A GRAMMAR OF THE COORG LANGUAGE

N. A. G. Garman

Ph.D. Thesis
University of Edinburgh
1973
Research for this thesis was started in September 1967, financed by a grant from the Department of Education and Science, London. This grant extended up to 1969, and included travel to and from India in 1968; within the grant period the first three chapters were completed (save for minor subsequent additions and updating of references), and a preliminary version of Chapter 4 appeared as a paper in the Dravilingual series (Vol. 1, No. 7). In December 1970 a revised version of this paper was written up (Garman, forthcoming) while I was working on a project - Cross-Linguistic Studies of Language Acquisition - supported by a grant from the Social Science Research Council to Dr. R.J.Wales at the Cognition Project, Department of Psychology, University of Edinburgh. The remaining work was done after joining the Department of Linguistic Science, University of Reading in October 1971. Part of Chapter 5 was presented as a paper to the Second All-India Conference of Dravidian Linguists, 1972 (Garman, to appear). No other part of the thesis has been submitted for publication. The thesis has been composed by myself.

M.A.G. Garman
Department of Linguistic Science,
University of Reading.

I want to thank all my informants: Dr. I.K. Nuthanna (London, September 1967); Sri N.N. Vasu (Mysore, July-August 1968); Sri N.N. Belliappa and Smt. N.G. Belliappa (Mysore, July-August 1968); Dr. C.A. Pemmiah (Virajpet, September-November 1968); Sri K.K. Appachu and Smt. N.K. Appachu (Ammathi, September 1968); Sri N.C. Chinnappa (Virajpet, September 1968); Sri N.C. Subbaya and Smt. N.P. Subbiah (Karada, September-November 1968); and Kum. N.K. Belliappa (Edinburgh, November 1970-September 1971). I owe my particular thanks for hospitality as well as linguistic data to Sri N.N. Belliappa, Smt. N.G. Belliappa, Sri K.K. Appachu and Smt. K.K. Appachu, Dr. C.A. Pemmiah, Sri N.C. Subbaya and Smt. N.P. Subbiah.

My thanks go also to Dr. R.J. Wales for encouraging me in every way possible to continue this research while I was at the Cognition Project (August 1969-September 1971), and to my colleague there, Mr. P.D. Griffiths, for his valuable advice on a number of specific points and for the benefit I gained generally from working with him for more than a year. Dr. E.K. Brown kindly read a preliminary version of the section on 'volitive' verbs in Chapter 3; Professor M.B. Emeneau, Dr. G. Brown and Dr. E.C. Fudge provided helpful comments on the Dravlinpex paper (the first version of Chapter 4); and Dr. P.J. Trudgill has read the later drafts of the third and fourth chapters: I am most grateful to them all.

It will be evident how much of this work has been influenced by the approach to phonological description presented in Fudge (1967, 1969a and 1969b). It will be equally clear that Professor J. Lyons
has had a quite incalculable influence in the course of this research, even though he did not supervise it; perhaps this statement alone suffices to show the thanks that are due to him from one of the former postgraduate students in the Edinburgh Linguistics Department: it is a debt of gratitude common to us all.

Above all, I want to thank my supervisor, Dr. R.E. Asher; he has earned my gratitude not merely for being my supervisor but for constantly maintaining a judicious blend of encouragement and criticism, and being endlessly patient, in the face of many long and embarrassing delays. Without his support in ways that are outside the normal brief of a supervisor, the work might never have been finally written up.

The typing was done by Mrs. N. Quinlan, of the University of Reading; she had a great deal of difficult material to work through in very little time, and carried it out in a most helpful and expert way.
SUMMARY

The purpose of this work is to present the main features of the phonology, morphology and syntax of the Coorg language of southern India.

Chapter 1 briefly describes the area where the language is spoken and the most important points regarding the community of the Coorgs (noting areas of further research interest, principally in regional and social dialects). It also introduces and comments on the rather sparse 19th-century literature on the language, and records the important work done in this century by Professor K.B. Emeneau.

Chapter 2 is principally concerned with the sound system of the language, describing it in some phonetic detail and demonstrating alternative analyses in respect of a number of problem areas (in particular, the stop consonant system). It is suggested that an analysis in terms of phonetic contrast alone is inadequate, and that frequency of contrast has to be taken into account when setting up the phonological system. This shows the necessity of working with underlying representations, together with a set of process rules, in order to account for the surface contrasts.

Chapter 3 deals with syntax, illustrating with a particular type of 'surface' transcription discussed in the preceding chapter. The basic sentence patterns of the language are introduced, and then attention is concentrated on those sentences involving the copula, and on the transitive/causative constructions in the language. It is suggested that the facts of Coorg require a 'lexicalist' approach to the statement of certain voice-related verb forms (which are therefore
not to be treated in the syntactic component at all).

The conclusions of Chapters 2 and 3 constitute the basis for the main thesis of the work. It is argued in Chapter 4 that the lexicon has to include a generative subcomponent, working in terms of 'Root' and 'Affix', in order to facilitate the statement of extra-syntactic lexical relationships (such as hold between certain voice-related verbs as described in Chapter 3); furthermore, that the appropriate phonological system for the representation of these lexical relationships is the one suggested at the end of Chapter 2. Chapter 4 concentrates on the structure of verbs; Chapter 5 notes some evidence in favour of a lexicalist approach to the description of certain lexical relationships between nouns, and shows how the analysis allows for a straightforward account of a particular problem in derivational morphology (contrast of consonant length immediately following a short root vowel). Finally, Chapter 6 suggests ways in which the analysis may throw light on the structure of complex lexical items.
## CONTENTS

Statement of research (i)
Acknowledgements (ii)
Summary (iv)

Chapter 1: Introductory 1-27

1.0 Background 2
   1.1 The land 2
   1.2 Recent history 4
   1.3 The Coorg community 5
   1.4 Population 7
   1.5 Coorg literature 9

2.0 Previous studies 10
   2.1 Early general and linguistic studies, to the end of the 19th century 10
   2.2 20th century studies 18
   2.3 The Coorg vowel system 20

3.0 Fieldwork for the present study 25

Chapter 2: Transcription 26-109

1.0 Introduction 29
   1.1 Inventory of phonemes: vowels 29
   1.2 Inventory of phonemes: consonants 30
   1.3 The word 32
   1.4 The syllable 32

2.0 Contrasts 33
   2.1 Vowels 34
Chapter 3: Syntax

1.0 Introduction

1.1 The basic syntactic patterns

1.1.1 Sentences negated by [ille]

1.1.2 Sentences negated by [alla] ('Relational')

2.0 The copula

2.1 The copula forms [a:gi] and [ull]-/[ir]-

2.1.1 The copula in existential/locational function

2.1.2 The copula in possessive function

2.1.3 The copula in relational sentences

2.1.4 The copula in interrogative and negative sentences

2.2 The status of the copula

2.2.1 Kandiah's arguments

2.2.2 The possessive copula

2.2.3 The adverbialisation transformation

2.3 The analysis of the copula

2.3.1 Summary

2.3.2 The analysis

3.0 Voice

3.1 'Intransitive', 'transitive' and 'causative'

3.1.1 The data

3.1.2 Discussion

3.1.3 The analysis of causative verbs

3.1.4 The problem of 'volitive' verbs

3.2 Two proposals regarding 'volitive' verbs

3.2.1 Kandiah's proposal

3.2.2 Lyons' proposal

3.2.3 Syntactic relatedness
3.3 Conclusion

3.3.1 The role of syntactic deep structure

3.3.2 The role of the lexicon

Chapter 4: The structure of lexical items: verbs

1.0 Introduction

1.1 Verb classes

1.1.1 The non-past affix

1.1.2 The past affix

1.2 The verbal lexeme

1.2.1 The basic lexemes

1.2.2 Derived lexemes

1.2.3 Irregular and defective lexemes

2.0 Preliminaries to the analysis of lexemic structure

2.1 Lexemic relations

2.2 The form of lexical entries

3.0 The generative component

3.1 Onset

3.2 Peak

3.3 Coda

3.3.1 Preliminaries

3.3.2 The system of elements

3.4 Cons Suff

3.5 Voc Suff

3.6 Suffix\textsubscript{2}

3.7 I and II

3.8 Volit\textsubscript{1}

3.9 Volit\textsubscript{2}
4.0 The rules cited in this chapter
4.1 The lexeme structure rules
4.2 The phonological mutation rules
4.3 The realisation rules
4.4 The articulatory sequence rules

Chapter 5: The structure of lexical items: nouns
1.0 Introduction
1.1 Lexeme-final elements
1.2 Contrast of consonant length after a short root vowel
1.3 Canonical forms
2.0 Preliminaries to the analysis of nominal lexemes
2.1 The nominal lexeme
2.2 Number
2.3 Case
2.4 Gender
3.0 The generative component
3.1 Onset
3.2 Peak
3.3 Coda
3.4 Cons Suff
3.5 Voo Suff
3.6 Suffix₂
3.7 Nom
3.8 Noun
4.0 The rules cited in this chapter
4.1 The lexeme structure rules
4.2 The phonological mutation rules
4.3 The realisation rules 370
4.4 The articulatory sequence rules 370

Chapter 6: The structure of complex lexical items 372-430

1.0 Introduction 373

1.1 Preliminaries to the analysis of complex nominal structure 373

1.1.1 Set 1 373
1.1.2 Set 2 376
1.1.3 Set 3 379
1.1.4 Set 4 380

1.2 The lexeme 383

2.0 The structure of complex nominals 386

2.1 Set 1: Lexeme \textsuperscript{\textasciitilde} Lexeme 386

2.1.1 Lexeme = Base \textsuperscript{\textasciitilde} Classifier 386
2.1.2 Lexeme \neq Base \textsuperscript{\textasciitilde} Classifier 396

2.2 Set 2: Base \textsuperscript{\textasciitilde} Postbase 399
2.3 Set 3: Base \textsuperscript{\textasciitilde} Lexeme 412
2.4 Set 4: Lexeme \textsuperscript{\textasciitilde} Classifier 417

2.5 A further case of linear derivation 420

3.0 The rules cited in this chapter 427

3.1 The lexeme structure rules 427
3.2 The phonological mutation rules 428
3.3 The realisation rules 428

Appendix I: Inventory of verbal lexemes, Classes 1-5 431-448
Appendix II: Inventory of derived verbal lexemes 449-455
Appendix III: Inventory of irregular and defective verbal lexemes 456-458
Appendix IV: Inventory of nominal lexemes

Bibliography
CHAPTER ONE

Introductory
1.0 Background

1.1 The land

Coorg (an anglicisation of the Kanarese word /kodagu/) is one of nineteen Districts that make up the modern (i.e. post-1956) Mysore State in southern India (see the map in Fig. 1 on p. 3). It lies in the south-western corner of the state, defined by a district boundary on three sides (west to north; north to east; and east to south) and by the border with Kerala State on the fourth side (west to south). Its greatest extent from north to south is about sixty miles, and from east to west about forty miles, enclosing an area of just over one and a half thousand square miles. It consists in the main of mountainous country, extending across the peaks of the Western Ghats, somewhat to the north of the Nilgiris. The district town, Mercara, lies at an altitude of almost four thousand feet, and the highest peak in Coorg, about twenty miles away from Mercara in a south-westerly direction, reaches five thousand seven hundred and twenty nine feet. The average rainfall in Mercara is of the order of a hundred and twenty inches a year, most of this resulting from the south-west monsoon (July to September), which supports average to good rice cultivation in the valleys. Forest reserve areas are all that now remain of the once extensive forests (containing teak and sandalwood) that have largely been cleared for other types of land use; apart from rice fields, numerous coffee estates make a considerable demand on land area. The district is famous in India for its coffee, and also for oranges and bee-keeping; marmalade and honey are marketed by co-operative societies.
Figure 1: Coorg District in Mysore State (post-1956)
1.2 Recent history

In recent history, Coorg has undergone a number of political changes which have affected its social structure. As an independent territory, ruled by a dynasty of Kanarese-speaking Hindu Rajahs of the Lingayat sect, it was placed under British protection in 1792 when Tipu Sultan, the Muslim ruler of Mysore, was holding much of South India against the British and simultaneously laying claim to Coorg. After the defeat and death of Tipu at the hands of the British in 1799 (in which the Coorgs also played a notable part), a Hindu dynasty was installed on the Mysore throne. But an uprising occurred in Mysore in 1831, and was followed by a period of British administration; and in 1834 Coorg was annexed to Mysore, the last Coorg Rajah being deposed by the British, who accused him of cruelty towards his people. In 1858, when the British Government took over the administration of India from the East India Company, Coorg became a separately administered province, and remained so (even after India's independence) until 1956; in that year the states of the Union were redefined on a linguistic basis, and Coorg was merged with Kanarese-speaking Mysore. This was a direct result of the influence of the Kanarese-speaking Lingayat dynasty in Coorg, from the beginning of the seventeenth century up to 1834. During this period of more than two hundred years, the contacts between Coorg and the Malayalam culture of the Malabar coast must have declined, in favour of the Kanarese language and culture of the court. Srinivas (1952) notes that 'Educated Coorgs are usually trilingual, knowing Kodagi, Kannada and English. Kodagi is used in the home, Kannada in talking to most non-Coorgs excepting Malayalis, and English in official matters, and occasionally in conversation with strangers' (1952: 9).
It should be noted that English succeeded in establishing itself as the language of officialdom after 1834 in much the same way as Kanarese must have done under the Coorg Rajahs. Since 1956, Kanarese has increasingly become once more the language which supplants Coorg outside the home or circle of fellow-Coorgs.

What Srinivas (1952: 7) described as 'Coorg Proper', the 'core and centre of the culture of the Coorgs', lying in the area bounded by Mercara, Siddapur, Srimangala and Bhagamandala, is apparently a much smaller area today. It is generally said to lie south and west of Mercara, north and west of Virajpet; perhaps as more of a concept than a geographical area, it is of importance and is held in great and sentimental respect by many Coorgs who feel that they have been cut off from their culture and the roots of their language by 'Westernisation'. It is fair to say that most of these Coorgs would not give up their present occupations (in law, medicine, the armed services, etc.) to go and live in the old conditions. However, it is still not difficult to find people of middle age and upwards who are relatively undisturbed by the encroaching world; but the existence of monolingual Coorg speakers must be seriously doubted.

1.3. The Coorg community

'Coorg' is an ambiguous term, referring to the land, the largest single community there, and the language spoken by that community. It will be seen in what follows that it is also a complex term, in that the notion of a 'Coorg community' is complex.

In Emeneau (1938) the Coorgs are described as follows: 'The Coorgs are an endogamous community of about 40,000 people who form approximately a quarter of the population of the province of Coorg.... They were originally the warrior owners of this tract and formed, and
still form, the highest community in the social scale (barring the few Brahmans who live in the province). It is doubtful how far they can be considered a caste in any strict Indian sense of the word, for they resolutely refuse to accept the ministrations of the Brahmans in any of their rites' (1938: 123). Richter (1870), basing much of his account on Hoegling (1855) together with his own long experience in the province, had earlier noted that a number of the tribes speaking the Coorg language are not accepted as part of the Coorg community; they provide drummers at feasts, or are ironsmiths, or carpenters, barbers, toddy-tappers, washermen, etc. A further group, known as Amma Coorgs, preserve a very different kind of distinctiveness, although numbering very few people (only 281 according to Richter, 1870; and probably still not more than five hundred): of these, Srinivas (1952) says that they 'exemplify a tendency which has always been present in the caste system: a small group of people break off from a larger whole of which they are a part, Sanskritize their customs and ritual, and achieve a higher status than their parent body in the course of a few decades' (1952: 35). J.S.F. Mackenzie notes in a preface to Lindsay (1874) that 'The Amma Coorgs, a small subdivision numbering in all 300 souls, resemble their countrymen in language and costume but neither eat animal food nor drink spiritous liquors, and only intermarry with their own class'. The main body of Coorgs, however, relish any meat except beef (pork and venison are delicacies) and are, in general, fairly satisfied with their reputation for being able to drink alcohol.

In contrast to these distinctions, however, Srinivas (1952) also stresses the point that fairly high caste non-Coorgs are accepted into the Coorg community with much greater ease than is found with the caste
system generally (1952: 37), and he cites Moegling (1855) and Richter (1870) to the same effect. One of the commoner points that one hears raised in conversation among Coorgs these days is the influx of large numbers of Muslims from north Kerala; apparently it is these people against whom Coorg social solidarity is currently defined (in part), and the distinctions marking off the relatively recent admissions into the Coorg fold (e.g. Tulu or Kanarese Gowdas, Kanarese Okkaligas, etc.) are correspondingly blurred.

The Coorg community as a social unit is therefore complex, and not completely isomorphic with the corresponding speech community. It would clearly be worth while to investigate what promises to be a rich field of social varieties within the speech community. In addition, Coorgs themselves generally recognise a number of regional dialects: the north-eastern, the north-central, the south-central, and the southern. Mercara is often cited as having its own dialect. All this remains uninvestigated as yet.

1.4 Population

Connor (1870), reporting on the survey of Coorg that he carried out between 1815 and 1817, estimated the total population of the area to be about 40,000. The first census, in 1871 (cf. Lindsay, 1874), reported a total population of 168,312, of which 26,389 were Coorgs (there is no indication of whether this figure includes non-Coorg communities speaking the Coorg language). Thus Coorgs represented about 15% of the total population at that time; this figure increased only slightly up to the 1921 census, when it jumped to 27%. Prior to the 1871 census, there is the estimate of Moegling (1855), which reckons 25,000 to 26,000 Coorgs; if Coorgs at this time also
constituted about 15% of the total population, this would give a figure of around 165,000 for the area, which, in view of the 1871 figure, seems only slightly too high. But it is difficult at first sight to square this figure with that in Connor (1870) for the first quarter of the century. One might reject Connor's figure as unreliable except for the fact that he shows a generally high level of competence in his report, and an estimate of the population clearly falls within the area of his competence as a survey officer; probably his figure needs only to be modified somewhat. In this connection, it is worth noting what Moegling (1855) has to say regarding the Coorg population prior to his day: 'They have much increased in number during the last 20 years. They are no more killed *ad libitum* by their Rajahs, nor destroyed by harassing warfare. In former days they seem scarcely to have mustered more than 4,000 or 5,000 fighting men!' (1855: 28).

Later on, he points out that the old social order was in decay at the time of writing as a result of the sudden increase in numbers in the Coorg community: 'I am told, there are some houses in the country containing sixty, seventy, eighty souls and upwards. Very fine and patriarchal, if there be peace in the house! But, what fearful misery, when such a house is rent by discord! In these days, the ancient system is breaking up...!' (1855: 32). Moegling's point about the homicidal attitude of the Rajahs towards the Coorgs is highly controversial, to say the least; as a missionary, he clearly favoured the policies of the British administration in Coorg as opposed to those of the earlier Hindu dynasty and must therefore not be taken as an objective historical source: but his other point, regarding the decimation of the Coorgs in warfare, fits with the historical fact that Coorg was struggling for its existence against Muslim Mysore from Hyder Ali's conquest of Bednur in 1763 to the death of his son Tipu in
1799, and with the account in Rice (1878) that Coorgs formed the main body of the Rajahs' armies (1878: 327). We may perhaps think of a community of 10,000 Coorgs at the time of Connor's survey, in a total population of probably rather more than 40,000. After the death of Tipu, Coorg was considerably easier of access from the outside; roads were reopened, trade contacts increased with the Kanarese-speaking area formerly controlled by Tipu, and we probably have to recognise an influx of Kanarese communities on quite a large scale. During this period also, of course, the Coorgs were increasing in number, remaining the largest single group in the territory.

Returning to the present century, the census for 1931 contains the most detailed information prior to the reorganisation of the states; Coorgs are estimated at 41,026, while the number of Coorg speakers is given as 44,585 (all of whom are recorded as speaking some other language also — undoubtedly Kanarese and/or English). At this time, Coorgs formed about 25% of the total population in Coorg (163,327); other speech communities in the area were listed as Kanarese (62,769, but made up of various social communities), Malayalam (14,914), Tulu (14,275), Yerava (10,026), Hindusthani (4,378), and Tamil (3,007). Since 1956, figures have been available only for the new Mysore State or for India as a whole; in 1961 there were 78,202 Coorg speakers in Mysore State, while the figure for India (including Mysore) was 79,172.

1.5 Coorg literature

As a final point in this section, it may be noted that Richter (1870) and Caldwell (1875) both correctly state the situation in their day, that Coorg had no literature (in the sense of the term that excludes the oral tradition of songs). However, Appacha (1906) is a bold and conscious attempt to initiate a Coorg dramatic tradition, and
was followed by Appacha (1908), and two other works in the same pattern (for which references are not to hand). In these works, common Hindu myths are worked into the form of a short drama, where characters tend to speak either a rather stilted language (Kings, court officers, etc.), or a colloquial variety (the common people); the text is broken into at intervals with short songs, usually based on folk idiom, and showing interesting features of rhythm and alliteration. On the whole, the songs have outlived the plays, although productions of the complete plays were put on in a number of places in Coorg during 1968, in honour of the birth centenary of the poet. Appacha (1929), a second edition of Appacha (1906), is particularly interesting, in that it contains a prose introduction by the author which deserves consideration as the first attempt to create a formal style in the language, outside the framework of the dramatic form. In addition to Appacha's work, mention should also be made of Chinnappa (1929), a translation into the Coorg language of the Bhagavad Gita. The same author had earlier (Chinnappa, 1924) published a collection of, and commentary on, the songs, sayings and customs of the Coorgs, in the Kanarese and Coorg languages (unfortunately, the only copy of this work that came to hand had the title page mutilated, so that the publisher could not be discovered). At the Cauvery Ashram in Virajpet, Nukkatira S. Poovayya is currently writing devotional lyrics and short poems in the Coorg language (Poovayya 1966, 1968).

2.0 Previous studies

2.1 Early general and linguistic studies, to the end of the 19th century

Ellis (1816: 3) mentions 'Codugu' as one of the languages of south
India related to Tamil and Malayalam; but it was not until Lt. P.E. Connor carried out his survey of Coorg, 1815-17, that there was much information available on the people and the land, and it was only much later than this that reliable language data began to be collected. Connor's report remained unpublished for fifty two years (Connor, 1870), although presumably much of the information it contained circulated prior to that date among interested people who were connected with the East India Company in some way. The language was of only incidental interest to Connor, of course; his professional concern was with the nature of the terrain, and the social, economic, and demographic particulars of the area. On these topics he shows a sober and perceptive judgement that one could hardly expect in his description of the speech of the Coorgs, but it is nevertheless worth repeating his impressions of it here: 'That this mountainous tract should have a dialect peculiar to itself is a phenomenon deserving some remark: the attainments of a philologist would be necessary to enter into those enquiries which so curious a subject deserves; no attempt will be made here to investigate its Etymology but perhaps a few brief remarks may be desirable.

'The dialect spoken amongst these hills is known only to the Codugus, its use consequently is limited to a few people and it cannot be considered as the channel of intercourse with any but themselves; there is no data by which to establish its antiquity, nor can scarcely a well founded conjecture be formed as to the origin of it, unless from the apparent affinity it bears to the Mallialum, we are entitled to conclude that it is most probably derived from it, and that the alterations it has undergone have been caused by the detached and ignorant state of the society amongst whom it prevails.
'The language of the Codugus has much of the harsh and disagreeable sound of the Malabar spoken on the Eastern Coast, it is unwritten and like most oral dialects scanty and meagre; there are but few abstract terms, and even the names of objects of sense are borrowed (somewhat modified in the use) from other tongues. In short it appears evidently that of a rude people, and has no claims to be considered as a primary language.

'Having no alphabet, the Canarese character is always used, and their own or that language written indifferently; the Native Officers of Government, whose attainments alone reach thus far, comprehend both perfectly...' (1870: II, 53-4).

We may probably rely on the information here regarding the social status of the Coorg language, and the use of the Kanarese script; it conforms to what is known of the history of the area, and - save in the matter of literacy, in which present-day Coorg is better than average - corresponds generally to the situation today. Even the suggestion that Coorg might be derived from Malayalam is a more reasonable guess in many ways than certain later attempts to see it as a dialect of Kanarese (e.g. Caldwell, 1856). More than thirty years after Connor's survey, B.H. Hodgson included some Coorg material in a comparative word list of some southern Indian languages (Hodgson, 1849). He noted his indebtedness 'for these vocabularies to Mr. Walter Elliot of Madras, whose name is a sufficient warrant of their perfect accuracy' (1849: 2); but the fifty seven Coorg items are on the whole so badly transcribed as to be nearly unusable. Long and short vowels are confused, and a number of what can only be retroflex consonants are represented as dentals.

In 1856, R. Caldwell published the first edition of his comparative
grammar of Dravidian languages; however, this work (Caldwell, 1856) is less useful as far as Coorg is concerned than the second edition (Caldwell 1875), a discussion of which will be postponed until a brief survey has been made of the other publications which appeared after Hodgson (1849). Among these should be mentioned Moegling (1855); this records the impressions of the land and the people set down by a German missionary, the Rev. H. Moegling (mentioned above, p. 8), and deals in particular with the last Lingayat Rajah, whom Moegling regarded not only as 'a fool and a coward' (1855: 201), but also as an insane despot, justly deposed by the British in 1834. This view prompted a reply (Anon, 1857) from someone describing himself as 'An officer formerly in the service of his highness Veer Rajunder Wadeer, Rajah of Coorg', who dedicated his book to the Rajah and attempted to rehabilitate the Rajah's reputation: 'The Rev. Mr. Moegling, an American (sic) missionary, is the other person who has recently revived and given increased circulation to these calumniou reports, in his work entitled Coorg Memoirs...' (1857: 133). Undeterred however, Moegling in the following year published the Kanarese autobiography of the last Rajah, together with an English version which had been made by Lt. R.Abercromby, previously published in 1808; he took the opportunity of again stating his interpretation of the Rajah's personality (Moegling, 1858).

Capt. R.A.Cole was appointed Superintendent of Coorg in 1865; two years later, he published a grammar of the language (Cole, 1867), which deserves assessment as the first serious description to appear in print. In the preface to this work, he records that shortly after his appointment he travelled on duty to one of the west-central taluks, 'the very stronghold of the Coorgs', and 'found that many of them could not speak
Canarese, the official language, but only a dialect, which I could not understand. The officials also, when desirous of making remarks to each other, used to employ this dialect... (1867: Preface, 3). It should be noted that this account is consistent with that given in Connor (1870) for the situation fifty years earlier; one has to assume a gradual spread of Kanarese-Coorg bilingualism from the eastern parts of the province, and one has evidence here that it had not at this time penetrated to the western taluks. Cole's grammar is, unfortunately, a very disappointing effort, even for its time. It consists in the main of a collection of paradigms (of nouns, pronouns, and verbs), followed by a list of 'irregular' verbs (most of which are perfectly regular, given certain straightforward morphological statements), more lists of 'adverbs', postpositions and conjunctions, a vocabulary section, and some sample sentences. Cole, who clearly knew Kanarese to some extent at least, used both the Kanarese script and a Roman transliteration of this in citing the Coorg material, and as a result there is a generally reliable representation of vowel length, retroflex consonants, etc. However, the transcription is defective in other respects (see below, p. 22), the morphological statements are not trustworthy, the classification of the nouns and verbs is arbitrary, and the vocabulary frequently does not distinguish between Coorg items and Kanarese loans. Two years later, another German missionary, the Rev. A. Graeter, published a brief account of the land and the people (Graeter, 1869). It was written in Kanarese (language and script), and included some Coorg songs also (in Kanarese script). The same author in the following year published a more extensive collection of Coorg songs (Graeter, 1870), to which was appended a sketch of Coorg grammar and a vocabulary (1870: 26-48). Of the grammatical sketch it
is fair to say that it seems to be largely independent of Cole (1867), but represents no advance over that description, save in respect of the transcription of the vowels (see below, p. 23). It contains twelve nominal and pronominal paradigms, one verb paradigm, and a list of nearly fifty 'irregular' verbs—far larger than that given in Cole (1867).

It was in this year that Connor (1870) appeared, reporting on the survey of 1815-17; and so did Richter (1870), a valuable manual or gazetteer of the province by one of its most respected missionaries and educationists, which included a section on the language (1870: 193-214). Richter records his indebtedness to Noegling (1855) as far as non-linguistic matters are concerned; he says of that work that it 'furnishes extensive and correct information on social and religious topics and has been largely made use of in this volume' (1870: Preface). He makes no acknowledgment in respect of his language material, however, although it is clearly based on the same data as is found in Graeter (1870); the reason for this is that these two missionaries were collaborating on the language at this time. Richter's transcription is not systematically different from that used in Graeter (1870), although it is employed a little more consistently.

The following year, C.E. Gover published a collection of south Indian folk songs in translation (Gover, 1871), including a number from Coorg (1871: 101-46). He states that he is indebted 'to two earnest and capable German Missionaries, the Revs. W. (sic) Graeter and George Richter, for literal translations of the originals. The first-named gentleman collected and published them in the Kodagu vernacular and also rendered most of them into English' (1871: 103-4). It is noteworthy, in view of the relatively consistent transcription used in
Richter (1870), that Gover specifically says of Richter that 'Almost single-handed he reduced the language to writing...' (1871: 104). In this year too, Capt. R.A.Cole published his second work (Cole, 1871), an account of the civil code prevailing among the Coorgs.

The final publication containing Coorg material prior to Caldwell (1875) is Burnell (1873), a Coorg translation of St. Matthew's gospel (XIII, 1-34). Burnell notes that 'this specimen of the Kodagu language is due to the kindness of the Rev. F.Kittel of the Basel Mission; he has submitted it to the criticism of a number of the most intelligent natives of Coorg, and has added the valuable notes under the text' (1873: iii). He also refers to Richter (1870) and Graeter (1970), and goes on to say that 'There is also a Grammar by Capt. Cole, but it is to philologists of less use than Mr. Graeter's' (1873: v). The text is written in the Kanarese script, incorporating a sufficient number of diacritical devices (undoubtedly Kittel's) as to allow for an unambiguous representation of the vowels of Coorg (see below, p.24).

Thus, by the time Caldwell (1875) appeared, a fair amount of Coorg material had been published, and a reliable system of transcription was within reach; but many uncertainties remained in the morphology of the language, and the syntax had received virtually no attention (although the basis for beginning such a study was available in Burnell, 1873).

Caldwell has this to say of Coorg: 'Last in the list of cultivated Dravidian languages is the language of Coorg; but although I have thought it best to give this language a place amongst the cultivated members of the family, the propriety of doing so seems to me still more doubtful than that of placing Tulu in this list... The native spelling of Coorg is usually Kodagu, properly Kudagu, from kuda, west,
a meaning of the word which is usual in Ancient Tamil. In the first edition of this work, this language had not assigned to it a place of its own, but was included under the head of Canarese. It had been generally considered rather as an uncultivated dialect of Canarese, modified by Tulu, than as a distinct language. I mentioned then, however, that Dr. Koegling, a German missionary, who had resided for some time amongst the Coorgs, was of the opinion that their language was more closely allied to Tamil and Malayalam than to Canarese. It is not quite clear to me yet to which of the Dravidian dialects it is most closely allied. On the whole, however, it seems safest to regard it as standing about midway between Old Canarese and Tulu. Like Tulu, it has the reputation of puzzling strangers by the peculiarities of its pronunciation. A grammar of the Coorg language has been published by Major (sic) Cole, Superintendent of Coorg, and some specimens of Coorg songs, with an epitome of the grammar by the Rev. B. (sic) Graeter of Mangalore' (1875: 32-3). Caldwell's Coorg material consists of (i) a paradigm of a neuter noun, (ii) a paradigm of the first and second person pronouns, and (iii) a paradigm of a verb. On the whole, it is cited in a usable form, although there are some errors: thus, the nominative forms of the first and second pronouns (1875: 416-7) show a short vowel where a long vowel must be expected. It is possible that certain forms cited by Caldwell are no longer current, of course. He apparently used Cole (1867) and Graeter (1870)/Richter (1870) as sources, but some forms are from none of these works. Relatively little work was published on Coorg in the next few decades. Rice (1878), in a section on the language (1878: 279-96), presents a slightly revised version of the description in Richter (1870), placed at his disposal by Richter; none of the changes
is of importance. Hodgson (1880) contains an unchanged version of the Coorg material in Hodgson (1849). More important than either of these, therefore, are the publications of Anon (1882) and Veil (1886); the first is a selection of bible sentences in Coorg, and the second a collection of Coorg proverbs, written in unmodified Kanarese script in each case (the typographical evidence allowing for the possibility that Veil was the author of the first as well as the second). Appiah (1887) is an interesting but hardly important work containing a proposal for an entirely new Coorg script, some Coorg material, and a few paradigms; for comments on the script described in the work, see below, p. 24.

2.2 20th century studies

The first important publication in the twentieth century to incorporate Coorg material was the Linguistic Survey of India (LSI); the relevant parts are Vol. I, parts 1 and 2 (1927-8). Of this work, however, Emeneau (1955) notes that it 'did not extend its operations into Madras, Hyderabad, and Mysore States, and consequently failed to map the dialects of the greater part of the Dravidian-speaking territory. Moreover, its mesh was so wide and its methods so hit-or-miss that several of the Dravidian languages in central India were missed altogether...' (1955: 153). This general criticism regarding the methods used in LSI is borne out for Coorg also; the Coorg material it used was mainly drawn from one of the worst available sources, the data in Hodgson (1880), and was not even consistently checked against the better material in the other source quoted, Richter (1870).

For some time after this, nothing of importance appeared in print.
However, during the period 1935-6, Emeneau collected material in the
field on Toda, Kota, Kolami, and Coorg, and a number of his publica-
tions from that time contain some Coorg material even if they are
concerned principally with other topics than a descriptive analysis
of the Coorg language. Emeneau (1938) is worthy of special note, as
it contains an extensive, if ritualised, discourse in the language;
Emeneau (1945) presents some additional material in the framework of
a comparative study.

Goda Varma (1946), as a result of independent fieldwork done in
1939, attempts 'to show that the Coorg language agrees more with Tamil
and Malayalam than with Kannada in point of phonology, structure and
vocabulary, although it has latterly to some extent been influenced,
in these respects, by Kannada, the language now employed for literary
and court purposes in the country' (1946: 418). Goda Varma goes on
to make a well-documented statement of certain aspects of Coorg
phonology (in respect of its vowel system) from a comparative and
historical point of view (although his statement has been superseded
by that worked out independently by Emeneau, presented in Emeneau,
1970a).

The most important milestone in Coorg linguistic studies was, of
course, the publication of Emeneau’s excellent material in DED, DBIA
and DEDS (1961-8). Emeneau has also clarified the comparative position
of the language (within the South Dravidian subgroup), in Emeneau (1967),
and has made further important statements (Emeneau, 1970a, 1970b,
regard to the same general area of interest that is covered in Goda
the same analysis of Coorg verbs as that in Emeneau (1967), but
attempts a generative statement, and supplies some additional data; a revised version is presented in Garman (forthcoming) where the model used is not substantially different from that described in Chapter 4 of the present work. Some of the additional material appears in Burrow and Emeneau (1972).

The current situation with respect to Coorg linguistics is such that two recent comparative studies, Shanmugam (1971) and Subrahmanyan (1971), are able to use Coorg data with confidence. But it is nevertheless frustrating that a comprehensive grammar has yet to appear; in this respect, therefore, Doraiswamy (forthcoming) may prove to be most important. Meanwhile, the following chapters of the present work represent an attempt to provide a grammatical model in terms of which a coherent and comprehensive description may eventually be framed.

2.3 The Coorg vowel system

One of the outstanding features of the sound pattern of Coorg, and one which has attracted comment from the earlier investigators, is the nature of its vowel system; this recognises short and long unrounded vowels in the high and mid back positions (/i, i:, e, e:/) as well as the corresponding rounded vowels (/u, u:, o, o:/).

In respect of the high back unrounded vowel /i/, Coorg may be interpreted as sharing in what is apparently an areal feature, evidenced in Tamil and Malayalam varieties, Tulu, and the (Coorg) Gowda variety of Kanarese (see, for example, Asher, 1966; Andrews kutty, 1971; Ehat, 1967; and Kushalappa Gowda, 1970). All these languages show derounding of word-final /u/; and Coorg regularly has /i/ where Mysore Kanarese (for example) has /u/, as in items such as /maddi/ (Coorg), /maddu/ (Mysore Kanarese), 'medicine'. But, as is
implied in the transcription here, there is a contrast, however sporadic, between Coorg /i/ and /u/ in this position; furthermore, all eight back vowels occur and contrast in other positions. Hence the situation in Coorg is to a considerable degree distinct from that in the other languages mentioned above, and its vowel system is unique to it. Further discussion of the phonological status of the elements involved must be left until the following chapter; what is relevant here is the extent to which the early descriptions of the language paid attention to this feature of its sound structure.

There can be little doubt that the back unrounded vowels (perhaps together with the fact that certain lexical items are nasalised, showing nasal vowels), were mainly responsible for the reputation that Coorg had in the last century for being a 'difficult' language. Thus Connor (1870) mentioned that it 'has much of the harsh and disagreeable sound of the Malabar spoken on the Eastern coast' (1870: 53) (presumably referring to the areal feature of final derounding); Cole (1867) records his surprise on discovering that 'Dr. Moegling, the celebrated German missionary, ... had given up the attempt to learn the language, owing to the difficulty of conveying the exact pronunciation of the words' (1867: Preface, 3); and Richter rather fancifully observed that 'The Kodagu language is shorter, more simple, but less refined than the Canarese and a convenient medium for conversation; by its contracted, rounded forms with abrupt terminations in half vowels, it does not require a great exertion of the organs of speech and admits of chewing betel and retaining the precious juice, whilst the flow of conversation is uninterruptedly carried on. Indeed, a beginner should practise the pronunciation with his mouth half full of water, till he can speak without spilling any' (1870: 194).
It is convenient to begin a consideration of the transcriptions that were proposed in respect of these back unrounded vowels with Cole (1867). He notes there (obvious misprints have been corrected in what follows) 'the peculiar sound given to the vowel u in most of the words in which that vowel is to be found. The pronunciation is as near as possible to that given to u in the word creature, and I have designated it as a half or silent u, and had wished to have it caused to be written in the Canarese character as follows ☐ ru, and to have denoted it in the Roman character by placing a dot under the vowel; but the Press was not able to do so. This vowel has also another peculiar pronunciation, chiefly occurring in the Dative case in the affix of that case. This pronunciation is almost like that given by the French to eu in the word queue' (1867: Preface, 13). It is fairly clear from this that Cole thought in terms of just one extra vowel, 'silent u', of which the typical form was heard by him as being close to the value of English /a/; its other, 'peculiar pronunciation, chiefly occurring in the Dative case', is undoubtedly the high back unrounded quality. It is interesting that, although he recognised only one 'extra' vowel, he wanted to relate it in terms of symbolisation and terminology to the high back rounded vowel. Thus (taking his example), the Kanarese syllabary can only represent the consonant r by means of a (vowel deletion) diacritic • on the basic form , ra (i.e. the included vowel a is present in the unmarked symbol), yielding ☐; if the sequence ru is intended, then the u-diacritic is added to the basic symbol, yielding ☐: Cole's symbolisation of 'silent u' is achieved by the expedient of using the vowel deletion diacritic with the u-diacritic (not normally allowed, of course, in the Kanarese script).
Graeter (1870), employing just the Kanarese script, uses the consonant symbols with the vowel deletion diacritic most commonly to represent the mid back unrounded vowel, as in  for /raːjʊ/,'king'; he uses a combination of this diacritic with the u-diacritic (i.e. the same as the symbol in Cole, 1867) to represent the high back unrounded vowel, as in  for /raːjangi/,'to the king'. However, he is not consistent in his application of this distinction, frequently indicating a mid back unrounded vowel where the high back unrounded must be expected (e.g.  for /ra:jara gondi/,'by the kings', 1870: 26).

Richter (1870) uses only a Roman script, where o and u represent the mid and high back unrounded vowels, respectively. Of them, he notes that 'the former (ö) is pronounced like e in the French relative pronoun "que", or the o in the German "Götter", the latter (ü) sounds like the French u in "vertu" or like the ü in the German "Mütter"' (1870: 195). However, while Richter's script is adequate in respect of the u/o distinction, it also contains the symbol a which is nowhere described or explained and which occurs in some forms where one must expect either ö or a; hence, some uncertainty as to the precise nature of the Coorg vowel system is still evidenced in this work. This is the more surprising in view of the fact that at one point Richter seems to recognise that the contrast between ö and a is neutralised under certain conditions; thus, he gives the forms rájö, 'the king' and rájangi, 'to the king', adding in a footnote that 'Though corrupted at the end of a word the a takes again its full sound as soon as new syllables are added' (1870: 197). Possibly a is an attempt to illustrate this neutralisation, since it occurs only in those forms where neutralisation of the ö/a contrast is found; but not in all such forms, as the above example shows.
Kittel's version of the Kanarese script, used for the Coorg material in Burnell (1873), agrees with Graeter's in using the vowel deletion diacritic to represent the high back unrounded vowel; he notes that 'All Half Vowels have the Tulu sound' (1873: 1). The mid back unrounded vowel he indicates by placing a dot above the symbol for short or long ë; in this way he implies a relationship between the mid front and mid back unrounded vowels, as against the ë/a relationship implied in Richter (1870). It will be shown in Chapter 2 that each of these relationships is valid, depending upon the position and environment of the vowels concerned.

Caldwell's Coorg material (in Caldwell, 1875) is cited in Roman script, where the single apostrophe ' after a consonant indicates the high back unrounded vowel; thus marat'l', for /maratìll/, 'in the tree' (1875: 319). In the one instance where the mid back unrounded vowel is expected, the transcription shows am (in kejjam, first person singular, affirmative mood, past tense, of the verb 'to do', 1875: 554-5; cp. /kejje/, '(I) did (work), worked'). Appiah (1887), in spite of the freedom consequent upon devising a wholly new script for the language, nevertheless does not provide distinct symbolisations for the back unrounded vowels at the same level as for the other vowels; the high back quality is represented by a superscript dash, −, and the mid back quality by the superscript symbol 1; in each case, these diacritics are in combination with the basic symbol for a consonant with the included vowel a.

The first systematically implemented Romanisation is found in Goda Varma (1946), where the symbols ì and ì are used for the back unrounded qualities; Emeneau uses the same symbols in his works, marking length with a single dot after the vowel. The symbolisation
in the present work is the same, except that the more usual length marker */:/* is used.

It should perhaps be noted that contemporary practice concerning the use of the Kanarese script for Coorg is to use the vowel deletion diacritic on the basic consonant symbol for representing the high back unrounded vowel; thus $\text{ŋ}$ is /ra/ and $\text{ŏ}$ is /ri/. This means, of course, that $\text{ŋ}$ has a different value depending on whether it is being used to transcribe Coorg (/ri/) or Kanarese (/r/), and that no unambiguous representation of the consonant alone is possible when this script is being used for Coorg. Regarding the mid back unrounded vowel, the practice is to use the form for the consonant followed by the mid front vowel (i.e. $\text{ŋ}$, /re/, stands for Coorg /re/ and /rē/) in all positions save word-finally, where $\text{ŋ}$, /ra/ (hence standing for Coorg /ra/ and /rē/) is used. In this way, current practice recognises both the relationship implicit in the transcription proposed in Richter (1870) and that in Burnell (1873). It is a consideration not to be lightly dismissed that this implementation of the Kanarese script, while not 'phonemic', has gained wide acceptance in Coorg, and apparently causes no difficulties in everyday use. It will be seen in the next chapter that a solution of this sort captures a number of regularities that are not primarily phonetic.

3.0 Fieldwork for the present study

The main part of the fieldwork was carried out in Coorg between May and November 1968. Prior to that, about twelve hours of informant work had been completed in London, during September 1967, and this provided a useful basis for preliminary analysis and subsequent work.
in the field. However, the data from these London sessions was later seen as being quite heavily influenced by Kanarese, and has therefore not been used as a primary source for the description of the language in the following chapters.

Most of the data which is represented in this study was collected in Karada village, about ten miles west of Virajpet, and well within the area which Coorgs generally consider to be the home of the Coorg language and culture. But the initial fieldwork in Coorg was done in Mercara: here, the informant was N.M. Vasu; his parents have lived in Mercara for some time, and his childhood was wholly spent in the town, except for brief visits to the family home, which is in Karada. His speech in many respects seems to be typical of his generation in Mercara; it shows, for example, a fair degree of Kanarese influence (chiefly at the lexical level), in connection with which the role of the Government Arts College in Mercara is probably important (most of the teaching there is carried out in Kanarese). However, Vasu and his parents are all part of the larger family, Nadikerianda (/nadike:riyanda/), whose ancestral home and lands are at Karada; the fieldwork done in Karada subsequently revealed many respects in which Vasu's speech was typical of that area, and which therefore seemed to be characteristic of the Nadikerianda family. The informants in Karada (N.C. Subbavva and N.P. Subbiah) were a retired, well-educated couple who had both been 'out' (in other parts of India) for much of their lives; they had returned to Karada only within the previous five years. They each spoke essentially the same variety of the language, and this showed slight generation differences with that of Vasu; these differences have been ignored in the preparation of this work. Their educational attainments included a thorough knowledge of
Kanarese and English, and may therefore be argued to be a disturbing factor with regard to their Coorg speech; against this, however, it should be noted that all the Coorgs in the Karada area apparently know Kanarese fluently and English to a varying extent. Hence, in respect of their knowledge of Kanarese (the language most likely to interfere with Coorg), my informants were not untypical of the people in the village generally. In practice, they showed themselves to be ideal informants in many ways; they quickly became interested in the purpose of the research and were extremely helpful in pointing out respects in which they felt that their speech might diverge from that of their contemporaries in the village; in all such cases, the information was checked against the speech of whoever was available. N.N. Belliappa, N.G. Belliappa, and N.M. Belliappa, who also provided language data which is represented in this work, are all of the Nadikerianda family too; although not maintaining frequent and close contacts with Karada any longer, they show essentially the same variety of speech as is found in that area.
CHAPTER TWO

Transcription
1.0 Introduction

This chapter is mainly concerned with a monosystemic analysis of the sound pattern of Coorg, in terms of general phonemic theory. As such, one of its purposes is to fit into the general format of the monographs in the Linguistic Survey of India series currently being produced by the Centre for Advanced Study in Linguistics at the Deccan College, Poona (1967 - ). However, this analysis also provides a convenient basis on which to compare some rather different proposals, which are considered in the context of a discussion of phonological distribution (pp. 63-109).

1.1 Inventory of phonemes: vowels

Coorg vowel phonemes have to be classified in terms of the following phonological parameters: position (front/back; high/mid/low); length (short/long); and manner (rounded/unrounded). They are set out in Figure 1.

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unrounded</td>
<td>Rounded</td>
</tr>
<tr>
<td></td>
<td>Short</td>
<td>Long</td>
</tr>
<tr>
<td>High</td>
<td>i</td>
<td>i:</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>e:</td>
</tr>
<tr>
<td>Low</td>
<td>(æ)</td>
<td>a</td>
</tr>
</tbody>
</table>

Figure 1. The Coorg Vowel Phonemes
(The parenthesised element /æ/ is of restricted occurrence.)
In addition to these, however, a number of nasalised vowels occur, as follows:

\[ /\tilde{i}, \tilde{e}, \tilde{e}:, \tilde{e}, \tilde{a}, \tilde{a}:, \tilde{u}, \tilde{u}:/ , \]

and we therefore recognise the nasalisation marker \( /\tilde{}/ . \) \( /\tilde{i}:/ \) and \( /\tilde{e}:/ \) also occur, as the result of lengthening of \( /\tilde{i}, \tilde{e}/ , \) respectively, before the quotative particle (see p. 41). Emeneau (1938: 123, fn. 1) notes that 'nasalisation is best evaluated phonemically as a feature of the whole word and not of any separate vocalic or consonantal phoneme'. Accordingly, he represents it in his transcription by superscript \( \text{n} \) immediately after the form in question. Very few lexical items show this nasalisation, and it is therefore not convenient to set up a whole series of additional, nasal vowel phonemes for Coorg: Emeneau's solution is probably the best, but in this work the more conventional use of the tilde on the vowels will be followed.

1.2 Inventory of phonemes: consonants

The relevant parameters for the consonant phonemes are: place (labial/dental/retroflex/palatal/ velar/(glottal) ); length (single/ geminate); and manner (stop/nasal/lateral/trill/fricative/approximant; voiceless/voiced). The consonant phonemes are illustrated in Figure 2:
<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Dental</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
<th>(Glottal)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stop</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>voiceless</td>
<td>p</td>
<td>t</td>
<td>t</td>
<td>c</td>
<td>k</td>
<td></td>
</tr>
<tr>
<td>voiced</td>
<td>b</td>
<td>d</td>
<td>d</td>
<td>j</td>
<td>g</td>
<td></td>
</tr>
<tr>
<td><strong>Nasal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>n</td>
<td>n</td>
<td>ñ</td>
<td>ñ</td>
<td></td>
</tr>
<tr>
<td><strong>Lateral</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>l</td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Trill</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fricative</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>voiceless</td>
<td>(f)</td>
<td>s</td>
<td>ñ</td>
<td>(h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>voiced</td>
<td></td>
<td>(z)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Approximant</strong></td>
<td></td>
<td>v</td>
<td></td>
<td>y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. The Coorg Consonant Phonemes

(The parenthesised elements /f/, /h/ and /z/ are of restricted occurrence.)

The category 'Labial' in Figure 2 covers bilabial and labiodental articulations, as indicated by the symbols in that column; similarly, 'Dental' covers dental to post-dental articulations, and 'Palatal' post-alveolar to palatal articulations. /c/ and /j/ are post-alveolar affricates, but are conveniently classed with the true stops in most phonological statements. It will be seen that the categories 'Glottal' and 'Fricative (voiced)' are of marginal status. Full details of the allophonic realisations of all these elements are given in section 3.0 below.
The issue of consonant length (which is not illustrated in Figure 2) represents a problem in analysis which will be considered further in section 4.2.3; for the moment, the traditional categories 'single' and 'geminate' will be made use of.

1.3 The word

In what follows, a unit called the word will be appealed to fairly frequently. In all cases, 'word-initial' may be taken to mean 'potentially post-pausal (utterance-initial)', while 'word-final' should be interpreted as 'potentially pre-pausal (utterance-final)'. The uninflected forms of nouns (i.e. the 'subjective singular') and of verbs (i.e. the second person singular imperative) are, in each case, a single word; but those inflected forms which show just one main stress are also, in each case, a single word.

1.4 Stress

There is no contrastive stress in Coorg in the sense shown in English import (verb/noun). However, it is not entirely predictable from the word alone, as defined above. In order to state the occurrence of stress a phonological unit called the syllable has to be set up, compatible with the larger phonological unit, the word (i.e. every word is wholly made up of syllables). Then, every word-initial syllable has full stress; every word-final syllable has secondary stress. Word-medially, a syllable has full stress if it contains a long vowel nucleus, or a short vowel nucleus followed by a geminate consonant cluster (the first consonant of the cluster being separated from the second by the syllable boundary). Where a syllable has neither a long vowel nucleus nor a final consonant which is part of a geminate cluster in the sense just described, it carries no stress.
However, although this statement covers hundreds of examples, it does not account for a large number of forms such as /ku:kudike/, 'large cooking vessel for rice', which shows full stress on the first two syllables; in this case, and all the others of this type, we set up an internal word boundary /+/, and write /ku:+kudike/. Not surprisingly, the occurrence of /+/ is frequently a guide to morphemic analysis (e.g. /ku:li/, 'rice'; /kudike/, 'cooking pot'). However, in cases such as /nu:putti/, 'vermicelli rice' (cp. /nu:li/, 'thread', and /putti/, 'rice preparation'), the internal boundary is not marked, since the stress pattern is predictable with reference to the phonemic sequence as it stands.

All syllables in word-initial position are of the form (C)V(C) or (C)V; medially, they are CV(C) or C(V, and a single intervocalic consonant is to be taken as (the onset) of the same syllable as the following vowel; and since no consonant occurs word-finally, except in a few loans, such as /tapa:l/, 'post, mail' (from Hindi), word-final syllables are open. Geminate consonants do not occur after a long vowel; this is interpretable as a general condition on the overall length of the syllable unit.

2.0 **Contrasts**

In what follows, the abbreviations '1, 2, 3, sg, pl' stand for 'first, second, third person singular, plural', respectively; 'imp' is for 'imperative', 'caus' for 'causative', 'comp' for 'completive', 'opt' for 'optative', and '(in)tr' for '(in)transitive': 'masc' and 'fem' stand for 'masculine' and 'feminine', and 'prox' and 'rem' for 'proximate' and 'remote'.

2.1 Vowels

Wherever possible, these are illustrated in two positions:
(a) in the first syllable of the word, occurring with stress, and
(b) word-finally. In each case, the relevant element is underlined.

2.1.1 Short vowels, position and manner

\( /o/ \) does not occur finally, except in a few loan words such as \( /f\text{oto}/ \), 'photograph', \( /r\text{e}:\text{diyo}/ \), 'radio', etc.

(i) High front versus mid front:
(a) \( /\text{nilli}/ \) stand (2 sg imp)
\( /\text{nalli}/ \) paddy
(b) \( /\text{kandi}/ \) narrow passage
\( /\text{kande}/ \) bulb of plant

(ii) High back unrounded versus mid back unrounded versus low:
(a) \( /\text{kittici}/ \) was possessed (3 sg, 1, 3 pl)
\( /\text{kitti}/ \) bundle
\( /\text{katti}/ \) cot, bedstead
(b) \( /\text{takkj}/ \) language
\( /\text{takke}/ \) headman (of village)
\( /\text{takka}/ \) sufficient

(iii) High back rounded versus mid back rounded:
(a) \( /\text{puli}/ \) orange, sourness
\( /\text{poli}/ \) break (tr; 2 sg imp)

(iv) High front versus high back unrounded versus high back rounded:
(a) \( /\text{kurk}\ddot{e}/ \) fox, jackal
\( /\text{kirke}/ \) small
(b) /ma:di/ upper storey
  /ma:di/ jungle clearing
  /ma:du/ may do

(v) Mid front versus mid back unrounded versus mid back rounded:

(a) /etti/ arrive (2 sg imp)
 /etti/ bull, bullock
 /otti/ press (2 sg imp)

(b) /jalle/ sugar cane
 /malle/ cockerel

(vi) Mid front versus low versus mid back rounded:

(a) /ketti/ cut, blow
 /kati/ wash (plate, hands) (2 sg imp)
 /kotti/ tip, nipple

(b) /ba:ne/ open lands
 /ba:na/ sky

(vii) High front versus mid back unrounded versus high back rounded:

(a) /ippa/ will be (3 sg, 1, 3 pl)
 /"ippa/ will raise (3 sg, 1, 3 pl)
 /uppa/ will plough (3 sg, 1, 3 pl)

(b) /bolli/ silver
 /kullj/ dwarf (masc)
 /bollu/ Bollu (man's personal name, pet form)

(viii) Mid front versus high back unrounded versus mid back rounded:

(a) /kemmi/ cough (2 sg imp)
 /timmi/ sneeze (2 sg imp)
 /kombi/ horn
(b) /bille/  disk, badge
/billi/  bow (archery)

(ix) High front versus low versus high back rounded:
(a) /îkka/  now
/akka/  then
/ûkate/  without boiling over

(b) /kari/  curry
/tara/  short, kind
/kary/  may be digested

2.1.2 Long vowels, position and manner
/i:/, /iː/, /e:/ and /æ/ do not occur word-finally, except where this is in the first syllable of the word, as in /tiː/, 'tea'.

(i) High front versus mid front:
(a) /ciːle/  bag
/ceːle/  sash

(ii) High back unrounded versus mid back unrounded versus low back:
(a) /kili/  lower, below
/keːli/  ask (2 sg imp)
/kali/  grain

(iii) High back rounded versus mid back rounded:
(a) /ku:ta/  quarrel
/ko:ta/  coldness (not weather)

(b) /da:ru:/  and who (/u:, co-ordinative marker)
/da:ro:/  someone (/o:, indefinite marker)
(iv) High front versus high back unrounded versus high back rounded:
(a) /ki:ti/         torn piece
    /ki:da/         place below, down
    /ku:ti/         shout, noise

(v) Mid front versus mid back unrounded versus mid back rounded:
(a) /ne:ru/        may hang (intr)
    /ne:^ru/       may rise up
    /to:ru/        may leak
(b) /ayiga:le:/    even they (/e:/, emphatic marker)
    /elliyo:/      somewhere (/o:/, indefinite marker)

(vi) Mid front versus low back versus mid back rounded:
(a) /e:le/         which way?
    /a:le/          that way
    /o:le/          screwpine leaf
(b) /aval:el:/     even she (/e:/, emphatic marker)
    /aval:ai:/      she? (/a:/, interrogative marker)
    /e:valo:/       someone (fem) (/o:/, indefinite marker)

(vii) High front versus mid back unrounded versus high back rounded:
(a) /irici/        sawed (wood) (3 sg, pl)
    /irici/        (liquor) rose to the head
    /u:ri/         village
(viii) Mid front versus high back unrounded versus mid back rounded:

(a) /teːˈniː/ honey
/ˈtiːndiːci/ was finished (3 sg, pl)
/tɛːndiːci/ leaked (3 sg, pl)

(b) see (v) above

(ix) High front versus low back versus high back rounded:

(a) /niːˈriː/ water
/ˈnaːriː/ fibre of plant
/nuːˈriː/ one hundred

(b) see (iii) above

2.1.3 Vowels, short versus long

(i) High front:

(a) /kiri/ lip
/ˈkɪriː/ mongoose

(ii) Mid front:

(a) /eri/ ragi (Eleusine corocana)
/ˈeːriː/ wall of paddy field

(b) /aːne/ elephant
/ˈtaːneː/ even oneself (/eː/, emphatic marker)

(iii) High back unrounded:

(a) /iˈliː/ get down (2 sg imp)
/iˈliː/ drag (tr; 2 sg imp)
(iv) Mid back unrounded:
   (a) /əli/  
       /əli/ leave (position) (2 sg imp)
   /əli/ seven
(v) Low back:
   (a) /mədə/ purity, cleanliness
       /mədə/ upper storey
   (b) /ku:va/ shallow well
       /pu:va/ flower? (/a:/, interrogative marker)
(vi) High back rounded:
   (a) /nu:di/ heel of foot
       /nu:di/ girl
   (b) /kadə/ mustard seed
       /padə/ and swamp (/u:/, co-ordinative marker)
(vii) Mid back rounded:
   (a) /pədi/ powder
       /pədi/ fear
2.1.4 /æ/ versus /e/ versus /a/
   (a) /beænki/ (financial) bank
       /beŋgi/ (rain) cleared
       /aŋgi/ to that (thing), to it
2.1.5 Nasal versus oral vowels
   (i) High front, short:
       (a) /iva/ she (prox)
           /ive/ he (prox)
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(b)</td>
<td>/kavi/</td>
<td>poet</td>
</tr>
<tr>
<td></td>
<td>/kavl/</td>
<td>lie face down (2 sg imp)</td>
</tr>
<tr>
<td>(ii)</td>
<td>Mid front, short:</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>/bevari/</td>
<td>sweat</td>
</tr>
<tr>
<td></td>
<td>/kerva/</td>
<td>wall</td>
</tr>
<tr>
<td>(b)</td>
<td>/kanive/</td>
<td>valley</td>
</tr>
<tr>
<td></td>
<td>/kanye/</td>
<td>plains to the east of Coorg</td>
</tr>
<tr>
<td>(iii)</td>
<td>Mid back unrounded, short:</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>/cellave/</td>
<td>scaly anteater</td>
</tr>
<tr>
<td></td>
<td>/illave/</td>
<td>relative (masc)</td>
</tr>
<tr>
<td>(iv)</td>
<td>Low, short:</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>see (i) (b) above</td>
<td></td>
</tr>
<tr>
<td>(v)</td>
<td>High back rounded, short:</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>/kuyyadi/</td>
<td>let (it) be bored, dug</td>
</tr>
<tr>
<td></td>
<td>/kuuye/</td>
<td>let (it) feel prickly</td>
</tr>
<tr>
<td>(vi)</td>
<td>High front, long:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>/kavi:ndi/</td>
<td>saying 'poet'</td>
</tr>
<tr>
<td></td>
<td>/kanye:ndi/</td>
<td>saying 'lie face down'</td>
</tr>
<tr>
<td>(vii)</td>
<td>Mid front, long:</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>/e:va/</td>
<td>which person? (fem)</td>
</tr>
<tr>
<td></td>
<td>/e:v/</td>
<td>which person? (masc)</td>
</tr>
<tr>
<td>(viii)</td>
<td>Mid back unrounded, long:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>/ba:vendi/</td>
<td>saying 'brother-in-law'</td>
</tr>
<tr>
<td></td>
<td>/ma:vendi/</td>
<td>saying 'father-in-law'</td>
</tr>
</tbody>
</table>
(ix) Low back, long:
   (a) /naːvu/         tongue
       /məːvi/    father's sister, mother-in-law

(x) Mid back rounded, long:
   (a) /moːva/         daughter
       /məːve/    son

/ʌ:/ and /ɐ:/ are only found in the quotative construction in the data, i.e. followed by -/ndi/, before which all short vowels are obligatorily lengthened. Such occurrences ( (vi) and (viii) above) should perhaps be taken as word-final, but it will be seen that this complicates the statement of what a word is.

2.2 Consonants

Retroflex consonants do not occur initially, save for stops in a few loan words; e.g. (from English) /daːktri/, 'doctor' (where the English alveolar stops are interpreted in terms of the Coorg system as being non-dental and hence retroflex), and (from Hindi) /tapaːl/, 'post, mail' (where the initial stop is retroflex in the source language). Where possible, contrasts are illustrated (a) word-initially and (b) word-medially.

2.2.1 Contrasts of place

(i) /p/ vs. /t/ vs. /t/ vs. /c/ vs. /k/:
   (a) /patti/     space before house
       /tatte/     goldsmith
       /cattuva/   wooden spoon
       /katte/     dam in tank or pond
(b) /ka:pi/ coffee
  /pa:te/ cockroach
  /ra:te/ pounding board
  /a:ce/ day of the week
  /ka:ze/ crow (n)

(ii) /b/ vs. /d/ vs. /d/ vs. /j/ vs. /g/:

(a) /bale/ 'bangle'
  /dale/ noose
  /jale/ pliant stick
  /gale/ long stick

(b) /adi/ beginning, origin
  /ca:di/ slander
  /ja:di/ jasmine (Jasminum grandiflorum)
  /ra:gi/ ragi (Eleusine coracana)

Instances of an ungeminated voiced bilabial stop are rare inter-
vincally; /kurube/, 'shepherd', is one example. The form /kaybi/, 'sugar cane', should also be noted, showing another case where single
/b/ has to be set up outside word-initial position.

(iii) /m/ vs. /n/ vs. /n/ vs. /ñ/ vs. /ñ/:

(a) /ma:le/ necklace
    /ma:ni/ I
    /ma:na/ shame

(b) /a:me/ tortoise
    /a:ne/ elephant
    /ba:ne/ open grazing land
    /pu:He/ cat
    /a:nu:mi/ male child
A further skewness of consonant distribution is evidenced here: apart from the fact that initial retroflex nasals are not found, it is also the case that /n/ is found initially in only a few words (less than ten, even allowing compounds to count as distinct words), and is found ungeminated intervocally possibly only in the item /puñe/ given above. However, it occurs more commonly in intervocalic position when geminated (as in /kumu/, 'Coorg child'). Further, /ñ/ does not occur initially; and it is rare intervocally, regardless of whether it is geminated or single: the last form cited above is a compound of the elements /a:li/, 'man' and /kumu/, 'Coorg child', and /cañó:le/, 'chain' shows the stress pattern of a compound also, although in this case the identification of the elements is less certain (cf. /o:le/, 'ear ornament, earring').

(iv) /l/ vs. /ɾ/:
(a) /a:li/ banyan tree
    /a:li/ man, servant
(b) /lekka/ lesson

The only recorded instances of /l/ in word-initial position involve loan words (such as the item given above, which is probably via Kanarese), or else are sound-symbolic, as in the single DED entry under /l/-, /lot/, /lotto:/, 'noise of a wooden cattle-bell'.

(v) /f/ vs. /s/ vs. /ʃ/ vs. /h/:
(a) /fæn/ fan
    /sa:la/ loan
    /ʃa:le/ school
    /he:sige/ disgust (exclamatory)
(b) /ka:fi/  coffee (∼ /ka:pi/)
/mi:ge/  moustache
/de:fa/  country, nation
/a:ha:ra/  food

/h/ is rare intervocally; the only instances are found in Sanskritic vocabulary items, and in consciously 'correct' styles of speech (where, for example, /sa:hasa/ may occur instead of the more usual /sa:sa/, 'effort').

(vi) /v/ vs. /y/:
(a) /va:le/  'ear ornament' (∼ /o:le/)
   /va:la/  cardamom (∼ /e:la/)
(b) /ka:ya/  (crow) will caw
   /ga:ya/  wound

The occurrence of /v/ and /y/ word-initially is discussed more fully below (pp. 87-92); a phonological alternation is involved here, as indicated by the alternative forms noted above.

2.2.2 Contrasts of manner
(i) /p/ vs. /b/ vs. /m/ vs. /f/ vs. /v/:
(a) /pa:ti/  song
   /ba:de/  inner hall
   /ma:le/  necklace
   /feen/  fan
   /va:le/  ear ornament
(b) /pa:pa/  exclamation of pity
   /kuruba/  shepherd
/a:me/ tortoise
/ka:fi/ coffee
/ka:ya/ (crow) will caw

(ii) /t/ vs. /d/ vs. /n/ vs. /l/ vs. /r/ vs. /s/ vs. /z/:

(a) /ta:ti/ amulet
    /da:ri/ who
    /na:ni/ I
    /la:di/ tape
    /ra:te/ pounding board
    /sa:sa/ effort

(b) /ku:ti/ shout, noise
    /cu:di/ needle
    /u:ni/ gums
    /nu:li/ thread
    /u:ri/ village
    /mu:gi/ smell (2 sg imp)
    /dazan/ dozen

/z/ only occurs in the data in loanwords, and never initially.

(iii) /t/ vs. /d/ vs. /n/ vs. /l/:

(b) /ka:ti/ bison
    /ca:di/ slander
    /a:ni/ nail (metal, wood)
    /ga:li/ wind
2.2.3 Contrasts of length

The distinction between single and geminate consonants (of equivalent place and manner) is found only in the context of a preceding short vowel (see above, p. 33).

(i) Stops, voiceless:

/stop/ steps for getting over fence
/kapre/ frog
/miti/ limit
/titi/ fire
(ii) Stops, voiced:

/pata/ picture
/patta/ coronation

/melaci/ moon
/acci/ jaggery cake

/portiki/ mean fellow
/aggi/ husked rice

/kurube/ shepherd
/ubba/ poles in slots forming a gate

/kadi/ ear (grain)
/paddi/ kite, hawk

/adi/ place below
/addi/ obstacle

/raja/ holiday
/pajja/ Holeya girl

/noga/ yoke
/orzandi/ let (child) wriggle on belly (opt)

(iii) Nasals:

/keni/ ear
/enni/ female buffalo

/jana/ people
/cenna/ small quantity

/mana/ sand
/manni/ mud, land property
/n/ and /n/ never occur singly after a short vowel.

(iv) Laterals:

/kale/ scar
/jalle/ cane of sugar
/kali/ play
/kalli/ thief (fem)

(v) Approximants:

/ava/ she (rem)
/avva/ mother
/daya/ kindness
/bayya/ place behind

The phonemes /r, f, s, ẓ, h, z/ never occur geminate in the language.

3.0 Allophonic statement

3.1 Vowels

It will be seen from Figure 1 (p. 29) that the rounded/unrounded opposition only applies to mid and high back vowels. Front vowels are lip-spread, in greater degree for the long vowels than for the short, and for the high vowels than for the mid. Back unrounded vowels in high and mid positions are slightly less lip-spread than their corresponding front vowels. /a:/ has neutral lip configuration, while /a/ has allophones that range from unrounded to slightly rounded (see below, p. 54). The degree of rounding of the back rounded vowels is greater for the long and the high vowels than for the short and the mid.
All vowel articulations are characterised by:

(i) relatively longer duration, with a correspondingly less centralised quality, when followed by a single voiced consonant allophone;

(ii) relatively shorter duration, with a more centralised quality, when followed by a geminate voiceless consonant group;

(iii) a secondary articulation of retroflexion when followed by a retroflex consonant;

(iv) voiceless articulation when occurring without stress before a voiceless consonant or, quite often, word-finally.

By (i) and (ii) three degrees of phonetic duration and quality are established for the allophones of the short vowel phonemes and similarly for those of the long, yielding six perceptible degrees in all. Within one speech style (i.e. as might be found with a particular informant on a particular occasion) the long degree for the short vowels is shorter than the short degree for the long vowels. For reasons of clarity of presentation, the phonetic transcription used below does not mark these conditioned degrees of duration.

The secondary articulation of retroflexion ( (iii) above) is more noticeable with the allophones of the long vowels than with those of the short, and is confined to the latter part of their articulation. For front vowels, retroflexion is accompanied by a centralised quality, and for the high and mid back vowels (though with these the distinction is harder to find) by a more truly back articulation, together with slight lowering. In each case the effect is that of a diphthong with a weak final element. /a/ and /a:/ show no perceptible diphthongal glide, though retroflex 'colouring' is evident. A subscript dot under the vowel symbol (or associated length
marker) indicates secondary retroflexion in the phonetic transcription below.

The phonemes /i/, /i:/, /e/, /e:/, /u/, /u:/, and /o/, /o:/ have allophones with relatively tense onset when they occur initially. The result is a diphthongal type of articulation, with a weak first element, as the tongue is momentarily displaced to the greatest extent from its position of rest (the onset) and subsequently reaches the slightly more centralised position for the main component of the diphthong. The distance between the initial and final positions is not so great for those vowels which have relatively tense articulations throughout; /i:, /e:, /u:/, and /o:/ are tenser than their short counterparts, and /i/, /u/ are tenser than /e/, /o/: in each case the tense onset is correspondingly less prominent where the following vowel articulation is tenser. The tense onset is indicated by [ɻ] (for the front vowels) and [W] (for the back vowels) in the phonetic transcription used below; the degree of tenseness is not marked.

The remaining details concerning the allophonic realisations of the vowel phonemes are illustrated below for each vowel phoneme in turn.

3.1.1 Short vowels

(i) /i/ (short, high, front) has the following allophones:

[ɻ] short, fairly lax, slightly retracted from front position, occurring always with stress;

/ɪkka/ [ɻɪ.ɪkka.] now

/ɪndi/ [ɻɪ.ɪndi.] today

/kiri/ [ɻɪ.ɪkɪ.] lip
[ɪ] extra short, lax, fully centralised, occurring medially without stress;

/kudike/ [koɾeke] cooking pot
/kiriŋji/ [kiɾiŋdi] from the lip

[ɾ] half long, fairly tense, slightly raised and fronted from the position of [ɪ], occurring utterance–finally:

/kari/ [kɛɾi] curry

(ii) /e/ (short, mid, front) has the following allophones:

[ɛ́] short, lax, slightly retracted, occurring with stress;

/be̞di/ [be̞di] heat of the sun
/kela/ [ke̞la] stomach
/rekke/ [rekke] wing

[ɛɾ] short, tenser, less retracted, occurring with stress before /y/;

/ney/ [nerj] butter

[ɛɾ] extra short, lax, retracted, occurring medially without stress;

/piːɾeke/ [piːɾeke] small cucumber

[ɛ] short, lax, slightly retracted, occurring utterance–finally;

/mane/ [mane] house
(iii) /i/ (short, high, back, unrounded) has the following allophones:

\[
\begin{array}{ll}
\text{[\texttt{ui}] short, fairly lax, fairly advanced from} \\
\text{back position, occurring always with stress;}

/\texttt{kirke}/ \quad \text{[\texttt{kirke}]} \quad \text{small}

/\texttt{tripti}/ \quad \text{[\texttt{tripti}]} \quad \text{satisfaction}

/\texttt{idi}/ \quad \text{[\texttt{idi}]} \quad \text{the whole}

\end{array}
\]

\[
\begin{array}{ll}
\text{[\texttt{u}] extra short, lax, fully centralised,} \\
\text{occurring medially without stress;}

/\texttt{kudire}/ \quad \text{[\texttt{kudire}]} \quad \text{horse}

/\texttt{adinji}/ \quad \text{[\texttt{adinji}]} \quad \text{from it (rem)}
\end{array}
\]

This allophone of /i/ is generally articulated further back than [\texttt{e}] of /i/; however, for most speakers the distinction is lost before a palatal consonant. Thus /\texttt{adinji}/, 'from it (rem)' (cp. /\texttt{adi}/, 'it (rem)') and /\texttt{allinji}/, 'from there' (cp. /\texttt{alli}/, 'there'), both show a medial vowel articulation which is in the region [\texttt{e}] to [\texttt{u}], without contrast.

\[
\begin{array}{ll}
\text{[\texttt{ui}] short, fairly lax and advanced, with a} \\
\text{tenser, raised offglide, occurring only in} \\
\text{utterance-final position;}

/\texttt{mulli}/ \quad \text{[\texttt{mulli}]} \quad \text{thorn}
\end{array}
\]

(iv) /e/ (short, mid, back, unrounded) has the following allophones:

\[
\begin{array}{ll}
\text{[\texttt{e}] short, lax, fairly advanced, occurring} \\
\text{always with stress;}

/\texttt{embadi}/ \quad \text{[\texttt{embadi}]} \quad \text{eighty}

/\texttt{gelli}/ \quad \text{[\texttt{gelli}]} \quad \text{win (2 sg imp)}
\end{array}
\]
shrewd fellow

[ə] short, lax, fairly advanced, occurring in utterance-final position;

man

(short, low) has the following allophones:

[əɾ] short, fairly lax, raised and retracted from cardinal position, occurring with stress in utterance-initial position before phonetically short consonants;

it (rem)

paddy seedling

place below

shorter, lax, just lower and further back than mid-open central, occurring with stress (a) utterance-initially before a phonetically long consonant articulation, and (b) following a consonant in the initial syllable of a word;

then

shop

medicine

enough

extra short, lax, mid-open, fully centralised, occurring medially without stress;

sixth

that much

doing
For a number of speakers [ə] maintains its central quality even when it occurs long with emphatic stress (only in the continuative aspect forms of verbs); thus, beside the last item cited above there is also

[ə] as for [ə] but slightly lip-rounded, occurring medially without stress before /l/
or /nd/ followed by a back rounded vowel;

/ma:daemondu/ [ma:daemondu] must do
/ekkalu:/ [ekkalu:] always

For the first of these forms, some speakers have /ma:daemondu/, showing phonemic merger of /a/ with /o/ in this environment. The second item is related to the form /ekko:lu:/, 'always'; in this regard, compare what was noted above for [ə] under conditions of emphatic stress. In this item too, a phonemic merger has apparently taken place (based on the features of length and lip-rounding), of /a/ plus extra length to /o:/; little or none of the 'emphatic meaning' remains.

[ə] short, lax, advanced, occurring utterance-finally;

/mara/ [menai]  tree

(vi) /u/ (short, high, back, rounded) has the following allophones:

[ə] short, fairly lax, fairly advanced, occurring always with stress;

/kuru/ [kuru:]  seed
wetness
broken rice grains

extra short, lax, fully centralised,
occuring medially without stress;
hawk
eagle

half long, fairly tense, slightly raised
and retracted from the position of [奥林],
occuring utterance-finally;
worm
death, corpse

(vii) /o/ (short, mid, back, rounded) has the following
allophones:

short, lax, fairly back, occurring with
stress before a short consonant or before a
consonant preceded by /r/ or homorganic nasal;

umbrella
outside
pain

short, lax, often fairly advanced, as
(except when followed by velar or retro-
flex consonants), occurring with stress before
phonetically long consonants;

beak
shed
leaves
knowledge
[0:\] short, lax, advanced, with some derounding, occurring with stress before /y/;
/cymbali/ [ˈtərjambadlɪ] nine
/cy/ [ˈtərə] nail (finger, toe)

[o:\] half long, fairly tense, close to cardinal position, occurring utterance-finally (in just a few loans);
/re:diyo/ [ˈtərədijo:] radio

3.1.2 Relative positions of the short allophones

The diagrams in Figure 3 show the relative positions of the short vowel allophones discussed above, and indicate the phonemic groupings.

Figure 3: The short vowel phonemes
3.1.3 *Long vowels*

(i) /iː/ (long, high, front) is realised everywhere as:

\[iː\] long, tense, slightly lower than cardinal position, occurring only with stress;

\[iː/\] this

\[\text{miːse}/\] moustache

\[\text{iti}/\] spear

(ii) /eː/ (long, mid, front) has the following allophones:

\[eː\] long, tense, close to cardinal position, occurring with stress before a consonant which is followed by a high vowel or before a word boundary (indicated by a space in the phonemic transcription) or utterance-finally;

\[,\text{manː}]/\] which man?

\[\text{awalːe}/\] she (rem) (/eː/, emphatic marker)

\[\text{eː}/\] which?

\[\text{[ɛː]}/\] long, tense, with a weakly retracted final tongue position, occurring with stress before /r/ plus a non-high vowel;

\[\text{neːrːa}/\] time

\[\text{[ɛː]}/\] long, tense, occasionally closer to cardinal position [a] than [ɛ], occurring only with stress before a consonant other than /r/ plus a non-high vowel;

\[\text{keːmː}/\] barking deer
(/peːte/ /peːte/) town, bazaar
(/seːna/ /seːna/) thought

(iii) /iː/ (long, high, back, unrounded) is realised everywhere as:

[wːː] long, tense, close to cardinal position,
occuring only with stress;

/tiːpi/ [tʰuːpiː] will finish (1 sg)
/kiːda/ [kʰuːkʰaː] place below, down
/niːla/ [nuːkʰaː] length, throughout

(iv) /eː/ (long, mid, back, unrounded) has the following allophones:

[ɔː] long, tense, occurring with stress before
a consonant plus high vowel;

/kəːpi/ [kʰəːpʰiː] will ask, hear (1 sg)
/eːli/ [ɛːlɛtʰuː] seven

[æː] long, tense, close to cardinal position,
 occurring with stress before a consonant plus
 non-high vowel;

/eːlane/ [ɛːlɛnɛ] seventh

(v) /aː/ (long, low, back) has the following allophones:

[aːː] long, tense, strongly advanced, often
 with a palatalised off-glide, occurring with
 stress before /y/;

/əːyiː/ [aːjɛiː] carpenter
/ottaiya/ [ɔtʰaijaː] urging (n)

[aːː] long, tense, close to cardinal position,
 occurring with stress elsewhere than before /y/;
(vi) /u:/ (long, high, back, rounded) is realised everywhere as:

[u:] long, tense, slightly lower than cardinal position, occurring only with stress;

/vu:/ [u:ru:] village
/munidi/ [mu:ndiri] three
/kulii/ [ku:li:] cooked rice
/pu:/ [plu:] flower

(vii) /o:/ (long, mid, back, rounded) has the following allophones:

[o:] long, tense, close to cardinal position, occurring with stress before a consonant plus a high vowel, or before a word boundary or in utterance-final position;

/koli/ [ko:li] stick
/daro: mañse/ [da:ro:menja] some man or other (/o:/, indefinite marker)
/po:/ [po:] go (2 sg imp)

[o:] long, tense, with a weakly advanced final tongue position, occurring with stress before /r/ plus a non-high vowel;

/bo:re/ [bo:re] difference
[ɔː] long, tense, close to cardinal position, occurring with stress before any consonant other than /r/ plus a non-high vowel;

\[\text{/boːnda/} \quad \text{not wanted}\]
\[\text{/oːtə/} \quad \text{reed}\]
\[\text{/roːma/} \quad \text{hair (of body)}\]

(viii) /æ/ (long, low, front) is realised everywhere as:

[əː] long, tense, slightly raised from cardinal position, occurring only with stress;

\[\text{/fæn(i)/} \quad \text{fan}\]
\[\text{/bæn(i)/} \quad \text{(financial) bank}\]

3.1.4 Relative positions of the long allophones

The diagrams in Figure 4 indicate the positions of the allophones of the long vowel phonemes, and mark the phonemic groupings.

Figure 4: The long vowel phonemes
3.2 Consonants

(i) /p, t, ʈ, k/ are fairly tense and voiceless stops (bilabial, dental, retroflex and velar, respectively). They are noticeably but not very strongly aspirated when they occur prevocally with stress and are hardly aspirated at all elsewhere. They are unreleased when they occur as the first element of a geminate cluster. /k/ is pre-velar [k+] utterance-initially when followed by a high front vowel and intervocally when preceded by a high front vowel; it is post-velar [k] utterance-initially when a mid-open to low back vowel allophone follows, and intervocally when a mid-open to low back vowel allophone precedes; elsewhere, it is mid-velar [k]:

/kʰiːti/ [kʰiːtiː] torn piece
/ikka/ [ikkaː] now
/kela/ [kelaː] stomach
/rekke/ [rekke] wing
/kɔtə/ [kɔtə] coldness (not climate)
/akki/ [akki] husked rice

(ii) /b, d, ɖ, ɡ/ are the corresponding lax and voiced stops. They have no feature of aspiration, and are fully voiced intervocally. They are unreleased when they occur as the first element of a geminate cluster. /ɡ/ has the same positional variants as noted above for /k/. /d/ is a retroflex flap [ɾ] when it occurs singly in intervocalic position. /d/ in the same position usually has slight but noticeable friction on release (not marked in the phonetic transcription here). All single voiced stops are slightly shorter in duration than their voiceless counterparts.

(iii) /c, ɟ/ are in most positions blade-postalveolar
affricates. /c/ is fairly tense and voiceless, /j/ is lax and fully voiced intervocalically. They each share the aspiration characteristics of the corresponding stop consonants. /c/ is [tʃ], and /j/ is [dʒ], when occurring as the first element of a geminate cluster.

(iv) /m, n, ŋ, ñ/ are voiced nasals. /n/ is dental when followed by /t, d/, but post-dental elsewhere. For the rest, place of articulation is as for the corresponding stop consonants.

(v) /l, l/ are voiced laterals. /l/ is post-dental, and clear in all positions; /l/ is retroflex and fairly dark (pharyngealised rather than velarised).

(vi) /r/ is a single, voiced post-dental flap [ɾ] when preceded or followed by a front vowel or voiced dental stop. When it occurs intervocalically between other than front vowels, or with a following voiced non-dental stop or affricate, it is an alveolar flap or trill [ɾ] (generally 1 to 3 taps; 1 before or after a voiced stop or affricate, 1 or 2 after a short vowel, 2 or 3 after a long vowel). It is voiceless [ɾ] or [ɾ], when it is part of a cluster with a voiceless dental stop, or non-dental stop or affricate. It is a retroflex flap, followed by a 2 to 3 tap apico-alveolar trill, when it follows a retroflex consonant (voiceless if that consonant is voiceless, otherwise voiced):

/karih/  [kʌɾiː]  curry
/kere/  [keɾe]  tank
/kare/  [keɾe]  stain
/kuru/  [koɾu]  seed
/triṟti/  [tɹiɾtiː]  satisfaction
/gra:ma/  [ɡraːmaː]  village
(vii) /f/ is a voiceless labiodental fricative.

/s/, ñ/ are apico-postdental and blade-postalveolar voiceless sibilants, respectively. /s/ has a retroflex allophone [ʂ] when followed by a retroflex consonant.

/ʂ/ is the voiced counterpart of /s/

/h/ is a voiced glottal spirant [ʰ] intervocally; initially it may have voiceless onset, or be voiceless [h],

(viii) /v, y/ are labiodental and palatal approximants, respectively. /v/ has lip rounding except when it is preceded or followed by a front vowel, in which case it has only lip compression (see Ladefoged, 1971: 62 for this distinction), and is somewhat closer; these two allophones are distinguished in the transcription as [w] and [v], respectively.

/y/ is [j] in all positions.

4.0 Distribution
4.1 Vowels
4.1.1 Clusters

The Coorg material cited from Emeneau's fieldnotes in DED and DEDS recognises four vowel clusters, of which the following are examples (given here as they occur in DED and DEDS):

todia small garden
perie elder
podea sari
èle youth
With regard to all these, it should first be emphasised that such postulated clusters are of very low frequency in the sources cited, and apparently contrast with forms such as (from DED):

\[
\text{o\text{"}ey\text{"}e} \quad \text{husband}
\]

However, none of my informants recognised such a contrast, and all had a perceptible palatal approximant between the medial and final vowels of all these items:

\[
\begin{align*}
\text{/todi\text{"}a/} & \quad \text{[t\text{"}ori\text{"}\text{"}a]} & \text{small garden} \\
\text{/peri\text{"}e/} & \quad \text{[p\text{"}eri\text{"}\text{"}a]} & \text{elder} \\
\text{/pdo\text{"}ey\text{"}a/} & \quad \text{[\text{"}po\text{"}re\text{"}ja\text{"}a]} & \text{sari} \\
\text{/podi\text{"}a/} & \quad \text{[\text{"}odi\text{"}ja\text{"}a]} & \text{husband} \\
\text{/\text{"}le\text{"}e/} & \quad \text{[\text{"}ili\text{"}\text{"}a]} & \text{youth} \\
\text{/deo\text{"}e/} & \quad \text{[d\text{"}eri\text{"}\text{"}a]} & \text{husband}
\end{align*}
\]

It would of course be possible to eliminate /y/ from the transcription in these contexts since it could be argued that the inter-vocalic palatal approximant is predictable with reference to the front quality of the preceding vowel; however, this would not affect the issue regarding vowel clusters in the language, since such 'clusters' would have a purely technical status.

In addition to the DED and DBDS material cited above, DBIA records, from the same source, a further possible instance of a vowel cluster:

\[
\text{go\text{"}du\text{"}e (go\text{"}dv\text{"}e)} \quad \text{wheat}
\]

For my informants, however, this item contains a consonant cluster (-/dv/-) rather than a vowel cluster; the voiced dental stop is followed by a voiced labiodental approximant with no inner rounding, which is the appropriate form of the expected allophone of /v/ in this context (see p.63).
4.1.2 Long vowels

These generally do not occur in utterance-final position, except:

(i) in monosyllabic items:

\[ /i:/ \quad \text{this} \\
/\theta:/ \quad \text{which?} \\
/\alpha:/ \quad \text{that} \\
/\theta\mu:/ \quad \text{flower} \]

(ii) as realizations of the emphatic marker (/e:/), the interrogative marker (/a:/), the co-ordinative marker (/u:/), and the indefinite (distinct from the indefinite form /ori/, 'a', 'one') marker (/o:/):

\[ /a: \quad \text{maneye:/} \quad \text{that very house, even that house} \]
\[ /\alpha r/: \text{mu:diya:/} \quad \text{a girl, is it? (cp. /mu:di/, 'girl')} \]
\[ /\alpha r y u: \quad \text{pu:neyu:/} \quad \text{dog and cat (cp. /na:y, 'dog'; /pu:ne/, 'cat')} \]
\[ /\ell i y o: \quad \text{somewhere or other (cp. /elli/, 'where?')} \]

(iii) in loanwords, such as /re:diyo/, 'radio'.

4.1.3 Back unrounded vowels

Thus far, the description has treated these as phonemic elements in their own right, established on the basis of the contrasts evidenced in section 2.1 above and tacitly following the criterion of phonetic similarity in the assignment of allophones to phonemes: hence, all long high back unrounded vowel articulations are assigned
to /iː/, all long mid-close to mid-open back unrounded vowel
articulations to /eː/, and so on. It has been seen in particular
that front and back unrounded vowels of corresponding height and
length are in contrast. However, this analysis suffers from the
disadvantage of obscuring the nature of the distributional
characteristics of these vowels. First, we must define three distinct
positional classes of vowels: (i) utterance-final, (ii) utterance-
initial or medial, occurring with stress, and (iii) utterance-medial,
without stress. In position (i) there is full contrast between /i/ and 
/i/, and between /e/ and /e/; the only other short vowels that
occur in this position are /u/ and /a/, each of which is also in full
contrast with /i/ and /e/. But the contrast between /i/ and /u/ is
based upon just eleven items in the nominal system, and on a few verb
forms such as /ma:du/, 'may do' versus /ma:di/, 'do (2 sg imp)'.
In exemplification of the foregoing may be cited:

\[
\begin{align*}
/akki/ & \text{ husked rice} \\
/takki/ & \text{ speech, language} \\
/kokke/ & \text{ hook, crook} \\
/akke/ & \text{ elder sister} \\
/kadi/ & \text{ bite} \\
/kade/ & \text{ side} \\
/kadu/ & \text{ mustard seed} \\
/kada/ & \text{ ocean} \\
/padi/ & \text{ swamp} \\
/ma:di/ & \text{ do (2 sg imp)} \\
/ma:diyandi/ & \text{ doing} \\
/nadu/ & \text{ middle} \\
/ma:du/ & \text{ may do}
\end{align*}
\]
In addition, for a number of speakers the contrast between /e/ and /a/ in this position is not on the same level as that between /e/ and /e/, or /a/ and /e/; free variation between the two is fairly common, as is a merger of /e/ with /a/.

The main point to be made about the vowels that may occur in this position, however, is that the front and back unrounded vowels are in full contrast.

In position (ii) the pattern is quite different. First, back unrounded vowels most typically occur before a retroflex consonant, and in this environment the possibility of a front vowel occurring is very restricted (only ten cases in the data). Secondly, front and back unrounded vowels occur and contrast more frequently before /r/ than before any other single element; the occurrence of the front vowel quality in this environment is unrestricted and there are more than twelve cases where the back unrounded quality is also found. Against this has to be set the fact that there are only five instances of the back unrounded quality occurring elsewhere than before a retroflex consonant or /r/.

For exemplification, it is convenient to order the data according to the regular pattern, then to the exceptional pattern type (a) and finally the exceptional pattern type (b), as follows:

The regular pattern; back unrounded vowels in a following retroflex environment, front and back unrounded vowels contrasting before /r/, and front unrounded vowels occurring elsewhere:

/"\idi/ the whole
/"\idi/ singing ceremony before harvest festival
/teˈli/ laughter
/kɛˈli/ esteem
/iɾi/ night
/kirke/ small
/eraci/ flesh
/eraki/ eaves
/neˈɾa/ time
/neˈɾa/ bundle of paddy seedlings
/idi/ it (prox)
/kiˈli/ fastening
/bedi/ heat of the sun
/teˈni/ honey

Exceptional pattern type (a); the front unrounded quality in a following retroflex environment:
/zili/ parrot
/zida/ plant
/iiti/ spear
/eini/ ladder

Exceptional pattern type (b); the back unrounded quality elsewhere than before /r/ or a retroflex consonant:
/timmi/ sneeze (2 sg imp)
/etti/ bull, bullock
/kida/ place below, down
/eiviu/ will get up (1 sg)

Exceptional pattern type (a) is found in a number of loanwords (such as /iːti/, 'spear') which may have more fully assimilated
variants with the corresponding back unrounded vowel (/i:ti/). It is also found occasionally as the result of morphological relationships within a paradigm, although here also the back unrounded quality is found with many speakers; thus, /ni:mi/, 'you (sg)', /ni:ki/, 'to you (sg)', but /ni:da/ni:da/, 'of you (sg)'. There is also an environmental restriction, for certain speakers, against back unrounded vowels occurring after a palatal consonant; in all such cases, the corresponding front vowel is found instead: /cedi/ (for /cedi/ in the speech of some others), 'rage'; /celli/ (for /celli/), 'flea'; etc.

Exceptional pattern type (b) may arise through loss of the relevant phonological environment, either through historical change (as seems to be the case with /etti/, 'bull, bullock') or through morphological alternation and constraints on resultant phoneme-sequences: cp. /e:li/, 'get up (2 sg imp)' with /e:vi/, 'will get up (1 sg)'. Where morphological alternation is not the reason, variant forms with the corresponding front vowel are becoming increasingly common, as in /etti/ /etti/, 'bull, bullock'.

Finally for position (ii), there are no cases in the data of a back unrounded vowel occurring after a bilabial or labiodental consonant, and there are only a few (exceptional) instances of a front vowel occurring after a bilabial or labiodental consonant and followed by a retroflex (one such exception is the loanword /pe:ta/, 'market, bazaar, town'). /u/ and /o/, on the other hand (as also the low vowel /a/) occur and contrast fully in this environment (and their long counterparts likewise). There is therefore a clear distributional relationship between most instances of front vowels in this position and their corresponding back unrounded and rounded
counterparts, as shown in Figure 5:

![Figure 5: The distributional relationship between front and back vowels in position (ii)](image)

In position (iii) (utterance-medial, without stress), all the short vowels save /a/ occur and /i/ is in full contrast (except immediately before a palatal consonant, as noted above, in 3.1.1 (iii)) with /i/ and with /u/. DED records one item with a mid-back unrounded vowel symbol in this position:

- putteri
- harvest festival

However, since all my informants had [e] as the medial vowel articulation in this item, it is transcribed here as /puttari/.

Similarly, with nouns such as /appë/, 'father', the inflected forms show /a/ rather than /ë/:

- /appana/ father (objective)
- /appanda/ id. (possessive)
- /appandi/ id. (allative)

It was noted in the preceding chapter (p. 23) that Richter (1870:197) makes the same point.

Finally, /i/ is generally not in contrast with /a/ in this position, as long as the consonant that precedes is single: /i/ occurs when the preceding sequence is a high vowel followed by a single consonant, and /a/ occurs after a sequence of non-high vowel
plus single consonant. Further details of this distributional pattern will be given in Chapter 4 (pp. 238-9).

What emerges most clearly from these considerations is that setting up a phonemic distinction between front and back unrounded vowels for position (ii) (utterance-initial or medial, occurring with stress) does not make clear the regular nature of the phonetic patterning in this position. The distributional pattern can be accounted for at the phonemic level only by appeal to the principle of relative frequency of occurrence, as suggested in Fairbanks (1957); in these terms, the four phonemes /i, i:, e, e:/ will be set up, together with the statement that they are realised as back unrounded vowels, of corresponding height and length, in a following retroflex environment; and as back rounded vowels if in addition a bilabial or labiodental consonant immediately precedes. Further, for certain idiolects, the occurrence of a palatal consonant immediately before the vowel in question will be stated as a condition preventing a back unrounded articulation in a following retroflex environment. These four vowel phonemes will therefore express the regular pattern of distribution; in addition, it will be necessary to establish a further set of four phonemes, /I, I:, E, E:/, in order to account for the exceptional pattern type (a) (front quality occurring in a following retroflex environment), and another four, /"i, "i:, "e, "e:/, for exceptional pattern type (b) (back unrounded quality elsewhere than before a retroflex consonant). Finally, it will be stated that /"i, "i:, "e, "e:/ most commonly occur, in contrast with /i, i:, e, e:/, respectively, in the environment of a following /r/.

Although such an analysis sets up twelve vowel phonemes in place of eight, it has the virtue of being able to characterise eight of
the twelve as having very restricted distribution: the regular pattern is stated in terms of a system of only four elements (setting aside the '___/r/' environment, which remains a problem; this will be explicable in terms of the system in Chapter 4, pp. 231-234). It thus also allows naturally for a treatment of loanwords (in which /I, I:/, E, E:/ play an important role) in terms of the approach outlined in Fries and Pike (1949).

Hence, a decision between the two analyses under discussion (the one ignoring the frequency of the elements it establishes, the other paying attention to this factor) might seem to be possible simply on the basis of what price (in terms of an expanded phoneme inventory) one is prepared to pay for a revealing description of a regular phonological pattern in the language: but this is only apparently the case, since the issues involved are rarely so simple in practice. Indeed, it is not difficult to show that there are further difficulties in Coorg which stand in the way of even a frequency-orientated phonemic theory; thus, on the one hand, there is the morphological pattern evidenced in the set /niːni/, 'you (sg)'; /niːda/-/niːda/, 'of you (sg)', while on the other hand there is that illustrated in the verb forms /keːli/, 'ask (2 sg imp)': /keːpi/, 'will ask (1 sg)' (the transcription here is the one described in section 2.1 above, based on phonetic similarity rather than on frequency). It will be seen from Figure 6 that neither the simple nor the modified (frequency-orientated) phonemic systems is able to represent these forms in a wholly consistent way:
Simple phonemic transcription

/modified phonemic transcription

Figure 6: Comparison of phonemic analyses of two morphological patterns

From this it is clear that what is required for a satisfactory statement of such relationships is a phonology which works in terms of underlying forms and process rules (although exceptions will of course remain); this will be the main concern of Chapters 4 and 5. For a statement that takes into account the historical facts regarding the production of back unrounded vowels in the language, see Emeneau (1970a) and Kothandaraman (1969).

4.2 Consonants

4.2.1 Clusters

(i) Below is given a list of two-consonant clusters which occur (a) intervocally and also in either (b) word-initial or (c) word-final position, or both:

/\(\text{pl}/\) (a) /\(\text{eroplen}(i)/\) aeroplane
(b) /\(\text{ple}:t(i)/\) plate

/\(\text{pr}/\) (a) /\(\text{tupri}/\) spit (2 sg imp comp)
(b) /\(\text{pra:ni}/\) animal

/\(\text{tr}/\) (a) /\(\text{katri}/\) scissors
(b) /\(\text{tri:pti}/\) satisfaction

/\(\text{tr}/\) (a) /\(\text{sveri}/\) sweater
(b) /\(\text{tre:n}(i)/\) train
<table>
<thead>
<tr>
<th>/gr/</th>
<th>(a) /bagri/</th>
<th>bend down (2 sg imp comp)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(b) /gra:ma/</td>
<td>village</td>
</tr>
<tr>
<td>/kə/</td>
<td>(a) /pakəi/</td>
<td>bird (~/pakəi/)</td>
</tr>
<tr>
<td></td>
<td>(c) /sa:ka(i)/</td>
<td>socks</td>
</tr>
<tr>
<td>/kə/</td>
<td>(a) /pakəi/</td>
<td>bird (~/pakəi/)</td>
</tr>
<tr>
<td></td>
<td>(b) /kəatriye/</td>
<td>warrior</td>
</tr>
<tr>
<td>/kr/</td>
<td>(a) /okrə/</td>
<td>thresh (2 sg imp comp)</td>
</tr>
<tr>
<td></td>
<td>(b) /kraya/</td>
<td>price</td>
</tr>
<tr>
<td>/st/</td>
<td>(a) /a:sti/</td>
<td>property</td>
</tr>
<tr>
<td></td>
<td>(b) /stira/</td>
<td>permanence</td>
</tr>
<tr>
<td>/st/</td>
<td>(a) /kоста/</td>
<td>trouble</td>
</tr>
<tr>
<td></td>
<td>(b) /ст:сан(i)/</td>
<td>station</td>
</tr>
<tr>
<td></td>
<td>(c) /пост(i)/</td>
<td>post, mail</td>
</tr>
<tr>
<td>/sl/</td>
<td>(a) /mosle/</td>
<td>crocodile (~/mosle/)</td>
</tr>
<tr>
<td></td>
<td>(b) /slipar(i)/</td>
<td>slippers</td>
</tr>
<tr>
<td>/sr/</td>
<td>(a) /viːra:nti/</td>
<td>calmness</td>
</tr>
<tr>
<td></td>
<td>(b) /Sri/</td>
<td>Lord, Mister</td>
</tr>
</tbody>
</table>

All these items are loanwords, with the exception of /mosle/, 'crocodile' (also /mosale/~ /mosale/) and the verb forms showing the completive or intensifier element /r/ (marked 'comp'); these latter have alternative pronunciations without the consonant cluster, as /охкири/, /баггир/, etc. /пак̡и/, 'bird' is more common in the data than the alternative form /пакси/; but each is apparently the result of reborrowing or remodelling, since the fully assimilated form /пакки/, which is recorded in DBIA with the meanings 'bird' and 'penis of immature boy' has now come to mean exclusively 'penis'. /кə/ is one of the most common types of cluster in Coorg (especially in intervocalic position), corresponding in many cases to /ks/ in related languages such as Kanarese.
(ii) The inventory of two-consonant clusters which occur intervocally and in no other position is very large, although the size depends partly on the rapidity of the speech style accepted for analysis, and in particular on whether open transition between consonants is taken as a type of clustering. The principle that has been followed here is that consonant groups only qualify as a cluster when there is close transition between them (no release of the first consonant) or, in cases of looser transition, where there is some allophonic feature of homorganicity holding across the consonant boundary (as in /erci/ → /eraci/, 'flesh', where the first form shows /r/ realised as a voiceless tap in the environment of the following voiceless /c/). The list given below contains all the clusters that occur in the data; it is followed by a tabular presentation (Figure 7) where an attempt is made to draw a distinction between systematic and accidental gaps in the data.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Word Form</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/pp/</td>
<td>/kuppi/</td>
<td>bottle</td>
</tr>
<tr>
<td>/pt/</td>
<td>/tri:pi/</td>
<td>satisfaction</td>
</tr>
<tr>
<td>/pt/</td>
<td>/tuppi/</td>
<td>(I) spat (comp)</td>
</tr>
<tr>
<td>/pc/</td>
<td>/nipipi/</td>
<td>cause to stop, stand (2 sg imp)</td>
</tr>
<tr>
<td>/pk/</td>
<td>/cepici/</td>
<td>to the small metal box (allative case form of /ceppi/)</td>
</tr>
<tr>
<td>/pn/</td>
<td>/toppa/</td>
<td>objective case form of /toppi/, small leaves</td>
</tr>
<tr>
<td>/pl/</td>
<td>/cipili/</td>
<td>in the shell (locative case form of /cippi/)</td>
</tr>
<tr>
<td>/pr/</td>
<td>/tuppi/</td>
<td>spit (2 sg imp comp)</td>
</tr>
<tr>
<td>/pr/</td>
<td>/tarpi/</td>
<td>(I) escape, shall escape</td>
</tr>
<tr>
<td>/py/</td>
<td>/ci:yandi/</td>
<td>combing (continuative aspect form)</td>
</tr>
</tbody>
</table>
tall narrow container

cause to drive away (2 sg imp)

to the male goat (allative case form of /posti/)

effort

in the pearl (locative case form of /mutti/)

take up (in hand)(2 sg imp comp)

(I) squeeze, shall squeeze

cutting (continuative aspect form)

box

at the gathering (allative case form of /kuti/)

(I) showed

in the bundle (locative case form of /katti/)

sharpens (2 sg imp comp)

(I) see, shall see

building (continuative aspect form)

scrap of food

(I) threshed (paddy) (comp)

cause to call (2 sg imp)

small basket

(I) pushed

in the direction (locative case form of /dikki/)

of the gun (possessive case form of /to:ki/)

evidence

litigation
/kv/ /nikvi/ (I) comb, shall comb
/ky/ /navyandi/ licking (continuative aspect form)
/bt/ /tabte/ (I) embraced (comp)
/bc/ /tabciru/ cause to embrace (2 sg imp)
/bb/ /obbe/ open drain
/bn/ /jibna/ objective case form of /jibbu/, young areca nut
/bl/ /tabli/ orphan
/br/ /kabri/ seize with mouth (2 sg imp comp)
/bv/ /pabva/ (creeper) twines, will twine
/by/ /pabyandi/ (creeper) twining (continuative aspect form)
/dp/ /modpa/ (thing) is, will be sweet
/ac/ /udcati/ (sun) rose
/dk/ /mukke/ old man
/da/ /uddi/ common pulse
/dn/ /c:dn/ (I) read (past)
/dl/ /bedli/ in the heat of the sun (locative case form of /bedi/)
/dr/ /udri/ rub (2 sg imp comp)
/dv/ /tivu/ (I) shall clean
/dy/ /se:dyandi/ drinking (deep draught) (continuative aspect form)
/dk/ /na:dk/ to the district (allative case form of /na:di/)
/dd/ /dadde/ stupid woman
/dn/ /o:dn/ (I) ran
/dl/ /ka:dl/ in the forest (locative case form of /ka:di/)
/dr/ /mu:dra/ of the face (possessive case form of /mu:di/)
/dy/ /ma:dvi/ (I) do, shall do
doing (continuative aspect form)
/dy/ /ma:dyandi/ doing (continuative aspect form)
/jj/ /ga:de/ small bell
/gt/ /nugte/ (I) entered by force (comp)
/gc/ /bag:iri/ cause to bend down (2 sg imp)
/gd/ /pagde/ chess
/gs/ /muggi/ mould
/gr/ /mugre/ (I) swallowed
/gv/ /bag:ri/ bend down (intr, 2 sg imp comp)
/gv/ /bag:vi/ (I) bend down, shall bend down (intr)
/gv/ /bag:ri:ni/ bending down (continuative aspect form)
/mp/ /rampa/ hubbub
/mt/ /kumte/ (I) churned (comp)
/mc/ /kem:iri/ cause to cough (2 sg imp)
/mb/ /tumbi/ flying beetle
/mn/ /kumu:ri/ mushroom
/mn/ /timme/ (I) sneezed
/mr/ /gu:ma:ra/ of the owl (possessive case form of /gu:mi/)
/ms/ /sama:ra/ family
/m:ms/ /sansa:yə/ doubt
/mv/ /kemvi/ (I) cough, shall cough
/mv/ /kem:vi:ni/ coughing (continuative aspect form)
/np/ /nenpi/ (I) think, shall think
/nt/ /ante/ of that sort
/nt/ /kinte/ (I) tore into strips (comp)
cause to flicker (2 sg imp)
to the back (body part) (allative case form of /benni/)
today
gold
tear into strips (2 sg imp comp)
mind, conscience
(lightning) flashes, will flash
(rain) drizzling (continuative aspect form)
lame man
cause to say (2 sg imp)
to the wife (allative case form of /ponni/)
piece of meat
(I) said
joint (wrist, fingers)
in the eye (locative case form of /kann/)
of the wife (possessive case form of /ponni/)
(I) say, shall say
saying (continuative aspect form)
tile
tacky secretion of jackfruit
Coorg child
man
cause to dive (2 sg imp)
(financial) bank
younger sister
(I) dived
chain
dive (2 sg imp comp)
(I) dive, shall dive
diving (continuative aspect form)

(I) pull, shall pull
right hand
(I) scattered
cause to kill (2 sg imp)
to the leg (allative case form of /ka:li/)

hair (of head)
objective case form of /a:li/, banyan tree

stone
of the stick (possessive case form of /ko:li/)

work
(I) scatter, shall scatter
big

(I) play, shall play
white
(I) made small hops, jumped
(I) took a bath
to the man (allative case form of /a:li/)
talk, gossip
objective case form of /a:li/, man
with a stick (locative case form of /ko:lii/
liquor
of the man (possessive case form of /a:li/
sacred basil
village servant
ruling (continuative aspect form)
small bag for betel quid
cotton cloth
coconut shell
chair
carbon
shepherd
bear
marshy place
outside
objective case form of /u:ri/, village
in the village (locative case form of /u:ri/)
(I) slip, shall slip
leaping, flying (continuative aspect form)
book
trouble
disgust (exclamatory)
(I) smelled (tr)
crocodile
smell (tr, 2 sg imp comp)
(I) smell, shall smell (tr)
smelling (tr, continuative aspect form)
the West
calmness
holy fig tree
cucumber
kick, step on
white head-cloth
shell, cowrie
gold £1 coin
(something) pains, will pain
the poets (plural form of the noun /kavi/)
gall bladder
blow, cuff
evening
(I) sent
to the hand (allative case form of /kay/, hand)
egg-plant
peacock
carpenter
(I) beat, shall beat
cow
<table>
<thead>
<tr>
<th>p t t c k</th>
<th>b d d j g</th>
<th>m n n n n n</th>
<th>l l</th>
<th>r f s s h z</th>
<th>v y</th>
</tr>
</thead>
<tbody>
<tr>
<td>x x x x x 1</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>x 6 x x</td>
<td>1 6</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>t 5 6 x 3 x</td>
<td>6 1 3</td>
<td>5 x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>c 2 2 2 x 2 2 2 2 1 2</td>
<td>2 2 2 2 2 2 2 2 2</td>
<td>2 2 2 2 2 2 2 2 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k x x x</td>
<td>1 x</td>
<td>x</td>
<td>x</td>
<td>x x</td>
<td>x x</td>
</tr>
<tr>
<td>b 1 x x x</td>
<td>x x</td>
<td>x</td>
<td>x</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>d x 1 6 x x</td>
<td>x 6</td>
<td>x</td>
<td>x</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>d 5 6 1 3 x</td>
<td>5 6 x 3</td>
<td>5 x</td>
<td>x</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>j 2 2 2 1 2 2 2 2 x 2</td>
<td>2 2 2 2 2 2 2 2 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g x x 1 x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>m x x x x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n x x x x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n x x x x x</td>
<td>x x</td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n x x x x x</td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l x x x x x</td>
<td>x x</td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l x x x x x</td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r x x x x x x x x</td>
<td>x x</td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r x x x x x x x x</td>
<td>x 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f x x x x x 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s x x x x x 4 x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h z 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v x x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>y x x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 7: Table of intervocalic consonant clusters**

Each entry x indicates the occurrence of a consonant cluster of which the first element is the consonant in that row and the second element is the consonant in that column. Where no entry is made, the cluster
concerned does not occur in the data; for the rest, the following entries indicate the principal restrictions against certain consonant sequences (systematic gaps):

1. stops or affricates differing only in voice cannot form a cluster
2. an affricate is released except before another affricate
3. retroflex stops are released before a postalveolar affricate
4. /r, f, s, š, h, z/ never occur geminate (always released)
5. retroflex stops are released before labial stops and nasals
6. stops differing only in the retroflex versus dental opposition do not form a cluster.

(iii) Three-consonant clusters occur only intervocally. In general, they show the following structure:

```
voiced stop
nasal
lateral
trill
approximant
```

```
+ stop +
```

```
trill
```

```
lateral
```

The following are examples of this pattern:

/dkr/ /badkri/ live (2 sg imp comp)
/pdr/ /pundri/ squeeze (2 sg imp comp)
/lor/ /balcri/ snatch (2 sg imp comp)
/rtr/ /artri/ cut (2 sg imp comp)
/vtr/ /cavtri/ kick, step on (2 sg imp comp)
/sor/ /mu:scri/ cause to smell (tr, 2 sg imp comp)
/dkl/ /badkli/ in the property (locative case form of /badki/)
In the village green (locative case form of /mandi/)

In the writing (locative case form of /elti/)

In the eaves (locative case form of /erkli/)

In addition, there are the following instances:

/do:ktri/ doctor
/ofənil/ optional
/markinflor/ American wheat
/laksəmi/ Lakshmi (woman's name)

(iv) Four-consonant clusters are quite rare; they usually consist of an approximant followed by a sequence of nasal plus stop plus trill:
/squeeze (2 sg imp comp)

4.2.2 Distribution within the word

Retroflex consonants generally do not occur in word-initial position, except in a few loan words:

/te:n(i)/ train
/ti:/ tea
/tapa:l/ post, mail
/do:ktri/ doctor

In addition, /l/, /r/, /s/, /s/ and /h/ are relatively rare in this position; DED, DEBS and DBIA record only the following items:

DED he:sige disgust (exclamatory)
lot, lotto: noise of wooden cattle-bell
rampa
rekke wing
sa:la loan
se:d- drink (deep draught)
DED  se:r-  join (intr)
DEDS  rattte  upper arm
DBIA  sadala  looseness
       sanna  small
       seri  correct

To this list may be added:

/1/-  /lekka/  sum, account
       /lo:ka/  world

/r/-  /ra:ja/  holiday
       /ra:sa/  sweetness
       /ra:gi/  ragi
       /ra:je/  king, Rajah
       /ra:te/  plank for pounding rice
       /ra:ni/  queen, Rani
       /ro:ma/  body hair
       /ra:ksa:/  ogre, Rakshasa
       /ra:ye/  cultivator

/s/-  /sim/:  lion
       /suru/  beginning
       /sanne/  gesture
       /sonne/  zero
       /saddi/  noise
       /sotti/  property
       /sonta/  waist
       /sa:li/  row, line
       /se:di/  tired feeling in legs
       /so:ki/  evil influence
/sa:sa/  effort
/sa:ta/  coldness
/sa:ma/  time
/sambala/  salary
/savkiya/  health
/sasa:ra/  presumption, cheekiness
/saha:ye/  help, assistance
/sa:ma:na/  thing, article
/somari/  wastrel, idler (m, f)

/ʔ/  /sa:pa/  curse
/ʃa:le/  school
/ʃu:le/  trident
/ʃarira/  trunk of body

Most of these items are loans via Kanarese, and are acknowledged (and used) as such; some have Coorg equivalents (e.g. /ʃarira/ = /tadi/).

The situation regarding the approximants /v, y/ in word-initial position (not just for Coorg but for related languages also) has frequently been obscured by what will be argued here to be a separate issue, namely the occurrence of tense onset to front, and back rounded vowels occurring word-initially (see above, p. 50). The issue as to whether or not the tense onset should be assigned to /y/ (for front vowels) and /v/ (for back rounded vowels) has proved to be a fairly long-lived one in phonemic descriptions of the languages of the group; and the same issue, although not stated in the same terms, was a problem facing those grammarians and missionaries who, prior to the present century, were concerned with transliterating Dravidian languages into Roman script.
Caldwell (1875) states the position succinctly in terms of the older tradition: 'There is a tendency in all the Dravidian languages to pronounce e as if it were ye, and o as if it were yo. In colloquial Tamil this pronunciation, though often heard, is seldom represented in writing; but in modern Canarese and Telugu, y before e, and y or w before o, are often written as well as pronounced' (1875: 122). Caldwell himself decides to regard this phenomenon as a corrupt habit of pronunciation, hence not to be recognised in the transcription. He has not been consistently followed in this practice by later grammarians, however; and two quite different and more recent works, Bright (1958) and Ramanujan (1963) both phonemicise tense onsets as /v/- and /y/-.

Only Bright (1958: 12), however, presents arguments specifically for this analysis, and these are taken up for consideration here.

(i) His first point has to do with the phonetic similarity between the tense onset and the corresponding approximant (he illustrates with reference to the palatal point of articulation, but his arguments clearly extend to the bilabial as well).

(ii) His second point is that in some idiolects of Kanarese certain loans show initial [e:], thus establishing a contrast which has to be reflected in the transcription.

(iii) His final point is that medial [e:] arising out of the junction of two words, the first of which has its final vowel elided, may occur with or without the tense onset, thus giving rise to stylistically variant pronunciations.

The situation in Coorg is very similar to this, except that the tense onset tends to be regular and strong for some speakers, and intermittent and weak for others: thus, in setting up a statement for Coorg as a whole, one is concerned not so much with the occurrence of the tense onset as with its privilege of occurrence. This, however, does
not affect the main issue.

It is clear that Bright's first point is consistent with the phonetics-oriented approach of phonemics generally, but even within that theory it may be argued that the concept 'phonetic similarity' should be used as a heuristic device rather than a theoretical tenet (as, for instance, even in such a work as Bloch, 1950). It is doubtful whether Bright's appeal to the concept could be defended in any context save that where a type of (broad phonetic) transcription might be required for cross-varieties comparative work. Fairbanks (1957) and Chomsky (1964) present arguments against the 'biuniqueness' principle that is at stake here (the first from a standpoint within phonemic theory).

Bright's second point apparently does not apply to Coorg; but even within phonemic theory his position has been argued against as being inadequate for handling situations where 'co-existent phonemic systems' (Fries and Pike, 1949) seem to be operating. If such loans as Bright refers to are exceptional in terms of the overall system, then the optimal transcription will mark them as such by the use of some additional symbol (perhaps /E:/), rather than mark the regular cases (in this instance, by a preceding /y/-).

His final point is really answered by himself, since he notes that 'the difference could...be assigned to an occurrence of plus juncture' in the representation of that pronunciation which preserves the tense onset in medial position, 'but without any gain in simplification of the phonemic system' (1958: 12). From the discussion of the second point above, it will be seen that phonemicising the tense onset actually complicates the system marginally, and so Bright's disinclination to take up the use of the plus juncture will hardly be justifiable if his second point is not conceded; furthermore, it has also been seen
(pp. 32-3) that an internal juncture element is required on independent grounds.

Moreover, if the tense onset is assigned to the phonemes /v/ and /y/, a very curious distribution pattern for the vowels results, whereby only the low vowels /æ, a, a:/ and the unrounded vowels /i, i:, e, e:/ may occur word-initially.

The position adopted here, then, is that Bright’s alternative analysis is correct, whereby (in agreement with the practice in Caldwell, 1875) the vowels with tense onset are taken as ‘allophonic realisations of the simple vowels’ (Bright, 1958: 12).

A phenomenon of the sound system of Coorg which is related to the foregoing should be pointed out here, even though it throws light on the status of the vowels /a, a:/ as much as on the distributional patterning of consonants. It concerns the vowels /e:, o, o:/ (in the data; but it may also be discovered to involve /e/) in initial position. Sequences of tense onsets [j] or [w] plus vowel occurring initially in such items as

/e:lakki/ cardamom
/oraki/ sleep
/o:le/ ear ornament

are optionally replaced in the speech of many informants by the sequences [ja:], [we], [wa:], respectively, yielding the following phonemicisation:

/ya:lakki/ cardamom
/varaki/ sleep
/va:le/ ear ornament

It should perhaps be pointed out that an analysis which treats the tense onset in the first three forms cited above as sub-phonemic is in principle just as able to account for the alternative forms (with initial /y/ or /v/ followed by a low vowel) as one that
phonemicises the tense onset. The low central vowel quality is systematically related, as maximally unmarked, to the mid front quality (marked for front articulation, with a contingent feature of lip-spreading) and to the mid back rounded quality (marked for back and lip-rounded articulation. In those styles of speech where the tense onset features of [front articulation, lip-spreading] or [back articulation, lip-rounding] are particularly strongly implemented, the phonological opposition may be entirely carried in this segment of the diphthongal complex, and not marked in the following vocalic component (yielding /s, a:/).

The fact that this phenomenon is not thorough-going in its application in Coorg should not be a reason for underestimating its importance in Dravidian phonology generally. The same sort of alternation is attested for related languages (Bright, 1958: 15, mentions the alternation between the forms given in his transcription as /vondu/ and /vandu/, 'one', for Kanarese) and in particular seems to be reflected in the facts of Toda as recorded in DED and DEDS: e.g. Ta. otti, To. war-, with the sense 'break in pieces' (DED 799). However, the situation in Toda is at once more comprehensive and complex than in the other related languages; a tentative statement by Emeneau for Proto-Dravidian *ō in Toda (*ō is less certain) is put as follows: 'Otherwise than after p-, *ō > wa: when the next syllable (the last in the word) has *-ay (which is lost in To.); otherwise, *ō > wi:' (Emeneau, 1970b: 38). In the Toda examples given there the phenomenon is not restricted to initial position in the word, which suggests that the formal relationship between, for example, Ta. kotai, 'west wind, summer', and To. ka:r, 'monsoon, year' (DED 1827) is part of the same alternation, and that this is a rather general feature of Dravidian
phonology. There is no case of /va/ or /va:/ alternating with /o/, /o:/ in Coorg in non-initial position, but a substitution of this sort does occur in other languages; thus Upadhyaya (1968: 139) records Kanarese items (from the Vakkaliga dialect spoken in the Nanjangud area) which show /va/ or /va:/ after initial /k, g, t, n, b, m, s/, where the standard language has /o/ or /o:/.

As a final point in this section, it may be noted that there are in general no instances of word-final consonants, the only exceptions being a few loan words such as:

/sa:ks(i)/ socks
/tre:n(i)/ train
/tapa:l/ post, mail,

where the parentheses indicate that final /i/ is also a possibility in most cases.

However, a number of nouns ending in /a/ show intervocalic /l/ after the /a/ before certain suffixes:

/ava/ she (rem)
/avale:/ even she (rem; /e:/, emphatic marker)
/aynga/ they (rem)
/ayngala:/ they? (rem; /a:/, interrogative marker)
/mayma/ daughter-in-law
/maymalu:/ daughter-in-law also (/u:/, co-ordinative marker)

Another set of nominals, with final /e/ or /ê/, show intervocalic /n/ before certain suffixes; in these forms, the contrast between the mid back unrounded and the low vowels is lost before the /n/:

-ra:je/ king, Rajah
-ra:janu: ra:niyu:/ king and queen, Rajah and Rani
Finally, certain verb forms with final /e/ (1 sg past) show /a:n/ in place of /e/ when followed by certain suffixes:

/parine/ I leaped

/parina:na/ did (I) leap? (/a/, interrogative marker)

As far as the noun forms are concerned, it is convenient to treat the intervocalic /i/ and /n/ as belonging to the base form rather than the suffix, and hence to write /ava(1)/, 'she (rem)' (thus distinguishing these nouns from those such as /mara/, 'tree', which do not show the intervocalic /i/ in any environment), and, analogously, /ra:je(n)/, 'king, Rajah'.

4.2.3 Further details on intervocalic distribution

This section is mainly concerned with the features of length and voicing of intervocalic consonants, and in particular with the way in which they relate to the length of the preceding vowel.

(i) Stop consonants preceded by a homorganic nasal.

Thus far all such sequences have been represented by /m/
before /p/ or /b/, /n/ before /t/ or /d/, etc., as follows:

/mp/ /rama/ hubbub

/mb/ /jamba/ pride

/nt/ /ante/ of that sort

/nd/ /andi/ that day

/nt/ /kunte(n)/ lame man

/nd/ /punde(n)/ quarrelsome fellow

/nc/ /anci/ tile

/ni/ /kani/ rice gruel

/ni/ /naki/ to us (*/naŋaki/; allative case form of /naŋga(1)/)

/ng/ /tange/ younger sister
Since a nasal consonant which is not homorganic with the following stop is also found in all cases where the following stop is voiceless (see pp. 78-9 above), it is not possible to make use of just one nasal consonant symbol, say, /n/, in all these instances. However, it would be possible to do so unambiguously in all cases where the following stop is voiced; but this would lead to a highly idiosyncratic distributional pattern for /n/ with respect to the other nasal consonants, and must be rejected as an ad hoc solution. Another solution would be to set up a distinct element /N/ before all stops, which is realised as a nasal homorganic with the following stop in each case; this would then contrast with other nasal consonants in the environment of a following voiceless stop. Such a symbol would correspond to the 'anusvāra' in the Kanarese script. Further, the Kanarese anusvāra may also be used before a nasal consonant symbol, thus providing an alternative way of representing geminate nasal sequences, and /N/ could clearly be allowed to pattern in an analogous fashion.

A decision between these analyses does not seem very important, since the problem is raised in the context of a phonemic approach, and this is not what will be used in setting up the phonological system for the language (Chapters 4 to 6). The transcription described in the first sections of this chapter, allowing /m/ to occur immediately before /p/ and /b/, /n/ before /t/ and /d/, etc., will continue to be used in the citing the data to be accounted for; but at the systematic phonemic level a polysystemic approach will be adopted, and this will recognise a nasal element that is unmarked for place of articulation as the source for all nasal consonants that are homorganic with a following stop.
(ii) Voiced and voiceless stops after a homorganic nasal.

A more important point concerning the homorganic clusters of nasal plus stop has to do with the voicing opposition of stops; the symmetry of the presentation above, in which both voiced and voiceless stops are illustrated following a homorganic nasal, is misleading. Voiceless stops in this position are much less frequent in the language than are voiced stops. In many cases, the occurrence of a voiceless stop is a mark of a loanword (e.g. /pa’ncé/, 'dhoti') or of a contracted form (e.g. /nañi/- for /nañga/-, 'to us'). Among the simple nouns in the data, there are only 9 instances of a voiceless stop in this position, as against more than 80 instances of a voiced stop; while with the verbs (taking only the uninflected forms) the ratio is 1 instance of a voiceless stop to 38 instances of a voiced stop. Furthermore, with the single exception of /kañki/-, 'vital spot', all instances of a voiceless stop in this position follow a short vowel in the word-initial syllable (e.g. /rampa/-, 'hubbub', /ante/-, 'of that sort', etc.).

(iii) Voicing contrasts between stops in intervocalic position.

It has been seen that there is a contrast between single and geminate stops, nasals, laterals and approximants in intervocalic position where the preceding vowel is short (pp. 46-8 above). However, the length distinction apparently evidenced in such forms as:

/kadare/ steps for getting over fence
/karre/ frog
/nelaci/ moon
/acci/ jaggery cake
is susceptible of treatment as a conditioned alternation; the geminate consonant clusters are found after a short vowel in a stressed syllable (the first in the word), and the single consonants after a short vowel occurring in an unstressed syllable. The counter-examples to this statement, exemplified in the contrasts for dental and retroflex voiceless stops:

/miti/ limit
/titi/ fire
/pata/ picture
/patta/ coronation

are extremely rare, occurring in only the forms just cited and the following:

/kate/ story
/pata/ kite
/tiket(i)/ ticket
/aparu:pa/ rarity
/upava:sa/ fasting
/kace:ri/ office
/kutum:ba/ family

all of which save the last are clear instances of loan words.

In all other cases, single stops occurring in this position are voiced. Furthermore, although contrasts can be found easily enough for single and geminate voiced stops in the data, the following observations have to be made: first, geminate voiced stops, like their voiceless counterparts, are not found other than immediately after a
short vowel in a stressed syllable; secondly, even in this position they are relatively infrequent (only 12 instances in the uninflected forms of verbs, as opposed to 47 instances of geminate voiceless stops; and only 28 instances in the uninflected forms of nouns, as opposed to 120 instances of geminate voiceless stops). The distinction between voiced and voiceless stops in intervocalic position after a short vowel is thus intimately bound up with the single versus geminate opposition, and with the occurrence of stress.

After a long vowel (always occurring with stress), the contrast between single voiced and voiceless stops is quite regular (see pp.44-6 above), except that /b/ does not occur; geminate consonants, whether voiced or voiceless stops, or nasals, laterals or approximants, do not occur in this position.

Regarding the distinction between single and geminate nasals, laterals and approximants in intervocalic position, the situation is fairly straightforward, since with these consonants there is no cross-cutting distinction of voice; they contrast as single versus geminate only after a short vowel in a stressed syllable.

The pattern described here, and in the section above on homorganic clusters of nasal plus stop, may be summarised conveniently in the table of Figure 8 (the use of the symbols P and B is from Krishna-murthi, 1961):
After a short vowel, in stressed syllable  | After a long vowel (always in a stressed syllable)  | After a short vowel, in unstressed syllable

<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>P</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>PP</td>
<td>(BB)</td>
<td>(BP)</td>
<td></td>
</tr>
<tr>
<td>NB</td>
<td>NB</td>
<td>NB</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>CC</td>
<td>CC</td>
<td></td>
</tr>
</tbody>
</table>

P = voiceless stop, single; PP = geminate voiceless stop cluster
B = voiced stop, single; BB = geminate voiced stop cluster
N = nasal consonant homorganic with following stop
C = non-stop consonant, single; CC = non-stop geminate cluster
Parentheses enclose infrequent consonant types.

**Figure 8: Intervocalic consonant types**

(iv) A phonemic solution for intervocalic stops.

In respect of the situation regarding single and geminate voiceless stops in intervocalic position, as just described, Emeneau (1967: fn.8) proposes the following solution:

'A phonemic statement for Kodagu will recognise that voiceless stops and the affricate c have two major allophones each, based on quantity. After a short unaccented vowel (i.e. in a word's first syllable) a voiceless stop is long and heterosyllabic; elsewhere within a word, i.e. after a long accented vowel or after an unaccented vowel, it is shorter, and the syllabic division precedes it: e.g. mati"
'This statement covers hundreds of examples. Exceptions to it, viz. with a short voiceless stop after a short accented vowel, are so rare that they may be covered by the use of special symbols; e.g. [kate] "story" (a borrowing ultimately from Sanskrit) contrasts with [katte] "donkey", and the two may be written kaTe and kate.'

Thus, in terms of this analysis, P and PP in the first column of the table in Figure 8 may each be written as P, and brought into a symmetrical opposition to P in the other two columns. This solution therefore apparently regularises the data in an elegant way, and as such was made use of in Garman (1969) in the context of a generative phonological description; however, it will be argued below (pp. 104-109) that it is not suitable for this purpose since it actually obscures certain regularities in the patterning of phonological elements.

A final point remains to be made here. A number of items show /v/ or /y/ after a short vowel in a stressed syllable, followed by a single consonant or by a homorganic cluster of nasal plus stop:

- /cavti/ step on, kick (2 sg imp)
- /davde/ cheek
- /pavni/ gold £1 coin
- /gavli/ large lizard
- /kavriki/ vital spot
- /ñavndi/ squeeze (2 sg imp)
- /bayti/ evening
- /kaybi/ sugar cane
- /bayne/ egg-plant
- /mayli/ peacock
- /kuyndi/ feel prickly (2 sg imp)
In such cases the sequence of short vowel plus approximant patterns very much like a long vowel in respect of the possible following consonants; thus, geminate consonants may not occur, and there is a regular contrast in voicing among stops occurring singly, but a voiceless stop preceded by a homorganic nasal is rare (only found in the item /kavinka/). Hence it is possible to include these cases under the second column of the table in Figure 8 above.

Concerning the contrast between B and BB, and between C and CC in intervocalic position Emeneau (1967: fn. 8) remarks:

'Other consonants do not show the same complementary distribution with regard to quantity as do the voiceless stops...and are treated phonemically as single and double respectively. For voiced stops and the voiced affricate j this contrast has little functional yield, but it must be recognised.'

The Coorg material in Emeneau (1938, 1967 and 1970a) is cited in the phonemic transcription that treats length as an allophonic feature of voiceless stops (here called the Emeneau type A transcription), while that used for Coorg in DED, DEDS and DEIA marks the geminate versus single distinction for all consonants (here called the Emeneau type B transcription, corresponding to that presented in the earlier sections of this chapter).

5.0 Conclusion

In this section the problem of voiced and voiceless stops in intervocalic position is further considered, in the light of a phonological solution which is based upon certain Dravidian orthographic systems. The first part consists of an outline of the salient features of the four main Dravidian orthographies, and of an
examination of how the contrasts that these recognise as basic are reflected in Coorg (5.1); the final part (5.2) looks ahead briefly to the requirements of a phonology of underlying representations such as will be described in Chapters 4 to 6.

5.1 Dravidian orthographies

The four main orthographies that are the concern of this section are those used for Tamil (Tā), Malayalam (Ma), Kanarese (Kā) and Telugu (Te). They fall into two broad categories, the Ta/Ma and the Kā/Te.

(i) The Ta/Ma system

This is more clearly expressed in the Tamil script than in the Malayalam, since the latter script has been fairly extensively modified in order to take account of a large number of Sanskrit loan words which show regular contrast between voiced and voiceless and between aspirated and unaspirated stops. Thus, it has distinct symbols which always represent voiced stops, and others for aspirated stops (see, for example, Andrewskutty, 1971), but these are confined to the Sanskrit component of the vocabulary. Native Malayalam vocabulary items, on the other hand, are written in a way which corresponds to the basic system of the Tamil script, employing stop symbols which are unmarked for voice. The situation with regard to the Tamil script is altogether more regular, as may be seen from the following observation in Shannugam (1973):

'There have been attempts to introduce new symbols, especially to represent the voiced stop consonants, by some popular journals and writers. Although this practice is not universally accepted, it is more common now to represent the voiced ba as ᐇ (that is, by the bold type of the letter used for ma). The representation of other
voiced stop consonants has not gained currency." (1973: 5).

According to this system, then, there is (ignoring the exception just noted) only one stop symbol for each place of articulation; and this symbol may occur either word-initially or word-medially; when medial, it may either be preceded by a symbol representing a homorganic nasal, or be intervocalic; when intervocalic, it may be either single or geminate. The possibilities, together with the (generalised) corresponding phonetic values, are illustrated, for the velar place of articulation, in Figure 9:

<table>
<thead>
<tr>
<th>Initial</th>
<th>Medial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>with homorganic nasal</td>
</tr>
<tr>
<td>k</td>
<td>Nk</td>
</tr>
<tr>
<td>[k]</td>
<td>[ɔg]</td>
</tr>
</tbody>
</table>

Figure 9: The functions of the velar stop symbol in the Ta/Ma system

The first row presents a conventional transliteration of the Ta/Ma orthographic system, with ṇ standing for the anusvara. The stop symbol represents a fairly tense voiceless stop initially, a fully tense voiceless stop when geminate intervocally, a fairly lax voiced stop after the nasal, and a fully lax, fricative articulation, usually voiced, when it occurs singly in intervocalic position. The fully tense stop is long after a short vowel in a stressed syllable; otherwise, it is only half-long (represented here by [k̂]). This variation between long and half-long quantities is wholly regular within the Ta/Ma system, as is pointed out in Firth (1934: iii-iv) for Tamil:
'It is only in certain cases that double stop consonants like pp, tt, ṭṭ, kk are heard really doubled in the Italian sense.... They are, however, always voiceless and energetically articulated.... But they vary considerably in length.... If the tt of kattu "caw" were represented by an index of two, the index of the tt of kaattu "protect" would be one and a half.'

The orthography thus operates primarily in terms of an inter-vocalic opposition between geminate (tense) and single (lax) categories, with respect to the stops. In initial position, and following a homorganic nasal, this opposition is neutralised. Voicing is not a primitive category of the system. It is true that Fowler (1954), expressly dealing with a heavily Sanskrit-influenced variety of Tamil, sets up the lax stops /b, ַ, g/ in his phonemic system (mainly on the basis of word-initial contrasts in certain items); but Fairbanks (1957) successfully shows that these stops are best handled outside the main system (occurring infrequently, and only in Sanskrit, Portuguese and English loan words), and that the orthography accurately reflects the central sound pattern of the language (though this last point is not made explicit).

(ii) The Ka/Te system

By contrast, the Ka/te system recognises both a voiced and a voiceless series of stop symbols; again, illustration will be made with reference to the velar place of articulation, with broad phonetic values indicated, as set out in Figure 10:
Initially, there is a recognised voicing contrast, and this is carried through to all positions. Unlike with the Ta/Ma system, $kk$ only occurs after short vowels in stressed syllables, and hence always represents a fully long voiceless stop articulation; the fairly tense half-long voiceless stop which occurs after long vowels and after short vowels in unstressed syllables is represented by $k$. Thus the two systems bear even less correspondence to each other than is apparent on first sight.

At this point it is convenient to widen the discussion to include Coorg.

5.2 The sound pattern of Coorg

The main features of the sound pattern of Coorg have been presented and discussed in the preceding sections of this chapter, and it is fairly clear where Coorg stands in relation to the two orthographic systems which have just been introduced. It is important first of all to see the Ta/Ma and Ka/Te systems not as competing phonological solutions to cover essentially the same basic data, but
rather as complementary to each other, reflecting the rather
different surface sound patterns in the languages they are used for.
Coorg, with frequent contrast between voiced and voiceless stops in
initial position (even in native vocabulary items), and with
demonstrable, if relatively infrequent, contrast between voiced and
voiceless stops medially, certainly stands within the Ka/Te system
insofar as its surface sound structure is concerned.

However, it has been seen that a simple phonemic analysis which
takes the voicing contrast between stops to be a primitive feature
of the system (e.g. the Emeneau type B transcription) is unable to
reflect the distributional pattern of the elements concerned. The
representation of voiceless stops in the Emeneau type A trans-
scription constitutes one attempt to reflect this pattern more
faithfully, within a phonemic framework; however, this only high-
lights the nature of the patterning of voiceless stops, and says
nothing about voiced stops, or homorganic clusters of nasal plus
stop, although these also stand in need of explanation. The regular
pattern for stops in Coorg - i.e., ignoring the parenthesised
elements in the table of Figure 8 above (p. 98) - is illustrated here
in Figure 11:

<table>
<thead>
<tr>
<th>Initial</th>
<th>Medial</th>
</tr>
</thead>
<tbody>
<tr>
<td>P, B</td>
<td>NB</td>
</tr>
<tr>
<td>NB, P, B</td>
<td>PP</td>
</tr>
</tbody>
</table>

**Figure 11:** The basic distributional pattern for
stops in Coorg.
It may be seen from this that, ignoring the contrast between P and B in word-initial position, the patterning of stops in Coorg closely corresponds to what is found in the Ta/Ma system. The only difference concerns the occurrence of both P and B in the third column of the table; and it is clear that this difference is only apparent, since it has been seen (pp. 95-9 above) that P and B are not generally in contrast in this position, B occurring after a short vowel in a stressed syllable, and P elsewhere, i.e. after a long vowel, and after a short vowel in an unstressed syllable. Indeed, this only serves to demonstrate more clearly the parallelism between the Coorg pattern and that expressed in the Ta/Ma system. This fact, and the patterning of medial stops generally in Coorg, is most conveniently reflected by the use of a single stop symbol (with phonetic values indicated for the velar place of articulation), as in Figure 12:

<table>
<thead>
<tr>
<th>With homorganic nasal</th>
<th>Intervocalic, single</th>
<th>Intervocalic, geminate, after short vowel in stressed syllable</th>
<th>Intervocalic, geminate, elsewhere</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP</td>
<td>P</td>
<td>PP</td>
<td>PP</td>
</tr>
<tr>
<td>[ŋ]</td>
<td>[ŋ]</td>
<td>[ŋk]</td>
<td>[ŋk]</td>
</tr>
</tbody>
</table>

**Figure 12:** The regular pattern of medial stops in Coorg

With regard to the entry PP in the rightmost column, it is relevant to recall the description in Firth (1934) regarding the phonetic quantity of the corresponding stops in Tamil (p. 103 above), and also to note what was recognised earlier (p. 61) regarding the relatively longer duration of 'single' voiceless stops in Coorg compared with their voiced counterparts. In other words, the phonetic facts are not at variance with the distributional pattern that is being
claimed to hold for Coorg equally as for the Ta/Ma system.

Clearly, then, in respect of its most regular stop contrasts in medial positions, Coorg falls within the Ta/Ma system; but in order to formalise this fact, the optimal phonological system has to fulfil the following conditions:

(a) it has to be polysystemic; that is, it must allow for a systematic distinction between sets of elements operating at different positions within the word (at least, between word-initial and word-medial positions)

(b) it must operate in terms of underlying representations, and derive certain surface contrasts by rule.

In Chapters 4 to 6 an attempt is made in this direction.

In conclusion, it is worth making two connected observations. First, the type of phonological system which has been suggested here as appropriate for underlying forms in Coorg has been approached by means of an examination of the frequency of the contrasts between certain elements within a simple phonemic system; hence the degree of the coincidence between the resulting system and that expressed in the Tamil and Malayalam orthographies constitutes substantial evidence for the view that this orthographic system is indeed (as has often been claimed) a suitable representation of the most fundamental phonological contrasts in at least a large number of Dravidian languages (if not all; it is, for example, an empirical issue whether a phonology of underlying representations for Kanarese and Telugu would have to be set up in the same general way as for Coorg). This is not altogether surprising, perhaps, in view of the historical claims that have been made for the analysis that the Ta/Ma system provides for stop consonants; Caldwell (1875) was the first to provide a name for the
central characteristic of this analysis when he noted that the Tamil and Malayalam orthographies exhibited what he called 'the peculiar Dravidian law of the convertibility of surds and sonants' (1875: 137). His view was that this principle had been a characteristic of the proto-language and that Tamil preserved this state of affairs most faithfully of all the Dravidian languages; on the other hand, 'in the Northern Dravidian dialects' (by which Caldwell appears to refer to the non-literary languages of North and Central India, but the situation in Kanarese and Telugu is essentially similar), 'the difference between surds and sonants is generally expressed by the use of different characters for each sound, in imitation of the system of the Devanagari' (1875: 137).

Caldwell's belief that the proto-language must have had a system of stops built around the 'convertibility' principle was countered later in Bloch (1919), but has since been supported with a great deal of evidence, for example in Burrow (1938) and Krishnamurthi (1961: 24) (also Emeneau, 1970b, where however some dissatisfaction is expressed regarding the symbols *k-, *-kk-, etc.; this is apparently Emeneau's viewpoint subsequent to his proposal of the Emeneau type A transcription for Coorg). It is fair to say that, at time of writing, an assumption of the historical validity of the convertibility principle is quite uncontroversial. A concluding remark in Burrow (1938) may be cited here as typical: 'Telugu and Kanarese have, for reasons that are obscure in most cases, introduced secondary voicing into primitive Dravidian words' (1938: 722).

The second observation that has to be made is that there is evidence on morphological grounds also (as will be shown in Chapters 4 to 6) for setting up a single series of stops in the underlying forms
for Coorg lexical items. Thus, pairs of lexical items such as the following (cited in Emeneau type B):

- 
  /ku:di/  
  /ku:ti/  
  /ka:di/  
  /ka:ti/  
  /todi/  
  /totte/  
  /ju:ngi/  
  /ju:ki/

show a morphological relationship which may be generalised as:

-(\Pi)P + P- $\rightarrow$ -PP-, 

with the voicing distinction being a secondary correlate of the underlying contrast of consonant length (geminate versus single). In this connection, the work of Kumaraswami Raja (Kumaraswami Raja 1969a, 1969b) on the regular alternation between -NP- and -PP- (with -NPP- forming an inadmissible sequence) is particularly important, and has been incorporated in the analysis suggested in the later chapters of this work.
CHAPTER THREE

Syntax
1.0 Introduction

This chapter does not aim at a complete survey, however non-detailed, of the field. This is partly for reasons of limited space (in a study which is primarily morphological and phonological), and partly because seven months' fieldwork has not yielded sufficient material in depth — nor an adequate insight into the language — for anything more than a superficial treatment, save in certain fairly well defined areas. A number of general studies of the syntax of Dravidian languages are available (e.g. Ramanujan, 1963 for Kanarese; Agesthialingom, 1967 for Nadurai Tamil; and Kandiah, 1967 for Ceylon Tamil, all within transformational-generative theory); and while these have certainly outlined an approach to the syntax of the Dravidian group, very little detailed work has yet been done at all. The data on Coorg syntax is in general only sufficient to indicate that Coorg to a large extent fits into the general framework established thus far; but (more interestingly) in certain areas it seems to provide evidence that this framework requires modification, or at least further discussion. What follows, therefore, is, first, a description of the basic sentence patterns of Coorg, and secondly, a fairly detailed study of (i) the copula, and (ii) the causative and transitive constructions of the language. These topics have either been dealt with very briefly in descriptions of other languages, or else analysed in detail (e.g. Kandiah, 1967), but in a way that seems inadequate in the light of what a description of Coorg must achieve. Much of what has been analysed for other languages of the group has, inevitably, proved to be relevant to this study; it is hoped, and believed, that the analysis of these two problem areas in Coorg syntax will have relevance for the description of other South Dravidian languages.
The transcription used for presenting the data is Emeneau type B (see Chapter 2, p. 100). This should perhaps be thought of as a type of useful broad transcription rather than a strictly phonemic one (e.g. it does not treat quantity as an allophonic feature of inter-vocalic voiceless stops); accordingly, it is enclosed in square brackets, but these of course should not be interpreted in the same way as the square brackets of the preceding chapter. In the subsequent chapters also (Chapters 4 to 6), square brackets will continue to be used to indicate the Emeneau type B transcription, and slashes will mark off elements of the phonology of underlying forms. The Emeneau type B transcription is more useful for syntactic and morphological work than the Emeneau type A, since it provides a wholly consistent representation of consonant gemination, which turns out to be a very common morpho-syntactic phenomenon. Where necessary, elements which are subject to deletion rules are enclosed in parentheses in those contexts where they would be deleted; for example, very commonly, word-final -[i], before another word with an initial vowel. In all cases, the forms cited are the 'full' forms of slow and careful speech.

1.1 The Basic Syntactic Patterns

The following sentences are superficially identical:

1. [adi ba:ti]
   it came
   'It came'.

2. [adi ba:ti]
   it   duck
   'It's a duck'.

The ambiguity of the phonological realisations of 1 and 2 rests
on two factors: first, the homonymy of the noun [ba:tî], 'duck' with the verb [ba:ti], 'came'; and secondly, the surface identity of the two distinct types of syntactic structure involved in these sentences. The first factor is not relevant to this section; the second is, and may be illustrated by consideration of the negative counterparts of 1 and 2. These are:

3. [adi bandîle]  
   it came-not  
   'It didn't come'

4. [adi ba:t(i) alla]  
   it duck not  
   'It's not a duck'.

(For the purpose of the present discussion, the differing surface realisations of the basic form of the verbal element in sentences 1 and 3 are not relevant.)

Sentences 1 and 3 represent the positive and negative forms of one type of syntactic pattern, and 2 and 4 those of another type. In each case the negating element is underlined. [le] in 3 is morphologically related to [ille], which is derived historically from an old Dravidian negating verb; [alla] is similarly derived from another old negating verb. DED 198 gives several paradigmatic forms for alla in Tamil, and notes that in Modern Tamil that form is used for all persons and numbers, although originally it was only the neuter form; and the Old Tamil cognate of [ille] (DED 2106) was a verb with a full negative paradigm. Coorg shows only the invariant forms [alla] and [ille] and it is convenient here to regard them as negating verbal particles. Traditionally, they are glossed along the following lines: [alla], 'to be not so-and-so'; [ille], 'to be not,
to exist not (in a place)'. [alla] negates only those syntactic
patterns of the *subject nominal-Predicate nominal* type, while [ille]
egates patterns where the predicate is verbal. This statement will
be revised later, but serves for the moment.

1.1.1 *Sentences negated by [ille]*

The class of structures negated by [ille] covers a wider variety
of sub-types than that negated by [alla], and so will be dealt with
first here.

(i) Intransitive and transitive verbs.

1 illustrates a one-place verbal predicate structure (using the termin-
ology of Lyons, 1968: 350-371): a fairly small class of verbs,
including [po:], 'to go', [ca:], 'to die', [bu:], 'to fall',
etc., occurs as predicate in this pattern. The sentences below show
other, but related patterns:

5. [ave na:yina kondati]
   he dog killed
   'He killed the dog'.

6. [ave ku:li undati]
   he rice ate
   'He ate the rice'.

7. [ave undati]
   he ate (rice)
   'He had a meal'.

In the foregoing, 5 shows a two-place structure, with the second
nominal showing the objective case marker (underlined). 6 also shows
the same pattern (although, as commonly with Dravidian inanimate
nouns, the second nominal shows no overt objective marker—see Asher,
1968: 91, where the same fact in Malayalam is accounted for in terms
of a 'zero exponent of accusative case'), but the grammar requires that it also be related to 7. As in English, it is possible to think of contexts where the utterance which

8. *[ave kondati]*

'He killed'

underlies is perfectly acceptable; but there is an essential difference between 7 and 8 in that one does not have to look for contexts wherein the utterance that 7 underlies would be accepted. That is, no anaphoric (i.e. sentence to sentence) or deictic (i.e. sentence to situation of utterance) reference need be invoked in the case of 7. In other words, 7 is grammatical, and 8 is not, although it may be acceptable in a given context. (On the distinction between 'utterance'/'sentence', 'acceptable'/'grammatical', and the broader distinction between 'primitive'/'linguistic' terms, see Lyons, 1968: 137-42, 172.)

However, it may be argued that, while the derivation of 8 from 5 is not a requirement of the grammar, it is necessary that 7 be thus derivable from 6. A fairly strong case for this can be made out for the verb *[unn]*-, 'to eat (rice)', since it is in contrast with another verb, *[tim]*-, 'to eat (anything which is not rice)'. Thus:

7. *[ave undati]*

'He had a meal'

and

9. *[ave tindati]*

he ate (not rice)

'He had a snack'

may be argued to depend, for semantic analysis, on an appropriate predicate nominal, which is subsequently deleted. In 9 this
obviously may be any of a large class of nominals referring to non-rice dishes, or other edibles; in the case of 7 the second nominal is restricted to [ku:li] 'cooked rice', [taŋuːli] 'yesterday's rice (served again)', etc. Hence the same syntactic relationship as holds between 7 and 6 also holds between 9 and 10:

10. [̃aʊ pandi kari tindati]  
    he pork curry ate  
    'He ate the pork curry'.

Hence both of these verbs presuppose certain predicate nominals and the sentences in 7 and 9 are clear cases of 'pseudo-intransitive' constructions. A number of other verbs, such as [oːd]-, 'to read', [elid]-, 'to write', [pare]-, 'to utter, speak' etc., belong in the same class, which might be called, following Lyons (1968: 360-1), the class of 'inherently transitive verbs'.

(ii) Impersonal constructions.

A superficially quite different pattern from any that has so far been considered, but which is also negated by [ille], is illustrated by the following:

11. [dudd' niːki bo:n du:va:]  
    money you-to needed - interrog.  
    'Do you want money?'

12. [naki po:ra]  
    me-to suffices-not  
    'I want more'.

13. [naki novva]  
    me-to pains  
    'I feel sore'.
14. [na:ki kulipa] 
   me-to is-cold 
   'I feel cold'.

15. [na:ki pera dura nadapakaya] 
   me-to much distance walk-able-not 
   'I can't walk very far'.

In each of the sentences 11-15, as the literal and free translations indicate, the notional subject is not the grammatical subject: the case marker (underlined) is the 'allative'. Further, in 12, 13, and 14 no other nominal occurs: in 11 [duddi] occurs, and in 15 the nominal group [pera du:ra] occurs, but whereas [duddi] may be interpreted as the grammatical subject of 11, [pera du:ra] is quite clearly a modifier of the verb [nada]-, 'walk' in 15. For 13 one might tentatively supply [nombala], 'pain' as a (deleted) grammatical subject - but this suggestion is probably motivated by morphological considerations rather than syntactic ones; namely, that the noun [nombala] and the verb [novva] are formed on the same root [no]-; [ga:ya] 'wound' has equal syntactic justification to be considered as the grammatical subject. With 12, an even wider choice exists for determining the putative grammatical subject. By contrast, in 14 it is difficult to find anything to play this role. All these sentences, therefore, differ from one another quite considerably, and yet all are related in some sense. In traditional terms, they are all examples of 'impersonal' constructions, and are kept distinct as such. However, it seems to be the case in other Dravidian languages, and is certainly the case in Coorg, that the verbs in these constructions are comparatively rare, defective, or morphologically unique: thus [kuli]-, 'cold feeling is', [no]-, 'pain (intr)' and [kayy]-, 'be able'
all have paradigms restricted to neuter forms, while [bo:nd]-, 'be needed' is a morphologically irregular formation from the root [bo:d]-, 'to beg'; and [po:r] is a unique verb form occurring only with the negative verbal suffix -[a], '(something) is not enough'. This suggests that the most economical analysis will assign the irregular features of 11-15 to the verbs occurring therein, and will derive these sentences from regular one-place underlying structures: this will require that [kayy] - and [kuli] - be marked in the lexicon for obligatory subject deletion, and that all the others, except for [bo:nd]-, be marked for optional subject deletion. It is possible that the correct treatment of [no]- is to make two entries in the lexicon, one with the meaning 'to pain (intr)' and the other with the meaning 'pain is'; then the first will be marked for no subject deletion, and the second for obligatory subject deletion: this is tentative, however, as the data contains no conclusive evidence one way or the other. [bo:nd]- will have to be marked for non-deletion of subject: in the situation of utterance, something like [bo:nduva:], 'wanted?' may occur; but this is to be handled in terms of utterance (where perhaps a rule of topic deletion is required) and not in terms of sentence by a rule of subject deletion. 

In all cases where there is obligatory deletion of subject, the question arises as to what element should be posited for the subject in the underlying structure. The operation of a concord rule between the subject nominal and the personal ending of the verb places limits on the choice of subject nominal for these sentences; that is, the form of the personal ending definitely excludes the first and second person singular, and the second person plural. In a language such as Ceylon Tamil, which is described by Kandiah (1967), the system of
personal endings does not show the fairly advanced syncretism of the Coorg system, and it is possible to set the limits even closer on the choice of subject nominal; Kandiah demonstrates that, in terms of the concord rule, it is 'most convenient to set up the third person neuter singular pronoun from among the various possibilities' (1967: 335). In Coorg, where all singular subjects save the first and second person pronouns, and all plural subjects save the second person pronoun are in concordial relation with the same personal ending of the verb, the situation is not so clear. However, it is not irrelevant to point out that this personal ending in Coorg is historically an old third person singular inanimate form; furthermore, native speakers' intuitions point to [adi], 'it' (the third person singular inanimate proform) as the 'supplied' subject, and this corresponds to Kandiah's 'third person neuter singular pronoun' subject for these - Kandiah informally calls them 'subjectless' - sentence types.

(iii) 'Existential' constructions.

The following group of sentences is also negated by [ille]:

16. [miñ'aku: ikkaku: eccaki" bo:re]  
   before-to-and now-to-and what-extent-to difference  
   'Between now and formerly, how much difference there is!'

17. [afrikatili" sima undi"]  
   Africa-in lions are  
   'There are lions in Africa'.

18. [de:va undi"]  
   God is  
   'God exists'.

19. [avada kũñi avada arel(i) undi]
   she-of child she-of waist-in is
   'Her child is at her waist' (Method of carrying small children).

20. [moyra avada beratil(i) undi]
   ring she-of finger-on is
   'The ring is on her finger'.

21. [a: to: tatili ku:va unda:]
   that estate-in well is - interrog.
   'Is there a well in that estate?'

22. [a: to: taki ku:va unda:]
   that estate-to well is - interrog.
   'Is there a well for (the use of) that estate?'

23. [i: kũñ̆iki ikka po:di undi]
   this child-to now fear is
   'This child is now afraid'.

24. [na:ki pani undi]
   me-to work is
   'I have work (to do)'.

25. [a: na:yik[i] or(i) udda ba:1(i) undi]
   that dog-to a long tail is
   'That dog has a long tail'

26. [na:da pakka cenna dudd[i] undi]
   me-of-prox. some money is
   'I have some money'.

All the foregoing sentences consist of a subject nominal in the
'subjective' case, and a predicate containing a form of the verb
[u11]-, 'to be' and also, optionally, some sort of predicate
expansion, typically consisting of a nominal phrase with the head nominal in the 'locative' (marked by \([-\text{\textit{la}}]\)) or the allative case \([-\text{\textit{ki}}]\). 16 shows the result of optional deletion of \([\text{\textit{undi}}]\) (the appropriate form of \([\text{\textit{ull}}]\), 'to be'), a stylistic variation which is open to all the examples of this type, except sentences like 18 and probably 17 as well. There is a scale of preference in the matter of verb deletion in these sentences which is not strictly relevant to the present discussion, and is moreover difficult to grade precisely; but it seems to be the case that in maximally unmarked instances, the verb is frequently deleted where a locative expansion is within the predicate, and frequently retained where a locative expansion is a sentential adjunct. Thus, \([\text{\textit{undi}}]\) could more naturally be deleted from 19 and 20 than from 17. Another factor that has to be taken into consideration is the predicate nominal itself: thus \([\text{\textit{bo:re}}]\) frequently tolerates deletion of \([\text{\textit{ull}}]\) in my data. By 'maximally unmarked' instances is meant instances where there are no grammatical categories for the expression of which the occurrence of the verb is obligatory. Thus, the category 'interrogative', one of whose markers is the suffix \([\text{\textit{a:}}]\), is realised on the verb in 21 and 22 above, and under these conditions the verb is non-deletable. The only possible form of the interrogative counterpart to 16 would thus be:

27. \([\text{\textit{mi\text{"\textsc{n}}\text{"aku: ikkaku: accaki \text{"\textit{bo:re unda:}}}]}\]

before-to now-to that-extent difference is - interrog.

-\text{\textit{and}} -\text{\textit{and}} -\text{\textit{to}}

'Between now and formerly, is there that much difference?'

where the verb occurs. Tense markers ('past' and 'non-past') are also realised on the verb, and under these conditions too the verb is non-deletable.
The similarities of sentences 16-27 may therefore be brought out by including them all in a class which may be labelled - prompted by the gloss on the verb that is common to them all - 'existential'.

From this point, it is necessary to note that a variety of notional 'functions' is served by this class, and that these have to be clearly distinguished by the grammar in order to account for the transformational relations that these sentences contract. The principal functions, as indicated by the translations given, are existence, location and possession.

(a) Existence and location

The relation between these functions is demonstrable with reference to 17, which bears formal similarities to the expression of the basic existential function in 18 and to the expression of the basic locational function in 19-21; with 17 may be compared:

28. [sima undi]

'Lions exist'

and

29. [sima afrikatil[i] undi]

'The lion is in Africa'/ 'The lions are in Africa'.

The presence of existential function as opposed to locational function in a given sentence would seem in some cases to depend upon whether the locative expansion (where this exists) is considered a sentential adjunct or part of the predicate group. In the first case, the existential function is present, and in the second it is the locational. This distinction is relevant to the issue, mentioned above, of whether the verb [ull]- appears in the surface structure: its absence is possible only with locational function. However, the distinction between a sentential adjunct and a predicate expansion is
not always easy to maintain, as Lyons points out (1968: 390). In the cases just considered, it is true to say that where the locative phrase precedes the subject nominal, the preferred interpretation is that it is a sentential adjunct (existential function). However, stylistic considerations, for example emphasis, may interfere with this, and the distinction is wholly neutralised in adjectivalisation transforms; thus:

30. [afrikatilt(i) ule sima]
   Africa-in being lions
   'The lions in Africa'/ 'Lions in Africa...',

is interpretable in two ways, as shown by the translation, the first (ignoring the difference in number) being derived from the structure underlying 29 and the second from that underlying 17. (Concerning the way the feature of definiteness in the subject nominal reflects this distinction, see below, p. 154).

(b) Existence and possession.

The relation between the functions of existence and possession is best approached via a consideration of certain sentences which contain what is formally an allative expansion. Thus, 22 shows what is basically an existential sentence with a sentential adjunct expressing 'benefactive' sense by means of the allative case marker. 21 and 22 are distinct primally in that 22 makes no assertion that the well is located inside the estate. The adjectivalised transform of 21 is:

31. [a: to:til(i) ule ku:va]
   that estate-in being well
   'The well in that estate...';

but
32. [a: toːt̪at̪̂ira kuːva]
that estate-of well
'The well of that estate...'
is closer to the interpretation of 22 than that of 21 since, like 22, it makes no assertion that the well is actually within the estate. The case marker, underlined, in 32 is the 'possessive', and the grammar has therefore to handle the functions of existence and possession in such a way that the relation between 22 and 32 becomes clear; as also the relation between 24 and 33, and between 25 and 34:

33. [naːda pani]
me-of work
'My work...'

34. [aː naːyira udda baːli]
that dog-of long tail
'That dog's long tail...'

(c) Location and possession

A further expression of the function of possession to some extent overlaps all this, and is illustrated by 26. But this too is formally linked with the expression of existence, and makes explicit also the relation implied in the foregoing between possession and location. The form [pakka] in 26 is glossed just as 'prox.' (proximate), since it is not easy to isolate its meaning; but it is clearly related by my informants (and conveniently so from the descriptive point of view) to the [pakka] that occurs in other types of construction, as:

35. [naːŋaːki kaːd̪i pakk(a) aːci, naːdi duːr(a) aːci]
us-to forest near has become, town far has become

'For us, the forest is near, the town (lit. 'district') is far away.'
A conventional statement of a life of retirement, preceding death.)

The relation between location and possession found in the use of [pakka] depends crucially on the animate or inanimate status of the nominal with genitive inflection in the construction:

36. **Nominal, Possessive marker + [pakka]**

Where the nominal is animate, the interpretation is possessive; where it is inanimate, the interpretation is locative. Thus:

37. \[maratira pakka ori balyê kall(i) undi\] tree-of-prox. a big stone is

'Near the tree there is a big stone',

which is to be compared with 26 above.

(d) Alienable and inalienable possession

Finally on [pakka], it is to be noted that, given an animate nominal, the area where this construction does not overlap the possessive function of the 'allative-existential' construction exemplified by 24 is precisely where a distinction between alienable and inalienable possession seems to be drawn; thus:

38. \[*[a: na:yira pakka ori udda ba:li(i) undi]\] that dog-of-prox. a long tail is

makes no sense, except in the case where there is a long tail lying on the ground beside the dog. Body parts are central cases of inalienable possession, but the grammar will have to recognise also that:

39. \*[na:da pakka pani undi]\ me-of-prox. work is

is not a grammatical alternative to 24 above, which therefore is also a case of 'inalienable' possession.

Concerning the use in this way of such labels as 'alienable' and
'inalienable', the position adopted here is that suggested in Lyons (1966) in the context of a discussion of traditional 'notional' terminology for the parts of speech - namely, that, where a formal description has set up the relevant categories (in this case, compare 38 and 25), the question of labelling the categories is a secondary matter, and one that is best determined with reference to the clearest, or nuclear, cases (which will also be the most numerous, or at least the largest single class). Thus, in Coorg, the terms 'alienable' and 'inalienable' apply to the formal distinction between sentences such as 25 and 38, and therefore may be applied, as labels for a particular formal feature, to cases such as 24 and 39 (to account for the ungrammaticality of 39).

Finally, an interesting distinction of meaning along the same lines can be found by comparing 26 above with:

40. [na:ki cenna dudd(i) undi]
   'I have some money',
whereby [duddi] could most typically be translated in 26 as 'coins' (as well as 'money'), and in 40 as 'money' (in preference to 'coins'), the implication being that in 26 the money is on my person, whereas in 40 I am referring to my wealth.

1.1.2 Sentences negated by [alla] ('Relational')

The class of sentence types negated by [alla] is, in the broadest syntactic terms, homogeneous, since each example is of the general pattern:

41. Subject nominal + Predicate nominal

However, the class includes sentences which express a number of different notional functions, and these are indicated, in conventional set-theoretical terms, in the examples given here:
42. [ninna:ndi bandave bollu]
   yesterday having-came-he Bollu Subject = Predicate
   nominal   nominal
   'The man who came yesterday is Bollu'  

43. [āve angadika:re]
   he shopkeeper  
   'He's a shopkeeper'.

44. [a: manše rayte]
   that man farmer  
   'That man is a farmer'.

45. [na:tta tammane orī nalle ti:nika:re]
   me-of younger a good eater brother  
   'My younger brother is a good eater'.

46. [kodave kinnanga perta a:ro:gyah:ra]
   Coorg boys very healthy-ones  
   'Coorg boys are very healthy types'.

42 exemplifies identity predication, while 43-45 show class-membership
(with role-predicates in 43 and 44), and 46 shows class-inclusion.
Every kind of nominal group in the language may occur as the subject
nominal in this class of sentences, and the examples cited above have
been chosen to illustrate the range of possibilities (thus, a
pronominalised subject showing the adjectivalisation transformation
in 42; an untransformed pronoun in 43; demonstrative and possessive
nominal groups in 44 and 45; and a modified indefinite nominal group
in 46). Certain restrictions operate on the type of predicate
nominal that may occur, however; for a discussion of these, and the
implications they hold for the form of the underlying structures of
these sentences, see below, pp. 154-158. It should be emphasised that
there are no formal grounds for distinguishing the different functions noted above for 42, 43-5 and 46, and that these sentences therefore all express a *single syntactic* relation. Further, since the symbols =, ∈ and ≤ all may be interpreted as representing types of relation holding between things or classes of things, this syntactic pattern will henceforth be called 'relational'.

2.0 The copula

The last two basic sentence patterns - the existential and the relational - raise the issue of how Coorg handles the notion of 'being', and therefore an analysis of the copula verb follows here. Traditionally, the copula is treated as a verb in its own right; however, it has been suggested in more recent theoretical work that it is not a constituent of deep structure at all, but simply a 'vehicle' for expressing categories that are normally marked in the verb, such as tense, mood and aspect; the corollary of this being that in maximally unmarked sentences it may not occur at all: for a representative statement of this position, see Lyons (1966, 1967 and 1968).

Kandiah (1967), in a discussion of Ceylon Tamil, considers this question and presents six arguments for according deep status to the copula. All of his arguments are relevant to the discussion of the copula in Coorg, but are not accepted here. Accordingly, in what follows the Coorg verbs of being will be examined, further examples given and a critique made of Kandiah's position - which, since it is not published, will be set out fairly extensively. It is maintained here that the arguments against Kandiah's position are also relevant to the situation in Ceylon Tamil, as described by him.

In view of the fact that Kandiah's position is criticised below,
it is worth making the point at this stage that his work contains the first explicit treatment, in transformational-generative terms, of the copula in Dravidian, and it is precisely because it is an extremely detailed and valuable survey of Dravidian verbal syntax that it is used as the framework for discussion here.

2.1 The copula forms [a:g]- and [ull]-/[ir]-

Two verbs enter into the discussion of the copula in Coorg, one of which exhibits a mixed paradigm drawn from the forms of two distinct verbs of being. The three historical verbal bases which are thus involved have the following forms in Coorg:

(i) [a:g]-
(ii) [ir]-
(iii) [ull]-

An examination of the cognate forms of these three items in other Dravidian languages (listed in DED 282 for [a:g]-, DED 407 for [ir]- and DED 599 for [ull]-), together with their meanings, is enough to show that there is a fairly wide semantic distinction between the entries at DED 282 on the one hand, and those at DED 407 and 599 on the other. DED 282 typically records glosses such as 'become, come into existence, happen, occur, prove to be, be what ought to be, be right, be possible', etc. (in Coorg, [a:g]- means 'become, happen'). On the other hand, DED 407 is most commonly recorded as 'exist, remain, sit down, be in a place, live, be stable', etc. (in Coorg, [ir]- means 'be (in a place)'); while DED 599 contains such glosses as 'to be, to be there, exist, live', etc. (in Coorg, [ull]- is identical in meaning with [ir]-, the two paradigms having merged).

Given these semantic areas of coverage, it is not surprising that the forms in DED 407 and 599 may be wholly interchangeable in any
particular language - and this is the case at least for certain varieties of Tamil, for example. But in Coorg this close relationship has resulted in a merger of the two forms, where they are in complementary distribution with respect to the syntactic environment in which they occur. Thus, from [ir]- are drawn those forms that are marked for past or future tense, or mood, or aspect; while the remaining forms are made on the base [ull]-. *Prima facie*, it would seem to be appropriate to say that the [ull]- forms are marked for present tense, but this is not so; in adjectivalisation transforms, the forms -[inje], and -[ippe] are possible (with past, and future reference, respectively) but are quite rare,-[ulle] generally occurring. Thus constructions such as 31 (above) are truly tenseless. It is only in contrast with the finite past and future tense forms (on the base [ir]-) that the [ull]- forms may be glossed as distinctively 'present tense'; in what follows also it will be seen that it is convenient to regard just the past and future tense forms as marked.

Thus there is no reason for setting up [ull]- and [ir]- as distinct from each other in the syntactic base; they form a single system, where there is a three-way tense distinction (past, present, future). As such, this system is unique, since in the rest of the Coorg verbs there is only the two-way distinction between past and non-past.

Further, [ull]-/[ir]- on the one hand and [a: g] on the other express the aspectual distinction between unmarked stative sentences (showing static aspect) versus those that are marked for dynamic aspect, respectively (for the terms 'static' and 'dynamic', and the relation holding between them, see Lyons, 1968:397f.).
The examples below illustrate the foregoing.

2.1.1 The copula in existential/locational function

47. [ave manel(i) undi]
   he house-in is
   'He is in the house'.

48. [ave manel(i) imjati]
   he house-in was
   'He was in the house'.

49. [ave manel(i) ipra]
   he house-in will-be
   'He will be in the house'.

50. [a: naretili, dumba ma:nge undi]
    that tree-in many mangos are
    'There are many mangos in that tree'.

51. [indi nida kelas(a) a:ci inni ni:ni po:kalu]
    today you-of work became now you can-go
    'Your work ended today; now you can go'.

52. [ente bo:ndiye:nga:yu a:ma]
    what needed-if-even will-become
    'Whatever you want will happen'.

53. [nanga santo:sa(i) ikka]
    we happiness-in let-be
    'Let's be joyful!'

47-49 illustrate the three-term distinction of tense; 50 on the one hand and 51 and 52 on the other show the opposition between static and dynamic, respectively; and, finally, 53 represents a typical modal ('optative') formed on the ir- base (the relevant verb
form is underlined in all these examples, and in those that follow).

2.1.2 The copula in possessive function

The distinctions of tense and aspect that are illustrated above in sentences expressing existential and locational functions also hold with regard to possessive constructions involving the copula:

54. \[\text{ni:ki} \text{ raja i}\text{jata:} \]
    you-to holiday was?
    'Did you have a holiday?'

55. \[\text{avangi madi a:ci}\]
    he-to enough became
    'He had enough'.

2.1.3 The copula in relational sentences

56. \[\text{ave ori } \text{da:ktri}\]
    he a doctor
    'He's a doctor'.

57. \[\text{ave ori } \text{da:ktr(i) a:ci}\]
    'He became a doctor'.

58. \[\text{ave ori } \text{da:ktr(i) a:pa}\]
    'He will become a doctor'.

59. \[\text{kinnanda mu:di ceriyad(i) a:ci}\]
    boy-of face small-it became
    'The boy's face grew small' (Description of effect of being scolded).

However, in the case of relational sentences it is not possible to make distinctions of tense without also marking dynamic aspect in the copula: that is, tense may only be marked on the base \[a:g]-,
'to become', and not on the base [ir]-, 'to be, be in a place'.

(This consideration confirms the distinction drawn earlier between the classes of relational and existential sentences on the grounds of their different negating elements.) Thus, it is only on the basis of this distinction that the grammar is able to account for the fact that the perfective version of 57 (dynamic aspect):

60. [avə ori da:ktri a:vitundi]

implies the unmarked static sentence 56, but that the counterpart of the unmarked copula in the locative sub-type of existential sentence shown in 47 is not formed on the base [a:g]- as in 60 but is one of the directionally-differentiated pair [bar]-, 'to come'/[po:]-, 'to go'; thus:

61. [avə maneki banditundi/po:vitundi]

implies the unmarked static 47 in the same way that 60 implies 56 (see also the discussion on pp. 161-162, regarding the connection between [bar]-/[po:]- and the copula forms in existential sentences).

2.1.4 The copula in interrogative and negative sentences

The final examples relevant to this discussion of the copula are concerned with interrogation and negation. (For convenience, examples given earlier will be re-introduced here.) In the following examples, the affirmative-declarative sentence is followed by the negative, then the interrogative, and finally the negative-interrogative counterparts:
(i) **Existential sentences (unmarked)**

(a) **existential function**

18. [de:va undi]
   'God exists'

62. [de:va ille]
   God not-be
   'There is no God'

63. [de:va unda:]
   'Does God exist?'

64. [de:va illeya:]
   'Is there no God?'

(b) **locational function**

47. [ave manel(i) undi]
   'He is in the house'

65. [ave manel(i) ille]
   'He is not in the house'

66. [ave manel(i) unda:]
   'Is he in the house?'

67. [ave manel(i) illeya:]
   'Is he not in the house?'

(c) **possessive function**

25. [a: na:yik(i) or(i) udda ba:l(i) undi]
   'That dog has a long tail'

68. [a: na:yik(i) or(i) udda ba:l(i) ille]
   'That dog doesn't have a long tail'

69. [a: na:yik(i) or(i) udda ba:l(i) unda:]
   'Does that dog have a long tail?'
135

70. [aː naːyik(i) or(i) udda baːl(i) illeya:]

'Does that dog not have a long tail?'

(ii) Relational sentences (unmarked)

43. [ave aŋgadikaːre]

'He's a shopkeeper'

71. [ave aŋgadika:ranalla]

he shopkeeper-not-be

'He's not a shopkeeper'

72. [ave aŋgadika:ranalla]

'Is he a shopkeeper?'

73. [ave aŋgadika:ranallava:]

'Is he not a shopkeeper?'

(iii) Sentences marked for aspect/tense

In the next set of sentences, the negative counterparts to
examples of dynamic aspect are given:

74. [aː maratili, dumba maːnge aːpile]

(.cp. 50)

'In that tree, there won't be many mangos'.

75. [avangi madi aːyile]

(.cp. 55)

'He didn't have enough'.

76. [ave ori daːktr(i) aːpile]

(.cp. 58)

'He will not become a doctor',

and in the final set, the negative counterparts are provided for
those static sentences which are marked for tense:

77. [ave manel(i) injile]

(.cp. 48)

'He was not in the house'

78. [ave manel(i) ippile]

(.cp. 49)

'He won't be in the house'.

The foregoing illustrate that in existential and relational sentences which are marked for tense or aspect the copula behaves like any other verb in the language by being supplemented by *ille* in the negative (cp. 3 above): but where the copula is unmarked in an existential sentence, it is, as pointed out in Asher (1968: 104) with regard to the same problem in Malayalam, 'not supplemented, but replaced by the negative form'. At the same place, Asher also handles Malayalam relational sentences (which he calls 'equational'; Asher, 1968: 99), noting that the maximally unmarked forms of these show *aane* in the positive which is replaced by *alla* in the negative. As a consideration of the examples given so far will suggest, the situation in Coorg is slightly different, in that no overt copula form equivalent to Malayalam *aane* occurs, at least in unmarked sentences. Under elicitation conditions my data shows one case of a copula in this context:

79. [adi nalled(i) (um)d'a:] it good-it (is) - interrog.

'Is it a good thing?'/Is it good?',

but there is every reason to believe that this is highly aberrant; the informant on this occasion described the parenthesised copula as 'unnecessary', and never used it again on subsequent occasions: furthermore, it was given under artificial conditions, where the informant seemed to be trying to make his language as 'explicit' as he could to an outsider.

Granting that this is so, then the situation for Coorg is that the negative element [*alla*] replaces nothing, and relational sentences are distinct in that the interrogative suffix -[*a*] in these sentences occurs on a nominal (see 72), without requiring a
copula as 'vehicle'. However, the grammar has to allow for this in other cases as well, where emphasis is linked with interrogation; compare the following:

80. [ave ninna:ndi bandavana:]

he yesterday having-come-he?

'Is he the one who came yesterday?' (non-emphatic).

81. [ava: na:ndi bandave]

'Is he the one who came yesterday?' (emphatic he).

2.2 The status of the copula

Examples 47 to 80 above, together with 16 to 46 given in discussing the basic sentence patterns, provide sufficient material for considering the six arguments for the deep status of the copula which are given in Kandiah (1967: 71-6). These arguments are presented here and analysed.

2.2.1 Kandiah's arguments

(i) Kandiah's first argument (1967: 71) is 'a general theoretical point', namely that 'the criterion of the frequency of occurrence may not be legitimately invoked by the grammar to exclude the Copulative Verb from treatment'.

In answer to this, it may first be noted that denying deep status to the copula is not excluding it from treatment, but treating it in a particular way. Secondly, the fact that a grammar of Coorg or of Ceylon Tamil - which denies deep status to the copula may have numerically as many cases of 'writing in' the copula in the surface structure as a grammar which includes the copula in deep structure has of 'deleting' the copula from the surface structure in order to fit the data is a relatively minor issue, since the theoretical
principle here is not frequency of occurrence but predictability of occurrence: or, refining this, predictability of the privilege of occurrence. That is, if the grammar can account for the distribution of the copula in the corpus it is describing by reference to the configuration of the relevant underlying syntactic structures, then there is no justification for including the copula in deep structure: and this holds true even where there is, as noted above (p. 121), a scale of preference in the matter of occurrence of the copula in existential sentences. Two possible ways of handling the scale of preference would be:

(a) to 'write in' the copula in surface structure before the operation of certain stylistic transformational rules optionally deleted it in certain cases - e.g. when the predicate nominal is [bo:re], 'difference' (see above, p. 121).

(b) to delay 'writing in' the copula until certain optional rules in the transformational component of the language have specified whether in any particular instance the copula will occur. These rules will be rather similar to optional stylistic rules, but since stylistic rules are usually formulated as deleting elements rather than optionally writing them in, it may be necessary to keep the two distinct.

The choice between (a) and (b) would be a purely empirical one, however, and would not affect the status of the copula. All this is a purely theoretical answer to a purely theoretical argument.

(ii) Kandiah's second argument (1967: 71-2) is really a continuation of his first, since it shows that the criterion of frequency, if followed, would favour setting up the copula as an element of deep structure, since there are cases where its 'retention'
is preferred to its 'deletion'. Because the criterion of frequency of occurrence has been denied relevance to the issue above, no specific answer to this argument is given here.

(iii) The third argument Kandiah presents (1967: 72-3) rests on the fact that, in Ceylon Tamil, the negative particle may optionally show gender and number concord with the subject nominal. He gives the example (numbered to fit in with this work):

82. kantan vaytiyar alla(r)

'Kandan isn't a doctor'

where the parenthesised r is the optional concordial suffix.

The argument itself is in two parts. The first states that it would be exceptional to have this as the sole instance where concord is (optionally) realised on an element which is not a verb (a particle), so that a verb has to be posited here, even though it has no surface realisation.

The second part of the argument is that it would be counter-intuitive to take the negative particle as a verb; because this would ignore the differences between particle and verbal behaviour for the sake of the concord feature of resemblance, and because it would create the 'curious situation' whereby the copula pattern has no verb in the positive but a verb in the negative.

It should first be pointed out that number concord is marked on predicate nominals in Coorg, and generally in languages of the group (this is one of the peculiarities of the predicate-constituent nominal as opposed to other types of nominal; see, for example, the discussion in Bach, 1968: 102-3). Hence it can only be that Kandiah is here concerned with the particular phonological form of the concordial suffix he cites, which is identical with the type
associated with verbs rather than nouns. In this situation it may be held either that the particle is a peculiar type of verb or else that verbal-type concord is realised on particles as well as on verbs. But it is just as exceptional to find that with alla, and only with this element, the verb-deletion rule may optionally erase only the base form of the verb, and not the concordial marker: and then that alla may have these non-erased elements attached to it (as if it were a verb, which is still more exceptional if alla is not taken to be a verb). The point is that, whatever analysis is adopted, there is something unusual about it.

The second point is more crucial, since it depends in part on what one is prepared to call a 'curious situation'. The theory advanced in Lyons (1966, 1967 and 1968) which seeks to deny that the copula is a constituent in deep structure is based in part on the notion of markedness: in these terms, the copula is seen as a purely superficial 'vehicle' for overt marking of categories such as tense, mood, aspect, etc. It is not at all curious, from this standpoint, that Coorg and Ceylon Tamil should agree in having no surface structure copula in positive sentences but in showing a form that might be interpreted as a copula in negative sentences. Therefore the reference to the 'curious situation' is no valid argument against taking alla as the negative copula form.

Hence Kandiah's only reason for not taking alla as a verbal element is that it is 'counter-intuitive' to do so. Against this sort of objection argument on the basis of a closed corpus is clearly unreasonable. However, it is not without relevance to this issue to recall that alla (and ille) are traditionally (i.e. in the native tradition as well as the Western) treated as verbs: and that from the
historical point of view, to the extent that Ceylon Tamil gives evidence of the form *allar* in such cases as 82, it would seem to be preserving what is recorded in DED 196 as *allar*, the third person plural masculine form of the Tamil verb *al*—'to be not so-and-so', and to the extent that it shows *alla* Ceylon Tamil would seem to be in accord with what DED notes of modern Tamil, that *alla* has come to be used for 'all persons and numbers'.

(iv) In his fourth point, Kandiah states (1967: 73-4) that because copula verb phrases take similar expansions (e.g. time-phrase expansions) to those of other verb phrases, the copula has to be posited in deep structure; for such expansions are developed out of his node *Pred.P.*, and 'if the Copula Verb were not posited, the Time expansion would have to be developed differently for the two different patterns. In Copula sentences it would have to be developed as a non-adverbial element of equal status with the subject NP and the Complement, while in other sentences it would have to be developed as an adverbial expansion of the verb, of lower status than the subject NP'.

Kandiah's proposal, in terms of his Base Component, and concerning the deep structures required for an analysis which treats the copula as a purely surface element may be set forth for Coorg as follows:
83. Non-copula pattern

'Bollu is taking his meal now'.

84. Copula pattern

'Bollu is now a doctor'.

However, this is not what is proposed here; it is not even possible to accept the Non-copula analysis for the sake of argument, for the reasons set out in what follows.

It would seem to be the case that the class of expansions that may be taken equally by the two patterns is quite restricted - as is discovered when looking for examples. On the other hand, a large number of expansions are peculiar to either the one or the other
pattern. Thus, adjectival expansions involving any member of the class of 'true' adjectivalis are restricted to an NP node: the same point is made, with reference to Malayalam, in Asher (1968: 95) - '..."adjectivals" in Malayalam form a category whose occurrence will be stated as being restricted to pre-nominal position'. Further, adverbial expansions such as [melle], 'slowly, gently' (a 'true' adverbial), or a large class of abstract nouns showing the 'locative' case, such as [nida:na:tili] (lit. 'in the end'), 'eventually, in a leisurely way' or [jo:ri:li] (lit. 'in force, speed'), 'forcefully', are all by definition restricted to the verbal node. What is suggested here - and Kandiah also suggests this in a footnote to his argument - is that those expansions which are taken equally by both copula and non-copula patterns are to be treated as sentential adjuncts, or possibly as Fred. P. adjuncts. This would involve revising the P-marker 83 so that Time P. stands as an immediate constituent of S or of Fred. P.; and it would not be difficult then to formalise the two patterns, 83 and 84, in such a way that their Time P. expansions are of comparable status.

(v) Kandiah's fifth point (1967: 74-5) concerns the formal (phonological) identity between his copula aaka and the verb aaka, 'to become (cp. Coorg [a:g] - 'to become'). He states that, to show the syntactic similarities between the two, it is necessary to set both up as constituents in deep structure; that only in this way can the grammar account for the similarity of:

85.  murukan panakkaaran aanaan

'Murugan became a rich man'

and
Kandan vayttiyar aavaar

'Kandan is a doctor'

Kandiah then says that because there are differences in these verbs, despite their basic similarity, the deep structure must recognise two verbs, aaka₁ and aaka₂. He calls them \( V_{\text{Cop Act}} \) and \( V_{\text{Cop Iden}} \) (referring to the forms double-underlined in 85 and 86, respectively.

It is clear that Kandiah's point here is consistent with his decision to accord deep status to the copula; but it in no way supports that decision. The situation illustrated for Ceylon Tamil by 85 and 86 has been set out above for Coorg, in examples 56 to 59. There, it was argued that the distinction between 'becoming' and 'being' sentences in Coorg (parallel with Kandiah's patterns with \( V_{\text{Cop Act}} \) and \( V_{\text{Cop Iden}} \), respectively) may be handled in terms of dynamic and static aspect: and that in sentences marked for dynamic aspect the copula occurs in surface structure as the base \([a:g]_\text{-}\), whereon the appropriate aspectual marker may occur. The situation is not materially altered by the fact that Coorg has no surface structure copula form in aspectually unmarked sentences (i.e. a corresponding form to Kandiah's \( V_{\text{Cop Iden}} \)). That is, if there is no objection in principle to an analysis which says that what is realised as aavaar in 86 is represented by zero in Coorg surface structure — and this sort of analysis is tacitly assumed in any cross-language comparison — then this analysis at no point makes contact with the issue of the status of the copula. Hence there would seem to be no reason for proposing a radically different status for the Coorg copula from that for the Ceylon Tamil copula on the basis of
this particular difference in the data. To summarise the reply to Kandiah's fifth point, it may be stressed that the argument for two copula verbs, to handle what are here called static and dynamic sentences, is not an argument for the deep status of the copula; since an analysis which recognises static and dynamic aspect, but no copula, in deep structure is in principle able to account for the same facts. If it can be shown that it is desirable on other grounds to set up static and dynamic aspect, then this would be an argument against setting up the copula as a deep element (for a discussion of static and dynamic aspect on other grounds, see pp. 161-162 below): for the moment it is sufficient to note that there is nothing in Kandiah's fifth point in favour of such an analysis.

(vi) Kandiah's sixth and final point (1967: 75-76) is related to the foregoing. It is that, because the copula verb occurs in 'relativised' constructions, it must be a deep element. It is not suggested here that this is put forward as an argument in the same sense as the previous five, but more as a confirmatory piece of evidence: but, under either interpretation, it is insufficient. Thus far, examples of 'relativisation' (this term is from Kandiah, 1967; but Asher, 1968: 105-6 is more satisfactory in calling this 'adjectivalisation', and it is this latter term which is used in this chapter) have occurred in 30, 31, 42, 80 and 51 above: of these only 30 and 31 involve the copula. These latter two are repeated here, and further cases of copula-relativisation given:

30. [afrikatil(i) ulle sima]  
Africa-in being lions  
'The lions in Africa'/'Lions in Africa...'
31. [a: to: tat'im(i) ulle ku:val]  
that estate-in being well  
'The well in that estate...'

87. [ikka ulladi po:yiruva]  
now being-it will-completely-go  
'What exists now will pass away'.

88. [su:raŋga:ne raŋga]  
heroes-being kings  
'Heroic kings/Kings who{are\}heroes...'

89. [santo: savu:ne kelasa]  
happiness-being work  
'Joyful work...'  

90. [santo: savulle kelasa]  
happiness-being work  
'Joyful work...'

The above examples cover the main types of copulative function discussed so far (save for possessive function: this is reserved for analysis immediately following this), but show no new facts that would require a distinct treatment of the copula from that proposed for verbal predicate constructions. Thus, 30, 31 and 87 show the form [ull]- in constructions derived from existential predicates (30 showing neutralisation of the existential/locative contrast, 31 showing a preferred locative interpretation and 87 an unambiguous existential interpretation), whereas 88 shows [a:g]- in the construction derived from the relational predicate type. Finally, 89 and 90 represent an overlap of the existential and relational predicate types, with no easily discernible difference in meaning. The overlap is best treated as a characteristic of the syntactic
behaviour of [santo:sa], which (like a number of other loanwords denoting abstract concepts) apparently stands between the clear instances of nominals and existential predicate elements (e.g. verbs). In this connection it is important to notice that [santo:sa] (and the other words of this type) may occur predicatively in a sentence negated either by [alla] (the relational construction) or by [ille] (the existential construction), again apparently with only a slight difference of meaning. Providing a helpful gloss for such items is rather difficult; perhaps 'happiness' and '(being) happy' capture the distinction involved here.

Finally on Kandiah's sixth point, it may be noted that an analysis which treats the copula as a superficial element will have to examine the adjectivalisation construction illustrated here for the purpose of deciding at what stage the copula is to be written into the string: i.e. whether before the transformation or after it. In this context, Kandiah's point is relevant, and would seem to point to the preference of writing in the copula before the transformation so that its base form may be determined with reference to the underlying predicate construction, thus obviating the necessity for providing distinct rules for determining the shape of the copula in both predicate and adjectivalised structures. But it in no way argues for the deep status of the copula.

2.2.2 The possessive copula

In conclusion to his discussion of $V_{\text{Cop Iden}}$ and $V_{\text{Cop Act}}$, Kandiah goes on to describe a pattern which he keeps distinct and calls 'Possessive'. This is the counterpart in Ceylon Tamil to what has been described above (p. 134) as the 'possessive function' of the copula in Coorg. For this pattern, Kandiah sets up a third verb
aaka, which is interchangeable with two other verbs in this pattern, iru and ulla. This interchangeability is stated as holding at least in the cases where there is an abstract subject nominal. iru and ulla are cognates of Coorg [ir]- and [ull]- respectively. Kandiah says (1967: 79) that the 'possessive' verb aaka is deletable from surface structure, but that it is nonetheless necessary to 'posit' it; by this he appears to mean that it must be accorded deep status: 'The reasons for doing so are identical with some of the reasons above for establishing that there is a $^\text{VCop Iden}$ and will not be repeated here'. He thus takes it as a sort of copula (by implication) and this agrees with the analysis of Coorg presented above, in examples 16-26 and 31-34. The situation in Coorg is somewhat different in that [ir]- and [ull]- have merged in the language in a way that they have not in Ceylon Tamil; but whether this materially affects the status of the copula may be doubted. As Kandiah suggests, the nature of the subject nominal (in feature terms, [+ abstract]) seems to be a conditioning factor in the interchangeability of aaka and iru and ulla in Ceylon Tamil 'possessives', and an analysis which excluded the copula from deep structure could account for the surface alternation of these three forms in this construction with reference to the subject nominal. Certainly there is no justification for handling 'possessive function' copula sentences in Coorg as distinct from the other copula types. Asher (1968) gives pertinent examples from Malayalam, where irikkuka and unta (cognate with [ir]- and [ull]- respectively) have remained distinct verbs; it is noted there that 'the use of irikkuka in a way that allows it to be considered without question a 'verb of being' is very restricted' (1968: 102) and this restriction would seem to involve setting up a number of modal
categories for the deep structures of copulative sentences so as to account for the variations within the locative type that are illustrated there for Malayalam. Thus, in the frame

avan viittil ——, unte makes the unmarked assertion 'he is at home' and same implies that this is stated by 'someone who is elsewhere than in the house'; while irikkuka in avar vemute

viittil —— implies that 'They are just at home' (i.e. they have no work to go to.)' (1968: 103).

This concludes the discussion of Kandiah's position regarding the status of the copula.

2.2.3 The adverbialisation transformation

It remains to point out one further construction in which the copula occurs, before summing up. This construction is described in Asher (1968: 106-7) as the result of an adverbialisation transformation. The following examples are given for illustration:

91. ["ettira bayya ke:ra:yi ke:rir a bayya a:la:yi ba:nati po:paku va:].

bullock behind rope— rope—of behind man— sky—in go—is—it—

— of become become not?

'Isn't there a man at the reins of a bullock flying through the sky?' (From a story text, describing a miraculous vision).

92. [male jo:ra:viti pojjati].

rain force—become rained

'The rain beat forcefully'

93. [ave po:diya:vit(i) o:dici].

he fear—become ran

'He ran fearfully'.
Ammathi Nad-in, single blow-in famous-person people-of-the become-and Nad-of

'In Ammathi Nad, Kullachanda Chondu, the famous single-sticks

kodi kũnįya:vitu: kullacanda coːndu bolandandiŋjati

beloved child-become Kullachanda Chondu was-growing-up and

fighter and beloved child of his people, grew up'.

The underlined forms in 91-94 are from the base [aːɡ]-, 'to become'. 91 shows [aːyi] where the others have [aːyiti] (this latter suffixed by the conjunctive particle [uː] in 94) and this divergent form needs explaining. The story from which 91 is extracted is a traditional one, and 91 appears to represent a conventional form of the description. It is just possible that [aːyi] looks to Malayalam aayi (as set out in Asher, 1968), but there is no need to look further than Coorg for an explanation: quite commonly, and especially in set phrases, the verbal form in -[iti] (traditionally called the past participle in European descriptions of Dravidian languages, and expressing perfective aspect) shows a short form which consists just of the past tense marker; thus:

95. [AVE cattii poːci],

which shows the past tense marker underlined (followed by a non-morphological element, or 'enunciative' vowel [i]) is said, under conditions of elicitation, to be the short form of:

96. [AVE cattiti poːci]

he having went -died

'He died' (almost with the sense 'He went and died').

In the case of [aːɡ]- the past tense marker is -[i] suffixed to
a form of the base which does not show final 
-[^g], and therefore there is no difficulty in taking [a:y.i] as the short form of [a:y.i"].

Granted, then that there is only a single underlying form to be accounted for in these examples, it is clear that they all show a pattern that is apparently related to copula constructions. However, not all the examples are of the same sort. 92 and 93 show nominal + [a:y.i" as a type of manner adverbial, while [vi:rana:y.i"] and [kodi kuññiya:y.i"] (the forms without the conjunctive suffix) in 94 are clear cases of 'past participle' function. The relationship between the two types of construction is superficially clear; but there are differences that require a distinct treatment for each. In Coorg, the intonation pattern is the clearest marker of these differences, and Asher (1968) is able to draw on the written tradition of Malayalam to point out the same sort of fact - that the 'participle' is graphemically a free form while the adverbialisation marker is 'inseparable from the noun which it follows' (1968: 106). Exactly what analysis should be adopted for each of these patterns is unclear (and 91 would appear to be a problem in statement in any event since it shows forms which are on the border-line between participial and adverbial function), but it seems natural to assume for both patterns that they are derived from an underlying copula predicate construction. Thus:

97. ['ett"ra bayya ke:r(i) undi"]
   'At the back of the bullock are reins'

98. ['male jo:r(i) undi"]
   The rain is heavy'

99. ['avãngi po:di undi"]
   'He is afraid'
100. [ave kodi kumñi]

"He is a beloved child"

illustrate the sort of constructions to be posited for 91-94. The adverbialisation transform is to some extent similar to the adjectivalisation transform discussed above (p. 145), but it is to be noted that it obligatorily involves that form of the copula ([a:g]-) which indicates dynamic aspect: the sort of alternation noted in adjectivalisation between 89 and 90 above is therefore not possible. This would suggest either that the operation of the transform be restricted to embedded copula sentences which show dynamic aspect, or else that its operation should obligatorily assign dynamic aspect to the embedded sentence. A reasoned choice between the two cannot be made at this point (but see p. 165 below).

2.3 The analysis of the copula

What follows here is a summary of the various types of copula predication in Coorg and an outline of the overall analysis they suggest.

2.3.1 Summary

There are two basic patterns involving the copula, the relational and the existential. The first of these shows no surface copula in maximally unmarked sentences, and shows [alla] in the negative in otherwise unmarked sentences: distinctions of tense, mood and aspect are marked on the base [a:g]-, and the negative counterparts of these sentences show morphologically regular contractions of the base [a:g-] + [ille]. The second pattern optionally shows the copula verb [ull]- in maximally unmarked cases, and [ull]- is replaced by [ille] in the negative forms of otherwise unmarked sentences: tense
and mood are marked on [ir]- (for static aspect) and on [a:g]- (for dynamic aspect), and the negative counterparts of these sentences show regular forms with either [ir]- or [a:g]- + [ille]. The copula system is unique in Coorg in showing what is superficially a three-term distinction of tense: however, it is probably better to take this rather as, first a distinction between marked and unmarked, and then a two-term distinction of tense within the marked category. In terms of this analysis, the following table may be set up to illustrate the range of possibilities:

<table>
<thead>
<tr>
<th></th>
<th>Unmarked (for tense/aspect)</th>
<th>Marked Past</th>
<th>Marked Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos</td>
<td>∅ / [ull]-</td>
<td>{ [a:y]-</td>
<td>[a:p]-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[a:m]-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[a:c]-</td>
<td></td>
</tr>
<tr>
<td>Neg</td>
<td>[alla]/[ille]</td>
<td>[a:yile]</td>
<td>[a:pile]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[iñjile]</td>
<td>[ippile]</td>
</tr>
</tbody>
</table>

**Figure 1: The forms of the copula**

In the first, 'unmarked', column the table shows the forms for the copula in both relational (before the slash) and existential (after the slash) sentences. All the remaining four 'marked' columns are relevant to existential sentences, but the dynamic versus static contrast does not apply to relational sentences that are marked for tense: only the forms recorded in the 'Dynamic' column may occur in these. For simplicity, the various modal categories have been eliminated from the table, but they present no problem of statement since they are formed on [ir]- or [a:g]- exactly as described for the two categories of tense.
2.3.2 The analysis

(i) The formalisation of the deep structure of copula sentences raises many problems, and what is offered here is not to be taken as a final statement. However, it is worth pointing out that the formal distinction in Coorg between unmarked relational sentences (negating with [alla]) and unmarked existential sentences (negating with the distributionally far more common [ille]) agrees with the proposals concerning noun phrases in Bach (1968: 103-4).

There it is argued that the peculiar properties of predicate nominals (such as concordial relationship with the subject nominal, and restrictions on the kinds of determiners that may occur - features that are attestable for Coorg also) lead one to regard predicate nominals as not being noun phrases in underlying structure; and that a treatment of them which introduces them into noun phrases by way of embedded relative predication can account for their peculiarities. Bach envisages 'a noun phrase consisting of a pronominal-like item (of a nature yet to be precisely determined) plus a further embedded sentence ' (1968: 104). Adapting Bach's argument from the restrictions on determiners with predicate nominals, it is possible to have:

101. \[\tilde{n} (ori) \hat{d}a:k\tilde{r}i\]
    he (a) doctor

'He is a doctor',

but the following is not natural without an expansion:

102. \[\tilde{n} a: \hat{d}a:k\tilde{r}i\]
    he that doctor

'He is that doctor'

This can be explained if \[\hat{d}a:k\tilde{r}i\] in both cases is derived from
the subject NP node of an embedded sentence. In the first case the indefiniteness of the predicate nominal is signalled by the fact that the embedded sentence is an existential copula type, such as underlies:

103. \[\text{[da:ktri undi]}\]

'There is a doctor'.

The indefiniteness of the subject NP in this pattern is a feature of English also: Lyons (1968: 390) points this out in the following way - 'Existential sentences typically have an indefinite, rather than a definite, subject: this fact raises the possibility that they should be treated, in a syntactic analysis of their deep structure, as indefinite locatives...' On the other hand, 102 would be derived from some other sentence pattern, i.e. which allowed a definite subject nominal, and this would also account naturally for the need in this case of an expansion (the predicate of the embedded relative sentence).

(ii) In terms of this analysis, the grammar would recognise [alla] as the negating particle of a particular class of expressions of which the predicate constitutes a nominal derived from an embedded relative sentence. This analysis is supported by what seems to be an important fact; namely, that the only other use of [alla] in the data is in cases where a (negative-interrogative) marking is required on a whole sentence (as opposed to an element within it):

104. \[\text{[\~ave bappa]}\]

'He will come'

105. \[\text{[\~ave bapp(a) alla:]}\]

'He'll come, won't he?'
106. [idd naːda pustak(a) alla:] it me-of book isn't it?

'It's my book, isn't it?'

104-6 show the similarity of function played by [alla:] in 105 (with an intransitive verb) and in 106 (relational sentence): in the former case, the embedded relative may be most clearly illustrated by another English version which, less idiomatically in English, translates the Coorg more faithfully:

107. '(It is the case) that he will come, isn't it?'

(iii) A possible formalisation of the foregoing would set up a basic bipartite sentence pattern of NP + Pred., together with the feature [+ relat.] (relational) assigned to this configuration; [+ relat.] would automatically be assigned the further feature [+ NP'S], indicating that a type of relative sentence embedding is obligatorily to be performed:

108.

At this stage an obligatory 'segment transformation' (as used in Jacobs and Rosenbaum, 1966: 64) will introduce NP and S as constituents into the deep structure:

109.
This gives the basic configuration of the required deep structure. The NP introduced by the segment transformation rule is rewritten as a proform whose exact nature it is not possible to state at this stage; however, it would seem plausible to have assigned to it automatically all the features of the subject NP of the embedded sentence. During this process, further development may be blocked at any stage where the features of the subject NP are not suitable (for example, there would appear to be certain restrictions on having pronouns as predicate nominals; thus:

110. [a: man « he, is probably to be excluded as ungrammatical). The embedded S is developed as an existential predicate sentence with existential function; it would seem possible in principle to restrict its development to this pattern by reference to the feature [+ relat] in the matrix sentence, or else to leave it to a relational transformational rule, which will have to erase the subject NP of the embedded sentence, to block further development of the construction if the embedded sentence is not an existential predicate type. Below is given the proposed deep structure tree for sentence 43:
(iv) A simpler deep structure configuration may be proposed for the existential pattern. The principal differences here are between the existential, the locative and the possessive functions, and the examination of these that has been made suggests that these are all linked. Following Lyons (1966: 390), it is proposed here that all these be treated as types of 'locative' constructions. In these terms, the existential function is filled by an indefinite locative predication, and the locative and possessive functions are expressed as (respectively) static and dynamic variants of a definite locative predication. The Pred. node in this construction would be assigned the feature [+ loc.], and then this would be further developed as [+ def.], which would in turn be developed as [+ dynamic]. Therefore, the P-Marker for the purely existential sentence 18 would be as follows:
At this point, a segment transformation rule will introduce a Loc.P. constituent into the P-Marker, assigning it the features [+ loc., - def.] that are specified for the Pred.:

Where the Loc.P. is [- def.], it is realised as zero. Where the Pred is specified as [+ dyn.], the copula will mark this aspect on the base [a: g] -.

Where [+ loc.] is developed as [+ def.], however, the Loc.P. established by the segment transformation rule will be developed further; the P-Marker for sentence 47 will be as follows:
47. ['ave maneli undi']

'He's in the house'.

The essential similarity, noted above, between this pattern and that which expresses possessive function may be illustrated by presenting the P-Marker for 40:

40. ['naksi cenna dudd(i) undi']

'I have some money'.
The criterial difference between 114a and 114b is that in 114b the nominal (pronoun) under the node Loc.P. is specified as [+anim.], whereas in 114a it is [-anim.]; but this is actually a simplification of the issue. The feature [+hum.] also seems to be relevant, inasmuch as it is possible to express in this way either possessive or locational function, given a [+anim, -hum.] noun such as [na:yi] 'dog'; thus both the following occur:

115. [a: na:yi li pulu undi]

'There are worms in that dog'/'That dog has worms'

25. [a: na:yi ki or i] udda ba:li undi

'That dog has a long tail'.

At this stage it is not clear how far the fact that [a: na:yi li] in 115 is a sentential adjunct rather than a predicate expansion affects this issue.

(v) The analysis suggested above for existential sentences, whereby the expression of existential, locational and possessive functions is linked to the notions 'locative', 'definiteness' and 'dynamicity', naturally suggests the possibility that a two-term directional distinction within the dynamic category may also be found within the same (i.e. copula) system. It is the case not only that such a distinction is found, but also that it seems to provide evidence of a close relationship between 'local' and 'grammatical' functions (for these terms, see Lyons, 1968: 295-304) involved. Thus the (stative) locative [manel i], 'in the house' is in opposition to both the dynamic forms [maneki], 'to the house' (allative) and [manefi], 'from the house' (ablative). Using the location of the house as a point of reference, the least marked verb forms collocating with [maneki] and [manefi] are [bari], 'come' and [po:ri], 'go',
respectively. For the same sort of reason, it has been proposed (Lyons, 1968: 397-9) that 'come' and 'go' in English be treated as directionally-marked forms of the dynamic copula. Further support for such an analysis within Coorg is not hard to find, for [bar]- and [po:]- are commonly used as auxiliary verbs just as are forms based on [ir]-, [ull]- and [a:gil]-; therefore, an analysis which tries to show a relationship between the copula and auxiliary verb systems is able to point to their surface identity in Coorg. Examples of the use of [bar]- and [po:]- as copula forms are:

116. [annane po:ce:ngi]

that go-if
manner

'If it turns out like that...'

117. [avangi cedi ba:ti]

him-to anger came

'He got angry'.

Examples of their use as auxiliaries are:

118. [ave catti po:ci]

he having went
-died

'He died'.

119. [ave geddandi ba:ti]

he winning came

'He was being successful'.

The relation between the local function of the allative marker -[ki] and its grammatical function is exemplified by the possessive types of copula predication presented above (p. 132). As far as the ablative marker -[ñji] is concerned, it plays an instrumental role in certain contexts with animate and inanimate nominals; with the
latter type, it is interesting to note that the basic locative form in -[li] is also a possible marker of instrumental function. Thus:

120. [a: su:lenji naid da duddi pa:1(i) a:ci]
that prostitute me-of money ruin became

'I lost my money because of that prostitute!'

121. [ave kunìina ko:li\'i poj\'ati]
he child stick-with beat

'He beat the child with a stick'.

122. [ave kun\'ina ko:li\'i poj\'ati]
he child stick-with beat

'He beat the child with a stick'.

(The last two sentences are fully synonymous, as far as could be determined during collection of the data.)

(vi) Finally, it will be noticed that in the P-Marker 114b the locative affix to the pronoun has the same form as the allative marker -[ki]. This is dictated partly by the fact that the Loc-P. nominal is [+anim, +hum], since with this class of nominals the basic locative marker -[li] cannot occur. But this does not wholly account for the fact that -[ki] occurs, for it has been noted above that it seems best to regard -[ki] as the marker of one sort of dynamic locative predication; if this is accepted, the problem arises as to how to introduce the feature [+dyn.] into the P-Marker 114b. Clearly it cannot be specified for the Pred. node as this stands above, for this would not have the desired effect (it would mean that a copula formed on the base [a:gi]—would occur in the surface structure, with the sense of money coming into possession of the notional subject). Possibly what one has here is further evidence to support the thesis
in Bach (1968) that predicate nominals should be introduced into sentences by way of relative clauses; for, if this approach is adopted, it would be possible to account for $-[ki]$ on the Loc. P. nominal by introducing that nominal into the underlying structure in 114b via a relative clause with the feature [+dyn.] specified in its predicate. (It is worth noting that exactly this process may be recognised in order to account for the facts of the adverbialisation transforms (pp. 149-152) which always show [a:g] in surface structure.)

3.0 Voice

The category of voice is appealed to in discussion of the data in this section: but since the morpho-syntactic phenomena that are to be dealt with here hardly correspond to what is traditionally handled under this term (i.e. 'active' and 'passive'), some explanation and justification of this usage is in order.

It should first be noted that restricting the category of voice to Indo-European active and passive constructions (also the Greek 'middle') hardly allows for revealing cross-linguistic statements to be made. Thus, for example, it is pointed out in Lyons (1968: 378-80) that one of the prime functions of the passive is to permit the construction of 'agentless' sentences; in Coorg, on the other hand, where there is no passive in the accepted sense, what is traditionally called the 'causative' construction fills this role (see the discussion below, pp. 172-173). Hence, one may want to recognise in this a typical function of what may in general terms be called 'voice', implemented in different constructions in different languages. In much the same spirit, Hockett (1958) proposes a characterisation of voice in terms of general grammatical theory as
follows: 'Voice-distinctions apply to verbs, and have to do with the relationship between the subject and the verb, the verb and its object, or the verb and some other noun tied to it in an intimate way' (1958: 236). In particular, Lyons (1968: 360-8) provides a formalisation of certain intransitive, transitive and causative constructions of English in the context of a discussion of voice; and Palmer (1971) explicitly recognises 'active', 'passive', 'causative', 'reciprocal' and 'reciprocal-causative-adjutative' within the category of voice in Tigrinya: 'clearly, if we do not confine voice to the European patterns of active and passive they (the five types just referred to) are simply different voices of the Tigrinya verb' (1971: 95).

However, one danger in the use of the term voice in this section must be specifically guarded against. It is traditionally a label for a grammatical category, where 'grammatical' is generally understood to refer to the syntax of the language in question: in what follows, however, certain intransitive, transitive and causative constructions will be introduced as involving 'voice-related' verb forms, without prejudicing the issue of whether the relationship in question is to be specified in the syntactic component, or in what manner. This issue will receive special consideration later on (pp. 178-92), where it will be shown that a number of voice-related verbs in Coorg actually require a type of lexicalist analysis: the formalisation of this is a separate issue again, which will be taken up towards the end, and developed in the following three chapters.

As a starting point for the discussion below, the proposal in Lyons (1968: 364) is taken up, whereby the relationship between certain one-place, two-place and three-place constructions may be formalised by
including $S$ as a possible rewrite of $\text{Pred}$ in a rule such as:

$$
123. \quad \text{Pred} \rightarrow \left\{ \begin{array}{l}
\text{Verb} \\
\text{Nom} + \text{Verb} \\
S
\end{array} \right. 
$$

3.1 'Intransitive', 'transitive' and 'causative'

The rule just cited formalises the distinction between 'basically transitive' nuclei (where $\text{Pred}$ is expanded as $\text{Nom} + \text{Verb}$) on the one hand, and, on the other, 'embedded two-place nuclei' (where $\text{Pred}$ is rewritten as $S$, which is in turn expanded as a one-place nucleus). In terms of this analysis, the grammar recognises both one-place and two-place nuclei, of which all the first are 'intransitive' and of which some of the latter are 'basically transitive' and the rest are 'derived transitive' nuclei. There is no case in the data of a verb which would require the setting up of a 'basically causative' (i.e. a primitive three-place nucleus) pattern, but there are a number of cases of what may be called 'derived causatives' (where $\text{Pred}$ is rewritten as $S$, which is then expanded as a two-place nucleus).

3.1.1 The data

The following sentences illustrate the facts to be accounted for:

124. \[ \text{payyu me:ya} \]
    cow graze (intr)
    'The cow grazes'

125. \[ \text{attaka:re payyuna me:pa} \]
    cattle-man cow grazes (tr)
    'The cowherd grazes the cow'
126. [paksiya maratinji pa:rici] birds tree-from flew 'The birds flew from the tree'
127. [ponna:li nelli pa:ticj] woman paddy winnowed 'The woman winnowed the paddy'
128. [kumni pandi kari tindati] child pork curry ate 'The child ate the pork curry'
129. [avve pandi kari kumniki tittici] mother pork curry child-to fed (by hand) 'The mother fed the child pork curry'

Also:

130. [rayte (attaka:rana gundi) payyuna m:scittati] farmer, (cattle-man-by- cow caused-to-graze means-of) 'The farmer got the cow grazed (by the cowherd)'
131. [kika:ri paksiyala maratinji pa:ricittati] hunter birds tree-from caused-to-fly 'The hunter made the birds fly from the tree'
132. [ta:yi (avvana gundi) kunina pandi kari timbicittati] grand- (mother-by- child pork curry caused-to-eat mother means-of) 'The grandmother got (the mother to get) the child to eat the pork curry'

(Parenthesised elements are optional.)

3.1.2 Discussion

Sentences 124-9 illustrate what is traditionally called an
intransitive-transitive relationship. Sentences 124, 126 and 128 are, further, related to 130-2, respectively, as non-causative to causative. The immediate concern of this discussion is to characterise the differences between 125 and 130, between 127 and 131 and between 129 and 132. However, it is first necessary to make explicit certain features of the examples given.

(i) The principal difference between 124 and 125 (apart from the extra nominal in 125) is the fact that the transitivised form of the verb has -[p]- as the non-past tense marker where 113 shows -[v]- (underlined). This is most conveniently analysed by setting up the category 'bilabial place of articulation' as the marker of non-past tense, and then recognising within this two sub-categories, namely, 'lax' (-[v]-) and 'tense' (-[p]-) manner of articulation. This is the analysis that lies behind the traditional approach to this area of South Dravidian morphology and syntax; in these terms, the transitivised forms all show 'tense' articulation of the non-past affix. This outlines one of the most common forms of morphological alternation between pairs of verbs in Coorg that are related to each other as 'intransitive' to 'transitive' (for the most part; there are some cases of 'transitive' verbs linked to what appear to be 'causatives' by similar processes, and these are discussed immediately below). However, it is not the only type of alternation, as may be understood from an examination of 126 and 127, where the 'lax'- 'tense' variable in the verb is not a marker of past or non-past tense but is the final element of the verb base; and -[r]- and -[t]- represent the lax and tense articulations of this, respectively. In 128 and 129 the alternation is different again, the opposition this time being between the 'lax' -[nd]- and 'tense' -[t]- (accompanied in
this instance by lengthening of the preceding vowel); the nasal in
the lax form represents the final element of the base, and the
following voiced stop represents the marker of past tense; while the
voiceless stop in the tense form represents the base-final element.
It will be shown in the next chapter that 'lax' and 'tense' are
useful phonological categories for treating a whole range of these
alternances, and that what is involved may be analysed as two
distinct but related types of morphological alternation, each
expressing the same function. In this section it is necessary to
consider the syntactic implications of this voice function. In this
respect, 124 and 125 are wholly regular, being straightforwardly
related as intransitive to transitive respectively. 126 and 127, on
the other hand, show a phenomenon that is very common among such
pairs of verbs; namely, a tendency towards specialisation of meaning
of the transitive counterpart. It should be emphasised here that the
distinction between the opposition -[v]-/[p]- on the one hand and
-[r]-/[t]- on the other has nothing to do with the semantics of the
verbs involved; there are numerous cases of semantically regular
transitives showing final -[t]- where their intransitive counter-
parts show -[r]- (e.g. [a:r]-, 'to dry (intr)'/[a:t]-, 'to dry (tr)').
The semantic connection is not hard to supply between the pair
[pa:r]-, 'to fly, jump' and [pa:t]-, 'to winnow (= make chaff fly
off from grain)', and the formal features of the verbs involved
encourage the establishment of the connection. Informants would
typically volunteer these connections, where they felt perhaps that
some explanation was required to an outsider. The way in which the
grammar formalises these intuitive connections is a part of the
argument of this chapter. Regarding the skewness of the meaning-
opposition in the pair of verbs under discussion it should be pointed out that Lyons (1968: 360) discussing English examples of what is apparently a very similar set of verbs, such as *lie/lay, fall/fell*, etc., notes that the transitive verbs in these cases are 'more specialised in their selectional possibilities than the corresponding intransitives'. It is exactly in selectional restrictions that the distinction between [paːr]- and [paːt]- is to be looked for (i.e. what sort of object nominal is made to 'fly' or 'jump'). (The fact that Lyons calls such verbs as *lay, fell*, etc. 'morphological causatives' is not a reason for supposing that he is dealing with a different type of verb to what is being illustrated here from Coorg - rather, his terminology is different, because his analysis is in this respect different from what will be presented here; see below, pp.184-188).

Finally, 128 and 129 are distinct from the foregoing in that 128 is itself a transitive construction, and it would seem odd to have a description whereby a process called, say, 'transitivisation' could be applied to such. Accordingly, it is decided here to adopt the terminology of Kandiah (1967, 1968) wherein a similar set of verbs in Ceylon Tamil is called the set of 'volitively related' verbs, the 'involitive' being the forms in 124, 126 and 128, and the 'volitive' being those in 125, 127 and 129. (However, this does not imply that Kandiah's analysis of this type of verb relation is accepted; see below, pp.178-184).

Only eight transitive verbs, out of a total of more than eighty intransitives, are found in the set of verbs that are open to the volitive relation. Only in two cases ([bud]-, 'to let go'/[budít]-, 'to make let go' and [pad]-, 'to suffer'/[padít]-, 'to make suffer')
are the pairs related as transitive to causative; in two other cases, there is simply a specialisation of meaning in the volitive form ([mä:r]-, 'to sell' / [ma:t]-, 'to change' and [biri]-, 'to open (jack-fruit), dismantle (house)' (with lax non-past and past affixes)/ [biri]-, 'to spread (leaves, blanket)' (with tense non-past and past affixes)); and in the remaining four cases, there is a fairly close semantic correspondence but not (it will be argued below) such as would justify calling the volitive form in each case the 'causative' of the corresponding transitive ([ari]-, 'to find out' / [arip]-, 'to inform, tell'; [tinn]-, 'to eat (not rice)' / [ti:t]-, 'to feed (by hand)'; [ka:n]-, 'to see, seem' / [ka:t]-, 'to show'; [kada]-, 'to cross' / [kadat]-, 'to take across').

(ii) Sentences 130-2 all show verb forms with -[c]- the 'causative' marker (double underlined) followed by the element -[itt]-. There are good reasons for keeping these two elements distinct; from a purely descriptive point of view the evidence is as follows: -[c]- is followed by -[itt]- in all past forms of causative verbs, and by -[ir]- -[id]- in all non-past forms. But -[itt]- (past) and -[ir]- -[id]- (non-past) are also the form of the 'completive' suffix to verbal bases. Therefore it is decided here to state that in Coorg morphotactics the causative suffix is obligatorily followed by the completive suffix, since this will avoid repeating the same set of realisation rules for two distinct suffixes. From a comparative point of view also it is more useful to set up -[c]- as the causative suffix, rather than the forms -[cir]- -[cid]- (non-past) and -[citt]- (past); on this point, it should be noted that Emeneau (1967) sets up -c- for the causative suffix in Coorg.
It remains to characterise the differences between 125, 127 and 129 on the one hand, and 130, 131 and 132, respectively, on the other. There are certain superficial similarities—for example, in each case concord operates between the subject nominal (the first element in each sentence) and the personal ending of the verb. Moreover, [passyu], the subject nominal of 124, becomes the object nominal (showing the objective case marker-[na]) in both 125 and 130. The same statement cannot, of course, be made for [pakṣiya] in 126, but only because of the selectional restrictions that operate against having a nominal such as [pakṣiyala] (to quote its objective case form in-[la]) as object of [pa:t]--; this does not affect the fact that the basic sentence pattern relationship between 126, 127 and 131 is the same as that between 124, 125 and 130, respectively. Thus, [nelli\" in 127 is a further example of what has been noted already for inanimate nominals—an 'objective' form with no overt case marker. 129 and 132 show greater superficial differences; [kuññina] is objective in 132 but [kuññiki] shows the allative case affix-[ki\"] in 129. However, this is superficial, in the sense that 129 can most naturally be accounted for by specifying [ti:t]- in the lexicon as taking 'food' nominals as direct object and [+anim.] nominals as indirect object, and glossing it here as 'to feed to' rather than as 'to feed'. Furthermore, some informants hesitate between the choice represented by [kuññina] and [kuññiki] in such sentences as 129, with no determinable semantic differentiation; this situation is presumably dependent upon the fact that [pandi kari], as an inanimate nominal, may optionally have no overt objective case marker.

But there are basic differences between the volitive and causative
patterns, and the greatest of these is that in 130, 131 and 132 the notional subjects of the main action are identical with the grammatical subjects of the sentences 124, 126 and 129, respectively. (By main action is meant 'the grazing' in 124 and 130, 'the flying' in 126 and 131 and 'the eating' in 126 and 132, rather than 'the causing' of these actions.) By contrast, in 125, 127 and 129 the grammatical and notional subjects are in coincidence. The simplest test of this is the following: that, ontologically, it is left open in 125 as to whether the cow actually chewed any grass, and in 129 as to whether the child actually swallowed what was fed to it. The corresponding question, as to whether the grain actually jumped or flew in 127, is almost meaningless, since the divergence of meaning is so great: but it should be noticed that this is only a special case of the meaning difference that is being pointed out here - thus, to graze a cow does not 'mean' the same (necessarily) as to make it graze and to feed a child pork curry is not necessarily to make it eat it. In 130-2, however, what is being asserted is precisely that the cow grazed, that the birds flew from the tree, and that the child ate the pork curry - together with the additional assertion that this was caused by some ultimate agent (the farmer, the hunter, the grandmother). The immediate agent (the subject of the corresponding volitive construction) is typically not specified, being introduced where necessary via some sort of embedding (the cowherd, in 130; the mother, in 132).

3.1.3 The analysis of causative verbs

For the sorts of reasons just discussed, sentences such as 130-2 have traditionally been related to 124, 127 and 129, respectively, as 'causative' to 'non-causative', and there seems no reason to
object to this analysis, or this terminology (cf. the remark in Bally, 1932: 54 that 'logiquement, causer c'est faire qu'une chose soit'). The same terms, for the corresponding morpho-syntactic relationship, have also been adopted in transformational-generative works such as Kandiah (1967), where arguments are presented for taking a sentence such as 130 as the result of embedding the structure underlying 124 in the Object position in:

133.  [rayte Object maː dici]

farmer Object did

'The farmer did Object'.

Further, the intermediary (instrumental nominal) [attaka:ra na gundi] of 130 is treated in the same analysis as the result of another embedding into the matrix sentence before the embedding of 124; thus:

134.  [rayte attaka:ra na gundi Object maː dici],

where the underlined section is the (reduced) embedded sentence, and where [gundi] is historically derived from the perfective participial form of the verb [koll]-, 'to take', but in much modified form. The corresponding form in Ceylon Tamil (and in Malayalam; see, for example, Asher, 1968: 95) is not a problem in statement as [gundi] is in Coorg, since it is not a diachronic peculiarity. Concerning the Coorg form, it is worth pointing out that Cole (1867) only records it as [gondu], but that none of my informants had [o] as the first vowel. In many cases, initial [g]- was not present, or else only sporadically so, and the form was then identical with - and by some people identified with - the copula [undi]. (In some people's speech, loss of [g]- was accompanied by another feature, namely the use of the possessive case marker-[da]~-[ra]- instead of the
objective on the preceding nominal, thus: [āttakaːranda undi].

Possibly this may be held to have influenced the quality of the vowel, but the matter is extremely uncertain. [āttakaːrana] is in the objective case in the embedded sentence in 134, and the sense of 134 itself may be given literally as 'the farmer, having taken the cowherd, did Object'.

This analysis is taken here to be substantially correct, although Kandiah does not make it clear under what node the instrumental sentence is to be embedded; possibly a manner adverbial node might be argued for. Further, it is not at all obvious that it would be correct to take [maːd]-, 'to do, make' as the causative verb form for the matrix sentence in 133 and 134; it does not appear in surface structure (in this construction), and it could be argued that the choice of a particular lexical item for this purpose is artificial, and that a better (because more abstract) formalisation would be to embed the structure underlying 124 into a configuration which had [rayte] as subject NP and whose Pred was assigned the feature [+caus.]. But, all such details aside, the method of analysing causative sentences as embedded two-place or three-place nuclei, is not in dispute. Embedding is the only way to formalise the fact that the object NP of the causative sentence corresponds in each case to the subject NP of the related involutive construction.

3.1.4 The problem of 'volitive' verbs

Now it is necessary to turn back to a consideration of the volitive sentences 125, 127 and 129. To clear the way for a discussion of these, it may be recalled here that it has been proposed to recognise the following types of primitive sentence structure:
135. Intransitive: one-place nucleus.

S
/   \
NP (Plural)   Pred (Past)
/     \       /    \
N      VP      N
[paksiya]   [paric] fly

[paksiya pa:ri:ci] 
The birds flew'

136. Transitive: two-place nucleus.

S
/   \
NP (Singular)   Pred (Past)
/     \       /    \
NP (Singular)   VP
/    \       N
pro N
[ave] [na:y] dog
[po:yy] beat

[ave na:yina pojjati] 
'He beat the dog',

and, in addition, the following derived sentence structures:
137. Causative: embedded two-place nucleus.

S

NP (Singular)      Pred (Past)

[+ caus.]

S

NP (Plural)      Pred

Pro

N

VP

[caus.j]

YP (Plural)

[pa:ricittati]

'He made the birds fly'.


S

NP (Singular)      Pred (Past)

[+ caus.]

S

NP (Singular)      Pred

NP (Singular)      VP

Pro

N

N

N

Vtr

[ta:yi]

[kumin]

[pandi]

[kari]

[timn]-

[+caus.]

grandmother    child    pork    curry    cause-to-eat (Past)

[ta:yi kumin pandi kari timbicittati]

'The grandmother got the child to eat the pork curry'. 

(These P-Markers are greatly simplified and given by way of illustration only.)

It will be noticed that by this analysis there are two competing methods of accounting for two-place nuclei (either as primitive or as derived). The choice implies a borderline area between the two, between 'basically transitive' verbs such as [poyy]- 'to beat' and the causative two-place construction of 137. Any analysis of volitive verbs will therefore have to come to a principled decision to treat volitives either as derived forms (together with the causatives), or as basically transitive, at least so far as the syntactic component is concerned (i.e., it is left open for the moment whether, by this analysis, volitive verbs are derived with respect to their involitive counterparts in some other part of the grammar).

3.2 Two proposals regarding 'volitive' verbs

Two recent discussions are relevant to the issue just raised; Lyons (1968: 359-60, 363-5) and Kandiah (1968); this last work presents materially the same argument as is found in Kandiah (1967), but most references are made here to the later version, since this is published. However, neither of these analyses is accepted here. What follows is a critique of their proposals as these apply to the situation in Coorg, before an attempt at a third analysis, which will have implications for, and be further developed in, the following chapters.

3.2.1 Kandiah's proposal

The verbs that are the subject of discussion here, and in Kandiah (1968), form a small subset of the total stock of Dravidian verbs and most of them have cognate forms in more than one language of the group: thus, many of Kandiah's volitively related pairs of verbs
have closely corresponding forms and meanings in Coorg (cp. Coorg [ari]-, 'to find out'/[arip]-, 'to inform, tell' with Ceylon Tamil arintaan, '(he) found out'/arivittaan '(he) informed (someone)'), where -vi- in the second form is the form of the volitive suffix which this verb takes in Ceylon Tamil: even the form of the particular volitive suffix in this verb would seem to be morphologically similar to the final element in Coorg [arip]-, since Kandiah sets up -vi- ~ -pi- ~ -pni- as the variant forms in Ceylon Tamil). The once productive process that has led to their creation as a distinct subset is no longer operative. The issue has been complicated further in the southern Dravidian languages, excluding Kanarese, by the fact that the original morphological alternance marking the voice distinction between involutive and volitive forms has at some stage been extended analogically to include verbs that were once outside the subset.

Thus Coorg [p]- and Ceylon Tamil -vi- ~ -pi- ~ -pni- in the case just cited go back to an old causative suffix: see Kandiah (1967: 124-6). On the original voice suffix *-nk (involitive)/*-kk (volitive) and the spread of the morphological relationship, see Emeneau (1967). The use of 'analogically' at this point in the text perhaps assumes too much in the diachronic situation, but may be justified by the fact that all the types of morphological alternance involved may be handled in terms of the 'lax'/ 'tense' opposition: see above (p. 168) and the following chapter.

Typically, numerous types of base-final elements, the tense affixes and an old causative marker all have to be taken into account when discussing the morphology of these verbs in the languages of the group.

(i) While the morphological aspect of the volitive relationship
is wholly susceptible of statement, Kandiah (1968) points out that there are certain interesting differences in syntactic behaviour between the involitive and volitive forms of many verbs (in Ceylon Tamil: but his demonstration may be paralleled from Coorg also). He shows that the involitive form of a given verb may not necessarily take the same class of subject or object nominals as its volitive counterpart; and this has been shown to be the case in Coorg also (above, p. 170). He also shows that volitively related verbs may take adjuncts — say, adverbial expansion — quite independently of each other, and this too may be illustrated from Coorg; thus, in the following examples:

139. \[\text{nelli nida\text{n}atil(i) on\text{ng}ici} \]
   paddy end-in dried (intr)
   'The paddy eventually dried'.

140. \[\text{kinne nelli nida\text{n}atil(i) onakici} \]
   boy paddy end-in dried (tr)
   'The boy eventually dried the paddy',

the verbs \[\text{on\text{n}aig} \]— 'to dry (intr)' and \[\text{onak} \]— 'to dry (tr)' (showing the original type of morphological marking of the voice distinction, underlined) are independently modified by \[\text{nida\text{n}atili} \] (a locative NP with adverbial function); that is, 140 does not assert that the boy caused the paddy eventually to dry, but that after some period of not drying the paddy he eventually did perform the action (slowly or quickly). Thus the semantic evidence is against a transformational relationship between 139 and 140, at least in terms of the thesis put forward in Katz and Postal (1964), Chomsky (1965) etc. Concerning the possibility that transformations may affect meaning (Chomsky, 1971; Partee, 1971; etc.) it should be noted that the range of meaning
that may be so affected is apparently rather restricted (typically involving neutralisation of semantic oppositions in certain syntactic environments), and that the hypothesis 'has so far eluded both demonstration and refutation' (Partee, 1971: 21). (Note that even the sort of grammar proposed in Chomsky, 1971 can only handle regular meaning-changes transformationally, and therefore cannot account in that manner for the specialisation of meaning typical of volitive verbs.)

A further problem which Kandiah (1968) points out for Ceylon Tamil and which is also found in Coorg is that, with certain nominals as subject or object, only the involitive, or only the volitive form of a given verb may occur. But this, together with the independent taking of adjuncts noted above, is only a special case of the undisputed fact that the volitive verbs often show a distinct semantic development when compared with their involitive counterparts. Thus, besides the case of [pa:r]-, 'to fly, jump'/[pa:t]-, 'to winnow', Coorg also has (a brief selection):

<table>
<thead>
<tr>
<th>Involitive</th>
<th>Volitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>[para]-</td>
<td>[parat]-, 'to spread (grain)'</td>
</tr>
<tr>
<td>[olamb]-</td>
<td>[olap]-, 'to wash (plates, pots)'</td>
</tr>
<tr>
<td>[ka:n]-</td>
<td>[ka:t]-, 'to show' etc.</td>
</tr>
</tbody>
</table>

From this, it is clear that any analysis which attempts to derive a sentence containing, say, [ka:t]-, 'to show' from a sentence with [ka:n]-, 'to see, seem' will run into the difficulty of having to account for the fact that, where there is a [+anim., +hum.] object nominal, [ka:n]-, and not [ka:t]-, may occur (in the sense of 'meet') and where the object nominal is [-anim.] either [ka:n]- or [ka:t]-
may occur, but that in the former case no indirect object in the allative case is possible, whereas in the latter case it is possible and frequent. The important point here is not that the situation for these two verbs is particularly difficult to state (it will be seen that they are much closer in meaning, and therefore in syntactic behaviour, than either of the other pairs listed above); it is rather that the statement, once made, is not useful for such other pairs as \[\text{pa:r}]/\text{pa:t}]; [para]/[parat]; [olamb]/[olap]; etc., and that numerous statements will have to be made, some of great complexity, to cover all the volitively related verb-pairs in the language.

(ii) In the face of such difficulties, Kandiah (1968) rightly concludes, first, that it is impossible to specify the domain of operation of a transformational rule, and its resultant string, such that it can satisfactorily account for the derivation of all sentences with volitive verb forms from corresponding sentences with involitive forms; and, secondly, that it would be undesirable to do so, since 'any attempt...to treat volitively related verbs as a single base unit differentiated by a transformation would, even if successful, fall short of descriptive adequacy for it would deny deep status to the difference between them, and not allow to either of them the prerogative it in fact enjoys of behaving differently in the BASE from the other' (1968: 230-231). To this it may be added that, even if it were possible to specify all the necessary information in the transformational component of the grammar, it would be undesirable to do so because it would mean that an exceedingly large number of transformational rules would have to be set up, of which very many would be operative only with one verb in the language; and, to the extent that there were some general
principals of operation underlying many of these rules, the fact of their existence could not easily be formalised by the grammar, since each rule would be separate from each other.

(iii) There is, therefore, a fair amount of evidence to show that sentences with volitively related verbs are not to be transformationally related to each other. Kandiah draws the following inference: 'if two verbs are to be related to each other in terms of the deep structural relationship of volition, and if the base, while making valid and necessary statements about them, can only differentiate them, then it appears reasonable to assume that their relationship has to be established BEFORE they enter the base' (1968: 231). This is basically correct, especially in the stress laid on an extrasyntactic base relation between these verbs: but the unnecessary and limiting assumption is made that the volitive relationship is a deep syntactic one in some sense, and it is this which leads Kandiah to set up a 'Pre-Base Component' wherein the relationship can be established. However, it is not clear from his work in what sense one can talk of a 'deep structure' which is not identical with 'structure generated by the syntactic base', where a syntactic base is postulated. Of course, it is possible to set up a non-syntactic deep structure by working in terms of a semantic, rather than a syntactic, base (for example, the work of McCawley, 1968, Lakoff, 1971, and others) but in this case there is no independent syntactic base as Kandiah envisages; and his proposed PreBase Component is certainly not to be interpreted as a semantic base. Thus, his Pre-Base Component is of uncertain status, being (in default of being anything else) a sort of syntactic component to do the work which Kandiah has correctly argued should not be done by the syntactic base itself. A further objection
to his proposal is that the Pre-Base Component requires rules of the form (1968: 236):

141. \[ W + X + Y \rightarrow Z \]

which has unfavourable implications for the meta-theory of phrase structure rules, and, as a consequence, for the proposal that the syntactic base of a natural language can be formalised as a type of phrase structure grammar. This fact, taken on its own, is admittedly not a counter-argument; the position adopted here is that any work which is conducted within the framework of transformational-generative grammar must substantiate such a claim as this in a rigorous way however, and therefore to show that it is not a necessary claim (in order to account for the facts) is to invalidate it. Accordingly, Kandiah's proposal must be held to be well-motivated but finally ill-conceived; and the solution that is offered here represents an attempt to show that a Pre-Base Component is not necessary (or desirable) for a statement of the relation between involutive and volitive verbs. But first it is necessary to consider the discussion of 'morphological causatives' in Lyons (1968).

3.2.2 Lyons' proposal

It has been seen that Kandiah (1968) presents an argument for excluding the volitive relation from the syntactic base proper, and that the facts of Coorg likewise support this. The proposal in Lyons (1968: 350-71) however, is that such a relation has to be made in the syntactic base (although it should be borne in mind that this is not the same base that Kandiah, 1968 assumes), and, moreover, that it is to be formalised in the same way as the causative relation (i.e. by sentence-embedding). Therefore his arguments will be illustrated here from Coorg (although he presents them mainly in
English, French and Turkish), and examined. The crucial point in the discussion is that of 'syntactic relatedness', and it will be suggested here that this is not a simple notion.

(i) Lyons first sets up what he calls an 'ergative' pattern (1968: 352), where the same verbal form occurs in both one-place and two-place nuclei, and where the grammatical subject nominal of the one-place structure corresponds to the grammatical object nominal of the corresponding two-place structure. In this pattern, the most natural interpretation is that the object nominal is the notional subject of the action of the verb in the two-place nucleus, the grammatical subject nominal being taken as some sort of agent. Thus, the following sentences:

142. [kodi bi:jici]
flag waved
'The flag waved'

143. [ave kodi bi:jici]
he flag waved
'He waved the flag',

illustrate the (very rare) pattern in Coorg of a transitive sentence being derived from its corresponding intransitive by what Lyons calls the 'ergative, or causative, transformation' (1968: 352).

(ii) The second pattern that he sets up he calls 'causative', and distinguishes two sub-types within it, namely, the lexicalised and the non-lexicalised types (Lyons, 1968: 352-3, 369). The latter need not detain us here, since it has already been considered (examples 130-2); the former type may be exemplified in Coorg by:

144. [mudike cattati]
old-man died
'The old man died'
Of such cases, Lyons says (1968: 352) that they are 'pairs of different verbs between which the same syntactic and semantic relationship holds in corresponding transitive and intransitive sentences' (i.e. as has been illustrated in 142 and 143 above). Therefore 145 is a derived two-place structure (the result of embedding the underlying structure of 144 into the Fred node of a deep structure matrix with [ba:leka:re] as subject nominal. The analysis thus far requires setting up the following tree:

146. Ergative:

```
  S
 / \  
NP (Singular)   Fred (Past)
     \           [+ caus.]
      S
           /   
      NP (Singular)   Fred
                       \   
                        VP
                         Verg
                           \  
                            [bi:j]-
                             wave

[ave]   [kodi]

'He waved the flag'.
```
Lexicalised Causative:

\[
\begin{aligned}
& \text{S} \\
& \quad \text{NP}^{(\text{Singular})} \quad \text{Fred}^{(\text{Past})} \quad [+\text{caus.}] \\
& \quad \text{NP}^{(\text{Singular})} \quad \text{Pred} \\
& \quad \text{N} \quad \text{N} \\
& \quad [\text{ba:leka:re}] \quad [\text{mudike}] \\
& \quad \text{youth} \quad \text{old man} \\
& \quad \text{VP} \\
& \quad \text{V}^{\text{intr}} \\
& \quad [\text{ca:S}] \\
& \quad \text{die} \\
& [\text{ba:leka:re mudikana kondati}] \\
& \end{aligned}
\]

'The youth killed the old man'.

(The non-lexicalised causative pattern has already been illustrated above; 137-8, p. 177).

(iii) Lyons then turns to 'morphological causatives' and says that these 'fall between the two extremes of 'lexicalisation', on the one hand... and the use of the 'same' verb... in both transitive and intransitive sentences, on the other' (1968: 360). He seems here to be talking in terms of morphology, for he goes on to note that ergative verbs in transitive sentences 'may be described as being derived from the corresponding intransitive verbs...by means of a morphological process of 'zero modification' ' (1968: 360).

He proposes to formalise the syntactic relation between such verbs as have here been termed 'involitive' and 'volitive' by the same method as in the other types of causative; namely, by deriving sentences with the volitive verb from the corresponding sentence with
the involitive verb. His reason for doing so is that the verbs thus formed are 'syntactically related as 'causatives' to corresponding intransitive verbs and (from a historical point of view) derived from them by what were once more or less productive morphological processes' (1968: 359-360). It has been shown above, however, that they are not adequately accounted for in Coorg as the 'causatives' of corresponding intransitives', and it is not hard to show that the same state of affairs may be argued to exist in English; thus, it is possible to point to a distinction in meaning between such pairs as 148-9 and 150-1:

148. John laid Bill down ('morphological causative')
149. John made Bill lie down ('true causative')
150. John felled something ('morphological causative')
151. John made something fall ('true causative')

in order to make a case for a distinct deep structure in each case (e.g. 'to lay' does not mean 'to make to lie', but something more like 'to make, by one's own agency, to lie'; and 'something' in 151 is commutable with a far wider set of nouns in English than is 'something' in 150 - setting aside metaphorical usage). If it can also be shown - and it would seem possible, from the examples above - that the distinction between the 'true' and the 'morphological' causative in each case is not generalisable in the language, then a further case has been made out for saying that the relation between 'morphological causatives' and their corresponding intransitives is not one that can be handled satisfactorily by the syntactic base at all; compare what was noted of the volitive relation above, (pp. 180-183).
3.2.3 Syntactic relatedness

The discussion above notwithstanding, however, there clearly is some sort of syntactic relation between sentences containing such verbs, and this has to be explained. In this connection, it will be recalled that Kandiah (1968), while presenting arguments expressly against formalising the volitive relation in the syntactic base, at the same time assumed it to be a 'deep structural relation'; and (1968: 220) he quotes Robins in support as saying that inflectional formations (such as mark the volitive relation) enter into and mark syntactic constructions.

The suggestion is made here that at least two 'grades' of syntactic relatedness have to be recognised, a 'strong' and a 'weak', (where the strong grade implies the weak, but not vice versa). Then a 'weak syntactic relationship' will be such as holds between all intransitive structures of a language on the one hand, and all transitive structures on the other; the 'intransitive-to-transitive' relationship. Then the inflectional formations that mark volitively related verbs in Coorg are the realisations of the morphological expression of this weak syntactic relationship. A 'strong syntactic relationship', by contrast, is the sort of relationship that has been treated in transformational-generative grammar in terms of the notion 'derivation'; that is, one sentence is derived from the underlying structure of another when there is a strong syntactic relationship between them. In these terms, there is a strong syntactic relationship between the non-causative/causative sets 124/130, 126/131 and 129/132 above, and between the ergative examples 142/143 above. But there is only a weak syntactic relationship between 124/125, 126/127 and 128/129, since in these cases the syntactic base can only relate the verbs involved as intransitive to
transitive (or one type of transitive to another type, in the case of 128/129), and beyond this can only differentiate them, as Kandiah (1968) points out.

For these reasons, it is proposed here that volitive verbs be introduced into the base as basically transitive verbs in primitive two-place nuclei; since only in this way can the grammar account for the fact that they behave as independent elements in the base. It should be noted that the same argument holds, mutatis mutandis, for what Lyons (1968) calls 'lexicalised causative' verbs, since the difference between these and his 'morphological causatives' is purely a feature of the lexicon of a given language, and not a syntactic matter at all. Thus, in Coorg, [kaːt]-, 'to show' is the volitive form of [kaːn]-, 'to see' (or its 'morphological causative', in Lyons' terms), but also the 'lexicalised causative' of [noːt]-, to look at, see'; this case shows particularly clearly that the distinction between the two types of relation here is wholly a matter of relatively low-level rules. Thus the verbs which Lyons calls 'lexicalised causatives' must also be introduced into the base in primitive two-place nuclei, and it must be left to the semantic component to relate sentences which contain these verbs with those that contain their intransitive and semantically related counterparts. Indeed, the only reason for setting up such pairs as die/kill, eat/feed, etc. is the semantic relationship that holds between them.

It is relevant at this point to recall that the crucial weakness of Kandiah's position is the failure to distinguish between '(in)volitive verbs' and '(in)volitive sentences' (1968: 226-7): cf. particularly his statement that 'both the relationship and the differences between any pair of volitively related verbs are deep
structural matters' (1968: 230), where 'deep structure' is apparently taken as a level prior to lexical insertion. Concerning the proposals in Lyons (1968), it would seem that the status of the derived two-place and three-place structures is intermediate between that of 'deep structure' in the sense of Chomsky (1965) and the semantic configurations of generative semantics in the sense of McCawley (1968). For this reason it is not always clear whether they are intended as formalisations of 'syntactic' or of 'semantic' structure.

Finally, it may be pointed out here that the pair of verbs most often quoted in support of a syntactic analysis for 'lexical causatives' - die/kill (Coorg [ca:]-/koll-) - is in many ways an unhappy choice for exemplifying the group as a whole. This is because it is extremely difficult, if not impossible, to find contexts wherein the 'true' causative make to die could possibly be in contrast with the lexicalised form kill. However, contrasts can be found in many other cases, as will be evident from the following English sentences with 'lexicalised causatives' (where in each case the last part of the statement is impossible if the 'true' causative form of the verb is substituted for the lexicalised form in the first part):

152. I'm telling him the truth, but he won't listen.
153. I'm showing him the book, but he won't look at it.
154. I'm feeding the child, but it won't eat.

In view of the above examples, it would seem that the synonymy of make to die and kill (Coorg [ca:vicir]- and [koll]-) is an ontological rather than a grammatical fact, and that it should therefore not be marked by the syntactic base, but by the semantic
component instead. If this is accepted, then any analysis which posits a strong syntactic relationship between a sentence with die and a corresponding sentence with kill (i.e. derives the latter from the same structure as underlies the former) is open to the charge of mixing levels.

3.3 Conclusion

3.3.1 The role of syntactic deep structure

Much of the foregoing discussion of volitively related verbs in Coorg might be open to interpretation as evidence against the notion of a distinct level of 'deep syntax'. In particular, the fact that Kandiah (1968) is able to show that a grammar incorporating the syntactic base component proposed in Chomsky (1965: 120-5) is incapable of stating the volitive relationship might be taken as an argument in favour of a generative semantics approach. It is true that a grammar of the sort described in McCawley (1968), Lakoff (1971), and others, which has a semantic instead of a syntactic base (working initially in terms of semantic deep structures, and then allowing for progressive lexical substitution of feature-specified nodes within these deep structures as the derivation proceeds) will not be open to the charge of failing in principle to characterise the difference between such pairs as English lay/make to lie, feed/make to eat, etc., and the corresponding Coorg forms. In such a model of grammar, if a distinction in meaning between the members of such pairs is recognised, it will be formalised in terms of distinct feature-specified deep structures of the semantic base.

However, such a grammar is open to the complementary charge of failing to account for the morphological similarities between the members of such verb-pairs. This is because it will characterise the
relationship between [paːr]-, 'fly, jump'/[paːt]-, 'winnow (grain)'; [kaːn]-, 'see, meet'/[kaːt]-, 'show'; [noː]-, 'look at, see'/[kaːt]-, 'show'; [caːl]-, 'die'/[koll]-, 'kill', in essentially the same manner; namely, in terms of (more or less) related semantic configurations. It is true, as has been argued above, that one difference between such pairs (lexicalised versus non-lexicalised) is irrelevant from the point of view of syntactic relations (see p. 190).

But to talk simply in terms of 'syntax' and 'semantics' is not sufficient, as far as the volitive verbs are concerned; for these display morphological regularities as well (indeed, their morphological relationships are more regular than either their syntactic or semantic relationships), which a generative semantics approach treats as fortuitous matters of lexical realisation. In this respect, such a description is unable to account for part of the explicit knowledge that Coorg speakers have concerning their language (p. 169). To this extent, therefore, it would seem a necessary (but not a sufficient) requirement that a grammar of Coorg have a syntactic, rather than a semantic, base.

3.3.2 The role of the lexicon

If the volitive relationship cannot be handled either by a semantic base or by the sort of syntactic base described in Kandiah (1968), then it clearly has to be formulated elsewhere, as is correctly argued by Kandiah (1968: 231); see p. 183 above. The proposal that is made here is that the appropriate place is the lexicon, where this is understood to be outside the syntactic base (as opposed to the organisation of the lexicon and the categorical subcomponent in Chomsky, 1965: 141-2). However, there are two competing aims which the lexicon has to achieve in this case; first,
it has to list the individual members of volitively related verb pairs as independent lexical items, each with its own set of syntactic and semantic features such that lexical insertion rules of the type described in Chomsky (1965: 122) may operate; secondly, however, it must make the morphological relationship between members of such verb pairs explicit. For this reason, it must contain, in addition to lists of entries as ordered pairs of phonological and syntactic-semantic features, a generative subcomponent which will derive the members of each volitively related verb pair from a common underlying structure.

It is because it must contain a generative subcomponent (see the following chapters for an attempt to formalise this, and Chapter 4 pp. 209-220 for further arguments for it) that this lexicon must be located outside the syntactic base; such a model operates in terms of the two independent and co-ordinate primitive notions 'sentence' and 'lexeme' (the latter specifying the domain of the categorial rules of the generative base component of the lexicon).

Finally, it may be noted here that such a model of grammar is in principle able first, to account for the morphological relatedness but syntactic independence of volitively related verbs; secondly, to handle all lexemic relationships (by which is meant morphological relationships between lexemes as generated under the symbol 'lexeme', whether verbal, nominal, or between these categories) which cannot be accounted for in the syntactic base because they are only partly regular; and thirdly, to distinguish between those morphological processes that are productive (to be handled in the syntactic base) and those that are non-productive (to be handled in the base component of the lexicon). In respect of this last point, it should be noted
that the model proposed here (which is a type of 'word-and-paradigm' in the sense of Robins, 1959) is somewhat different from that described in Matthews (1965a, 1965b, and 1967).
CHAPTER FOUR

The Structure of Lexical Items: Verbs
1.0 Introduction

In this chapter, the Coorg verbal system is examined, particularly with respect to its verb classes (1.1) and the nature of the verbal 'lexeme' (1.2); the implications of the discussion of volitive verbs in the preceding chapter are taken up, and considered in relation to lexemic relations generally, and the form that lexical entries must take (2.0 - 2.2); the generative component of the lexicon is then described (3.0 - 3.9); and finally a list of the proposed rules is provided (4.1 - 4.4).

The data that is discussed is presented fully in Appendices I-III (pp. 431 - 58), where it is organised in terms of the verb classes and canonical forms described below. Each item is numbered within its class for ease of reference, and is generally cited in the text together with its reference number in DED, DEDS, DBIA or DEN, if it has one.

The canonical forms are stated in terms of the cover symbols C (standing for all consonants, including intervocalic [v] and [y], but excluding those covered by the symbols S and N), S (standing for [v] and [y] immediately before a consonant), N (for a nasal consonant homorganic in place of articulation with a following stop), and V (standing for all vowels). \( \overline{V} \) is a long vowel; CC is a geminate consonant cluster. The marginal contrast between nasal and oral vowels is not marked at this level of representation, of course. The table in Figure 1 below shows all the canonical forms that are represented in the inventory of Appendix I; it should be noted that no dissyllabic type shows a long vowel, and that short-vowelled monosyllabic types show a greater variety of shapes than the long-vowelled types:
Verb classes in Coorg are defined with reference to the forms of the non-past and past affixes that may occur with different verbs. Five such classes are recognised in the inventory of Appendix I. The basis for them is examined in some detail here.

1.1.1 The non-past affix

The forms of the non-past affix may be characterised as either 'lax' or 'tense'. The lax forms are \([-\text{v}] - \sim [\text{vv}] - \sim [\text{uv}]\). The first follows any vowel which is not a short vowel in the initial syllable of the verb; i.e. it follows a long vowel in the initial syllable, or a short vowel in a medial syllable. It also follows certain \((C)\overline{V}C\)-forms (of Class 4 only, Appendix I), where the preceding consonant is \([l]\) except before the non-past and past affixes, where it is deleted. Contrast the non-past form of the Class 1 item 141:

\[
341 \quad \text{[a:luv]} \quad \text{rule} \quad \text{(from [a:l]-)}
\]

with those of Class 4 items 17-19:

\[
723 \quad \text{[e:v]} \quad \text{get up} \quad \text{(from [e:l]-)}
\]

\[
4402 \quad \text{[ba:v]} \quad \text{(child) lives, rule (from [ba:l]-)}
\]

\[
4457 \quad \text{[bu:v]} \quad \text{fall} \quad \text{(from [bu:l]-)}
\]
-[vv]- follows a short vowel in the initial syllable of the only verb of (C)V structure taking the lax non-past affix, the Class 2 item 1:

3143 [novv]- pain (intr)

In all other cases the form of the affix is -[uv]- (i.e. when a consonant precedes).

The tense forms of the non-past affix are -[p]--N-[pp]--N-[b]-. The first two have a similar distribution to their lax counterparts -[v]- and -[vv]-. Thus, -[pp]- is found after verb forms of the structure (C)V-, as in the Class 5 items 1-2:

781 [opp]- be suitable, consent
2904 [topp]- salute,

while -[p]- is found after a long vowel in the initial syllable or after a short vowel in a medial syllable. -[pp]- also occurs in certain (C)V- and (C)VC- verbs where the final -C or -CC is deleted before the affix, and -[p]- also occurs after certain (C)VC- verbs where the final -C is deleted similarly; the items affected are the Class 3 items 2-4:

407 [ipp]- be (in place) (from [ir]-)
2526 [tapp]- give (to 1st/2nd person) (from [tar]-)
4211 [bapp]- come, (from [bar]-)

the Class 3 item 7 and the Class 5 items 12-13:

3043 [nipp]- stand (from [nill]-)
3708 [popp]- fight (from [por]-)
1156 [kapp]- steal, (from [kal]-)

and the Class 5 items 14-19:

2354 [co:p]- become tired (from [co:l]-)
2936 [co:p]- be defeated (from co:l]-)
427 [i:p]- drag (from i:l]-)
904 [o:p]- have intercourse with (from o:l]-)
In addition, \(-[\text{p}]\)- occurs after certain Class 5 verbs, all of which have (C)VC- structure, and where the final \(-C\) is \([y]\); these are the Class 5 items 5–11: 

<table>
<thead>
<tr>
<th>No.</th>
<th>Word</th>
<th>Meaning</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>([\text{ayp}])-</td>
<td>send</td>
<td></td>
</tr>
<tr>
<td>1047</td>
<td>([\text{kayp}])-</td>
<td>be bitter</td>
<td></td>
</tr>
<tr>
<td>1136</td>
<td>([\text{kayp}])-</td>
<td>remove, undo (knot)</td>
<td></td>
</tr>
<tr>
<td>2894</td>
<td>([\text{tuymp}])-</td>
<td>(snake) hisses</td>
<td></td>
</tr>
<tr>
<td>4057</td>
<td>([\text{muyp}])-</td>
<td>increase</td>
<td></td>
</tr>
<tr>
<td>4297</td>
<td>([\text{bayp}])-</td>
<td>(stomach) hungers</td>
<td></td>
</tr>
<tr>
<td>3165</td>
<td>([\text{payp}])-</td>
<td>id.</td>
<td></td>
</tr>
</tbody>
</table>

Note that where the verb has a nasal vowel, a homorganic nasal segment precedes the affix; this is not treated here as part of the affix.

Finally, just three items show non-past forms with the affix \(-[\text{b}]\)- preceded by the homorganic nasal. The unaffixed forms of these verbs are of (C)VCC- or (C)VC- structure, where final \(-CC\) is \([\text{nn}]\) or \([\text{nn}]\), and final \(-C\) is \([y]\). In each case, therefore, the nasal segment \([m]\) preceding the affix \(-[\text{b}]\)- is explicable in terms of the final consonants of the corresponding unaffixed verb forms. But the affix \(-[\text{b}]\)- itself is to some extent problematic, in that it may be classified as 'tense' (since it involves complete oral closure, like the other tense forms) or as 'lax' (since it is voiced like the other lax forms). The problem lies really in the definition of the terms 'tense' and 'lax', however, and the overall analysis is not substantially affected by the choice of one classification over the other. Arbitrarily, then, \(-[\text{b}]\)- is taken as 'tense'; the verbs concerned are thus placed in Class 3 (rather than Class 2), being the items 5, 6 and
8 within that class:

516 [umb]- eat (rice)
2670 [timb]- eat (not rice)
1209 [ka:mb]- see, seem

1.1.2 The past affix

The past affix is either vocalic (Class 1 verbs) or consonantal (Classes 2-5); the consonantal affix may, like the non-past affix, be characterised as either lax or tense in form.

The vocalic affix is [i]. It does not occur in certain forms of Class 1 verbs even though these forms are definitely to be called 'past': for example the verb [ma:d]-, 'do, make', has the forms

[ma:dine] (I) did
[ma:dinadi] the having done (something)
[ma:dine kelsa] the work done

without [i]. However, the occurrence of [-i] or [in]- is not determined with reference to the form of the verb but rather to what follows the suffix, and hence does not concern us here.

The consonantal past affix has the following lax forms: [-nd]-\sim [-n]-; in each case the first element is a nasal, which is homorganic with the following voiced stop that constitutes the second element. The tense forms are of three series, corresponding to each of the places of articulation found in the lax forms: [-t]-\sim [-tt]-\sim [-dd]-; [-c]-\sim [-cc]-\sim [-jj]-; [-t]-\sim [-tt]-.

If the dental place of articulation is taken as unmarked, it is possible to account naturally for the palatal (lax or tense) forms as occurring after a final-V which is [i], or final -C which is [y]: see the Class 2 items 28-57 and the Class 5 items 34-62 (with final [i]), and the Class 2 items 4-8 and 12-17, the Class 4 items 10-14, and the
Class 5 items 5–11 (with final \[-[y(y)]\]). It is also possible to account for retroflex articulation of the affix (lax or tense) as occurring after all final retroflex consonants except for certain cases of \([-\lbar{l}\]) in Classes 4 and 5; these instances can be regularised by deriving the \([-\lbar{l}\]) in these items from a peculiar phonological element which does not constitute the necessary environment for the retroflex form of the past affix, but is nevertheless realised as a phonetically retroflex lateral. The items involved are the Class 4 items 17–19:

723 [\text{edd}]- get up
4402 [\text{badd}]- (child) lives, rule
4457 [\text{budd}]- fall

and the Class 5 items 16, 17, and 19:

427 \[\text{i:t}]- drag
904 [\text{c:tt}]- have intercourse with
3588 [\text{pu:t}]- bury

In addition, the tense forms of the affix are voiced when they follow final \[-[y]\] or \[-[l]\] of (C)VC- verbs and final \[-[yy]\] or \[-[ll]\] of (C)VC{-} verbs; in all these cases, the vowel of the past form of the verb is short and is followed by geminate consonants. The items concerned are the Class 4 items 10–19 (note that this includes the items 17–19 cited above). This voicing is to be treated as a feature of the class, predictable with reference to the preceding consonant.

The geminate voiceless forms of the affix occur after short vowels in the first syllable of the verb. \[-[tt]\] is found in two instances with verbs of the form (C)V; they are the Class 5 items 1 and 2:

781 [\text{ott}]- be suitable, consent
2904 [\text{ott}]- salute
It is also found in three cases where verbs of (C)VC-form show final -[r] (deleted before the affix); these are the Class 4 items 8 and 9, and the Class 5 item 12:

2533 [tett]- pay (penalty)
3622 [pett]- bear (child)
3708 [pett]- fight

-[cc] occurs after two homophonous verbs of the form CVC- where the final -C is [y] (deleted before the affix); these are the irregular verbs

4540 [becc]- cook (rice)
4565 [becc]- keep, appoint

-[tt]- occurs after (C)VC- verbs where the final -C is [d], which is deleted before the affix; these are the Class 4 items 1–7. The table in Figure 2 summarises the foregoing discussion.

<table>
<thead>
<tr>
<th>Non-past</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>-[uv]</td>
</tr>
<tr>
<td>Class 2</td>
<td>-[uv]-[v]-[vv]-</td>
</tr>
<tr>
<td>Class 3</td>
<td>-[p]-[pp]-[b]-</td>
</tr>
<tr>
<td>Class 4</td>
<td>-[uv]-[v]-</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 5</td>
<td>-[p]-[pp]-</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2: The forms of the non-past and past affixes for the five verb classes
1.2 The verbal lexeme

We have thus far talked in terms of non-past and past affixes being added to 'verbs' or 'verb forms' of varying canonical shapes. We now refine the terminology for these basic forms of verbs. The verbal lexeme is defined as the minimal element which is required to account for that part of the whole verb complex, through its paradigm, which cannot be analysed in terms of syntactic, closed-system elements such as non-past, past, modal and person affixes, and which is therefore to be inserted in the preterminal string of the syntactic component (in the sense of Chomsky, 1965: 84) independently of these elements. The lexeme consists of a base plus a classifier; specification of the base together with a specification of the forms of the non-past and past affixes appropriate to a given verb (supplied by the classifier) is sufficient to predict any form of a regular verb. The base plus non-past or past affix constitutes the non-past stem or past stem, respectively.

1.2.1 The basic lexemes

In the inventory of verbs in Appendix I there are four main columns: in the first is given the inventory number of the items within each class; in the next column is the DED, DEDS, DBIA or DBN reference number (where this exists); the third column contains the base for each verb, followed by the non-past and past stems (in that order); and finally the fourth column provides a brief gloss. For the few items that are not recorded in DED, DEDS, or DBIA, a tentative reference number is supplied in column two in parentheses. Within each base shape subgroup the entries are ordered with respect to their final elements; all further ordering within the groups is by initial elements. In both cases the order followed is that of Dravidian orthographic
traditional; however, the extra vowels [i], [i:], [e], [e:] follow
[i], [i:], [e], [e:], respectively:
[a, a:, i, i:, ñ, ñ, u, u:, e, e:, ñ, ñ, o, o:, k, g, ñ, n, j, ñ,
t, ñ, n, t, ñ, n, p, b, m, y, r, l, v, s, s, l].
The nasal-oral contrast in the case of a few vowels has been ignored
in the ordering of the items concerned.

Appendix I contains most of the lexemes that will be discussed
here; it was noted in the preceding chapter however, that there is a
regular morphological alternation, expressing the volitive relation-
ship between certain verbal lexemes, and by virtue of this relation-
ship it is possible to derive one lexeme from another. These
derived lexemes are not included in Appendix I, but are set out in
Appendix II; those lexemes in Appendix I which have a volitively related
lexeme in Appendix II are marked with an asterisk; those that have two
such forms are marked with two asterisks.

1.2.2 Derived lexemes

We now examine in more detail the morphological relationship just
noted and whose syntactic function was dealt with in the preceding
chapter. We have in fact to recognise two distinct but related
processes at the morphological level, which we shall call for now P1
and P2. P1 operates on certain lexemes of Classes 1, 2, 3, and 4 to
form volitively related lexemes of Class 1; P2 operates on certain
lexemes of Class 2, and on one of Class 4 to form volitively related
lexemes of Class 5. Note that some Class 2 items have a derived
lexeme in both Class 1 (by P1) and Class 5 (by P2). The field of
operation of P1 and P2 is summarised in Figure 3.

As has been noted already (Chapter 3, pp. 166-171), it is usual
in Dravidian studies to characterise the sort of lexeme relationship
involved here in terms of 'transitive' lexemes being derived from corresponding 'intransitive' lexemes. However, 'transitive' and 'intransitive' are only terms of convenience (see Asher, 1966: 26) and do not fit the syntactic and semantic facts in all cases. Part of the reason for this is that P1 and P2 are no longer productive processes in Coorg (and related languages). In what follows, therefore, the lexeme relationships mediated by P1 and P2 will continue to be discussed in terms of the notion 'volitivity' (from Kandiah, 1968).

A brief survey of the data in Appendix II shows that Class 1 items 1–6, Class 2 items 30–74, Class 3 items 4 and 13–19, and Class 4 items 2–7 all exhibit a final increment, -(V)C in the lexemes that are derived by P1. The remainder of the lexemes derived by this process show mutation of the lexeme-final consonants, as set out in Figure 4:
### Base-final consonants

<table>
<thead>
<tr>
<th></th>
<th>Lax (Non-derived base)</th>
<th>Tense (Derived base)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-hê</td>
<td>-kk</td>
</tr>
<tr>
<td>Class 1</td>
<td>-hê</td>
<td>-k</td>
</tr>
<tr>
<td>Classes 1, 2</td>
<td>-d</td>
<td>-t</td>
</tr>
<tr>
<td>Class 3</td>
<td>-n</td>
<td>-n</td>
</tr>
<tr>
<td>Class 2</td>
<td>-y</td>
<td>-r</td>
</tr>
<tr>
<td>Classes 1, 2</td>
<td>-r</td>
<td>-t</td>
</tr>
<tr>
<td>Class 1</td>
<td>-mb</td>
<td>-p</td>
</tr>
</tbody>
</table>

**Figure 4: The operation of P1 at the phonological level**

Three exceptions are found, in the derived lexemes related to the Class 3 item 6 and the Class 4 items 17 and 19: the first two show vowel length alternation, and the last shows an unexpected lexeme-final consonant.

The operation of P2 is restricted to mutation of the past and non-past affixes of Class 2 lexemes, such that they undergo class change, to Class 5. Exceptions to this are the derived lexemes of the Class 2 items 35 and 63, and the Class 4 item 17; the lexeme derived from the Class 2 item 63 shows an unexpected lexeme-final vowel [i], while the other two show exceptional mutations of lexeme structure.

All these six exceptions are excluded from treatment in what follows. The phonological mutation effect of both P1 and P2 is
conveniently handled in terms of tense and lax articulation of consonants; the voice relationship that they express is one of the principal concerns of this chapter.

1.2.3 Irregular and defective lexemes

The inventory of verbal lexemes is completed in Appendix III by a list of those lexemes that are irregular in terms of the classification scheme presented above, or that are defective in the speech of my informants. Six of them, marked with an asterisk, have derived, voice-related lexemes, which are also given in Appendix III; of these, five are derived in a perfectly regular way by P1, to form lexemes of Class 1, and one is derived by P2, again in a regular way. However, in this last case, the resulting lexeme is still irregular in respect of its lexeme-final element, [y], which does not occur before the non-past and past affixes; the irregularity is to be assigned to the lexeme, and not to the operation of P2 (which affects only the forms of the extra-lexemic non-past and past affixes that occur with the lexeme).

Finally, the following three items:

333 [a:valic]- yawn
1192 [ka:pa:d]- protect
DBIA 145 [jama]- utter (incantation)

all show unusual lexeme composition, and are not dealt with in this chapter; however, the first two of these will be returned to in Chapter 6, where it will be shown that their structure is explicable in terms of the system as developed at that point.
2.0 Preliminaries to the analysis of lexemic structure

We turn now to the matter of establishing a framework to generate the greater part of the data that has been discussed in the preceding section. The purpose is twofold: first, to specify the verbal lexemes in the lexicon in the most economical and revealing manner; and secondly, to provide for the development of the underlying representation of the lexeme from the point where it is transposed from the lexicon into a given syntactic string to the point where it signals a set of instructions to the articulatory organs.

It is first necessary to state certain general assumptions regarding the analysis that will be proposed, and, as far as possible, to justify these.

2.1 Lexemic relations

It is assumed here, with Chomsky (1965) and others, that a lexical entry must contain information that is necessary for:

(i) specification of its phonetic composition,

(ii) a. appropriate placement of the lexical item in a pre-terminal string generated by the syntactic component,

b. specification of its behaviour with respect to subsequent syntactic rules, and

c. interpretation of the lexical item by the rules of the semantic component.

There are, however, grounds for suspecting that (i) above may be inadequate as it stands, in the sense that certain important sub-regularities in relationships between lexemes in Coorg can only be stated if the internal morphological composition of lexemes is specified in the lexicon. Consider, for example, the following sets of related items:
An adequate grammar must recognize the morphological and semantic relationships that hold between items within such sets, and has to be able to state the extent of the coincidence between the domains of these distinct relationships. However, where relatedness between lexical items at both the morphological and semantic levels is the result, diachronically, of once-productive processes in a language which are now only semi-productive (or not productive at all), a problem in analysis arises. Regarding this sort of problem, Chomsky felt able, as late as 1965, to propose a transformational derivation of 'destruction' in a construction such as 'their destruction of the
property' (1965: 184-5); but the existence of such sets as 'horror', 'horrid', 'horrify'; 'terror, *'terrid', 'terrify', etc. as the result of 'quasi productive processes' was recognised as tending to the 'very unfortunate conclusion' that such items as these should be specified in the lexicon directly (1965: 186).

The reason why this conclusion should have been felt to be unfortunate is relevant to our purpose here. Chomsky saw, correctly, that 'it is clear that from the point of view of both the semantic and the phonological interpretation it is important to have internal structure represented in these words' (1965: 186); but such a view is of course incompatible with the proposal to specify these words directly in the lexicon, as long as it is simultaneously assumed that the phonological representation of a lexical entry be with respect to phonetic composition alone (i.e. that morphological information be ignored; see (i) above). However, this does not explain why morphological information should not be given in the lexicon, though it does make clear certain assumptions regarding the respective roles of the lexicon and the syntactic component in Chomsky's 1965 model of grammar. A tentative solution to the problem which Chomsky proposes within his 1965 model (1965: 187) is the setting up of certain 'stem' elements (such as 'horr-') which can be inserted into a string formed by prior insertion of certain other elements (such as '-ify') into the preterminal string. More recently, however, he has moved to a 'lexicalist' position (Chomsky, 1970), and has proposed a particular formalisation (the X-convention) for representing the internal structure of complex lexical items such as 'destruction'. The rules he now proposes are still clearly part of 'syntax', however, and the lexicon still has its entries in the form of simple linear concatenations
of phonological elements, the only purpose of the concatenated strings being to specify the phonetic composition of the item concerned.

All this is mentioned here simply to make the point that the 'lexicalist' position is logically distinguishable from particular formalisations of it - for example, Chomsky's own, and the modified version proposed in Stockwell et al. (1968: 5-3). The analysis to be presented in this chapter also represents a lexicalist approach, but one within a different model of grammar, especially insofar as the role of the lexicon is concerned.

Since our main concern in this chapter is with Coorg verbs, and since a number of these show a voice-relationship (see Appendix II, and the preliminary discussion in the preceding section) which is a particularly clear type of the lexemic relationships being considered here, it is relevant to recall the conclusions at the end of Chapter 3 regarding volitively-related verbs; it was seen there that no syntactic solution was acceptable, once the decision had been made to account for such related forms by setting up a single underlying form in each case. It was seen that the notion of a 'volitive sentence' is an invalid one, and that one should speak instead of a 'volitive verb'. Finally, it was proposed that this relationship be handled by setting up, in each instance, a single underlying form in the lexicon. This is, of course, an 'unfortunate' conclusion if the lexicon is of the type assumed in Chomsky (1965). It is, however, possible to formulate a lexicalist position (as the facts regarding volitively related verbs demand) by modifying the lexicon suitably. It is worth noting that Stockwell et al. (1968) reach a similar conclusion, although their lexicon does not in fact account for derivational processes: they note, 'Although in principle we would like to have a single complex entry for items such
as produce, productive, production, product, etc., and though we have tentatively explored some possibilities in this direction, there are so many complex problems that nothing has reached a formalizable state' (1968: 937).

Cheng (1966) and especially Fudge (1969b) have indicated possible ways in which to expand the lexicon so as to accommodate a generative sub-component. Such proposals have been criticised (Brown 1970) for their dependence on the syllable as a deep phonological unit, and for the 'unnecessarily complicated theoretical framework' that a generative component requires. However, while Brown's arguments for an interpretive syllable as a distributional unit at the level of phonetic realisation are persuasive, it is unclear exactly how a lexical entry such as she assumes, which recognises linear concatenation as the only relation holding between systematic phonemic elements, is able to reflect the fact that many lexical items exhibit internal structure which is essential to the stating of relationships between them and other items. It is also not clear, though, that setting up a deep syllable is an appropriate way to solve this problem in all languages. It is a useful unit for Chinese, certainly (see Cheng, 1966; also Tay, 1970): but the critical issue with regard to the description of particular languages is whether the deep syllable is a suitable generative unit, as opposed to being a useful distributional unit at the deep phonological level for the purpose of stating certain rules (e.g. the discussion of French adjectives in Fudge, 1969b: 255-6).

The facts of Coorg apparently require that we work in terms of the 'morph' (in the sense of Bazell, 1953: 51-62), which is only 'feebly linked to syllabic pattern' (Bazell, 1953: 62) in this language; no evidence for a distinct deep syllable has been found.
In the analysis proposed below, no presuppositions are made concerning the syllabic status of the generative phonological unit; instead, we work in terms of 'root' and 'affix', where the root is set up on the basis of the morphological similarities that have to be accounted for between related lexical items. It has to be admitted that there is a circularity to this approach, since the notion of what are 'related lexical items' is prior to the determination of what the form of the root actually is. But this circularity is inevitable in a discovery procedure, and not vicious as long as (i) semantic data, (ii) morphological data, and (iii) speakers' intuitions are balanced against each other, and never relied upon individually.

2.2 The form of lexical entries

We now consider the problems involved in an approach which attempts to provide morphological information in that part of the lexical entry which consists of a string of systematic phonemes.

A lexical entry for a complex such as

\[
\begin{align*}
3537 & \quad [\text{puŋ}] & \quad \text{rot, fester} \\
[\text{puŋi}] & \quad \text{mould, mildew} \\
[\text{pulu}] & \quad \text{worm}
\end{align*}
\]

must contain a structured string of systematic phonemes, representing a generalised derivational statement of each of the three items based on the same root; this will include specification of the affixes that are involved in the morphological composition of each item. In the above example, the root must be represented as a string of three elements; the first realised as a voiceless bilabial stop; the second as a short high back rounded vowel; and the third as a retroflex lateral when a vowel (an affixal element) follows, and having
no phonetic realisation otherwise. There are some general points raised in this sort of analysis which require comment, however.

(i) Linear versus parallel generation.

The most frequently occurring problem is deciding exactly what relationship holds between items resulting from derivational processes such as are illustrated here: thus, is the \([-\acute{\text{t}}\text{g}]-\) of \([\text{puŋgi}]\) 'the same as' the \([-\acute{\text{t}}\text{g}]-\) of \([\text{puŋg}]-\), or only phonologically identical to it? If it is 'the same', is \([\text{puŋgi}]\) a deverbal nominal or is \([\text{puŋg}]-\) a denominal verb? The general answer is that both types of relationship between lexemes have to be allowed for. Thus it will be a virtue of the model to be able to derive forms syntagmatically where this is appropriate and allow for paradigmatic derivation elsewhere; i.e. the model should be operationally parallel (in the sense of Neisser, 1967: 72) in those instances where it is not clear that it should be linear. A clear case of linear generation (syntactic derivation) will be found in the case of voice-related verbs; a further case will be discussed in Chapter 6 (pp. 420-427) concerning certain gender-related nouns. Where the answer is not clear, as in the case cited above, parallel generation allows for the uncertainty and does not force an answer which cannot be supported from the data.

(ii) Semantic analysis.

Since the root is common to both the nouns and the verb in the lexical items considered here, and since it is set up on the basis of the analyst's assessment of what constitutes a reasonable, and non-fortuitous coincidence of formal and semantic criteria, it would seem necessary that the semantic component should be sensitive to the internal structure represented in their complex lexical entry. This would crucially involve a semantic reading for the root element,
in advance of the category distinction between noun and verb and neutral to the distinction between these; only in this way could the economy achieved in having a single entry based on a uniquely-specified root be reflected in the operation of the semantic component. For these reasons, it would seem to be necessary as well as advantageous to abolish the distinction between a lexical entry and a dictionary entry; this is a contingent simplification of the otherwise complicating step of removing the lexicon from the base component of the grammar and expanding it so as to include its own generative subcomponent as well as the lexical lists of the language. The operation of the semantic component is thus sensitive not only to the assigned structure of the preterminal string of the syntactic base, but also directly to the structure of lexemes generated by the lexicon base (just as the phonological component is sensitive directly to their phonological specification). Therefore readings must be provided for each of the affixes specified in the entry, in such a way that they can be amalgamated with the reading for the root by some explicit process. Then, a lexical item, such as \([pulu]\), or \([puŋ\text{'l}i]\), or \([puŋ\text{'}-]\), has its form defined generatively by what is a possible sequence of root plus affixal elements, and has its semantic structure defined by a complex reading which is based upon component readings for the root and each of the affixal elements involved. In practice, affixes tend to supplement and modify the reading of the root, and to provide information regarding the syntactic category (noun, verb, etc.) and syntactic behaviour of the item they help to constitute. They are frequently the source of what Quine calls 'stage directions' (Quine, 1964: 474); thus, 839 \([olap\text{'a}]\) will be entered under the root /ol/-, and will be specified as containing (among other elements) a bilabial affix; this affix would
have an associated semantic reading which would restrict and refine
the reading for the root, which would have to be something like
'cleanse, with water'. The result would be - in highly simplified
terms - ('cleanse, with water' ('said of plates, pots, etc.'))

This can be made a little clearer, perhaps, by adapting some
proposals in Bierwisch (1970). Working within a componential model
of semantic structure, Bierwisch envisages meaning structures
involving 'arguments' (symbolised as X) which receive grammatical
indices (denoted by s, d, etc., for 'grammatical subject' and
'grammatical direct object', respectively) and which are related to
each other by certain 'logical constants' (such as 'and', 'not', etc.)
and by a number of 'relational components' (such as CAUSE, CHANGE TO,
HAVE, etc.) (Bierwisch, 1970: 175-7). If this model is used for the
semantic specification of a lexical item, and if a generative source
for complex lexical entries, working in terms of roots and affixes,
is set up, then the schema in Figure 5 shows the way in which the
semantic reading of a complex entry may be set out.

The items represented in the entry in Figure 5 are:

3255  [para]- crawl; Class 3 verb
      [parat]- spread (grain); Class 1 verb
      [pabb]- (creeper) twines; Class 1 verb.

[para]- and [parat]- are volitively related items, by process P1. We
are assuming here, for the purpose of exemplification only, that all
these forms can be accounted for by a root /par/- and affixes -/a/,
-/b/, and -/t/. Square labelled brackets around these elements
indicate their derivational status (root, affix); braces indicate
that one and one only of the elements enclosed must be selected.
Unlabelled square brackets enclose information concerning the syntactic
Figure 5: A complex lexical entry with associated semantic readings
category and class of the item concerned; angles, < > , enclose information concerning selection restrictions; unfilled parentheses indicate that part of a complex reading which is made up by the semantic reading of the root (common to all the possible complex readings). The semantic reading for [para]-, 'crawl' is arrived at in the following way: the features assigned to the root /par/- and the affix -/a/ are combined, as indicated by the converging pathways in Figure 5; at the node thus formed, this combined reading is supplemented by a further complex of features which are peculiar to that node and which further develop the type of predication involved. Thus PERFORM ( ) will have to specify an extension in a horizontal plane for [parat]-, 'spread (grain)'. But presumably the distinction between extension and dislocation with respect to MOVEMENT, in the items [pabb]-, '(creeper) twines' and [para]-, 'crawl', respectively, need not be handled in the semantic specification of these items, since it is part of the semantic specification of a creeper that it is not a type of living thing that is bodily mobile.

Note that it is not the function of the pathway from affix to node to contain such information as $X_a$ PERFORM ( ) or $X_a$ CAUSE $X_d$ ( PERFORM ( ) ). This is because not all lexical items which have the affix -/a/, and which are verbs, and even which belong to Class 3, would be appropriately specified as $X_a$ PERFORM ( ); for example, 3897 [mara]-, 'forget', 200 [ala]-, 'crave', etc., which have to do with inner states or feelings. The pathway from affix to node is rather to be seen as defining the node to which are attached the idiosyncratic semantic features of the corresponding lexical item.

Note also that, while in the example given in Figure 5 the morphological structure assigned by the lexeme generator is reflected exactly in the semantic configuration, this is not a necessary state
of affairs: all that is required of the match between the morphological and semantic levels is that it be exhaustive, and either one-one or one-many.

Finally, it will be appreciated that the labelling of semantic features applicable to a root in advance of a category distinction between noun and verb presents difficulties if natural language is used for this purpose: for example, the use of the label MOVEMENT in Figure 5 is not intended to imply that the 'basic' meaning of the root /par/- is nominal rather than verbal.

(iii) Ordering of complex entries.

Thirdly, there is a problem in deciding whether a complex lexical entry should be made by root (with the affixal possibilities represented as subordinate to this), or by affix (followed, in each case, by a statement of the roots that may occur). It has been assumed in Figure 5 that the first of these alternatives is the correct one, and the considerations in (ii) above concerning the sort of information that affixes contribute to the semantic reading of a lexical item support this.

(iv) Root and affix.

Finally, in a number of cases no univocal evidence for a root-final element is available from an examination of sets of apparently related items; thus, it is frequently impossible to tell whether a consonant occurring immediately after a root vowel is the realisation of a root-final element, or of an affixal element (with the root-final element either not being present in underlying representation, or else having no realisation at the phonetic level). In what follows in this chapter, and in the next two, it will become clear that the analysis proposed is one which is in search of further
data, in order to throw light on such points of obscurity. For this reason, reference will occasionally be made to cognate forms in related languages (especially Tamil, Malayalam, and Kanarese); the justification for this lies in the fact that in a large number of cases there are regular correspondences between the roots set up on the basis of internal evidence from Coorg and those evidenced in the related languages. Where internal evidence is scanty, therefore, comparative data forms one possible source for framing an expectation of what forms might also have to be accounted for in Coorg as a result of further fieldwork. However, such data has been used as circumspectly as possible.

The rest of this chapter is concerned with formulating the generative component of the lexicon in such a way as to account for the data in Appendices I and II; particular attention will be paid to the voice relation that holds between verbal lexemes, but occasionally appeal will be made to non-verbal forms, where these throw light on the root and affix structure of a verbal lexeme. The issue of noun-verb and noun-noun relations will be taken up in the following chapters.

3.0 The generative component

In what follows, a number of rules will be presented and illustrated. In many cases, modifications or additions to rules will be required as the examination of the data proceeds, and for this reason they will simply be numbered serially as they are appealed to; but in each case a reference will be given in parentheses, after the rule in question, to its final form, according to the order of presentation in sections 4.1 - 4.4 below.
(i) The lexeme.

The generative component of the lexicon takes the notion 'lexeme' as primitive, and characterises the possible derivations from it. The lexeme is not to be confused with the base, since it is the function of the lexeme to specify not only morpho-phonological form but also to provide such information as the fact that a certain lexical item is a verb, of Class 1, etc. The following Lexeme Structure (LS) rules are required:

1. Lexeme → [[Base]] Classifier (LS 1)
2. Base → Root (+Affix₁) (+Affix₂) (LS 2)
3. Class → { Noun } { etc. } (LS 3)
4. Verb → { I } { II } (LS 4)

The elements I and II specify the two major categories of verbs, those of Class 1, and those of Classes 2-5, respectively. Their further development is reserved for later on in this section.

(ii) The root.

This consists of an obligatory Peak (at which a system of vowels operates), optionally preceded by Onset and optionally followed by Coda (at each of which places distinct but related systems of consonants operate). The sequence Peak Coda patterns in identical fashion with respect to all the phonological rules regardless of whether Onset is present or not, and this fact is reflected in the form of the rules which expand the root; they allow for a three-place structure of which the last two places, Peak and Coda, are dominated
by a single node, Nucleus:

5. Root $\rightarrow$ (Onset) Nucleus \hspace{1cm} (LS 5)
6. Nucleus $\rightarrow$ Peak (Coda) \hspace{1cm} (LS 6)

(iii) The affixes.

These elements are expanded by rules 7-9. They are discussed in some detail below. Volit$_1$ and Volit$_2$ are set up to account for the operation of P1 and P2, respectively, as described briefly in the first section.

7. $\text{Affix}_1 \rightarrow \{ \text{Voc(olic) Suffix} \} \hspace{1cm} (LS 7)$
8. $\text{Affix}_2 \rightarrow \{ \text{Suffix}_2 \} \hspace{1cm} (LS 8)$
9. $\text{Voice Suffix} \rightarrow \{ \text{Volit}_1 \} \hspace{1cm} (LS 9)$

The lexemic structure as developed up to this point is illustrated in Figure 6.

Over this configuration the following two conditions operate:

10. NOT: Peak $+$ \hspace{1cm} (LS 10)

11. NOT: Suffix$_2$ $+$ II \hspace{1cm} (LS 11)

The first of these specifies that Coda must be present when Voc Suffix occurs, and that Suffix$_2$, Volit$_1$, and Volit$_2$ only follow an element
either at Coda or Cons Suff; the second ensures that Suffix$_2$ cannot occur in verbal lexemes of Class II.

(iv) The phonological system.

At this stage in the derivational process, systems of phonological elements are to be made operative at the positions defined in the lexemic structure. In spite of the polysystemic implications of this statement, there is essentially one phonological system, comprising consonants and vowels, within which are specified the subsystems at different positions in the lexeme.

Three points have to be made in advance briefly concerning this system.

(a) It has been seen (Chapter 2) that a phonemic statement for Coorg has to recognise a contrast between voiced and voiceless stop consonants for all places of articulation; but also that this contrast exists only for stop consonants, and that even among these
the contrast is in many cases marginal and is in general highly asymmetric with respect to both distribution and frequency of the elements involved. It was also seen in Chapter 2 that a phonological system of Coorg taking frequency and distribution of consonants into account would bear a close resemblance to the system which is expressed in the orthographies of Tamil and Malayalam, and which has also been proposed for the proto-language, in respect of the voicing feature in stops. In this type of system a contrast between tense and lax articulation is seen as the prime distinction involving these elements, the tense stop being indicated by gemination of the appropriate symbol. The possibility of voicing (together with other features of lax articulation, such as frication) is then allowed for with respect to the lax stop in certain positions, viz. intervocally, and after a homorganic nasal.

(b) The second point is that the phonological system is defined here in terms of elements that are largely abstract and 'feature-sized' (Fudge, 1967: 3). The phonological segment is provided by the lexemic structure; what is required of the system of phonology is that it specify the features that fill out the given segments. These features are denoted by letters and numerals (A, B, I, II, b, n, etc.) which combine with each other within the segment to form complex symbols joined by \( ^{\wedge} \). However, we use a more mnemonic transcription for the discussion below, set off in the text by the slashes / \/, and matrices are provided wherever necessary to state the equivalences between the two systems: thus \( /p/ \) is \( AI \), \( /t/ \) is \( AIIb \), \( /m/ \) is \( Ain \), etc. However, in the statement of the realisation rules, the abstract system of representation is reverted to, since each letter or numeral directly or indirectly has its effect at the
systematic phonetic level, in terms of instructions to the articulatory organs.

(c) Finally, the phonological system (however represented) is assumed to be subject to two distinct types of rule: the Phonological Mutation (PM) rule, and the Realisation (R) rule. It is further assumed that mutation rules at the phonological level, which rewrite one phonological element into another, serve the purpose of stating irregularities and subregularities in the language, and that they are ordered; while realisation rules (applying only after the last PM rule) rewrite phonological elements as systematic phonetic units according to very general states of affairs in the language, and are unordered (see the discussion in Fudge, 1969a). The extrinsic allophones yielded by the realisation rules are subject to mutation as a result of overlapping articulations; this is handled by the Articulatory Sequence (AS) rules, which are mutation rules operating at the physical phonetic level. Since they deal with phenomena which are directly attributable to the properties of the speech organs, they are in some sense 'natural', though of course it is not necessary that they be universal; the notion 'natural' in this context is not incompatible with the notion 'language specific'.

3.1 Onset

The system operating at this point is illustrated in the matrix in Figure 7. Parentheses (wholly without systematic status) indicate those elements that are marginal to the system: for example, the parenthesised elements of the second row (from the top) each occur not more than five times in the data. /ñ/ occurs only in the Class 1 item 157, and /s/ only in the Class 1 items 119 and 139:

2386 [mavn] squeeze
No retroflex consonants occur. The second and third columns (from the left) are unmarked and marked, respectively, under B; and also the first, second and third rows are unmarked, marked and marked, respectively under I. This is intended to formalise the distinction between marginal and central features in the phonology. B, in the second column, defines the unmarked place of articulation which is neither A (corresponding to labial articulation in a general way) nor C (velar place of articulation); Bj, however, defines a marked variety of B in the third column (marked for postalveolar to palatal articulation). Similarly, Row I represents the unmarked type of stop consonant; Ib and In define those instances where complete oral closure is marked for the features of voice and lowering of the velum, respectively. /c/ is unmarked with respect to I but marked with respect to B, whereas /n/ is marked with respect to both these.

![Figure 7: The system at Onset](image)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>p</td>
<td>t</td>
<td>k</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>(d)</td>
<td>(j)</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>m</td>
<td>(n)</td>
</tr>
<tr>
<td>IV</td>
<td></td>
<td>(s)</td>
<td></td>
</tr>
</tbody>
</table>

2310  [se:d]- drink a deep draught
2312  [se:r]- join (intr)
features; in this way /c/ is stated as being less marginal than /ñ/, and this is reflected in their relative frequency of occurrence (/c/ is the least frequent element of the first row, but much more frequent than the other two elements of the third column). The feature notation recognises the peculiar status of marked types of articulation by providing for them a second-order symbolisation — in this case, one that looks to the phonetic facts more obviously than do the first-order symbols (j = postalveolar to palatal, b = the voiced counterpart of p for 'plosive', n = nasal).

The realisation rules which operate on the features defining the matrix in Figure 7 are as follows:

12. A → [bilabial p(lace) of a(rticulation)] (R1)

{[postalveolar p. of a.] /j

13. B → [postdental p. of a.] /IV (R2)

[dental p. of a.] elsewhere

14. C → [velar p. of a.] (R3)

{[contact, vocal cords vibrating /b

15. I → [contact, velum lowered /n (R4)

[contact elsewhere

16. IV → [occlusion, groove friction] (R7)

The terms 'contact' and 'occlusion' are from Halle (1958).

Certain points concerning the formulation of the rules have to be noted here. First, it is assumed that systematic phonemic elements are spelled out always with the features on the horizontal axis of the relevant matrix preceding those on the vertical axis (thus /j/ is AI, not IA; and /ñ/ is BjIn, not InBj). Secondly, the usual phonetic assumptions are made concerning the movement of articulators: thus
[postalveolar p. of a.] specifies the tongue blade as the active articulator, and [postdental p. of a.] specifies the tongue tip as the active articulator, etc. In addition it is taken that, for Coorg, lowering of the velum implies simultaneous vibration of the vocal cords (there are no voiceless nasal consonants in the language). From what has been said already regarding the role of stop consonants in Coorg phonology, it will be clear that the feature [contact] specifies no vibration of the vocal cords; this feature is either specified directly as an additional phonetic feature [vocal cords vibrating] in certain environments, or indirectly (for example, by the presence of the feature [velum lowered]).

Finally, note that the second-order phonological features j, b and n never occur on the left hand side of the arrow in the realisation rules; they are employed only in stating the environment for the realisation of first-order features. First-order features, on the other hand (A, B, C, I, IV), may occur in either of these positions. The distinction in function which this positional difference marks will be referred to as that between 'contextual function' (of second-order or first-order features) and 'articulatory function' (of first-order features only), respectively.

3.2 Peak

At this point in the lexemic structure two interrelatable systems operate. The first accounts for vocalic quality at the systematic phonetic level, while the second, consisting of just the optional element /L/, specifies long phonetic duration: see Figure 8. /L/ does not occur in the data with /u/ and /o/; this is taken to be an accidental gap (nasal vowels are of very low frequency). In terms of the system here, /a/ is the maximally unmarked vowel, with
Figure 8: The systems at Peak

/i/ and /e/ marked for front articulation (this is the function of the second-order symbol j in this context), and /u/ and /o/ marked for back, lip-rounded articulation (the function of w). /ç/ and /ʌ/ are marked for lowering of the velum (n performs the same function here as in the system at Onsat). The nasality feature thus marked on these Peak realisations is extended throughout the lexeme by a phonetic mutation rule, AS1; the rule AS2 also provides for the homorganic nasal segment occurring before the nonpast and past affixes of Class 5; see the Class 5 items 8, 9, and 72:

\[
\begin{align*}
\text{[cúy]} & - ([cúymp] - [cúyñc]) & \text{(fly, ant) bites} \\
2894 \quad [túy] & - ([túymp] - [túyñc]) & \text{(snake) hisses} \\
1927 \quad [cúvɛ] & - ([cúvɛmp] - [cúvɛnt]) & \text{chew} \\
\end{align*}
\]

The main realisation rules which operate on this system are given here (excluding for the moment the elements /i"/ and /æ", which are considered in more detail below):
17. $X \rightarrow \begin{cases} \text{[front of tongue highest, lips spread]}/\_j \\
\text{[back of tongue highest, lips rounded]}/\_w \quad \text{(R9)} \\
\text{[velum lowered]}/\_n \end{cases}$

18. $1 \rightarrow \begin{cases} \text{[constriction],} \\
\text{[-] else.} \quad \text{(R10)} \\
\end{cases}$

19. $2 \rightarrow \begin{cases} \text{[midopen tract,} \\
\text{[-]}/\{j\} \quad \text{(R11)} \\
\text{[open tract,} \\
\text{[-]}/\{w\} \quad \text{(R11)} \\
\text{[velum lowered]}/\_n \end{cases}$

20. $L \rightarrow [\text{vocal cords continue to vibrate, unaltered vocal tract}] \quad \text{(R12)}$

Notice the distinction here between the realisation of $X$ which is marked for lip-spreading, and the unmarked lip position for this feature (unrounded, for the elements /a/ and /æ/).

Furthermore, while the feature 1 is always realised as [constriction], the feature 2 ranges from [midopen tract] to [open tract], depending on whether $X$ is marked for lip-rounding/lip-spreading, or is unmarked, respectively. The term 'constriction' is from Halle (1958). It is assumed here that [constriction], [midopen tract] and [open tract] automatically specify vibration of the vocal cords.

There is, however, a problem with the elements /i/ and /e/. An examination of the data shows that for the great majority of cases it is possible to state that the high and mid front unrounded vowels at Peak have retracted allophones (still unrounded) of corresponding height before a retroflex consonant (see Chapter 2, pp. 67-70).
Locically, exceptions to this can be of two kinds; either the back unrounded quality occurring without a following retroflex consonant, or the front unrounded quality occurring within this environment. Since the latter type of exception does not occur in the verbal system, we leave it on one side here. Concerning the other type, most of the instances involve a following postdental flap or apico-velar trill ([r], in terms of the transcription used here). Before this element, both back and front unrounded vowel qualities occur and contrast; see, for example, the Class 2 items 22 and 23:

2373 [ne:r]- hang (intr)
2380 [ne:r]- rise up

The situation may be regularised at the cost of setting up two elements /r/ and /r'/ instead of just /r/ at Code, both of which are realised in identical articulatory terms, but which represent distinct deep phonological categories. /r'/ is related phonologically to the class of elements that underlie retroflex consonants at the systematic phonetic level. After this is done, the only exceptions left are the Class 1 items 17, 75 (alternative form), and 116 (alternative form), and the Class 4 item 15:

2634 [tikk]- strain (at delivery of child)
2740 [timm]- sneeze
2857 [de:t]- drive away
1641 [gell]- win.

We accordingly establish a marked column for these cases, under what is a third-order feature, r, under j. This formalises the fact that, so far as the system at Peak is concerned, /i/ and /e/ are to be seen as types of /i/ and /e/, respectively (it will be shown below that a different solution is required for /i/ at Voc Suff).
We therefore supplement the realisation rules R9 and R11 as follows:

21. $X \rightarrow \begin{cases} \text{[back of tongue highest, \{lips rounded\]/\_w} \\ \text{[lips unrounded]/\_jr} \end{cases}$  

22. $2 \rightarrow \begin{cases} \text{[midopen tract, \{velum lowered\]/\_w\_n} \\ \text{[velum lowered]/X\_n} \end{cases}$

Notice that the two main subparts of R9 have here had to be re-ordered, since the environment '__j' (formerly in the first subpart, as in 17 above) includes the environment '__jr' unless it is preceded by this environment in the statement of the rule.

The derivation of the back unrounded vowels at the systematic phonetic level is handled by the realisation rule R9, therefore. But this rule, by a simple extension of its operation, also accounts for the fact that, in the environment of a preceding labial consonant and a following retroflex consonant (including /r'/ - the alternative forms of the Class 2 item 26 are possibly revealing in this regard), only the back rounded quality of high and mid vowels may occur ([a] and [a:]) may also occur, a fact that tends to confirm the unmarked status of /a/; see Chapter 2, pp. 90-92). R9 accounts for this restriction quite naturally by associating the retraction of front unrounded vowels with the following retroflex environment (the tongue root tends to retract with retroflection of the tip), and the
rounding of the back unrounded vowels thus formed with the preceding labial environment. For a detailed discussion, see Emeneau (1970a).

Therefore, R9 has to be supplemented further by what may be called for convenience the 'vowel retraction' rule:

\[
23. \ X \rightarrow \ [ \text{back of tongue highest}, \ \begin{cases} 
\text{lips rounded} & /A(\_\_\_j(\_\_L)\_Br \\
\text{lips unrounded} & /\{B\_\_\_j(\_\_L)\_Br \\
\text{in parentheses in request is Xj1 or Xj2. Note that this convention of empty parentheses is quite different from the use of parentheses in '(L)', where they indicate that the element enclosed may or may not be present.}

3.3 Coda

3.3.1 Preliminaries

The nature of the phonological elements operating at this position represents a crucial point in the analysis. As noted earlier, in a number of cases there is apparently no good reason for deciding that a consonant immediately after a vowel at Peak is the realisation of an element at Coda rather than Cons Suff, or vice-versa; if no other consonant or consonant cluster follows within the same lexeme, and if no evidence from related lexical items is to hand,
and if the consonant in question has in any case to be allowed for at Coda and Cons Suff, there is no principled way of deciding the issue. The Class 1 items 31, 32, 43, 69, 93, 96, 99, 101, etc. are all cases in point. Where no principled decision is possible, the grammar has to be able to state the equivalence of the possible derivations at a lower level, and this is allowed for here; thus, the phonological rule PM6 (which erases all +boundaries) states, in effect, that whether a given consonant derives from Coda or from Cons Suff is immaterial to the following rules.

In other cases, three kinds of evidence regarding the two consonantal systems are available. The first is from an examination of constantly recurring elements in base-final position as candidates for treatment as suffixes. Language-internally, this can be a hit-and-miss procedure, although the form of the base-final element is often a guide; thus, it is the case in Coorg that a homorganic cluster of nasal plus stop, of whatever place of articulation, frequently occurs in base-final position and never base-medially, and is thus almost certain to be amenable to treatment as a suffixal element. Once the suffixal system can be determined with some degree of confidence, one is in a position to determine the elements at Coda. More direct and revealing evidence is sometimes available in the existence of related lexical items in the language (see the earlier discussion concerning 3537 [pʊŋ]-, 'rot, fester', p. 214). Finally, we may work with the simplifying assumption that all base-medial consonants are representations of Coda; this follows directly from the postulation of a root of (C)V(C) structure, together with the condition LS 10 above. From this evidence, we have to account for at least the following systematic phonetic elements at this position: dental and retroflex laterals, nasals, and voiced stops; the
apico-alveolar tap; and the labial and palatal semivowels. However, we have already seen that the apico-alveolar tap must have two sources at the systematic phonemic level to account for certain Peak realisations, and consideration of sets of related lexical items leads to the establishment of still other elements at Coda. The complete system is shown in Figure 9.

![Figure 9: The system at Coda](image)

Before discussing these elements individually, some general points have to be made here concerning base structure.

At the phonetic level of contrast, the following canonical base shapes are found:

<table>
<thead>
<tr>
<th>Class 1</th>
<th>(c)VC</th>
<th>(c)VNC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(c)VCC</td>
<td>(c)VNC</td>
</tr>
<tr>
<td></td>
<td>(c)VSC</td>
<td>(c)VSHC</td>
</tr>
<tr>
<td></td>
<td>(c)VVC</td>
<td>(c)VCVNC</td>
</tr>
</tbody>
</table>
(i) Base vowels.

The first point to be noted is that long and short root vowels contrast only before the base-final elements -C and -NC in Class 1, and only before base-final -C or base-finally themselves in the pattern exhibited in the remaining classes. In all other cases, the root vowel is short, viz. before base-final -CC, and when followed by the sequences -S(N)C and -SV(N)C in Class 1 and -CV and -CVC in Classes 2-5. The problem of the lack of length contrast before base-final -CC is taken up below (pp. 240-245); first, however, we examine the other sequences which occur only after a short root vowel. Concerning these, the following points have to be made:

(a) In Class 1, -S- and -C- after the short root vowel are in minimal contrast at the transcriptional level in Appendix I: -S- is either [v] or [y]; and -C- is never [y], is [v] just in the Class 1 item 172:

4516 [bevar]- sweat,

and is otherwise [d, d, n, l, l, r]. It will be shown below, moreover, that the single instance of apparent contrast here (in the item just cited) is the result of the non-systematic status of the Appendix I transcription in respect of the symbol [v].

(b) The second base-vowel -V-, before -(N)C-, only occurs
after base-medial -C-; and it is in all cases either [a] or [i].

Further, it is possible generally to predict which of these two vowels will occur, given the root vowel; [i] occurs as the second base-vowel when [i] or [u] are the realisations of Peak, while [a] occurs after all other root vowels ([i] does not occur at Peak in these base types in the data). Only the Class 1 items 165-6, 169-70 and 185 fall outside the scope of this statement:

<table>
<thead>
<tr>
<th>Item</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>3623</td>
<td>[porik]-</td>
<td>pick up small objects</td>
</tr>
<tr>
<td>4402</td>
<td>[badik]-</td>
<td>live (happily)</td>
</tr>
<tr>
<td>725</td>
<td>[sid]-</td>
<td>write</td>
</tr>
<tr>
<td>3729</td>
<td>[porid]-</td>
<td>undertake an office</td>
</tr>
<tr>
<td></td>
<td>[molim]-</td>
<td>be pressed</td>
</tr>
</tbody>
</table>

Each of these shows [i] where the pattern noted above would require [a]; we shall set these items aside here, as not relevant to our immediate purpose. It will be seen in what follows that they cannot be generated by the model that is described in this chapter and the next, but require a more powerful generative component which will be formulated (principally on the basis of complex nominals) in Chapter 6.

The regular pattern, whereby the second base-vowel is predictable in phonetic quality, is shown in the Class 1 items 160 (also 163-4, 166, 172-3, 175-9, 181-4 and 187-9) and 161 (also 162, 167, 171, 174, 180 and 185-6):

<table>
<thead>
<tr>
<th>Item</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>203</td>
<td>[alak]-</td>
<td>stir with a ladle</td>
</tr>
<tr>
<td>636</td>
<td>[ulik]-</td>
<td>flay</td>
</tr>
</tbody>
</table>

In view of these considerations we may (setting aside [bevar]- for the moment) abolish the distinction between -S- and -C-, and cease to regard the second base-vowel as a structural component of the base in underlying representation. Furthermore, we know that, as a base-medial
consonant, the first -C- (including -S- now) after the short root vowel represents the system of elements at Coda; and it will be shown later (pp. 264-271) that base-final -C/-NC represent the system of elements at Cons Suff. Hence we set up the single structure (C)VC+C for all the following base types:

(C)VSC  (C)VSNC
(C)VCVC  (C)VCVNC

We now require two rules in respect of this structure: the first, which will be referred to as the 'epenthetic vowel rule', inserts the appropriate vowel between the Coda and Cons Suff elements; the second, which will be referred to as the 'vowel length reduction rule', ensures that all bases in which Cons Suff occurs have short root vowels at the phonetic level. That is, we allow for /I/ to occur at Peak in the normal way for these as for other bases; the occurrence of Cons Suff then triggers off the vowel length reduction rule which deletes /I/.

Neither of these rules is given at this stage in a formal way, since their exact form is dependent upon factors that have yet to be introduced. For example, they may be formulated either as phonological mutation rules or as realisation rules. They are described in more detail, and formalised, later on in this chapter (p. 263). However, the general function of these rules has been given at this point since appeal will have to be made to them in the following discussion.

(c) In Classes 2-5, the second base-vowel of (C)VCVC bases is predictable in exactly the same way as described above for Class 1 verbs; the items involved are just the Class 2 items 75-7 and the Class 4 items 20-2:
(d) Since the second (base-final) vowel of (C)VCV bases of Classes 2-5 cannot be predicted in terms of preceding environment, we generate Voc_Suff in the underlying structure of these items. Then, we have to formulate the vowel length reduction rule in such a way that it operates when Voc_Suff (as well as Cons_Suff) follows Coda.

(ii) Base-final -C and -CC.

We now examine the problem of the contrast of consonant length after a short root vowel, in (C)VC and (C)VCC bases. This contrast is of minimal functional load, as it distinguishes only the Class 1 items 6 and 77:

432 [el]- leave one's position
2767 [tull]- make small jumps

All the other (C)VC bases of Class 1 show base-final [r]; and (C)VC bases of Classes 3 and 4 show base-final [d] or [r] (which are thus never in contrast with base-final -CC, which is always [nn], [nn], [ll] or [yy] in these classes). Unlike [d], [r] never occurs geminate in the language; however, we have to allow for /r/ as a base-final element in the underlying representation of some (C)VCC bases, in order to account for certain lexical relationships; see, for example the Class 1 item 59, and the Class 2 item 77:
be in confusion through fear, each of which share the same root /bor/. This suggests that the sequence /rr/ may occur, but is realised as [ɪt] (we shall have to refine this statement later, but it will serve our present purpose as it stands).

It is also the case that all base-medial consonants are phonetically short and show no voicing contrast among stops (which are all voiced). There is a voicing contrast among the phonetically long base-final stops of (C)VCC bases, but, as was seen in Chapter 2, this contrast is marginal; -BB (standing for a geminate voiced plosive cluster) in this position is much less frequent than -PP (the voiceless counterpart). However, in (C)VČ and (C)VČVC bases, voiced and voiceless stops are in full contrast. This pattern suggests that base-final consonants are geminate when they stand immediately after a short root vowel (at Peak); in terms of the phonological system proposed here, this also entails that stops in this position will be voiceless. In all other cases (viz. after a long root vowel, or after a vowel which is not an element at Peak - as in (C)VČVC bases) the base-final consonant is not automatically geminate. Hence, we require a rule, which will be referred to as the 'automatic gemination rule', which geminates those consonants which stand immediately after a short vowel at Peak and immediately before the base boundary element \textregistered. In terms of this pattern, (C)VC bases and (C)VBB bases are exceptional; we shall concentrate on the first type of exception here, and deal with the second later on.

(a) All the (C)VC bases in Class 1 show base-final [ᵻ], or [l] at the phonetic level. If it can be shown that these are
realisations of base-medial elements in underlying representation, they will not be exceptions to the pattern noted above. In fact there is substantial evidence to support this view; consider the following lexical relationships which involve the Class 1 items 1-6:

569  [ur]-  melt (intr)
      [urik]-  id. (tr); Class 1 volitive verb
606  [or]-  fall asleep
      [oraki]  sleep; noun
1066 [kar]-  be digested
       [karak]-  digest; Class 1 volitive verb
2655 [tir]-  turn (intr)
       [tirik]-  id. (tr); Class 1 volitive verb
       [tirig]-  wander; Class 1 verb
       [tiri]  wick; noun
       [tirigani]  pulley; noun
4112 [mur]-  tighten (intr)
        [murik]-  id. (tr); Class 1 volitive verb
        [muriki]  torsion cord (of drum); noun
432  [el]-  leave one's position
        [elak]-  make leave position; Class 1 volitive verb
        [elaka]  uprooting from position; noun.

We can account for all these cases by setting up the roots /ur/-, /or/-, /kar/-, /tir/-, /mur/-, and /el/-; we can further account for the base shape mutation involved in the voice-relation between these verbs ((C)V(C)VC to (C)VVCVC) by setting up the base-final element /k/ for all the (C)V(C)VC verbs. This element is realised at the phonetic level when it is followed by \textit{Volit}_1, and it is also realised in a number of related noun forms; it is not realised, however, in base-final position.
of verbs, although it is phonologically present at the time of the operation of the automatic gemination rule. It thus protects /s/ and /l/ in these items from the effect of that rule. It will be seen later on that the existence of /g/ in these items facilitates the statement of the operation of \textit{Volit}_{1}; and it is also a relevant construct in generating the related noun forms that show final -[ki] (see Chapter 5).

By this solution, we can abolish the distinction between the canonical base shapes (C)VC and (C)VCC as far as Class 1 items are concerned, and set up the single type (C)VC in underlying representation. A stress-assignment rule (PM 9(i)) marks main stress on all root vowels, and the following sub-rule (which is the automatic gemination rule) geminates all consonants which immediately follow a short root vowel (i.e. the length element /L/ does not intervene), in base-final position (i.e. before the boundary element \(\ddagger\)):

\begin{align*}
24. \quad & v \rightarrow \dot{v} / (C) \ddagger \quad \text{(PM 9(i))} \\
25. \quad & c_i \rightarrow c_i\dot{c}_i / \dot{v} \ddagger \quad \text{(PM 9(ii))}
\end{align*}

(b) Classes 3 and 4 also show a contrast at the phonetic level between the base shapes (C)VC and (C)VCC. Here, however, the functional load is zero, since all (C)VC bases show final [d] or [r], and all (C)VCC bases show [nn], [nn], [ll], or [yy]. Taken by itself, this might suggest an analysis for verbs of these classes that base-final consonants are phonetically long after a short root vowel, save for those elements which underlie [d] and [r], which are always short. This is clearly unequatable with what has been discovered concerning base-final consonants elsewhere in the verbal system, however, and the correct solution is that base-final [d] and [r] at the phonetic level in (C)VC bases are realisations of base-medial /t/ and
We shall now consider some evidence supporting this analysis.

The items concerned are the Class 3 items 2-4, and the Class 4 items 1-9; among these, the following show certain relationships with other lexical items:

4311 \( [\text{bar}] \) – cone
   \( [\text{barat}] \) – cause to come; Class 1 volitive verb

1614 \( [\text{kedi}] \) – be ruined
   \( [\text{kedit}] \) – ruin; Class 1 volitive verb
   \( [\text{kedi}] \) – ruin; noun

2163 \( [\text{cud}] \) – burn (tr)
   \( [\text{cudigala}] \) – cremation place; noun
   \( [\text{tu:di}] \) – torch (of reeds); noun

3190 \( [\text{pad}] \) – lie fallow
   \( [\text{padit}] \) – let lie fallow; Class 1 volitive verb
   \( [\text{padibu:mi}] \) – fallow land, noun
   \( [\text{padi:nari}] \) – the west; noun

3191 \( [\text{pad}] \) – suffer
   \( [\text{padit}] \) – make to suffer; Class 1 volitive verb

4419 \( [\text{bud}] \) – let go (tr)
   \( [\text{budit}] \) – make to let go; Class 1 volitive verb
   \( [\text{budidi}] \) – toddy tapper’s hut; noun

Of these, it may first be noted that the base-shape mutation involved in the volitive relationship between the verbs cited here \(((C)VC \text{ to } (C)VCVC)\) parallels what was found in Class 1 above; that is, base-final \([r] \) and \([d] \) in the \((C)VC\) bases correspond to base-medial \([r] \) and \([d] \) respectively, in their volitively related counterparts.
However, there is a second type of evidence available with regard to these items, which is even more compelling, and for which we have to refer to the vowel length reduction rule. The (C)CV noun forms 1614 [keːdi], 2183 [tuːdi] (we ignore here the idiosyncratic alternation between /t/ and /c/ at Onset), and 4419 [buːdi] suggest that we have to recognise roots of the following forms:

\[
\begin{align*}
1614 & /keːt/- \\
2183 & /tuːt/- \\
4419 & /buːt/- \sim /biːt/-
\end{align*}
\]

It will be shown in the next chapter (pp. 320-321) that there are good independent grounds for regarding final [i'] of the (C)CV noun forms as not relevant to the operation of the vowel length reduction rule: we can therefore account naturally for both the short root vowel and the single base-final consonant of the related verbal bases here if we set up a Voc Suff element in their underlying structure. The vowel length reduction rule deletes /i/ at Peak in these cases, and the Voc Suff element protects the preceding consonant (which therefore unambiguously represents Coda) from the effect of the automatic gemination rule. The Voc Suff element has no realisation at the phonetic level, unless it is followed by Volit. Further discussion of this element is reserved until the system at Voc Suff is dealt with below (pp. 271-275). Note the difference, however, between this form of the solution and that proposed earlier for the Class I verbs; there, a base-final consonant (/k/, at Cons Suff) was established in the underlying forms to protect the Coda element from the operation of the automatic gemination rule, while here a base-final vowel (at Voc Suff) serves the same function.
(c) We now turn back to the exceptional bases of (C)VBB form, in Class 1. We have seen that, because of the operation of the automatic gemination rule, base-final stops should yield -PP (voiceless) geminate clusters after a short root vowel; we account for -BB realisations in this position by rule. This avoids the necessity of setting up a row of voiced stops /b, d, g/ in the system at Coda, thus reflecting the fact that the voicing contrast between stops at this position is not a regular feature of the phonological system: the ratio of occurrence of -BB to -PP in verbal bases is only of the order 1:4 (see Chapter 2, p. 97). Accordingly, we set up the element /r/ at Coda for all these items; its distinctiveness as opposed to /r/ lies just in the fact that it does not satisfy the conditions for the operation of the epenthetic vowel rule. As a result, /r/ at Coda may stand immediately before base-final /p/, /t/ or /k/ at Cons Suff; the resulting cluster is realised as the geminate voiced stop cluster [bb], [dd] or [gg], respectively (only these -BB types occur in the verbal system). Further details are given below (pp. 259-261), in discussing /r/.

When /r/ is not followed by an element at Cons Suff, it is realised phonetically as [r]. Evidence for this solution comes from the Class 1 item (considered earlier) 72, which shows the following lexical relationships:

3255 [pabb]- (creeper) twines  
[para]- crawl; Class 3 verb  
[parat]- spread (grain); Class 1 volitive verb.

(d) Finally, we have noted that there is a regular voicing contrast among stops in base-final position when they do not immediately follow a root vowel, and it remains to consider how this is
to be accounted for. In order to understand this, it is first necessary to note that, with one exception, there is no contrast between voiced and voiceless stops after a homorganic nasal, in verbal bases. The general pattern, then, is that stops are voiced when they occur singly in intervocalic position, and after a homorganic nasal; when they occur geminate they are voiceless.

Examination of sets of related items shows that there is a very common morphological process of stop-gemination in the language, which serves a number of functions. It will be shown below that one such function is the derivation of volitive verbs from involitives; but noun-noun and noun-verb relationships are also involved, as in:

1206  [ka:di]   forest; noun
       [ka:ti]   bison; noun

2927  [to:t]    dig; Class 1 verb
       [to:ta]   estate; noun

In terms of the phonological system proposed here, these items would be represented as

1206  /ka:ti/   forest
      /ka:tti/   bison

2927  /to:ti/   dig
      /to:ttia/  estate.

Note that a low-level phonetic mutation rule (AS 7) will reduce the length of geminate consonant clusters when they occur after a long vowel (see Chapter 2, p. 106). This phonological representation shows the morphological relationship between these items very clearly.

However, there is another sort of morphological relationship, which is very common in sets of volitively related verbs but which may also be seen elsewhere in the language; this involves homorganic nasal
plus voiced stop clusters on the one hand, and geminate voiceless stop clusters on the other:

2680  [ti:n]-  touch; Class 1 verb
       [ti:ta]  excrement; noun.

The phonological representation of these items is:

2680  /ti:n/-  touch
       /ti:ta/  excrement.

These two types of morphological relationship are capable of being expressed as a single process, on the assumption that the sequence NPP (homorganic nasal plus geminate voiceless plosive cluster) is inadmissible in the language: we set up the suffix *//, which is defined as /r/ when it follows /r/, /t/ when it follows /t/, /t/ when it follows /t/, etc., and delete the homorganic nasal segment when */* occurs. This is handled by the following rule:

26. \((N)P_1 + * \rightarrow P_1P_1\) (P = p, t, t, c, k, r, r') (IM2(ii))

It is important to note that /r/ and /r'/ also function like stop consonants in respect of this rule; consider the Class 1 items 22 and 23:

2373  [ne:r]-  hang (intr)
       [ne:t]-  id. (tr); Class 1 volitive verb

2380  [ne:r]-  rise up
       [ne:t]-  lift; Class 1 volitive verb.

In phonological representation, these are:

2373  /ne:r/-  hang (intr)
       /ne:rr/-  id (tr)

2380  /ne:r'/-  rise up
       /ne:r'r'/-  lift.

Note that the occurrence of */* does not shorten a long root vowel;
it was seen above (p. 240) that the vowel length reduction rule is triggered by elements at Voc Suf and Cons Suf (although this statement will have to be refined somewhat in what follows), whereas */* may occur after Cons Suf (which is in paradigmatic relation to Voc Suf), as in the Class 1 item:

2655 [tirik̈]- turn (tr); volitive counterpart of the Class 1 item 4,

and the Class 1 item 167:

2655 [tirig̈]- wander.

The first shows the occurrence of */* (here expressing the volitive relationship), after the Cons Suf element */o/, while the second shows the Cons Suf element */k/ without following */*/. The base-final */kk/ of the first of these items (from */k + */) is realised as [kk] by the rules R3 and R4; it is subsequently reduced in length by the phonetic mutation rule AS7, which operates on all long consonants which are immediately preceded by either a long vowel in a stressed syllable (i.e. at Peak) or a short vowel in an unstressed syllable (either at Voc Suf, or the apenthetic vowel).

We are now in a position to discuss the individual elements at Coda.

3.3.2 The system of elements

*/p/*: this is realised as a voiceless geminate cluster in the Class 1 item 68:

2498 [tapp̈]- escape

and in 69, which is of similar form. It is realised as a single voiceless stop in Class 1 item 120:

1341 [ci:p̈]- comb

In all other cases, it is base-medial and realised as a bilabial
semivowel or as a labiodental voiced fricative, depending on the environment; these instances are in the Class 1 items 155-6, 157-8, and 172, the Class 2 item 36, and the Class 5 item 72:

- 1973 [cavt]- step on, kick
- 2454 [tavd]- grope in dark
- 2386 [navnd]- squeeze
- 4349 [bavnd]- be bent
- 4516 [bevar]- sweat
- 1121 [kavi]- lie face down
- 1927 [cavo]- chew

The last three items show the labial approximant with lip compression (see Chapter 2, p. 63); this is, of course, not distinguished from the lip-rounded approximant in the transcription of Appendix I, since it is predictable with reference to the vocalic environment. This variation is, however, to be handled by the realisation rules R1 and R4, which have therefore to be supplemented as follows:

27. \[ A \rightarrow \{ \text{bilabial p. of a.} \} \begin{cases} \text{lip-rounding} & / \bigl( X(\{j\}) \bigr)(L)^*I^*X() \\ \text{lip-compression} & / \bigl( X() \bigr)^*I^*X(\{j\})() \end{cases} \]

28. \[ I \rightarrow \begin{cases} \text{occlusion} & / \bigl( X() \bigr)(L) A_\text{__}^*Xj() \\ \text{obstruction} & / X() \bigl( \{j\} \bigr) A_\text{__}^*X() \end{cases} \]

The term 'obstruction' is from Halle (1959). It is assumed that [occlusion] (as opposed to [occlusion, groove friction]) and [obstruction] automatically specify vibration of the vocal cords. By 27 above, all implementations of A will have lip-compression,
unless in intervocalic position they are preceded or followed (or both preceded and followed) by a non-front vowel (i.e. other than \(X_j()\)); by 28, feature I represents [occlusion] when the bilabial approximant is preceded or followed (or both preceded and followed) by a front vowel (i.e. an \(X_j()\)), and [obstruction] when this is not the case; the complex AI represents the bilabial approximant, of course, only intervocally (elsewhere, I is represented as [contact], in association with which A specifies lip-compression).

The first five items cited above all show the operation of the epenthetic vowel rule, which may be given at this stage:

29. (i) \(C_1 + C_2 \rightarrow C_1 + VC_2 (C_1 \neq I; C_2 \neq \emptyset)\) (PM3(i))

(ii) \(V\) (from (i)) \(\rightarrow \begin{cases} \{a/ i\} C + \_ & \text{PM3(ii)} \\ \{e/ a\} & \text{else.} \end{cases}\)

When \(C_1\) is \(/y/\), it is realised as an approximant with lip-compression and fairly close articulation (by R1 and R4) in intervocalic position if the preceding vowel is /i/ or /e/ (this is the case in [bevar]-, 'sweat'). When this happens, the epenthetic vowel (/a/, by PM3(ii)) is retained. But when /a/ occurs at Peak (as in the remaining cases), /p/ is realised as a lip-rounded approximant, and a later rule, at the phonetic level (AS3), deletes the epenthetic vowel. Note that we have formulated the epenthetic vowel rule as a type of mutation rule at the phonological level which inserts a phonological element into the underlying structure of these items prior to the operation of the realisation rules; the reason for doing this will be discussed below (p. 263).

Finally, only base-medial cases are unambiguously realisations of
\(/w/\) at Coda: base-final \(/[p]/[p]p/\) may equally well be realisations of \(\hat{w}/\) at Cons Suf.: 

\(/c/\): is realised as a voiceless stop (geminate or single, depending on the length of the preceding vowel) in the Class 1 item 30 (also 31), and 93:

- 4025 \([muc]:-\) close
- 1352 \([gi:c]:-\) make a scratch

\([c]\) after a long root vowel indicates the presence of \(/{ }^{\star}/\) in underlying structure. Elsewhere, \(\hat{c}/\) is realised as a palatal semivowel; it is base-medial in the underlying forms of the Class 1 item 159, the Class 2 item 4 (also 5-8), the Class 4 item 10 (also 11-14), and the Class 5 items 5 (also 6-11), and 27 (also 72-3):

- 8249 \([kuynd]:-\) feel prickly
- 1142 \([kayy]:-\) (time) passes
- 1528 \([keyy]:-\) work
- 39 \([ay]:-\) send
- 1309 \([keya]:-\) string (flowers)

Note that in the type represented by the second, third and fourth items here the base-final element in underlying structure is \(i/\) at Voc Suf: this protects the base-medial \(\hat{c}/\) from the automatic gemination rule, and the single \(\hat{c}/\) is later laxed to \(y/\) by R4. A later rule at the phonetic level changes the \(i/\) (from \(i/\)) to \(y/\) if there is a following vowel, and deletes it otherwise (IS 5).

\(\hat{c}/\) is base-final in the Class 2 item 12 (also 13-17), and the Class 4 item 16:

- 306 \([a:y]:-\) choose
- 3103 \([ne:y]:-\) spin (thread)
Because of the long preceding vowel, it is not affected by the automatic geminisation rule, and is laxed by R4.

To handle the lax realisations of /c/, therefore, we supplement R4 with the following subrule:

30. \[ I \rightarrow \text{[obstruction]} /X(\cdot)(\cdot)E_{i} \llbracket x() \rrbracket \text{ II} \] (R4)

Further, to account for the fact that the place of articulation is palatal (not postalveolar) for the approximant, we supplement R2 with the subrule:

31. \[ B \rightarrow \text{[palatal p. of s.]} /X(\cdot)(\cdot)E_{i} \llbracket x() \rrbracket \text{ II} \] (R2)

Note that all the base-final realisations might result from /c/ at Cons Suff (followed by /\*/).

/t/: this is realised as a geminate voiceless stop in the Class 1 item 43 (also 44-60), and as a single voiceless stop in the Class 1 item 113 (also 114-7):

646 [utt]- ooze
349 [a:t]- become mature.

The last item shows the presence of /\*/ in underlying structure; when it does not occur, /t/ is realised in this position as a voiced stop, as in the Class 1 item 118 (also 119):

886 [cot]- read

/t/ occurs intervocally in base-medial position in the Class 1 item 166, the Class 2 item 44 (also 52), and the Class 5 item 32 (also 35, 45, 61, 71); in all such cases it is realised as a voiced stop:

4402 [badik]- live (happily)
Thus we supplement R4 with the subrule:

32. \( I \rightarrow [\text{contact, vocal cords vibrating}] / X(L)^{a}B_{-}^{a}(X(\cdot)) \) (R4)

This is, of course, very similar in form to the supplement given above (31) for the palatal approximant realisation of /c/, and to that part of R4 (28) which handles the bilabial approximant realisations of /p/.

Note that some instances of the voiceless stop articulation may be the result of /r/ or /r'/ at Coda, or at Cons Suff, followed in each case by /*/; the variant forms of Class 1 item 116, 2657 [de:t]- \( \rightarrow \) [de:t]-, 'drive away', may thus be explicable in terms of /r/ (or /t/) and /r'/, respectively. [d] in base-final position may similarly be the result of /t/ at Cons Suff.

/t/: this is realised as a voiceless stop (geminate or single according to the length of the preceding vowel) in the Class 1 item 32 (also 33-41), and the Class 1 item 97 (also 98-9):

1267 [kitt]- be got
1566 [knit]- sharpen

It is followed in the latter type of base by /*/; but not in the following ones, where it is realised as a voiced stop; the Class 1 item 100 (also 101-112), and the Class 2 item 11:

290 [a:d]- dance
3059 [ni:d]- stretch out straight (intr).

In all the foregoing examples, it might be /t/ at Cons Suff that underlies the voiced/voiceless articulations. However, the following voiced stops are all uniquely the result of /t/ at Coda, in the Class 1 item 162 (also 163, 175-6, 183), the Class 2 item 32 (also
40, 58-60, 63), the Class 3 item 13 (also 16, 18), the Class 4 item 1 (also 2-7), and the Class 5 item 31 (also 34, 39, 42, 53, 56, 63-4, 66-7):

- [odik]- sweep
- [idi]- (wall) falls
- [kada]- cross
- [id]- drop (tr)
- [poda]- flutter, tremble.

This requires a further slight modification to R4, so that it includes the subrule:

33. $I \rightarrow \{[\text{contact, vocal cords vibrating}] / X()^{(L)}3r_{-}^{}\}$ (R4)

The feature 'Br' defines the column of phonologically retroflex elements in the matrix of Figure 9 (p. 236). Hence, we also need the following supplement to R2:

34. $B \rightarrow \{[\text{prepalatal p. of a., retroflexed tongue-tip}] / r_{-}^{}\}$ (R2)

in order to account for the realisations of /t/, /n/ and /l/. r is a further second-order feature (along with $j$) under $B$, serving a contextual function in the realisation of $B$. It is discussed further, in connection with /r/, below (pp. 256-258).

/3/: this element is set up to account for the few instances of [j] in base-final position (contrasting with the regular [y] as the lax realisation of /c/). It occurs just in Class 1, in the items 94-6:

- 274 [pu:j]- do acts of worship
- 4479 [bi:j]- wave (tr/intr)
- 3927 [ma:j]- (clothes) soil
Note that the first item is non-Dravidian, and that the second is an alternative form (cp. [bi:d-]). /j/ has to be set up at Cons Suff also, on the basis of one clear instance, and it may be that all the items cited here show that element; this would mean that /j/ could be eliminated from the system at Coda altogether.

/n/: this is realized as [nn] in base-final position after a short root vowel, in the Class 1 item 65 (also 66-7), and the Class 3 item 6:

1336 [kinn]- tear into strips
2670 [tinn]- eat (not rice)

Otherwise, it is [n], base-medially, in the Class 5 item 30 (also 40):

3050 [nena]- think.

/n/: this underlies [nn] base-finally after a short root vowel, in the Class 1 item 42, and the Class 3 item 5:

678 [enn]- say, tell
516 [unn]- eat (rice).

Elsewhere, it is [n], base-medially, in the Class 1 item 174 (also 178), and the Class 2 item 28 (also 39, 41):

Indo-Aryan [gunis]- calculate
98 [ani]- wear, enjoy (jewels).

/r/, /r'/: these may be realized as [r] in base-medial or base-final position: base-medially, in the Class 1 items 1 (also 2-5), and 164 (also 165, 167-8, 170-71, 177, 181, 186), the Class 2 item 29 (also 30, 34, 37, 42-3, 46-7, 49, 51, 55-7, 65-7, 69, 71), and 75 (also 76-7), the Class 3 items 2 (also 304), and 9 (also 12, 14, 17, 19, 21), the Class 4 items 8 (also 9), and 20 (also 21-2), and the Class 5 items 12, and 20 (also 21-2, 24-5, 28, 36, 43, 46, 48, 50, 54-5, 57-8, 62, 63-9):
569  [ur]-  melt (intr)
3623  [porik]-  pick up small objects
176  [ari]-  (liquid) is strained
571  [urid]-  roll
407  [ir]-  be (in a place)
312  [ara]-  make hoarse noise
2833  [ter]-  pay (penalty)
557/559  [ora]-  answer
3708  [por]-  fight
191  [ara]-  grind with rolling stone.

Base—finally, [r] from these sources may be found in the Class 1 item 121 (also 122-139), and the Class 2 item 18 (also 19-27):

346  [a:r]-  become dry
2597  [ta:r]-  descend.

We therefore require the rule R5:

35.  II → [contact, flapped]  (R5)

We assume that [contact, flapped] implies automatically that the vocal cords are vibrating.

Further, since [r] is articulated on the alveolar ridge, we have to extend the operation of R2 so as to include the following subrule:

36.  B → [alveolar p. of a.] /(/r)II,  (R2)

where the notation '(r)' formalises the fact that both /r/ and /r'/ are realised, singly, as [r].

As noted earlier, when either of these elements is followed by /*/ in underlying structure, they are realised as voiceless dental stop articulations; this would seem to be the case, for example, in the Class 1 item 59 (which may have either /r/ or /r'/ at Coda); it is given here together with the Class 2 item 77, to which it is related:
fear, be frightened
be thrown into confusion by fear.

In order to account for these voiceless dental stop realizations in geminate clusters, we require the further subrules:

37. $B \rightarrow [\text{dental p. of a.}] / \begin{cases} (r)\text{II}^B(r)\text{II} \\ B(r)\text{II}^B(r)\text{II} \end{cases}$ (R2)

38. $\text{II} \rightarrow [\text{contact}] / \begin{cases} B(r)^B(r)\text{II} \\ B(r)\text{II}^B(r)\text{II} \end{cases}$

/1/: this underlies [11] in base-final position after a short vowel, and [1] elsewhere. Base-medially, it is found in the Class 1 item 173 (also 179-80, 184-6), the Class 2 item 31 (also 36, 43, 54-5, 68, 72, 74), the Class 3 item 10 (also 15), and the Class 5 item 29 (also 33, 38, 52, 60):

200 [alas]- (curry, rice) spoils
213 [ali]- dissolve (intr)
200 [ala]- crave
1504 [kola]- (plant) shoots against planter

Base-finally, it is found in the following items: Class 1 item 76, Class 2 item 9 (also 10), Class 3 item 7, Class 4 item 15, and Class 5 item 14 (also 15):

1969 [cell]- sprinkle
1772 [koll]- kill
3043 [nill]- stand
1641 [gell]- win
2354 [co1]- become tired

Note that in the last item it is phonetically short after a long root vowel.
For this element we formulate the following realization rule:

39. \[\text{III} \rightarrow \text{[contact, lateral air escape]}\] \quad (R6)

We assume that \text{contact, lateral air escape} automatically specifies vibration of the vocal cords.

/1/: base-medially, this underlies [1], in the Class 1 items 6, and 160 (also 161, 169, 182, 188-9), the Class 2 item 33 (also 35, 45, 50, 53, 61-2, 64, 70, 73), the Class 3 item 11 (also 20), and the Class 5 item 23 (also 26, 37, 41, 44, 49, 51, 65, 70):

\[
\begin{align*}
432 & \quad [el] \quad \text{leave position} \\
203 & \quad [slak] \quad \text{stir with ladle} \\
426 & \quad [ili] \quad \text{descend} \\
252 & \quad [ala] \quad \text{measure} \\
& \quad [ala] \quad \text{sit.}
\end{align*}
\]

Base-finally, it is realised as [11] (after a short root vowel) or [1], as in the Class 1 items 77, and 141, and the Class 5 item 18:

\[
\begin{align*}
2767 & \quad [tull] \quad \text{make small jumps} \\
341 & \quad [a:1] \quad \text{rule} \\
1677 & \quad [ke:1] \quad \text{hear, ask.}
\end{align*}
\]

This element, like /1/, also involves the realization rule R6; it is distinguished from /1/ by R2, which specifies prepalatal contact with retroflexed tongue tip when B is marked with the second-order feature r.

/\text{p}/: a preliminary statement of the way this element operates has been given earlier; thus, it helps to form -BB clusters in base-final position in the Class 1 items 22 (also 24-6), 61 (also 62-4), and 70 (also 71-2):

DEIA 5 [agg] (fire) consumes
It has been noted already that the most important feature of the behaviour of \( r / \) is with respect to the epenthetic vowel rule Pk3, the operation of which is blocked when the element at Coda is \( r / \).

This is the contextual function of the second-order feature \( x \) in the matrix of Figure 9 (p. 236). Since the feature \( x \) has no articulatory effect in itself, \( r / \) is realised as the apico-alveolar tap when it is followed by an element at Voc Suff, since here the feature \( x \) has no relevance, and the specification of \( r / \) is in all other respects identical to that of \( r / \); as for example in the Class 3 item 19 (also cited earlier):

\[
3255 \quad [\text{para}] - \quad \text{crawl.}
\]

The form of the realisation rule R5 (35 above) already allows for this, by not specifying the feature \( x \) at all; hence, whether or not \( x \) is present, R5 (and of course R2) will apply, to identical effect in each case. However, we have to supplement this with the following subrule which realises the feature II identically to Ib when the immediately following phonological segment contains I (i.e. not Ib, Io or In):

\[
40. \quad \text{II} \to [\text{contact, vocal cords vibrating,}]
\]

\[
\begin{array}{ccc}
\text{bilabial p. of a.}] & \text{dental p. of a.]} & \text{prepalatal p. of a., retroflexed tongue-tip]} \\
\text{postalveolar p. of a.]} & \text{velar p. of a.}] & \text{(R5)}
\end{array}
\]

\[\begin{array}{cccc}
A & B & Br & I \parallel \\
\end{array}\]

Simultaneously, the following element at Coda, if it is not
marked for voice already, is supplied with this feature by R4:

41.  I → [contact, vocal cords vibrating] / BIHx^A()_.] (R4)

Note that voicing is only introduced if the element at Coda is not

geminated (by following /*\/).

Finally, /r/ also has to be set up in the verbal system for the

Class 3 item 3; this is because this item contracts a lexical relation-

ship with a particular noun form:

2526     [tar]-  give (to 1st/2nd person)
          [tamii] offer of marriage (to girl); noun.

Setting up /r/ for the common root here will yield, in the case of

the noun form, the sequence /rnt/ which will be realised as elements

at the systematic phonetic level, and then simplified by a phonetic

mutation rule (AS7).

/l/: this element, like /r/, is defined by feature x,

specifying that it is not affected by the operation of the epenthetic

vowel rule. Consider the Class 2 item 11, and its related verb and

noun forms:

3059     [ni:ld]-    stretch out straight (intr)
        [ni:lt]-    id. (tr); Class 1 volitive verb
        [ni:la]     length; noun.

We can set up here the common root /ni:1/-, to which is affixed the

element /t/ (at Cons.Suff. for the intransitive verb), additionally

/*/ (at Suffix2. for the transitive verb), or, instead of either of

these possibilities, the noun-classifying element /a/ (see Chapter 5).

This will result in the following sequences after all relevant phono-

logical rules have applied: /ni:lt/-, /ni:ltt/-, and /ni:la/

(omitting irrelevant details such as boundary elements). These will

then be realised as phonetic elements; in particular, /l/ will be
realised as [l], since the feature x has no articulatory function. Finally the rule AS6 will simplify the clusters by deleting [l].

Exactly similar considerations hold in the case of the Class 1 item 141, the Class 4 item 18, and the irregular item 4; these are cited here, together with their relevant related forms:

341 [aːl] - rule
   [əːsɛ] day of the week; noun

4402 [baːl] - (child) lives, rule
   [baːli] way of life; noun
   [bəːsɛ] act of living; noun

2002 [caːl] - die
   [caːvu] corpse, death; noun.

We therefore require a further extension of the voicing subrule in R4:

42. \[I \rightarrow \{\text{obstruction} \} / \text{BrIIIx} ^{A} \frac{\text{B}(\_)}{\text{C}} \] (R4)

\[\text{contact, v.c.s vibrating} / \text{BrIIIx} ^{\{\text{B}(\_)}{\text{C}} \] (R4)

It will be seen that this extension closely corresponds to what was proposed for /r/ above (41); however, /p/ is realised, not as [b], but as [v], after /l/, and this is allowed for by the first part of the subrule set out here. It is also clear that 'BrIIIx ^{A} \frac{\text{B}(\_)}{\text{C}} ' and 'BrIIIx ^{\{\text{B}(\_)}{\text{C}} ' function like a preceding vocalic environment in respect of the voicing subrule in R4. The final form of this rule gives the environment 'BrIIIx ^{A} ' first, and this allows the other environments 'BrIIx ^{()} ' and 'BrIIIx ^{\{\text{B}(\_)}{\text{C}} ' to be collapsed as '(()x^{()} ').

Finally, the form of R6:

45. \[\text{III} \rightarrow \{\text{contact, lateral air escape}\}, \] (R6)
allows for the realisation of /l/ in all environments as l (i.e. identically with /l/).

Since the last two items cited above each take the non-retroflex form of the consonantal past affix, /l/ may be taken to be the conditioning element involved in this phenomenon, and hence we must also set it up in base-final position for the Class 4 items 17 and 19, and the Class 5 items 16, 17, and 19.

At this stage, we may give the full form of the epenthetic vowel rule:

44. (i) $C_1 + C_2 \rightarrow C_1 + VC_2 \quad (C_1 \neq \text{r}, l; C_2 \neq \text{b}) \quad \text{(PM3(i))}$

(ii) $V \quad (\text{from (i)}) \rightarrow \begin{cases} \text{a} / \{\text{e} \} C + \cdots \\ \text{i} \quad \text{else} \end{cases} \quad \text{(PM3(ii))}$

We may also now formalise the vowel length reduction rule:

45. LCV(C) $\Rightarrow CV(C) \Rightarrow$ \quad \text{(PM3)}

This states that when an element at Coda is followed by either V (from Voc_Suff) in base-final position or VC (where the V is from the epenthetic vowel rule, and the final C is an element at Cons_Suff), the length element /L/ immediately preceding the Coda element is deleted (if it is present; otherwise, the rule applies vacuously).

Clearly, if the formulation of PM3 is defensible, then so is the claim in PM3 that the epenthetic vowel is a phonological rather than a phonetic entity. In this regard, notice that items such as /ni:lt/- and /ni:llett/-, cited earlier, show a Cons_Suff element following a Coda element without an intervening vowel. The crucial point here is that the Cons_Suff element in these items does not trigger the operation of the vowel length reduction rule; only when
the epenthetic vowel occurs before Cons Suff does PM3 apply. Of course, it would in principle be possible to formulate PM3 as a realisation rule, whereas PM3 could be so formulated also; but PM3 is probably more simply stated as a mutation rule. The most important point here, perhaps, is that it is clearly undesirable to account for the non-occurrence of long root vowels in (C)VCV, (C)V(N)S(C) and (C)VCV(N)S(C) bases by preventing the occurrence of /L/ at Peak in those bases which contain Cons Suff or Voc Suff. Not only would this complicate the statement of the relationship between such items as:

1614 [ked] - be ruined: Class 4 verb
[ke:di] ruin; noun

by setting up the root variants /ke/- /ke:ti/-; it would actually fail to account for the relationship between:

3059 [ni:di] - stretch out straight (intr)
[ni:ti] - id (tr); Class 1 volitive verb,

and the other items cited above.

3.4 Cons Suff

This is represented by the system of elements in the matrix of Figure 10, optionally preceded by the one term system /u/.

It has already been noted, in discussing the system at Coda, that there are certain items in which it is possible that either Coda or Cons Suff is represented; only those instances which unambiguously show elements at Cons Suff will be dealt with here.

/½/: this occurs preceded by /u/ in the Class 1 items 86 (also 87) and 167 (also 186-9):

2735 [dumb] - become full
**Figure 10: The systems at Consonant**

839  [-clam]-  gable.

In all cases involving /ː/, which only occurs before a phonological stop consonant (that is, (I)), the realisation rule RS makes the nasal homorganic in place of articulation with the following stop:

\[
\begin{array}{|c|c|c|c|}
\hline
\text{bilabial p. of a.]} & \text{Consonant} & \text{Bipalatal p. of a.]} & \text{Velar p. of a.]} \\
\hline
\text{A} & \text{B} & \text{Br} & \text{C} \\
\hline
\end{array}
\]

46. \( N \rightarrow \) [contact, velum lowered, tongue-tip]

\[
/\quad \quad \quad I
\]

\[
/\quad \quad \quad I^*
\]
The voicing of the stop (at all places of articulation) after /n/ allows us to state here the following extended form of the voicing subrule in R4:

\[
47. \quad I \rightarrow [\text{contact, v.c.s vibrating}] /\begin{array}{c}
\{X(1)^{\downarrow}\} \\
\{\} \\
\{\} \\
\end{array}\}_{b} (R4)
\]

/p/ also occurs with following /n/, in the Class 1 item 171:

578 [urip]- play (flute).

Finally, note that it is also part of the source for the -BB category of base-final consonants in Class 1, as discussed earlier:

when /p/ precedes /n/, [bb] is yielded.

/t/: this occurs with preceding /n/ in the Class 1 items 83 (also 84-5), 153 (also 154), and 159:

3695 [pond]- bounce
3944 [ma:nd]- scratch
2249 [kuynd]- feel prickly.

It also accounts for the base-final element in the Class 1 item 169 (also 170):

725 ["clid]- write

When preceded by /n/, it yields [dd] after a short root vowel, as noted earlier.

/t/: this occurs with preceding /n/ in the Class 1 items 81 (also 82), 152, 157 (also 158), and 186:

2712 [tund]- break (intr)
2630 [ti:nd]- touch
2386 [navnd]- squeeze
2213 [curind]- shrink (intr)
Base-finally (i.e. not followed by /*), it accounts for [d] in the Class 2 item 75 (also 76-7), and the Class 4 item 20 (also 21-2):

571 [uriq]- roll (intr)
557/559 [orad]- answer

/c/: this occurs with preceding /N/ in the Class 1 items 79 and 151:

3962 [miŋ]- be left over
4130 [muŋ]- suck (penis).

/v/: this occurs with preceding /N/ in the Class 1 items 78, 142 (also 143-50), and 175 (also 176-85):

3557 [punig]- rot, fester
746 [eŋ]- lengthen note (singing)
56 [adaŋ]- submit to.

It is followed by /* in the Class 1 item 160 (also 161-6):

203 [alak]- stir with ladle,

and not so followed in the Class 1 item 167:

2655 [tirig]- wander

We therefore extend the operation of R4 to include the following subrule:

48. \[I \rightarrow \text{contact, v.c.s vibrating}] /X()^*(L)^'C \{\{X()\} \} (R4)

Finally, when preceded by /ŋ/, base-final [gg] after a short root vowel results, as discussed earlier.

/ș/: this occurs just in the Class 1 item 168:

3262 [baraj]- grope.
it has already been seen that /g/ has to be set up as the underlying base-final element in the Class 1 item 1 (also 2-6):

569  [ur]-  melt (intr)

We can utilise /g/ further in the Class 1 items 27-9:

3658  [poni]-  (grain, stomach) swells
4096  [mun]-  dive
3233/3306  [pan]-  go stooping

In all these items, we set up the sequence -/Nñ/ immediately after the root vowel. /g/, as noted earlier, has no articulatory function, and we therefore extend the realisation rules R3 and R4 as follows:

49.  C → [no articulatory effect] / I o (R3)

50.  I → [no articulatory effect] / o (R4)

However, the phonological rule PM7 operates on the sequence -/Nñ/ to yield -/n/:

51.  N  →  (PM7)

The resulting nasal consonants are geminated in base-final position after a short root vowel by PM9 (the automatic gemination rule). But when -/Nñ/ is followed by */ (at Affix2), it is mutated to -/kk/ by PM2 (which is required anyway, to account for the volitively related forms of the Class 1 items 1-6):
Note that this accounts naturally for the volitive relationship exhibited by the Class 1 item 26:

4036  [munɪ]-  dive
[mukk]-  dip (tr) under water; Class 1 volitive related verb.

Setting up /ŋ/ in this way also avoids the necessity of including /n/ at Coda and/or Cons Suf, just for the three Class 1 items 27-9 cited above.

Consider also the volitive relationship involving the Class 3 items 6 and 8:

2670  [tinn]-  eat (not rice)
[tiːt]-  feed by hand; Class 1 volitive verb

1209  [kaːŋ]-  see, seem
[kaːt]-  show; Class 1 volitive verb.

These pairs of items suggest that (ignoring here the idiosyncratic length alternance on the root vowel of the first item) -/ŋ/, -/nt/ should be set up in base-final position for the non-derived forms, and we extend (iii) as follows:

Note that /n/, /ŋ/ have to be set up on independent grounds at Coda; however, apart from the Class 1 items 73-5:

1536  [kumm]-  churn
there are no independent grounds in the verbal system for an element /n/ at Coda and/or Cons.Suff. We therefore derive /n/ via the operation of M7, along with /s/ and the instances of /n/ and /n/ cited above (rule 51). Note that, since /t/ /g/ and /g/ only occur after /n/ in the data under consideration here, we do not require special realisation rules for them; they are in all cases mutated by either M2 or M7, and never appear in a terminal phonological sequence.

/7/: this is set up to account for the single Class 1 item 80:

1408 [kunt]— be lame,

which shows, unusually, a voiceless stop after a homorganic nasal.

/7/ is defined by the feature p (indicating that it is marked for voiceless plosive articulation) in the matrix of Figure 10. When it occurs immediately after the homorganic nasal element /N/, it is not voiced by R4 because the feature symbol p intervenes between the symbol I and the following environment (X(), or []). Hence the environment 'p' is included in the 'else' in the relevant subrule:

\[
54. \quad I \rightarrow \left\{ \begin{array}{l}
\{\text{contact, v.c.s vibrating}\} \\
\{\text{contact}\} \text{ else.}
\end{array} \right.
\]

\[(\text{R4})\]

/r/, /r/ : these elements are set up here to account for those cases of [r] which were noted in the discussion of Coda, above, to be possibly realisations of Cons.Suff.
/s/: this is set up for the single Class 1 item 140:

4000 [mu:s]— smell (tr)

3.5 Voc Suff

The matrix in Figure 11 shows the elements that occur at this position. They are set up to account in the first place for all

Figure 11: The system at Voc Suff

base-final vowels: thus /i/ underlies base-final [i], in the Class 2 item 28 (also 29-57), and the Class 5 item 34 (also 35-62); /i/ underlies base-final [i] in the Class 5 item 63 (also 64-71); and /a/ underlies base-final [a] and [e] (see the discussion below for this alternation) in the Class 3 item 9 (also 10-21), and the Class 5 item 20 (also 21-33), and the Class 2 item 58 (also 59-74), and the Class 5 item 72 (also 73), respectively:

98 [ani]— wear, enjoy (jewels)
67 [adi]— (lightning) strikes
69 [adi]— approach
312 [ara]— make hoarse noise
191 [ara]— grind with rolling stone
73 [ade]— (gap) is stopped
1927 [caye]— chew
2 [cave]— chew
In addition, we have noted earlier that /i/ is to be set up at this position for the Class 2 item 4 (also 5-8), the Class 4 item 10 (also 11-14), and the Class 5 item 5 (also 6-11):

1142 [kay]- (time) passes
1628 [keyy]- work
39 [ay]- send

This has the result that, at the time of the operation of the automatic gemination rule, the element /c/ at Coda in these items is not in base-final position, is therefore not geminated, and is hence laxd subsequently, by the realisation rule R4. A later, phonetic mutation rule (AS5) deletes the [i].

We have also seen that a vowel is to be supplied at Voc Suff in the underlying representation of the Class 3 item 2 (also 3-4), and the Class 4 items 1 (also 2-7), and 8 (also 9):

407 [ir]- be (in a place)
375 [i]- drop (tr)
2833 [ter]- pay (penalty).

For this we set up /i/, for the following reasons:

(a) it is one of the unmarked vowels in the system at this point;
(b) it occurs base-finally at the phonetic level in Class 5, but not in Classes 2-4; hence, setting it up in underlying representation base-finally for items of Classes 3 and 4 (the (C)VC base type does not occur in Class 2) helps to rectify a skewness in distribution of this element. Notice that the other unmarked vowel /a/ is not a possible candidate for the items under consideration, since it has a phonetic realisation at this position in the items of Class 3, and therefore contrasts with whatever vowel is set up for (C)VC bases;
(c) it explains why the volitive forms of the Class 4 bases 2 and 5-7:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1614</td>
<td>kedit</td>
<td></td>
<td>ruin (tr)</td>
<td></td>
</tr>
<tr>
<td>3190</td>
<td>padit</td>
<td></td>
<td>let lie</td>
<td>fallow</td>
</tr>
<tr>
<td>3191</td>
<td>padit</td>
<td></td>
<td>make</td>
<td>suffer</td>
</tr>
<tr>
<td>4419</td>
<td>budit</td>
<td></td>
<td>make to</td>
<td>let go</td>
</tr>
</tbody>
</table>

all show [i] as the second base vowel, even though only the last item cited corresponds to the pattern noted earlier with respect to the epenthetic vowel rule.

This requires that we supplement the general realisation rule R9 as follows, in respect of the unmarked realisation of the feature X:

55. \[ X \rightarrow [\text{back of tongue highest, lips unrounded}] / \{1\} \] (R9)

It will be recalled that, in discussing the system at Peak, where /i/ is introduced under the third-order feature r, the environment given for this particular realisation of X was simply '2' (for /a/). Note that, for the sake of typographical convenience, the alphabetic transcription used in the text for systematic phonemes does not distinguish between the element under consideration here and /i/ at Peak (i.e. /i/ is used in each case). Because they occur in different systems, the risk of confusion is slight enough; however, where it exists, it is avoided by referring to '/i/' at Voc Suff', or '/i/' at Peak', as appropriate.

Since /i/ at Voc Suff has no realisation in items of Class 3 and 4 when it occurs base-finally, we require two further subrules for R9 and R10:

56. \[ X \rightarrow [\text{no articulatory effect}] / 1 \} [\& t, - \& p] \] (R9)
57. 1 \rightarrow [\text{no articulatory effect}] / x \_ \_ [\alpha t, - \alpha p] \ (R10)

The notation '[$\alpha t, - \alpha p]$' specifies Classes 3 and 4; for the development of these class features (from II, under Class), see below (pp. 276-278).

Note that in this system of vowels /i/ is not taken as a type of /i/ (as in the system at Peak), but as an element in its own right. The justification for this is fairly clear from an examination of just the verbs, but the evidence in the language as a whole is overwhelmingly in support of such an analysis. There is full contrast between /i/ and /i/ at this position in the nominal system also, as will be seen in the next chapter.

Concerning /a/ at this position, two points have to be made. The first is that when /a/ occurs as a suffixal vowel, the vowel at peak cannot be either of the elements /i/ or /u/: this is handled by the phonological rule FM 4:

\[
\begin{array}{ccc}
  i & \rightarrow & e \\
  u & \rightarrow & o \\
\end{array}
\]

There is no restriction on Peak possibilities when the vowel at Voc Suff is /i/ or /i/. Note that it would be satisfying if it were possible to formulate FM 4 as a realisation rule or phonetic mutation rule; unfortunately, there are just enough exceptions in the nominal system to make this impossible.

Finally, /a/ is realised as [e] in the simple base forms and non-past stems of Class 2 verbs, in contrast to the past stems and volitive verbs of those items, which all show [a]. [e] also occurs (ignoring the nasality feature) in the Class 5 items 72 and 73:

\[
\begin{array}{l}
  1927 \ [\text{chye}] - \\
  \sim [\text{chye}] - \\
\end{array}
\]

chew
PN5 handles all these cases, save for the alternative form [cavé]-:

\[
\begin{align*}
\text{a} & \rightarrow e / \left\{ \begin{array}{l}
\text{-}t, -p \} \text{ non-past} \\
\text{a c - } [+t, +p] \} \\
\end{array} \right. \\
\end{align*}
\]

Note that the environment ' a c -' \([+t, +p] \} ' is stated in such a way as to allow for /a/ to be realized as [a] in the Class 5 item 27:

1609 [koya] string (flowers)

Regarding the alternative form [cavé]-, /e/ would have to be set up in the system at Voc Suff for those idiolects having this form.

3.6 Suffix

As noted earlier, the element at this point in the base structure is */s/; it occurs only in Class 1 verbs, and is set up in the first place to account for the regular voicing contrast between stops occurring base-finally after a long root vowel or after the second base vowel (introduced by PN 3). It occurs in the following Class 1 items: 88 (also 89-92), 93, 97 (also 98-9), 113 (also 114-7), 120, 155, 160 (also 161-6), and 171:

- 593 [u:k] comb
- 1352 [gi:c] make a scratch
- 1566 [ku:t] sharpen
- 349 [a:t] become mature
- 1341 [ci:p] comb
- 1973 [cavt] step on, kick
- 203 [alak] stir with ladle
- 578 [urip] play (flute)
It turns out to be the case that */* from Suffix2 is not important for stating relationships between verbs, nor verb-noun relationships; this is the main reason why it is distinguished from */* under Volit1 (see below, p.278-281).

3.7 I and II

Discussion of these elements (from Class by rules LS 3 and 4) has had to be postponed until this point, since they embody features that can only be clearly understood in terms of the particular phonological system used here. However, the rules 60 and 61 follow on directly from 11 above. They expand I and II as feature-pairs (set off in square brackets), and the set of possible pairings specifies the verb classes 1-5.

60. (i) I → [i]  \hspace{2cm} (LS 12(i))
    (ii) [i] → [-p]  \hspace{2cm} (LS 12(ii))

61. (i) II → [±t]  \hspace{2cm} (LS 13(i))
    (ii) [±t] → [±p]  \hspace{2cm} (LS 13(ii))

The table in Figure 12 shows Classes 1-5 of Appendix I and Classes I and II of the generative component, and how the feature-pairs correlate the two systems:

<table>
<thead>
<tr>
<th>Class in Appendix I</th>
<th>Past affix</th>
<th>Non-past affix</th>
<th>Classifier element</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>vocalic [i]</td>
<td>lax [-p]</td>
<td>I</td>
</tr>
<tr>
<td>2</td>
<td>lax [-t]</td>
<td>lax [-p]</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>lax [-t]</td>
<td>tense [+p]</td>
<td>II</td>
</tr>
<tr>
<td>4</td>
<td>tense [+t]</td>
<td>lax [-p]</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>tense [+t]</td>
<td>tense [+p]</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 12: The functions of the Classifier elements I and II*
The features are set up on the assumption that the underlying forms of the syntactic tense affixes are /i/ (the vocalic past affix), /nt/ (the consonantal past affix), and /p/ (the non-past affix). Verbs of Class I (Class 1) all show the vocalic past affix, and the lax form of the non-past affix; Class II verbs (Classes 2-5) all show the consonantal form of the past affix, and within this group there are four sub-groups, depending on whether the form of the past affix is lax ([-t]), or tense ([+t]), and whether the form of the non-past affix is lax([-p]) or tense ([+p]). The [+ ] values for the features set up here are handled by rule in the following way: the sequences

\[ a \quad /...[+t, +p] \neq nt.../ \]
\[ b \quad /...[+t, +p] \neq p.../ \]

represent what may occur at the lexeme boundary (\#) between a verbal lexeme and a following past or non-past affix. In the case of a following past affix, the feature [p] is irrelevant, and hence is assigned [+ ] values in (a) above; when a non-past affix follows, the feature [t] is irrelevant and is likewise assigned [+ ] values in (b). A rule will then rewrite the past affix -/nt/ as -/tt/ in the environment of a preceding [+t] feature, and the non-past affix -/p/ will become -/pp/ in the environment of a preceding [+p] feature. For minus values of the relevant feature, no change in the form of the syntactic tense affixes will be effected, and -/nt/ will yield a homorganic nasal plus voiced stop articulation, and -/p/ will be lax ed to a bilabial semivowel. Further details are outside the scope of this study.

At this stage, the conditions 62 and 63 apply:

62. NOT: \# ... Volit, \[ [+t, +p] \# (LS 14)
63. NOT: #... Volit₂ \{[+t] \} \ldots# \quad (LS 15)

62 states that \textit{Volit₁} may occur with verbal bases of all classes save Class 5; 63 supplements this with the statement that \textit{Volit₂} may only occur with verbal bases of Class 2 (see above, p. 205).

3.8 \textit{Volit₁}

All the forms of this suffix show the element /\*//, which is identical in form and phonological function to the element representing \textit{Suffix₂}, but their respective sources have nonetheless to be kept distinct. The justification for this lies in the fact that /\*// from \textit{Suffix₂}, as noted above, is found only with Class 1 verbs, and serves to mediate no lexical relationships, while /\*// from \textit{Volit₁}, is generated within verbal bases of Classes 1-4 and operates on these in such a way as to derive Class 1 volitive verbs. The distinction between the two sources for /\*// in the verbal system, however, does not obscure their similarity of operation, or the fact that the verbs in whose base structures they operate are all of Class 1; the following rule states, in effect, that /\*// from \textit{Volit₁} can only occur in this class:

64. #... Volit₁ \{[+t, +p]\# \rightarrow \ldots#... Volit₁ \{[i, -p]\# \quad (LS16)

The element /\*// is the sole representation of \textit{Volit₁} in most cases; but where the preceding element is a vowel at \textit{Voc Suff}, a consonantal element is introduced, by the phonological rule 65, as a 'vehicle' for the following /\*//:
Rule 66 then determines the introduced consonant as /p/ or /t/, depending on the preceding vowel; 67 also adjusts the -/ip/ sequence to -/ip/. These rules operate in the following instances: the Class 2 item 64 (also 68, 73, 74), the Class 3 items 4, and 13 (also 16-19), and the Class 4 item 2 (also 5-7); and in the Class 2 item 30 (also 33, 45, 51):

2551 [tale]- become weak; Class 2
[talat]- make weak; Class 1 volitive verb
4311 [bar]- come; Class 3
[barat]- cause to come; Class 1 volitive verb
929 [kada]- cross; Class 3
[kadat]- take across; Class 1 volitive verb
1614 [ked]- be ruined; Class 4
[kedit]- ruin; Class 1 volitive verb
265 [ari]- find out; Class 2
[arip]- inform, tell; Class 1 volitive verb

(See Appendix II.)

Note that, in the case of the Class 3 item 4311 [bar]-, we need a fourth subrule within PM 1, 68, in order to state that the second vowel of the derived base is /a/, not /i/ (as set up for the non-derived base):

68. \[i \rightarrow a / \_ t \#] [-t, +p] # (PM1 (iv))

Finally, the operation of Volit, in all other cases is shown in
Appendix II, and summarised in the table of Figure 13:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>-t</td>
<td>-t</td>
<td>-t</td>
<td>-t</td>
</tr>
<tr>
<td>-Mtk</td>
<td>-Mtk</td>
<td>-Mtk</td>
<td>-Mtk</td>
</tr>
<tr>
<td>-Ntk</td>
<td>-Ntk</td>
<td>-Ntk</td>
<td>-Ntk</td>
</tr>
<tr>
<td>-nk</td>
<td>-nk</td>
<td>-nk</td>
<td>-nk</td>
</tr>
<tr>
<td>-n</td>
<td>-n</td>
<td>-n</td>
<td>-n</td>
</tr>
<tr>
<td>-c</td>
<td>-c</td>
<td>-c</td>
<td>-c</td>
</tr>
<tr>
<td>-c'</td>
<td>-c'</td>
<td>-c'</td>
<td>-c'</td>
</tr>
<tr>
<td>-k</td>
<td>-k</td>
<td>-k</td>
<td>-k</td>
</tr>
<tr>
<td>-kk</td>
<td>-kk</td>
<td>-kk</td>
<td>-kk</td>
</tr>
<tr>
<td>-tt</td>
<td>-tt</td>
<td>-tt</td>
<td>-tt</td>
</tr>
<tr>
<td>-cc</td>
<td>-cc</td>
<td>-cc</td>
<td>-cc</td>
</tr>
<tr>
<td>-rr</td>
<td>-rr</td>
<td>-rr</td>
<td>-rr</td>
</tr>
<tr>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
</tr>
<tr>
<td>-pp</td>
<td>-pp</td>
<td>-pp</td>
<td>-pp</td>
</tr>
<tr>
<td>-t</td>
<td>-t</td>
<td>-t</td>
<td>-t</td>
</tr>
<tr>
<td>-t</td>
<td>-t</td>
<td>-t</td>
<td>-t</td>
</tr>
<tr>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
</tr>
</tbody>
</table>

Column 1: elements at Coda/Cons Suff/Voc Suff prior to the operation of the phonological mutation rules.

Column 2: elements in base-final position in the terminal sequence (Volit not occurring).

Column 3: elements in base-final position in the terminal sequence (Volit has occurred, and PM2 has applied).

*Figure 13: The operation of Volit*

There is no phonetic correlate of /t/, of course, in the Class 1
items 1-6. Note that the Class 1 item 127 and the Class 2 item 23 show distinct derivations from comparable underlying structures:

2312 \[\text{[ke:l]}-\] go up to house; Class 1
\[\text{[ke:t]}-\] take (person) up to house; Class 1 volitive verb

2380 \[\text{[ne:l]}-\] rise up; Class 2
\[\text{[ne:t]}-\] lift; Class 1 volitive verb.

In the first case, we require a phonological rule of the form:

69. \[r'r' \rightarrow rr\] \text{(PM2 (iii))}

after PM2 (ii) has operated (to yield /r'r'/) (but before the realisation rule R9, which accounts for the retracted articulation of /e/ before /r'/; in the latter case, however, /r'r'/ remains up to the terminal sequence, and R9 determines the appropriate retracted quality of the preceding vowel, while /r'r'/ is realised as [tt]. It should be noted that a number of speakers have the form [ne:t]-, 'lift'; in general, the present tendency seems to be in this direction, whereby the phonological rule PM2 (iii) is becoming more and more important for the description of the speech of the younger generation.

Finally, the Class 4 items 17 and 19 are irregular in respect of the base-final consonants of their voice-related forms:

723 \[\text{[e:l]}-\] get up (intr)
\[\text{[epp]}-\] raise up; Class 1 volitive verb

4457 \[\text{[bu:l]}-\] fall
\[\text{[bu:k]}-\] fell (tree), pour; Class 1 volitive verb
3.9 \textit{Volit}_2

This has its effect solely on the features that determine the form of the syntactic tense affixes; see LS 17 (and Appendix II):

\text{LS 17} \quad \# \ldots \text{Volit}_2 [-t, -p] \# \rightarrow \# \ldots \text{Volit}_2 [+t, +p] \#

This accounts for the fact that all bases formed by the operation of \textit{Volit}_2 are of Class 5.

The Class 2 item 35 and the Class 4 item 17 are irregular in that they also show mutation of base structure:

348 \quad [\text{oili}]- \quad \text{halt for night, dwell}
\quad [\text{ey}]- \quad \text{exhaust; Class 5 volitive verb}

723 \quad [\text{e:i}]- \quad \text{get up (intr)}
\quad [\text{edi}]- \quad \text{raise; Class 5 volitive verb.}

The Class 2 item 63 is also irregular, in respect of the base-final vowel of the derived form ([i] instead of [a]):

2460 \quad [\text{tade}]- \quad \text{be obstructed}
\quad [\text{tadi}]- \quad \text{obstruct; Class 5 volitive verb.}

4.0 The rules cited in this chapter

4.1 The lexeme structure rules

\begin{align*}
\text{LS1} & \quad \text{Lexeme} \rightarrow [\text{Base}] \quad \text{Class(ifier)} \\
\text{LS2} & \quad \text{Base} \rightarrow \text{Root} \quad (+\text{Affix}_1) \quad (+\text{Affix}_2) \\
\text{LS3} & \quad \text{Class} \rightarrow \{ \text{Verb} \} \\
& \quad \{ \text{Noun} \} \\
& \quad \{ \text{etc.} \} \\
\text{LS4} & \quad \text{Verb} \rightarrow \{ \text{I} \} \\
& \quad \{ \text{II} \} \\
\text{LS5} & \quad \text{Root} \rightarrow \text{(Onset)} \quad \text{Nucleus}
\end{align*}
LS6  Nucleus  →  Peak  (Coda)
LS7  Affix₁  →  \{ Voc Suff \, Cons Suff \}
LS8  Affix₂  →  \{ Suffix₂ \, Voice Suffix \}
LS9  Voice Suffix →  \{ Villit₁ \, Villit₂ \}
LS10 NOT:  Peak + \{ Suffix₂ \, Villit₁ \, Villit₂ \, Voc Suff \}
LS11 NOT:  Suffix₂ + II
LS12 (i) I  →  [i]
(ii) [i]  →  [- p]
LS13 (i) II  →  [+ t]
(ii) [+ t]  →  [+ p]
LS14 NOT:  #... Villit₁, ] [+ t, + p]#
LS15 NOT:  #... Villit₂, ] [+ t]... #
LS16 #... Villit₁, ] [+ t, + p]#  →  #... Villit₁, ] [i, - p]#
4.2 The phonological mutation rules

PM1 (i) \( V + * \rightarrow VC + * \)

(ii) \( C \) (from (i)) \( \{ r / i \}_{t \text{ else}} \)

(iii) \( i \rightarrow i / \_p \) (from (ii))

(iv) \( i'' \rightarrow a / t + * \ll [-t_2 + p] \# \)

PM2 (i) \[
\begin{bmatrix}
  r \\
  t \\
  t
\end{bmatrix}
\]

(ii) \( (N)P_i + * \rightarrow P_i P_i \) \( (P = v, t, t', c, k, r, r') \)

(iii) \( r'r' \rightarrow rr \) (optional)

PM3 (i) \( C_1 + C_2 \rightarrow C_1 + VC_2 \) \( (C \neq P, l; C_2 \neq k) \)

\[
\begin{bmatrix}
  a \\
  a \\
  o
\end{bmatrix}
\]

(ii) \( V \) (from (i)) \( \{ a \}_{t \text{ else}} \)

PM4 \[
\begin{bmatrix}
  i \\
  u
\end{bmatrix}
\]

PM5 \( a \rightarrow e / \_ \ll [-t, -p] \# \text{ non-past} \)

PM6 Erase all + boundaries

PM7 \[
\begin{bmatrix}
  k \\
  t \\
  t
\end{bmatrix}
\]

\[
\begin{bmatrix}
  n \\
  n \\
  n
\end{bmatrix}
\]

PM8 \[
\begin{bmatrix}
  t \\
  t \\
  t
\end{bmatrix}
\]

\[
\begin{bmatrix}
  n \\
  m
\end{bmatrix}
\]
The realization rules

\[ R1 \ A \rightarrow \begin{cases} \text{bilabial p. of a.} & \begin{cases} \text{lip rounding} & \left\{ X^{(\text{lr})} X^{(\text{r})} \right\} \\ \text{lip compression} & \text{else.} \end{cases} \\ \text{palatal p. of a.} & X^{(\text{lr})} X^{(\text{r})} \\ \text{postalveolar p. of a.} & \text{i} \\ \text{dental p. of a.} & \begin{cases} \text{prepalatal p. of a., retroflexed tongue tip} & \text{r} \\ \text{postdental p. of a.} & \text{IV} \\ \text{dental p. of a.} & \text{else.} \end{cases} \end{cases} \]

\[ R2 \ B \rightarrow \begin{cases} \text{alveolar p. of a.} & \text{r} \\ \text{prepalatal p. of a., retroflexed tongue tip} & \text{r} \\ \text{dental p. of a.} & \text{IV} \\ \text{velar p. of a.} & \text{else.} \end{cases} \]

\[ R3 \ C \rightarrow \begin{cases} \text{no articulatory effect} & \text{Ic} \\ \text{velar p. of a.} & \text{else.} \end{cases} \]
[no articulatory effect] / \_\_\_\_n

[occlusion] / \{X_5(U(L)^A — \(X_2\) \}

[obstruction] / \{X_2(U(L)^A \{A \_B_j\} \_ — \(X_2\) \}

[contact, v.c.s vibrating] / \{X_2(U(L)^B(r) \{E(r) \_ \} \_ \(X_2\) \}

[contact, velum lowered] / \_\_\_\_n

[contact] else.

\[\text{R4 I →}\]

[contact] / \{B(r) — B(r)II \}

\begin{align*}
\text{bilabial p. of a.} & \quad \{A \text{B} \} \\
\text{dental p. of a.} & \quad \{B \text{Bj} \} \\
\text{retroflex tongue tip} & \quad \{C\}
\end{align*}

[contact, v.c.s. vibrating, postalveolar p. of a.]

[contact, flapped] else.

\[\text{R5 II →} \]

R6 III → [contact, lateral air escape]

\[\text{R7 IV →} \]

[contact, velum lowered, postalveolar p. of a.]

[contact, retroflexed tongue tip] / — \(X_2\)

[contact, velum lowered, velar p. of a.]
\[ R9 \ x \rightarrow \begin{cases} \text{[no articulatory effect] / } \text{\_}_1 \ \text{[\(\alpha\) t, - \(\alpha\) p]} & \text{[lips rounded]} / \begin{cases} \text{\(A\)}^\text{\_}_1 \text{\_}_1 \text{\(L\)}^\text{\_}_1 \text{\(Br\)}} & \text{[back of tongue highest,]} \text{[lips unrounded]} / \text{\(c\)} & \text{[front of tongue highest, lips spread]} / \text{\(l\)} \end{cases} \\
\end{cases} \]

\[ R10 \ 1 \rightarrow \begin{cases} \text{[no articulatory effect] / } \text{\(X\)}\text{\_}_1 \ \text{[\(\alpha\) t, - \(\alpha\) p]} & \text{[constriction, velum lowered]} / \text{\(m\)} \text{\(n\)} \\
\end{cases} \]

\[ R11 \ 2 \rightarrow \begin{cases} \text{[midopen tract,} \begin{cases} \text{velum lowered]} / \text{\(w\)} \text{\(m\)} \text{\(n\)} & \text{[open tract,} \begin{cases} \text{velum lowered]} / \text{\(X\)}\text{\_}_1 \text{\(n\)} \\
\end{cases} \}
\end{cases} \]

\[ R12 \ L \rightarrow \text{[v.c.s continue to vibrate, unaltered tract]} \]

4.4 The articulatory sequence rules

\[ \text{AS1. Add:} \ \text{[velum lowered]} / \begin{cases} \text{[occlusion]} & \text{[occlusion]} \\
\text{[obstruction]} & \text{[obstruction]} \\
\text{[constriction]} & \text{[constriction]} \\
\text{[midopen tract]} & \text{[open tract]} \\
\text{[open tract]} & \text{velum lowered} \end{cases} \]
AS2. Add:

- **contact place of articulation, velum lowered**
- **obstruction**
- **contact place of articulation, velum lowered**

AS3. (i) **bilabial p. of a.**

AS3. (ii) **dental p. of a.**

AS3. (iii) **prepalatal p. of a.**

AS4. **Erase:**

- **bilabial p. of a.**
- **velum lowered**

AS5. (i) **front of tongue highest, lips spread**

AS5. (ii) **front of tongue highest, lips spread**

- **Erase:**
AS6.
(i) Erase:

\[
\begin{align*}
&\text{contact,} \\
&\text{alveolar} \\
&\text{contact,} \\
&\text{lateral air} \\
&\text{escape,} \\
&\text{dental} \\
&\text{p. of a.} \\
&\text{v. c. s continue} \\
&\text{to vibrate,} \\
&\text{unaltered} \\
&\text{tract} \\
&\text{open tract} \\
&\text{contact}
\end{align*}
\]

(ii)

\[
\begin{align*}
&\text{contact,} \\
&\text{lateral air} \\
&\text{escape} \\
&\text{bilabial} \\
&\text{p. of a.}
\end{align*}
\]

(iii) Add:

\[
\begin{align*}
&\text{v. c. s} \\
&\text{vibrating} \\
&\text{contact,} \\
&\text{place of} \\
&\text{articulation,} \\
&\text{velum} \\
&\text{lowered}
\end{align*}
\]

\[
\begin{align*}
&\text{contact,} \\
&\text{contact,} \\
&\text{constriction} \\
&\text{midopen tract} \\
&\text{open tract}
\end{align*}
\]

\[
\begin{align*}
&\text{contact,} \\
&\text{place of} \\
&\text{articulation,} \\
&\text{velum} \\
&\text{lowered}
\end{align*}
\]

\[
\begin{align*}
&\text{obstruction,} \\
&\text{open tract} \\
&\text{obstruction,} \\
&\text{bilabial} \\
&\text{p. of a.}
\end{align*}
\]

\[
\begin{align*}
&\text{v. c. s continue} \\
&\text{to vibrate,} \\
&\text{unaltered} \\
&\text{tract} \\
&\text{open tract}
\end{align*}
\]

\[
\begin{align*}
&\text{contact,} \\
&\text{midopen tract} \\
&\text{open tract}
\end{align*}
\]

\[
\begin{align*}
&\text{contact,} \\
&\text{velum} \\
&\text{lowered}
\end{align*}
\]

(NB. 6(iii) must precede 7, since otherwise the non-past and past stems of Class 5 verbs which show nasalised vowels will be voiced.)
obstruction, palatal p. of a.

obstruction, bilabial p. of a.

[front of tongue highest]

[open tract]

[back of tongue highest]
CHAPTER FIVE

The Structure of Lexical Items: Nouns
1.0 Introduction

Having proposed a 'root-and-affix' analysis of Coorg verbal lexemes, with systems of phonological elements operating at positions defined within the root (Onset, Peak, Coda) and affixes (Voc Suff, Cons Suff, Suffix, Volit, Volit), we turn now to consider the class of nominals. Essentially the same sort of structure is found, but there are a number of important differences, which are noted in the following three sections.

1.1 Lexeme-final elements

The nominal lexemes have to be set up in such a way (the reasons for this are considered in detail, below) that they show a final element which is one of the set:

\[ [i, e, i, u, a, a(1), s(n)] \]

We are here ignoring the nasal-oral contrast between vowels of the same quality; as was found in the verbal system, this contrast is marginal, and does not affect the validity of general statements concerning the structure of lexemes. The elements \([i]\) and \([n]\), parenthesised in the above forms, appear only in certain phonological environments. We will generalise these final elements as \(-V(C)\). Just a few nominals show final \([y]\), which may in careful speech be followed by \([i]\); this is handled by a late rule (AS 5) which may delete \([i]\) in this environment.

It will be seen below that there are numerous asymmetries in the distribution of these final elements; it suffices here to point out that the occurrence of \(-V(C)\) as a regular part of nominal lexeme structure contrasts with what was found in the verbal lexemes. There, all items in Class 1 show an obligatory final consonant, along with certain items in Classes 2-5; rather less than one third of verbs show a final vocalic element.
1.2 Contrast of consonant length after a short root vowel

It is a principle of verbal base structure that any base-final consonant occurring immediately after a short root vowel is automatically geminated. The few exceptions prove to be only apparent exceptions, where the consonant in question is base-medial in underlying representation; cf. the Class 1 item 6, the Class 3 item 2, and the Class 4 item 1:

432 ['el]- leave one's position
407 ['ir]- be (in a place)
375 ['id]- drop (tr)

It was further shown that all base-medial consonants are single, and lax. In this regard, it is an especially interesting problem that nominal bases show a regular contrast of consonant length after a short root vowel, as in the items 60/243, 140/347, and 95/276 (Appendix IV, pp. 459-99):

4524 [boli] light
4524 [bolli] silver
2473 [tani] coolness
3299 [panni] fruit
1697 [jade] cobra's hood
1910 [dadde] dull person (fem)

Clearly, if we treat the final vowel as a part of the nominal base in all these instances, we have to say that the second principle mentioned above cannot apply to the structure of nominals; on the other hand, if we treat it as extraneous to the base, then we have to say that the first principle does not apply. However, since each of these principles complements the other and both prove equally valuable in the description of verbal bases, it is not possible to decide
priori which of these alternatives, if either, is appropriate. We shall return to this problem below (section 3.0).

1.3 Canonical forms

Nominal lexemes show a much greater variety of canonical forms than do verbal lexemes. It is true to say, however, that the majority of nominal lexemes show forms that closely correspond to those found in the verbal system, except in respect of the final -V(C) element; thus (marking off the final element by +):

(C)VCC+V(C)
(C)VNC+V(C)
(C)VOC+V(C)
(C)VNC+V(C)
(C)VSC+V(C)
(C)VSNC+V(C)
(C)VOC+V(C)

In addition, the type (C)VOC+V among the nominals corresponds exactly in its canonical form to one type of verbal lexeme; with this nominal type, the final elements [a(1)] and ["e(n)"] never occur, and hence we generalise the final element as just V.

But there is a substantial residue of other, more complex forms to account for in the nominal system (a fuller discussion of these follows in the next chapter):

(C)VCC+V(C)
(C)VNC+V(C)
(C)VCC+V(C)
(C)VNC+V(C)
(C)VCC+V(C)
(C)VNC+V(C)
(C)VCC+V(C)
For certain of these, the canonical form covers only a handful of instances, and this tendency increases proportionately to the complexity of the canonical form. Note also that the more complex forms violate another principle of verbal base structure, namely that only root vowels may occur with the length element /l/, and may only occur as the first vowel of the base. For nominals it would seem, prima facie, that length has to be allowed for with respect to other than root vowels (maintaining that only root vowels may constitute the first V of the base), or that root vowels may occur as other than the first V of the base (maintaining that only root vowels may occur with length); or we could abandon both parts of this principle.

2.0 Preliminaries to the analysis of nominal lexemes

In what follows in this chapter and the next, an attempt is made to describe Coorg nominal lexemes (particularly their base structure) in a way which is consistent, as far as possible, with the model established in Chapter 4 for the verbal lexemes; while at the same time not doing violence to the structure of nominal lexemes considered as elements within their own system. In general, it turns out that, apart from certain important modifications to the generative base component of the lexicon, these two aims are complementary rather than competing, and that occasionally a constraint on lexeme structure set up on the basis of the verbal system leads to the most natural description of nominal lexeme structure.

In this chapter, the problem of defining the nominal base is taken up first; then its structure is analysed in some detail; and finally
the lexical relationships that hold, both between nouns and between nouns and verbs, are set out as fully as possible. We reserve consideration of the complex nominal lexemes for Chapter 6.

2.1 The nominal lexeme

We define the nominal lexeme as that part of the surface noun form which cannot be described in terms of closed sets of syntactic elements. In Coorg, there are three such sets: the first comprises the system which expresses the syntactic category of number; the other two express the category of case, the first consisting of a set of inflectional affixes, and the second comprising a number of noun particles. Since the noun particles occur only with certain inflected forms of nouns, they are not relevant to our purpose here. The nature of the number and case systems is briefly outlined in the next two sections, in order to prepare the ground for a definition of the lexeme in practical terms.

2.2 Number

This system handles the opposition between singular and plural nouns. It may be considered either as an optional system, consisting of the single term -/kal/- marking plurality, or as an obligatory two term system, comprising -/kal/- and a zero element. Plural nouns are marked by affixing -/kal/- to the lexeme, thus forming the plural stem; forms which do not show -/kal/- constitute the singular stem (which, if it also has no case affix, is therefore phonologically isomorphic with the lexeme; see the preceding section). The various case affixes are added to the singular or plural stems. The phonetic realisation of -/kal/- is determined with reference to the final element of the preceding lexeme; the table in Figure 1 shows the possibilities at the systematic phonetic level:
<table>
<thead>
<tr>
<th>Lexeme-final element</th>
<th>Plural affix -/kaŋ/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>-i</td>
<td>-ya(1)</td>
</tr>
<tr>
<td>-y</td>
<td>-ya(1)</td>
</tr>
<tr>
<td>-e</td>
<td>-ya(1)</td>
</tr>
<tr>
<td>-u</td>
<td>-ya(1)</td>
</tr>
<tr>
<td>-i</td>
<td>-ya(1)</td>
</tr>
<tr>
<td>-a(1)</td>
<td>-ya(1)</td>
</tr>
<tr>
<td>-e(n)</td>
<td>-ya(1)</td>
</tr>
</tbody>
</table>

**Figure 1: The forms of the plural affix**

1. After these elements the initial consonant of the plural affix is palatalised and lax to -[y]-.

2. After -[u] the initial consonant of the plural affix is labialised and lax to -[v]-.

3. After -[i] the initial consonant of the plural affix is lax to a velar approximant. Certain idiolects lose the -[i] and following approximant.

4. The final -[l] is lost before the following consonant of the plural affix; this consonant is palatalised and lax to -[y]-. Note that this set of nouns has not been grouped with the first three showing plural forms in -[ya(1)]- because it will prove convenient in the rest of this chapter to discuss the sets in the order illustrated here.

5. The final nasal is assimilated in place of articulation to the following consonant of the plural affix; this consonant is assimilated in voicing to the preceding nasal.
It is important to note that any nominal which has an inanimate object as its referent, no matter what lexeme-final element it shows, may not occur with the plural affix. Hence, the occurrence of 

\[-\text{/kal/-}\]

is a purely referential matter, and number in Coorg is a 'natural', not a 'grammatical' phenomenon (this statement will be modified slightly later on). The other basis on which number is established in Coorg is pronominalisation; nouns with singular referents pronominalise as (illustrating with the 'remote from speaker' forms):

\[\text{[\textit{ava}(\text{n})]}\quad \text{masc}\]
\[\text{[\textit{ava}(\text{l})]}\quad \text{fem}\]
\[\text{[\textit{adi}]}\quad \text{(nonhuman anim; inanim)}\]

while those with plural referents pronominalise as:

\[\text{[\textit{ayanga}(\text{l})]}\quad \text{hum}\]
\[\text{[\textit{avu}]}\quad \text{(nonhum anim)}\]
\[\text{[\textit{adi}]}\quad \text{(inanim)}\]

(Note that in each of these sets the pronominal form for inanimate reference does not mark distinctions of number:

\[\text{[\textit{adi} mara]}\]

may mean 'that's a tree' or 'those are trees'.) Pronominalisation also is therefore a wholly regular, referential matter.

Having said this, however, it is necessary to point out that there are just a few nouns which are to be described as 'inherent plurals'; items 423-4, 426, 428, etc.:

283 \[\text{[\textit{atta}(\text{l})]}] \quad \text{cattle}\]
401 \[\text{[\textit{ibba}(\text{l})]}] \quad \text{two persons}\]
2435 \[\text{[\textit{takka}(\text{l})]}] \quad \text{chief family}\]
3768 \[\text{[\textit{makka}(\text{l})]}] \quad \text{children}\]

Regarding these, it will be argued below that the \[-\text{/a(l)}\] element is to be treated as part of the lexeme, and not as a realisation of the
syntactic affix \(-/kal/-\) (to which it is diachronically related). This means that our statement above about the purely referential nature of number in Coorg is not able to cover these few items; they are plural in referential terms, and pronominalise as plurals, but do not occur with the syntactic plural affix \(-/kal/-\). However, the situation is otherwise straightforward, and there is nothing here to constitute even the beginnings of 'grammatical' number; we should talk of 'lexical' number instead.

2.3 Case

This is a variable-term system, depending, like pluralisation, on purely referential factors. If the noun referent is an inanimate (including vegetate) object, the case system consists of six inflectional affixes; if not, it consists of only four. The situation is shown in Figure 2:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>([-i, -y])</td>
<td>(\emptyset)</td>
<td>-na</td>
<td>-Da</td>
<td>-li</td>
<td>-(\hat{n})ji</td>
<td>-ki</td>
</tr>
<tr>
<td>([-e])</td>
<td>(\emptyset)</td>
<td>-tina</td>
<td>-tira</td>
<td>-tilli</td>
<td>-(\hat{n})ji</td>
<td>-ki</td>
</tr>
<tr>
<td>([-u])</td>
<td>(\emptyset)</td>
<td>-a</td>
<td>-da</td>
<td>--</td>
<td>--</td>
<td>-(\hat{g})i</td>
</tr>
<tr>
<td>([-i])</td>
<td>(\emptyset)</td>
<td>-a</td>
<td>-da</td>
<td>--</td>
<td>--</td>
<td>-(\hat{g})i</td>
</tr>
<tr>
<td>([-a(1)])</td>
<td>(\emptyset)</td>
<td>-a</td>
<td>-da</td>
<td>--</td>
<td>--</td>
<td>-ki</td>
</tr>
<tr>
<td>([-e(n)])</td>
<td>(\emptyset)</td>
<td>-a</td>
<td>-da</td>
<td>--</td>
<td>--</td>
<td>-(\hat{g})i</td>
</tr>
</tbody>
</table>

Figure 2: The forms of the case affixes
With nouns referring to humans, the locative and ablative affixes are not possible; with nonhuman animates they are occasionally found, or at least elicitable, but are considered unusual. It should be noted here that only case affixes come under this statement; locative and ablative functions are perfectly possible with nouns denoting animate beings, but are expressed through the system of noun particles.

The various forms of the inflectional affixes at the systematic phonetic level depend on the preceding environment; hence, there is only one declension in Coorg, with four subclasses within this - each of which is fully determined with reference to the final element of the stem. The nominative forms show no affix; the simple singular or plural stem represents the nominative noun form. Note that the locative and ablative affixes do not occur with stems showing final \-[a(n)], or \-[a(l)]. This is because all such stems have animate referents; this point will be discussed further below, when the matter of gender is dealt with. It may be noted here, however, that what is true of stems of nouns having animate referents is automatically true also of plural stems; this follows from the fact that only nouns with animate referents may take the plural affix. The accusative case affix is \[a\], preceded by an infix \-[n]- when the stem-final element is one of the set \[i, e, i, u, a\]; in the case of stem-final \[a\], moreover, this infix is preceded by another, \-[ti]-, which also occurs in the genitive, locative and ablative forms of this class of stem. The presence or absence of these infixes, together with their form, is entirely predictable with reference to the stem-final element, and hence they form part of neither the stem nor the case affixal system.

The genitive case form is \-[da] or \-[ra]; where \-[Da] is entered in the table in Figure 2, it indicates free variation between these
alternatives. Only [-ra] may occur after the infix -[ti]-, and only
[-da] after stem-final -[a(1)] and -["e(n)]; in the latter case, the
nasal consonant assimilates in place of articulation to the following
retroflex stop.

The locative and ablative case affixes are represented everywhere
by [-"li], [-"mi], respectively, preceded by the infix -[ti] in the
case of stems with final [a].

The dative case affix is realised as [-ki"] everywhere, except
after stem-final -["e(n)]; the nasal consonant assimilates in place of
articulation to the following velar stop, and the stop assimilates in
voicing to the preceding nasal.

2.4 Gender

Gender in Coorg is established on the same sort of basis as
number, namely the facts of pronominalisation and pluralisation. The
third person singular and plural proforms comprise the following
system:

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masculine</td>
<td>ava(n)</td>
</tr>
<tr>
<td></td>
<td>sy nga(1)</td>
</tr>
<tr>
<td>Feminine</td>
<td>ava(1)</td>
</tr>
<tr>
<td></td>
<td>avu</td>
</tr>
<tr>
<td>Nonhuman</td>
<td>adi&quot;</td>
</tr>
<tr>
<td></td>
<td>adi&quot;</td>
</tr>
</tbody>
</table>

Figure 3: The third person (remote) proforms

That is to say, there is a three-term system in the singular (masculine, feminine, nonhuman) and another in the plural (human, nonhuman animate, inanimate), where the only isomorphism between the two
systems lies in the fact that the masculine and feminine terms (in the singular) jointly exhaust the same range as the human (in the plural), and that the nonhuman animate and inanimate terms (in the plural) jointly exhaust the same range as the nonhuman (in the singular). The feature 'animate' (in the plural) excludes vegetates as well as inanimates: only nonhuman animals may be pronominalised as [avu] (with insects as a problematic border area).

As noted above in discussing number, what we are dealing with here is apparently a purely referential phenomenon. The state of affairs may be represented by the feature matrix (ignoring distinctions of number) in Figure 4:

| Animate | + | + | + | - |
| Human   | + | + | - |   |
| Masculine| + | - |   |   |

Figure 4: Feature representation of gender distinctions in third person proforms

Given this gender system, we have now to enquire how far it is reflected in the formal properties of the noun forms of the language (i.e. in the nominal system, as opposed to the pronominal forms). The answer is clear; the gender features 'animate', 'human' and 'masculine' are marked fairly extensively in the nominal system, and the relevant part of the noun form is the lexeme-final element -V(C): the situation is shown in the table in Figure 5:
The first column shows the lexeme-final elements, on the basis of systematic phonetic contrast (here again, though, the nasal versus oral distinction between vowels is ignored). The next four columns show the canonical forms which account for the majority of the lexemes, and which correspond closely to those already recognized in the verbal system. However, base-final -NC has not been distinguished, and (C)VSC- is not distinguished from (C)VVC-. The last three columns indicate the properties of the referents of noun forms, in terms of the gender features we have recognised for Coorg. Thus, a -value in the

<table>
<thead>
<tr>
<th>Lexeme -final element</th>
<th>(C)VCC+ V(c)</th>
<th>(C)VCC+ V(c)</th>
<th>(C)VCC+ V(c)</th>
<th>(C)VCC+ V(c)</th>
<th>Masc</th>
<th>Hum</th>
<th>Anim</th>
</tr>
</thead>
<tbody>
<tr>
<td>-i</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ajji</td>
<td>muti</td>
<td>gavdi</td>
<td></td>
<td></td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2 palli</td>
<td>e:ri</td>
<td>karadi</td>
<td>nari</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-e</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 dadde</td>
<td>cu:le</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 &quot;enne&quot;</td>
<td>ka:ke</td>
<td>kudire</td>
<td>age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 ubba</td>
<td>a:ka</td>
<td>kadaga</td>
<td>mara</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 okka</td>
<td>pa:pa</td>
<td>karapa</td>
<td>mona</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-i</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 &quot;etti&quot;</td>
<td>to:di</td>
<td>&quot;eraki&quot;</td>
<td>iri</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-u</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 payvu</td>
<td>car:vu</td>
<td>koravu</td>
<td>kuru</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;e(n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 ajje&quot;(n)&quot;</td>
<td>me:de&quot;(n)&quot;</td>
<td>gavde&quot;(n)&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 akke&quot;(n)&quot;</td>
<td>ko:de&quot;(n)&quot;</td>
<td>kurike&quot;(n)&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-a(l)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 obba(l)</td>
<td>mo:va(l)</td>
<td>mayma(l)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 atta(l)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
'Masc' column indicates that all the nouns entered in the corresponding row have female referents; similarly, a + value in the 'Hum' column indicates that all the nouns in that row have human referents. Where + values are assigned together, this means that a number of the nouns represented in that row have referents which possess the relevant property, and a number of others do not. Finally, notice that, in the case of an item such as 216:

1371 [kuni] (Coorg) child

the + masculine properties of the range of referents is irrelevant to the lexical meaning of the item; this situation is distinct from that where + values have to be entered simultaneously, and it is indicated in the table of Figure 5 by a blank in the relevant column.

It will be seen from the table that there are a number of nouns showing final -[i], -[e], -[a(l)] which have specifically human female referents; these are represented in the table by items 207, 554, 791, 276, 583, 425, 779, and 814:

46 [ajji] great grandmother
806 [musi] girl
1910 [dadde] dull person (fem)
2262 [cu:le] dancing girl
834a [obba(1)] one person (fem)
3768 [mo:va(1)] daughter
4189 [mayma(1)] cross-niece

It should be noted that, apart from the person/number proforms, which are outside the nominal system proper, the canonical shape (c)VC+V is not represented in this set; this is apparently a systematic gap, since no nouns of this form show gender marking. This is an important point, which will be taken up in more detail in the next section. By
contrast, the lack of an entry for type (c)VCVC- with final -[e] is probably an accidental gap (marked by parentheses), due to the relative infrequency of this canonical shape.

However, a large number of nouns, including those of the form (c)VC+V, show final -[i], -[e], and have referents of which some are inanimate, others are nonhuman animate, and the rest are human; among these last, there are no specifically male or female referents, and for this reason no entry is made in the masculine column for either of the rows concerned (the second, and the fourth), except for the parenthesised + entry in the second row for the single item 829:

\[
3623 \quad \text{[poriki]} \quad \text{mean fellow}
\]

The fifth row represents the large majority of nouns with lexeme-final -[a]: this group shows only inanimate referents. The sixth row represents a smaller group showing animate or human referents; among the latter, the male/female distinction is irrelevant, and most of these instances are accounted for by the (C)VC-V type in this row; here also, therefore, the (C)VC+V type may be treated as not marked with respect to the animate/inanimate distinction. The next two rows contain nouns with final -[i], -[u]; these final elements are actually in complementary distribution for the most part, as [payyu] is the only example of its type ("etti" shows the regular pattern), [ca:vu] represents a small group of nouns all with the sequence -[a:vu] which renders the final -[u] predictable, and [koravu] is the only example of its type, where the -[u] is again predictable. Only in the (C)VC+V form of nouns is there contrast between -[i] and -[u]; but for presentation of the data here the two rows have been kept separate across all four canonical types. The marginal contrast between -[i] and -[u] will be taken up in detail in the next section. Row eight
represents relatively few items, and covers a referential range
which includes inanimates, animates, and humans; row seven in
addition covers male and female referents, as in items 357 and 616:

306
3608a [pomni] wife, female
342 [a:n]i man, male

Rows nine and ten contain the class of nouns with final \[-s(n)\].
All have animate referents, and a large number of these are
specifically human males (row nine). In addition, a proportion refer
to nonhuman animals, and a very few to human females; these last two
groups are entered together, in row ten. Note that \[-"(n)\], which
seems to be a marker of essentially human male reference, and only
secondarily a marker of animacy, cannot occur with nouns of (C)VC+V
form, even where the referent is an animal rather than a human.
Finally, row twelve contains that group of nouns, among those with
final \[-a(1)\], which have plural referents; only a few lexical items
are involved.

By this analysis, there is a marked as well as an unmarked
function for the elements \[-i\], \[-e\], and \[-a\]; a marked as well as a
relatively unmarked function for \[-"(n)\]; two distinct marked
functions for \[-a(1)\]; and the maximally unmarked function within the
system is represented by \[-i]/[u]. In no case do any of these
elements show marked function in (C)VC+V nominals.

In its marked function \[-i\] is the realisation of a feminine
suffix, which we set up as FEM; for the marked function of \[-e\] we
also derive it from FEM. In each of these cases, the instances of
marked function are much less frequent than those of the unmarked
function, for which we set up the suffixes \/-i/, \/-e/, respectively.
However, in the case of \[-a\], the marked function accounts for most of
the items concerned, for which we set up an inanimate suffix INAN.
just a few nouns show the unmarked suffix, which we shall write as 

\[-/a/.\]

For all instances of \[-[i]/-[u], we set up, at this stage, the unmarked suffixes \(-/-/\) and \(-/[u], respectively. This proposal will have to be modified somewhat, in the following section.

For items showing final \(-[e(n)]\) and having specifically male referents, we set up the masculine suffix \textit{masc}, and for all other instances of this final element, \textit{anim}; it is an arguable point that, for the purposes of a semantic statement, we should derive some instances of \(-["(n)]\) from the suffix \textit{fem} (for those cases where a specifically female referent is involved), but this is not a crucial point for our purpose, and the distinction is accordingly not recognised here. Finally, we derive \(-[a(l)]\) also from \textit{fem}, and from \textit{flur}, for those items which show final \(-[a(l)]\) and have specifically female, and plural (‘inherent plurals’) referents, respectively. For further details of these suffixes, see the discussion of \textit{noun}, below (pp. 366-368).

We have thus far assumed that the final element \(-V(C)\) forms part of the lexeme (i.e. does not represent a system of syntactic affixes) and we have just now established that it does represent that part of the noun where distinctions of gender are marked. To what extent is it justifiable to treat these gender distinctions as not specified within the syntactic base component?

In order to answer this question, we shall examine the patterns of gender-relationships between Coorg nouns. This will require citing a number of nouns which show complex canonical shapes and which strictly fall outside the scope of this chapter, therefore; in particular, we shall recognise abstract nouns ending in \(-[atana]\), feminine nouns in \(-[ati]\), and masculine nouns in \(-[ka:re(n)]\). The structure
of these will be dealt with in detail in the following chapter. Other
types of gender elements will be illustrated where necessary.

There are a number of gender relationships, all more or less
related to each other, between Coorg nouns:

A (i) MASC/FEM/ABSTRACT: [-e(n)] / [-i] / [-atana].

1156 [kallao(n)] thief (masc)
[kalli] id. (fem)
[kallatana] theft, state of being a thief

(ii) MASC/FEM/ABSTRACT: [-e(n)] / [-ati] / [-atana].

3223 [bande(n)] shameless person (masc)
[bandati] id. (fem)
[bandatana] shamelessness

(iii) MASC/FEM/ABSTRACT: [-e(n)] / [-ati] / [-i].

3508 [punde(n)] quarreller (masc)
[pundati] id. (fem)
[pundi] quarrel

B (i) MASC/FEM: [-e(n)] / [-i].

[puco(n)] madman
[pucci] mad woman

(ii) MASC/FEM: [-e(n)] / [-ati].

1374 [kodave(n)] Coorg man
[kodavati] Coorg woman
(Cf. [kodi:vii], Coorg (the land))

(iii) MASC/FEM: [-kar:ro(n)] / [-karati].

37 [an:gadika:ro(n)] shopkeeper (masc)
[an:gdikarati] shopkeeper's wife
(Cf. [an:adi], shop, stall)
(iv) Masc/Fem: *[garːre(n)] / [garati]
3980  [mundigarːre(n)] paramour
       [mundigarati] mistress
(v) Masc/Fem: *[darːre(n)] / [darati].
       [pattedarːre(n)] head of family
       [pattedarati] head of family's wife
(Cf. [patte], title deeds)
(vi) Masc/Fem: *[vaːle(n)] / [vaːlati].
3604  [madivaːle(n)] washerman
       [madivaːlati] wife of washerman, washerwoman
(Cf. [madi], (ritual) cleanliness)
(vii) Masc/Fem: *[aːre(n)] / [arati].
       [kumbaːre(n)] potter
       [kumbaːrati] wife of potter
(viii) Masc/Fem: *[e(n)] / [ici].
4189  [maccine(n)] younger cross-cousin (masc)
       [maccinici] id. (fem)
(ix) Masc/Fem: *[i] / [ici].
3623  [poriki] mean fellow
       [porikici] mean woman
(x) Masc/Fem: *[e(n)] / [a(l)].
3768  [moːve(n)] son
       [moːva(l)] daughter
(xi) Masc/Fem: *[e(n)] / [e].
       [anaːte(n)] orphan (masc)
       [anaːte] id. (fem)

From the foregoing data, the following observations may be made:

(a) If the gender suffixes illustrated above are to be specified
in the syntactic base component, then a problem arises over the rather large number of them (the examples above are only a representative selection; no instances of '-[e(n)]' with nouns having animals as referents have been given, where there is no corresponding feminine form), and particularly over the fact that most of them are restricted to rather few lexical items. For example, the forms *'[aṅgadīye](n)]', *'[aṅgadīdāre](n)]', etc. are not the result of phonologically ill-formed sequences, but are not possible alternatives to *'[aṅgadīkāre](n)]', 'shopkeeper'. Further, no general statement of complementary distribution is possible with respect to the gender suffixes; consider the following:

<table>
<thead>
<tr>
<th>Number</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>3945</td>
<td>*'<a href="n">mā:ve</a>]'</td>
<td>mother's brother</td>
</tr>
<tr>
<td></td>
<td>'[mā:vi]'</td>
<td>father's sister</td>
</tr>
<tr>
<td>but 3763</td>
<td>*'<a href="n">mo:ve</a>]'</td>
<td>son</td>
</tr>
<tr>
<td></td>
<td>'[mo:va(l)]'</td>
<td>daughter</td>
</tr>
<tr>
<td>and 1156</td>
<td>*'<a href="n">kalle</a>]'</td>
<td>thief (masc)</td>
</tr>
<tr>
<td></td>
<td>'[kalli]'</td>
<td>id. (fem)</td>
</tr>
<tr>
<td>but</td>
<td>*'<a href="n">calle</a>]'</td>
<td>wastrel (masc)</td>
</tr>
<tr>
<td></td>
<td>'[callati]'</td>
<td>id. (fem)</td>
</tr>
</tbody>
</table>

In the face of such evidence, the existence of just a few cases where there is equivalence between certain alternative forms, as in:

*'[gavde](n)]' Gowda man

*'[gavdati]' Gowda woman

simply entails a further complicating factor which the syntactic component by its nature is ill-equipped to cope with. Consider also, in this regard, the complicated situation with respect to *'[kumba:re](n)]', which, besides 'potter' may also have the meaning
'stupid fellow'. According to my informants (none of whom are potters, it should perhaps be pointed out), it is the 'same' lexical item in each case; but with the first meaning the feminine form is [kumberati], and with the second it may be [kumbare(1)].

(b) Even within a single formal gender relationship - say, ["en] / [ati] - semantic specialisation has typically occurred to such a degree that the syntax would have to recognise at least two types of suffix [ati]; one with the meaning 'wife of', the other with the meaning 'feminine of'. Thus, [pattedarati] is not 'head of family (fem)', but 'wife of head of family'; and [bandati] is not 'wife of shameless man', but 'shameless woman'. In a number of other instances, moreover, the distinction between these senses is unclear, and informants hesitate between them; thus, [annahikarati] may be the wife of a shopkeeper, or possibly refer to a widow (perhaps) who now supports herself by running a shop. It is clear that these possibilities are dependent on highly idiosyncratic ontological or sociological factors, which it is not the business of the syntactic component to handle.

It should be noted here that a 'lexicalist' approach to the statement of gender distinctions in the Coorg nominal system, such as is emerging from these considerations, does not lose sight of the tie-up between form and function, where this exists. For example, the fact that [a(1)] is fairly typical of nouns having human female referents is not lost by deriving it from FEM (which is one source of [a(1)]) in the lexicon rather than the syntax; its frequency of occurrence in those lexical items of the language whose referents are female humans, and its relative constancy of function (as opposed, say, to the function of the unmarked suffix /i/) are both reflexes of
'stupid fellow'. According to my informants (none of whom are potters, it should perhaps be pointed out), it is the 'same' lexical item in each case; but with the first meaning the feminine form is [kumba:rati], and with the second it may be [kumba:ra(1)].

(b) Even within a single formal gender relationship — say, -[e(n)] / -[ati] — semantic specialisation has typically occurred to such a degree that the syntax would have to recognise at least two types of suffix -[ati]; one with the meaning 'wife of', the other with the meaning 'feminine of'. Thus, [pattedarati] is not 'head of family (fem)', but 'wife of head of family'; and [bandati] is not 'wife of shameless man', but 'shameless woman'. In a number of other instances, moreover, the distinction between these senses is unclear, and informants hesitate between them; thus, [angadikarati] may be the wife of a shopkeeper, or possibly refer to a widow (perhaps) who now supports herself by running a shop. It is clear that these possibilities are dependent on highly idiosyncratic ontological or sociological factors, which it is not the business of the syntactic component to handle.

It should be noted here that a 'lexicalist' approach to the statement of gender distinctions in the Coorg nominal system, such as is emerging from these considerations, does not lose sight of the tie-up between form and function, where this exists. For example, the fact that -[a(1)] is fairly typical of nouns having human female referents is not lost by deriving it from FEE (which is one source of -[a(1)] in the lexicon rather than the syntax; its frequency of occurrence in those lexical items of the language whose referents are female humans, and its relative constancy of function (as opposed, say, to the function of the unmarked suffix -/i/) are both reflexes of
the correspondence between form and function. Thus, while -[a(1)] is not a very widely distributed suffix, it occurs on nouns that appear to have a fairly high frequency in the language, and hence it is not surprising that informants tend to volunteer its meaning.

It was stated earlier, with respect to number, that any noun which has an inanimate object as its referent, no matter what lexeme-final element it shows, may not pluralise (p. 298). It has also been claimed that number and case in Coorg are 'natural' (i.e. determined by wholly referential factors) insofar as the person/number proforms are concerned (p. 299); and that pronominalisation does not take place with reference to features of noun morphology (p. 302). These are good reasons for treating gender as not (or, no longer) a syntactic category in Coorg. Thus, item 769:

1820  [ko:de(n)]  monkey

pronominalises as [ad'i] not because of the fact that -["e(n)] is in this item the realisation of the suffix ANIM, but because the referent of this noun is a nonhuman animal. Because of this, it is possible, and even advantageous, to dispense with the notion of 'gender suffix' in regard to the nominal system, with all that it implies. Thus, we need not recognise in item 104:

[dore]  master, European

a suffix -/e/ which is distinct from that in item 102:

[tore]  gourd.

By the same token, we do not have to analyse -[e] in the first of these items as a co-realisation of a single morphological unit which is also realised as -["e(n)] in certain other items. The referential meaning of the nouns these suffixes occur in fulfills those functions (determining pronominalisation, pluralisation, and co-occurrence with verbs denoting certain activities or states, etc.) which such a unit might
serve. On the other hand, we have seen that it is necessary to recognise a distinction between the sources of \([-i]\) in the items 529 and 554:

\[
\begin{align*}
\text{[cuːdi]} & \quad \text{coir rope} \\
\text{S 806} & \quad \text{[muːdi]} \\
& \quad \text{girl,}
\end{align*}
\]

partly because of the relative constancy of function of \([-i]\) as a final element in nouns having human female referents, and partly because of its peculiar distribution in this function (never in \((C)V(C)+V\) nouns). Hence, in some respects the notion of 'gender suffix' is valid; but there is no evidence in favour of its treatment in the syntactic component.

3.0 The generative component

It has been a working assumption thus far, and this will be justified in the rest of this chapter, that the nominal lexemes that we are concerned with here comprise the \((C)V(C)+V\) type, which is strictly comparable to the corresponding type of verbal lexeme, and eight other types which are all made up of the following base shapes plus the final element \(-V(C)\):

\[
\begin{align*}
(c)VCC \\
(c)VNC \\
(c)\overline{VC} \\
(c)V\overline{NC} \\
(c)VSC \\
(c)V\overline{NC} \\
(c)VCVC \\
(c)VC\overline{NC}
\end{align*}
\]

Granted, at this stage, that this is so, we may suppose the underlying structure of these base shapes, which are identical to those recognised
in the verbal system, to be generated from the same node Base, and in a similar way, as described in the preceding chapter (pp. 222-224). Figure 6 shows the generalised schema for the introduction and development of the node Base, this time with Classifier rewritten as Noun:

```
          #Lexeme#
         / \  /
        [Base] Classifier
                /  /
               Root (+Affix₁) (+Affix₂) Noun
                     /  /
                    Nucleus {Voc.Suff.} {Suffix₂}
                       /  /
                      (Onset) Peak (Coda) {Cons.Suff.} {Nom}

Figure 6: Generalised structure of the nominal lexeme
```

Note that Voice Suffix is not relevant here, and that Nom is required for the statement of certain lexical relationships involving nouns (this is dealt with below). Hence, we have to extend LS8 as follows:

1. \[ \text{Affix}_2 \rightarrow \begin{cases} \text{Voice Suffix} / \quad \text{Verb} \\ \text{Nom} \\ \text{Suffix}_2 \end{cases} \] (LS8)

In other respects, the schema is generated by the same LS rules that were given in the preceding chapter, however. We also need to include the following constraint in condition LS10:

2. \[ \text{NOT: } \text{Peak} + \text{Nom} \] (LS10)

This yields the following base strings (for nominals):
(Onset)\^Peak\^Code\^Voc Suffix  :  for \((C)VC/V\)
(Onset)\^Peak\^\{(Code)\^\{Cons Suffix\}\}  :  for \((C)VCC/(C)VNC\)
(Onset)\^Peak\^\{\{Code\^\{Cons Suffix\}\}  :  for \((C)V / (C)VNC\)
(Onset)\^Peak\^Code\^Cons Suff\^\{\{Suffix\}_2\}  \{\{Nom\}\}  :  for \((C)VSC/(C)VSC\)
(Onset)\^Peak\^\{\{Cons Suffix\}  \{\{Nom\}\}  :  for \((C)VVC/(C)VVC\)

\(\text{NB: linked parentheses indicate that one of the elements so linked must be present, but that neither is obligatory.}\)

We now take up for more detailed discussion the other problem outlined in the introduction, namely that the nominal system shows a significant number of items where there is contrast of consonant length immediately after a short root vowel. We have seen, in the preceding chapter, that the Classifier element \textit{Verb}, rewritten as \textit{I}, \textit{II}, was an integral part of the lexeme, accounting for the appropriate forms of the following past and nonpast affixes. Regarding the nominals, we have seen in this chapter that

(a) the 'gender' suffix \(-V(C)\) has to be specified for each lexeme, prior to the insertion of the lexeme in the preterminal syntactic string;

(b) there is only one declensional class in Coorg, with four subgroups within it being determined by the form of the suffix \(-V(C)\).

These two considerations suggest that the 'gender' suffix peculiar to the nominal system be introduced under the node \textit{Noun}, fulfilling a function there analogous to that served by \textit{I}, \textit{II} under \textit{Verb}. This is supported, in the framework of this analysis, by the general consideration that the \(-V(C)\) element must be simultaneously intra-lexemic and extra-basal: in other words, unless the structure of nominal and verbal lexemes is fundamentally dissimilar, there is no other place
for the element \(-V(C)\) to fit. If it can be shown, therefore, on independent grounds, that this is an appropriate solution, then this will confirm that nominal and verbal lexemic structure is fundamentally similar, and that constraints on the form of verbal lexemes are relevant to that of nominal lexemes. This solution will also account automatically for the fact that no \((C)VC+V\) nominal is marked for gender.

In this regard, note that this analysis of nominal lexeme structure allows for two distinct sources for lexeme-final \(-V\); one under Noun \((i.e.\) in that majority of cases where there is no final consonant), and the other under Voc Suffix \((within\ the\ base)\). If, for presentation purposes here, we set off the intra-basal suffix by +, and the extra-basal suffix by =, we can now account for consonant length alternation after a short root vowel as follows:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4524</td>
<td>[boli]</td>
<td>light</td>
<td>/bol-i/</td>
</tr>
<tr>
<td>4524</td>
<td>[bolli]</td>
<td>silver</td>
<td>/bol-i/</td>
</tr>
<tr>
<td>2473</td>
<td>[tanii]</td>
<td>coolness</td>
<td>/tan-i/</td>
</tr>
<tr>
<td>3299</td>
<td>[panni]</td>
<td>fruit</td>
<td>/pan-i/</td>
</tr>
<tr>
<td>1997</td>
<td>[jade]</td>
<td>cobra's hood</td>
<td>/jat-e/</td>
</tr>
<tr>
<td>1910</td>
<td>[dadde]</td>
<td>dull person ((\text{fem}))</td>
<td>/daa-e/</td>
</tr>
<tr>
<td>2463</td>
<td>[tatte]</td>
<td>flat plate</td>
<td>/tat-e/</td>
</tr>
</tbody>
</table>

By this solution, which arises naturally in the context of the analysis suggested thus far, we adhere to verbal lexeme structural principal that a consonant standing in base-final position immediately after a short root vowel is automatically geminated; also, that, if it is a stop, it is thereby tense and voiceless. Thus, in underlying representation, the true length contrast between stops is illustrated
by [jade] and [tatte] (not [dadde], which shows a derived base-final /d/, by the operation of R2, R4, and R5 on the sequence /p y/). All single consonants are lax and voiced intervocically.

How far is this solution justifiable? Evidence in favour of it would consist in one or more of the following conditions being met:

1. If the system of elements operating at one source could be shown to be significantly distinct from that operating at the other, in respect of its inventory;
2. If the elements of the system at one source could be shown to have a distributional pattern distinct from that of the 'same' elements at the other source;
3. If cases could be shown where both systems are simultaneously operative.

It is not difficult to show that all these conditions are met, although the evidence from (3) is not as full as might be expected. Concerning (1), Figure 7 shows the generalised schema for items such as [bolı], [tanı], and [jade].

![Figure 7: Generalised structure for (C)V-C-V nominals](image-url)
The system at Voc Suffix consists of 5 elements; /i/ and /u/ are in contrast, though minimally. Noun is not developed.

By contrast, Figure 8 shows the schema required for [bolli], [panni], [dadde], [tatte], etc.:

![Diagram of schema for (C)VCCV(C) nominals]

Figure 8: Generalised schema for (C)VCCV(C) nominals

Noun here is developed; the system operating at it consists of 5 elements, of which just 3 are identical in form to those found at Voc Suffix; however, two of these, /i/ and /u/, represent FAM in some items, which they never do in (C)VCCV nominals. (The presentation of Noun elements is simplified here, but the details that are omitted are irrelevant to our purpose; for a fuller treatment, see the discussion of Noun below, pp. 366-368). The justification for setting up /an/ as the phonological source for -[e(n)] must be postponed until the last part of Chapter 6; /al/ is the underlying form of lexeme-final -[a(1)]; see pp. 424-427 for both these elements.

Note that the elements /i/ and /u/ are not included in the system.
hence; the reason for this will become apparent when we consider the evidence of type (2), which is presented in the table in Figure 9:

<table>
<thead>
<tr>
<th>Canonical form</th>
<th>i</th>
<th>o</th>
<th>a</th>
<th>i</th>
<th>u</th>
<th>a(1)</th>
<th>o(n)</th>
<th>Σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (C)VC+V</td>
<td>61</td>
<td>68</td>
<td>48</td>
<td>9</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>197</td>
</tr>
<tr>
<td>2 (C)VCC = V(C)</td>
<td>40</td>
<td>54</td>
<td>22</td>
<td>76</td>
<td>1</td>
<td>6</td>
<td>25</td>
<td>224</td>
</tr>
<tr>
<td>3 (C)VNC = V(C)</td>
<td>16</td>
<td>17</td>
<td>10</td>
<td>25</td>
<td>-</td>
<td>2</td>
<td>6</td>
<td>76</td>
</tr>
<tr>
<td>4 (C)VC = V(C)</td>
<td>51</td>
<td>53</td>
<td>59</td>
<td>91</td>
<td>4</td>
<td>2</td>
<td>10</td>
<td>270</td>
</tr>
<tr>
<td>5 (C)VNC = V(C)</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>6 (C)VCVC = V(C)</td>
<td>16</td>
<td>35</td>
<td>26</td>
<td>32</td>
<td>1</td>
<td>1</td>
<td>17</td>
<td>128</td>
</tr>
<tr>
<td>7 (C)VCVNC = V(C)</td>
<td>4</td>
<td>2</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14</td>
</tr>
</tbody>
</table>

| Σ (2 to 7)     | 131| 162| 117| 236| 6 | 11   | 58   | 721|
| Σ (1 to 7)     | 192| 230| 165| 245| 17| 11   | 58   | 918|

Figure 9: Lexeme-final elements in the nominal system

This shows the distributional pattern of elements at the systematic phonetic level, counted for a total of 918 nouns representing all the lexeme types under consideration.

The first row contains those entries which, if the analysis under consideration is correct, show the suffixal system at Voc Suff, while the remaining six rows contain entries for all those lexeme types where the analysis posits a suffixal system at Noun. If row 1 is compared with row 8 (Σ (2 to 7)) across the first 5 columns, it will be seen that the relative frequency of [i] and [u] changes markedly between the two sets of entries. If the data is organised in terms of (C)VC+V versus non-(C)VC+V lexemes on the one hand, and
["i]/[u] suffixal elements versus non-"[i]/[u] elements on the other (as in the table in Figure 10), it is quite apparent that there is an association between the non-(C)VC+V lexeme types and the occurrence of the ["i]/[u] suffixal elements; the Chi-square value for the table in Figure 10 is in fact extremely high ($X^2 = 41.583$). Hence, it is justifiable to recognise a fundamental distinction between the two systems of suffixal elements here (one occurring with (C)VC+V lexemes, the other with all the rest); and a natural way to formalise this would be to establish a distinct source in underlying representation for each of these systems.

<table>
<thead>
<tr>
<th></th>
<th>&quot;i/u</th>
<th>&quot;[i]/[u]</th>
<th>Σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>(C)VC+V</td>
<td>20</td>
<td>177</td>
<td>197</td>
</tr>
<tr>
<td>(C)VC+V</td>
<td>242</td>
<td>479</td>
<td>721</td>
</tr>
<tr>
<td>Σ</td>
<td>262</td>
<td>656</td>
<td>918</td>
</tr>
</tbody>
</table>

"i/u = neither ["i] nor [u]
(C)VC+V = canonical forms other than (C)VC+V

Figure 10: The distributional pattern of the lexeme-final elements ["i]/[u]

Furthermore, since it is possible to state a complementary distribution of ["i] and [u] for all the lexemes of rows 2 to 7 (this is discussed in detail in the following section), and since they together account for the largest number of lexeme-final elements in those rows (see row 8), it is most convenient to exclude them from the system at Noun altogether; they are not present in underlying
representation at all, therefore, but are introduced as surface elements after a consonant at Coda or Coda Suff which stands in base-final position (i.e. where no element at Voc Suff or Noun occurs). This accounts naturally for the maximally unmarked status of ["i"] and ["u"] noted earlier. The rule that handles this is the realisation rule R13:

3. Insert: 

\[
\begin{array}{c}
  \text{constriction,} \\
  \text{back of tongue} \\
  \text{highest,} \\
  \text{lips unrounded}
\end{array}
\]

\[
\begin{array}{ccc}
  \{ A \} & \{ B \} & \{ I \} \{ II \} \{ III \} \{ IV \} \\
  \{ I \} & \{ II \} & \{ III \} & \{ IV \}
\end{array}
\]

(R13)

Note that the form of the enunciative vowel from R13 is ["i"]; it is mutated to ["u"] subsequently by the phonetic mutation rule AS9 when it is preceded by the sequences [av]- or [a:v]-.

By contrast, ["i"] and ["u"] have to represent underlying elements (at Voc Suff) in base-final position in (C)VCV nouns, since otherwise the consonant at Coda would stand base-finally after a short root vowel, and be geminated.

Regarding condition (3) above, consider the schema shown in Figure 11. This represents the generalised underlying structure of items such as 914, 918, 920, 933, 943, etc.:

- 2957 [nadeya] passage to shrine
- 3295 [paluva] coral
- 3497 [podiya] sari
- 1379 [kudiye(n)] man of toddy tapper caste
- 4270 [badave(n)] poor man

Both systems of suffixal elements are present simultaneously; the labial or palatal approximant in each of these items is a predictable surface element, breaking up the vowel cluster. It is not clear why the system
at Noun should be so restricted; nor why this lexeme type (which is included in the table in Figure 9 above as a type of (C)VVC=V(C) for simplicity of presentation of the data) should be relatively rare. However, we may briefly anticipate some of the discussion of Voc Suff (below), where this lexeme type will be dealt with in some detail, by noting the following lexical relationships which support the analysis proposed here:

2957  [nádeyá]  passage to shrine
       [náde]  limb
       [náda]-  walk; Class 3 verb

1379  [kúdiye(n)]  man of toddy tapper caste
       [kudi]  family of servants living in one hut

4270  [bádave(n)]  poor man
       [báda]  poor
In all such cases, there is evidence that the correct structural analysis has to recognise a (C)VC-V base (which may constitute a lexeme, if no element occurs at *Noun*), which may be followed by an element at *Noun*.

Finally, note that the analysis proposed here also preserves another principle of verbal base structure, namely that a vowel at *Peak* cannot be realised as long if a suffixal element from *Affix* 1 (*Voc Suff, Cons Suff*) occurs in the same base; the fact that this does not apply to extra-basal suffixal elements (from *Noun*) allows for lexeme-types such as (C)V(N)C-V(C), and provides the explanation of why these patterns like (C)VC-V(C), (C)VNC-V(C), and (C)V(N)C-V(C) lexemes in respect of their final elements (see the table in Figure 9).

We turn now to consider the systems of phonological elements which operate at the places defined in the generalised structure yielded by the LS rules.

3.1 Onset

The system at this place is shown in Figure 12:

![Figure 12: The system at Onset](image-url)
In most respects, it is similar to the verbal Onset system.

/p/, /t/, /k/ are among the most frequent elements, set up to account for the voiceless stops [p], [t], [k], respectively. The voiced stops [d], [j], [g] are much less frequent, and for them the elements /d/, /j/, /g/, respectively are set up, under the second-order feature b (defining plosives marked for voicing). However, [b] is almost as frequent as [k] and [g] in this position, and about as frequent as [t], and hence belies the marked status of /b/ in the matrix of Figure 12. An explanation for this state of affairs may be found by examining in other South Dravidian languages cognate forms to those showing initial [b] in Coorg; in a large number of cases Coorg initial [b] corresponds to (and diachronically has developed from) initial [v]: cf. 4254 [bolli], 'light', [bolli], 'silver', and Na. [veli], [velli], id. Rather than derive [b] by rule from /v/, we set up /b/ for all these cases; note that it would be a complicated matter to derive [b] from [v], since the two are in contrast at the systematic phonetic level (however minimally; see the following discussion), and /v/ is required to account for [v].

The most frequent nasal consonant is /m/, followed by /n/;

/n/ occurs in only four items, 230, 474, 731, and 732:

3097  [næn'mi]  [nem'mi]  chest (body part)

2362  [ma'ndi]  crab

3014  [ma'na]  shame

DIA 162  [ma'ya]  dispute, justice.

This is consistent with the general pattern whereby the elements in the column defined by the second-order feature j are less frequent than the elements in the corresponding rows.
/s/ occurs in sixteen items, which is considerably more than was found with the verbs, but this element is still a relatively infrequent one in the system.

Thus far, the inventory of the system is identical with that set up for the verbs; however, in addition 12 items show initial [r], 2 show initial [l], 3 show initial [š] and 7 show initial [v]. For these we set up /r/, /l/, /š/, and /v/, respectively. The last element is particularly interesting, since it underlies voiced labial articulations that contrast with [b] at the systematic phonetic level. The items concerned are 203-4, 569-70, 761-2, 818, and 877:

- [vara] ~ [ora] rice-paste extruder
- [visa] poison
- 896 [va:re] ~ [o:re] slantness
- 903 [va:le] ~ [o:le] ear ornament
- 4389 [va:ra] rent
- [va:re] week
- 827 [vanali] ~ [onali] sieve
- 606 [varaki] ~ [oraki] sleep

Of these, four show initial [va(:)] alternating with [o(:)] in free variation; as described in Chapter 2 (pp. 90-92), it is convenient to regard the [o(:)] forms as basic at the phonetic level, and derive the [va(:)] forms from them by a low-level rule. This leaves only 3 items for which we have to set up /v/; hence the contrast between /v/ and /b/ is minimal. /v/ is placed in the row defined by the
feature IV in the matrix, along with the other relatively infrequent items /s/ and /s/. /s/ is found just in the items 613, and 763-4:

\[
\begin{align*}
\text{[sa:le]} & \quad \text{school} \\
\text{[sa:pa]} & \quad \text{curse} \\
\text{[su:la]} & \quad \text{trident}
\end{align*}
\]

which are all loans (via Kanarese). Hence we have to supplement the realisation rule R7 as follows:

\[
\begin{align*}
4. \quad \text{IV} & \rightarrow \left\{ \begin{array}{l}
\text{[occlusion, groove friction]} / B(j) \\
\text{[occlusion]} / A \uparrow X(j) \\
\text{[obstruction]} / A \\
\end{array} \right. \\
\text{(R7)}
\end{align*}
\]

/1/ occurs in just two items, 397 and 760:

\[
\begin{align*}
\text{[lekka]} & \quad \text{account, sum} \\
\text{[lo:ka]} & \quad \text{world}
\end{align*}
\]

which are also loans (via Kanarese).

/\text{r}/ is found in the items 200-1, 296-7, 495, 559-60, 612, 759, 777, and 813:

\[
\begin{align*}
\text{[ra:ja]} & \quad \text{holiday} \\
\text{[rasa]} & \quad \text{sweetness} \\
\text{[ratte]} & \quad \text{upper arm} \\
\text{[rekke]} & \quad \text{wing} \\
\text{[rampa]} & \quad \text{hubbub} \\
\text{[ra:gi]} & \quad \text{sp. grain} \\
\text{[ra:ni]} & \quad \text{queen} \\
\text{[ra:te]} & \quad \text{board for pounding rice} \\
\text{[ro:ma]} & \quad \text{body hair} \\
\text{[ra:je(n)]} & \quad \text{king} \\
\text{[reyte(n)]} & \quad \text{cultivator}
\end{align*}
\]
Only those supplied with a DED reference number are part of the native vocabulary. In the case of [ratte] and [rekke] the Ka. forms erake, rakke, 'wing' suggest that these Coorg items are unusual in showing loss of an initial (root) vowel; the /r/ here is, diachronically, a Coda element.

3.2 Peak

The system at this point is shown in Figure 13:

![Figure 13: The System at Peak](image)

It will be seen that this is quite similar to the system set up at Peak in the verbal system. The most commonly occurring vowels are [i, e, a, o, u], for most cases of which the elements /i, e, a, o, u/, respectively are set up here. In just a few cases, [ɔ] and [u] are representations of /i, e/, respectively, as described in the preceding chapter for the verbs; and, by the same process, these systematic phonemic elements also account for certain instances of ["i] and ["e]. This is examined in more detail now.

It was seen in Chapter 2 (pp. 67-70) and Chapter 4 (pp. 231-234)
that there are two types of exception to the general rule that front unrounded vowels are retracted in a following retroflex environment (and additionally rounded, if a labial consonant simultaneously precedes): the back quality may occur without a following retroflex environment, or a front unrounded quality may occur even though a retroflex consonant follows. The latter type does not occur in the verbal system, but it is found with nouns; cf. items 28, 32-3, 168, 226, 328, 471-2, 478, 499, and 514:

<table>
<thead>
<tr>
<th>Item</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1318</td>
<td>[gili]</td>
<td>parrot</td>
</tr>
<tr>
<td></td>
<td>~ [gini]</td>
<td></td>
</tr>
<tr>
<td>1261</td>
<td>[cedi]</td>
<td>spark</td>
</tr>
<tr>
<td></td>
<td>~ [kedi]</td>
<td></td>
</tr>
<tr>
<td>2269</td>
<td>[cedi]</td>
<td>anger</td>
</tr>
<tr>
<td></td>
<td>~ [cadi]</td>
<td></td>
</tr>
<tr>
<td>1613</td>
<td>[gida]</td>
<td>plant</td>
</tr>
<tr>
<td></td>
<td>~ [gida]</td>
<td></td>
</tr>
<tr>
<td>2135</td>
<td>[cinni]</td>
<td>smallness</td>
</tr>
<tr>
<td>2296</td>
<td>[celli]</td>
<td>flea</td>
</tr>
<tr>
<td></td>
<td>~ [celli]</td>
<td></td>
</tr>
<tr>
<td>2081</td>
<td>[cindi]</td>
<td>scent (in hunting)</td>
</tr>
<tr>
<td>2275</td>
<td>[cendi]</td>
<td>ball</td>
</tr>
<tr>
<td></td>
<td>~ [cendi]</td>
<td></td>
</tr>
<tr>
<td>2637</td>
<td>[dindi]</td>
<td>stem of plantain</td>
</tr>
<tr>
<td>2135</td>
<td>[cinde(n)]</td>
<td>small man</td>
</tr>
<tr>
<td>DIA  41</td>
<td>[itti]</td>
<td>spear</td>
</tr>
<tr>
<td></td>
<td>~ [iti]</td>
<td></td>
</tr>
</tbody>
</table>

It will be seen that a high proportion of these items show an initial palatal consonant; it seems to be necessary to restrict the vowel
retraction rule (R9), therefore, so that it does not operate when a palatal consonant precedes the relevant vowel. However, this restriction, while on the whole well-motivated, is not absolute, as can be seen from the alternative forms given above, where the back quality does occur on the vowel in question. In general, such forms seem to be less common, and quite variable between one speaker and another. We do not take account of this variation here; we set up just /i/ and /e/ at Peak for both front and back rounded qualities in this particular environment, and write the appropriate restriction into the vowel retraction rule; and we note, informally, that this restriction is optional. The relevant subrule, without the restriction, has the form:

5. \[ X \rightarrow \{ \text{back of tongue highest, } \frac{B}{C}(\text{lips unrounded}) \} (\hat{\text{i}}) (\hat{\text{L}})^{\text{Br}} \quad (R9) \]

This allows for the consonant preceding the vowel to be defined by the feature B, B; (Br never occurs at Onset) or C. If we rewrite the environment as

\[
\{ \frac{B}{C}(\hat{\text{i}}) (\hat{\text{L}})^{\text{Br}},
\]

the restriction we are concerned with is effected. We therefore allow for both these environments, as follows:

\[
\{ \frac{B}{C}(\hat{\text{i}}) (\hat{\text{L}})^{\text{Br}},
\]

We may note here two further instances where the restriction does not apply; the items 331-2:
For the remaining items, it should be noted that all of them have alternative pronunciations with the expected retracted quality of vowel, and that these forms are more common. We set up /I/ at Peak for their non-retracted variants, which is entered in the system under the second-order feature f and is thereby marked for front articulation in all environments.

Still within this class of exceptional cases, we find that, while more than 50 items show the expected [u] or [o] in the environment of a preceding labial consonant and a following retroflex, there are 3 items where this is not the case; these are 391, 596, and 604:

- 4503 [betta] hill, mountain
- DIA 276 [pe:te] market, town
- 3639 [be:le] halves of dividable seed

For these, we set up /E/ under the feature f in the Peak system. This requires a further slight modification to the vowel retraction subrule in R9. Up till now, the feature X has been stated as follows:

\[
6. \quad X \rightarrow \left\{ \begin{array}{c}
\text{[back of tongue highest]} \setminus \{2\} \\
\text{[j]} \setminus \{r\} \\
\text{[j]} \setminus \{r\} \\
\end{array} \right\} \quad \text{(R9)}
\]

If we now modify the first of these stated environments, yielding the following rule:
7. \( X \rightarrow \) \{back of tongue highest\} / \( \{^1\} \) \( ^*(L)^{Br} \) \( \{^2\} \) \( \{^1\} \)

\((R9)\)

then the feature \( f \) will block the operation of the vowel retraction subrule, since it will stand between \( j \) and \( \{^1\} /r \). In these cases, \( X \) will therefore specify \{front of tongue highest, lips spread\}.

Concerning the other type of exception, where the back unrounded quality occurs before a non-retroflex environment, we have the following examples to consider; items 304, 636, 661, 671, 673, 713, 718 and 875:

698 \([\text{"etti"}]\)

~ \([\text{"etti"}]\)

bull, bullock

1348 \([\text{"ke:ki"}]\)

the East

2041 \([\text{"te:ki"}]\)

hiccup

~ \([\text{"te:ki"}]\)

3072 \([\text{"ne:ri"}]\)

bundle of paddy seedlings

776 \([\text{"e:ra"}]\)

more than enough

~ \([\text{"e:ra"}]\)

1348 \([\text{"ki:da"}]\)

place below, down

449 \([\text{"eraki"}]\)

eaves

~ \([\text{"eraki"}]\)

Concerning all the cases where \([r]\) follows the retracted vowel, we follow the same solution as was adopted in the verbal system, and set up \(/r'/\) as the following element (either at Coda or Cons Suff). Note that the two alternative forms \([e:ra]\) and \([eraki]\) are evidence for certain idiolects not having (probably, losing) the \(/r'/\) element.
Concerning 1348 [ke:ki"] and [ki:da], we also have to take into consideration the related item, 631:

1348 ["ki"] state of being lower, below

and accordingly recognize a root /ki:1/- with the alternative form /ke:1/-; the relevant terminal sequences will therefore be /ke:1kk/, /ki:1ta/, and /ki:1/, respectively. R9 retracts the root vowel in each case, and a later rule, AS6, simplifies the clusters (see the discussion of /I/ at Coda in the preceding chapter; further details will be given below).

For the remaining two items, ["atti"] and [te:ki"], we set up /e/ at Peak, under the second-order feature r, as described in the preceding chapter; in each of these cases, it is in free variation with /e/.

It was stated earlier, in discussing /I/, that one of the items showing this element at Peak is 169:

1693 [gida] plant

It was also noted that this has the alternative form:

1693 ["gida] plant

which was regular with respect to the vowel retraction rule. The statement regarding these items now has to be revised somewhat, since each of these items is irregular in respect of the vowel height of their Peak realisations: it was found in the verbal system that /i/ and /u/ at Peak are adjusted to /e/ and /o/, respectively when /a/ occurs at Voc Suff in the same base (/"/ at Peak was not involved in any of the items in the data), and accordingly the rule FM4 was formulated:

\[
\begin{bmatrix}
i \\
u\end{bmatrix} \rightarrow \begin{bmatrix}
e \\
o\end{bmatrix} \quad C + a
\] (FM4)
Essentially the same situation is found in the nominal system, but item 168 (both forms) is exceptional, together with items 156, 177, 190, and 203-4:

333  [ija]  trouble
[diva]  day
[visa]  origin, base
[visa]  poison
[visa]  ion

For just these items (of which the last four are part of the non-native vocabulary) we have to set up elements at Peak which are marked for high tongue position; accordingly, we establish a row in the matrix of Figure 13 (p. 327) which is defined by the feature h. For the items [ija], [diva], [visa], [sima] and also [gida] we set up the element /i/ in this row; it is marked for high tongue position and hence does not mutate to /e/ by rule P:ä4. The feature h is subsequently irrelevant to the operation of the realisation rules: thus, /i/ behaves in all other respects like /i/, and is realised as [i] in [gida] by the same rule (R9) that realises /i/ as [i] in the appropriate environment. However, for [gida] we have to set up /i/ at Peak, which is marked both for front articulation and high tongue position. Last, the item [buda] possibly has /i/ at Peak, which is then retracted and rounded by R9; but we also have to allow for the possibility that its root vowel is marked for lip-rounding in underlying representation, and accordingly we set up the element /u/ which is marked for both lip-rounded articulation and high tongue position. Setting up the feature h does not require any further modification to the realisation rules; it has neither articulatory nor contextual function, serving only to distinguish a class of elements
at the phonological level that remain unaffected by the phonological mutation rule IM4.

Finally, six items show nasalised vowels at Peak; 4, 23 (DBD form), 163, 551, 774, and 776:

<table>
<thead>
<tr>
<th>Item</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>2894</td>
<td>[tuv]</td>
<td>hiss of snake</td>
</tr>
<tr>
<td>1645</td>
<td>[kěvѣ]</td>
<td>ear</td>
</tr>
<tr>
<td>1644</td>
<td>[kєva]</td>
<td>wall</td>
</tr>
<tr>
<td>3945</td>
<td>[mא:vѣ]</td>
<td>father's sister</td>
</tr>
<tr>
<td>3945</td>
<td>[mא:ve(n)]</td>
<td>mother's brother</td>
</tr>
<tr>
<td>3768</td>
<td>[mא:ve(n)]</td>
<td>son</td>
</tr>
</tbody>
</table>

In all these cases the following consonant is an approximant, and nasalisation is spread through the rest of the item by the phonetic mutation rule AS1. This parallels the situation that was found in the verbal system. Accordingly, we establish the elements /i/, /u/, /e/, /a/, and /o/ in the system at Peak, under the feature n as described in the preceding chapter. Note that /i/ as well as /o/ has to be set up, as a possible source for [э] in [kєva] (through the operation of IM4).

3.3 Coda

We follow here the heuristic approach outlined in Chapter 4 for determining the inventory of elements at this position; in particular, we assume (once more) that all base-medial consonants at the systematic phonetic level must represent Coda elements in underlying representation. We have also seen, in the preceding section, that /r'/ has to be set up together with /r/; as in the case of the verbs, we allow for these elements to be representations of both Coda and Cons Suff. On the basis of this evidence, we may establish all the elements in the system at Coda, save for /r/ and /l/; these will be
discussed separately at the end of this section. The full system is shown in Figure 14:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>p</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>r</td>
<td></td>
<td>(j)</td>
</tr>
<tr>
<td></td>
<td>r</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>r</td>
<td>(r')</td>
</tr>
<tr>
<td></td>
<td></td>
<td>r</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>l</td>
<td>l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>(l)</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td></td>
<td></td>
<td>(s)</td>
</tr>
</tbody>
</table>

**Figure 14:** The system at Coda

/\p/\: this is realised as [v] in items such as the following:

23, 790, 815, 892, 907; and 693, 706, 720, 776, and 779:

1645 [kevi] ear
DIA 80 [kavdi] shell, cowrie
1034 [kavvi] vital spot
4516 [bevari] sweat
DIA 230 [nevana] pretence
3009 [na:vu] tongue
1590 [ku:va] shallow well
The realisation rules R1 and R4 handle the realisation of /p/ as the lax, voiced labial articulation. In the first 5 items cited above, /p/ is base-medial and intervocalic in the terminal sequence; in the remaining 5, it is base-final, but intervocalic also when */a/, */an/, or */al/ follow. [be:vi] and [na:vu] show /p/ in base-final position which is also lexeme-final. ["i"] is the form of the 'enunciative' vowel supplied by the realisation rule R13; it occurs after the lip-compressed approximant articulation of /p/ (by R4) which is conditioned in [be:vi] by the preceding front vowel. Where R4 yields a lip-rounded approximant articulation of /p/, as in [na:vu], the form of the enunciative vowel mutated to is [u] (AS9). Note also that the epenthetic vowel is deleted in [kavdi] and [kaviki] before the consonant at Cons Suf (by AS4) after the lip-rounded approximant articulation of /p/, but is retained in [bevari] and [nevana], after the lip-compressed approximant articulation of /p/. This is identical to the situation found with the verbs; the only new factor here is the way the particular realisation of /p/ determines the form of the enunciative vowel.

/p/ is realised as [pp] base-finally after a short root vowel, and as [p] after a long root vowel when followed by */x/ at Suffix2; cf. the items 221, 256, and 581:

DIA 108 [kuppi] bottle
1027 [kappe] toad
2139 [ci:pe] broom

All base-final articulations of /p/ at the systematic phonetic level, whether stops or laxed, may result from /p/ at Cons Suf.
/t/: this is realised as [d] when it occurs base-medially at the systematic phonetic level, as in the items 26 and 837:

1735 [kodi] love, desire
680 [edike] state of being in front

It is also realised as [d] when it occurs base-finally after a long root vowel in underlying representation, as in the items 513 and 681:

884 [o:di] share
3724 [po:di] auspicious ceremony

It is realised as [tt] when it occurs base-finally after a short root vowel, as in the items 293 and 337:

4157 [mette] mattress
1272 [titti] fire

Finally, it is realised as [t] when followed by *//: after a long root vowel, as in the items 545 and 695:

3746 [po:ti] niche over door
3920 [ma:ti] afterbirth

Note that, in the last three cases, the realisation of /t/ in base-final position at the phonetic level is not affected by whether an element at Noun follows (as in [o:di], [mette], and [po:ti]) or not (as in [po:di], [titti], and [ma:ti]). This is true for all elements in this position.

Base-finally at the phonetic level, these articulations may result from /t/ at Cons Suff.

/t/: this is realised as [d] when it occurs base-medially at the systematic phonetic level, as in the items 7, 843, and 946:

63 [adi] place below
929 [kadaye] steps over fence
938 [kadandi] wasp
It is also realised as [d] when it occurs base-finally in underlying structure after a long root vowel, as in the item 528:

DIA 157 [ca:di] slander

It is realised as a voiceless retroflex stop of long duration when it stands base-finally after a short root vowel in underlying structure, as in the item 318:

1713 [kotti] shed

and as a voiceless retroflex stop of short duration when it stands after a long root vowel and is followed by /a/ in underlying structure, as in the item 574:

1564 [ku:te] basket

Base-finally at the systematic phonetic level, [d], [t], [tt] may represent /t/ at Cons Suff.

/c/: this is realised as a palatal continuant (by R2 and R4) wherever it is single in the terminal sequence, base-medially or base-finally, as in the items 1, 176, and 799 (base-medially), and 509 (base-finally):

479 [oy] nail

[daya] kindness

1469 [kuyli] bee's sting

4385 [ba:y] mouth

In the case of [oy] (and others of this form, items 2-6), /i/ at Voc Suff is posited in the underlying structure, in order to account for the fact that /c/ is not geminated after the short root vowel by the automatic gemination rule; it is deleted by AS5. The epenthetic vowel is deleted in [kuyli] after [y], before the element at Cons Suff, by AS4.

/c/ may be realised as [cc] or [c] in base-final position at the
systematic phonetic level, depending on the length of the preceding vowel; [o] after a long root vowel indicates the presence of */z/ following /c/ in underlying representation.

[cc], [c], and [y] in base-final position at the systematic phonetic level may represent /c/ at Cons_Suff.

/k/: this is realised as [g] in the following items: 68, 115, 176, and 181:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>[age]</td>
</tr>
<tr>
<td>3483</td>
<td>[pose]</td>
</tr>
<tr>
<td>DIA 221</td>
<td>[naga]</td>
</tr>
<tr>
<td>3061</td>
<td>[noga]</td>
</tr>
</tbody>
</table>

These represent all the cases in the data where /k/ at Coda is followed by an element at Voc_Suff. It is also realised as [g] when it is followed by an element at Cons_Suff, as in the item 857:

DIA 236 [pagede] chess

and when it stands base-finally in underlying structure after a long root vowel, as in item 753:

3456 [bi:ge] lock

It is realised as [k] when it is followed by */z/ after a long root vowel, as in the item 709:

285 [a:ks] paddy (especially nursery) field

and as [kk] when it stands base-finally in underlying representation after a short root vowel, as in the item 426:

2435 [takke(1)] chief family

Base-finally at the systematic phonetic level, velar stops may represent /k/ at Cons_Suff.

/j/: this is set up to account for just 8 instances of [j], in the items 153, 200, 537, 539, 548, 644, 744, and 767:
The first two items show clear instances of /j/ at Coda; all the rest are possibly the result of /j/ at Cons Suff. In either case, /j/ is a marginal element, accounting for [j] which cannot be derived from /c/ in terms of the phonological system proposed here. [iija] is in DED, but is not known to my informants; [raija], [me:ji], [ju:ji], and [ra:je(n)] are part of the non-native vocabulary; and [bo:ji]→[bo:ja] really constitute just one instance of [j]. Note that the remaining item, [ma:ji], is related to the Class 1 verb [ma:jj] 'clothes soil', which was one of the few instances for which /j/ had to be set up in the verbal system.

/T/, /T/: these elements are set up here to account for the intervocalic voiceless stops [t] and [t], respectively, in just the 5 items 63, 82, 185; and 182 and 183:

<table>
<thead>
<tr>
<th>353</th>
<th>[ija]</th>
<th>trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>3740</td>
<td>[bo:ji]</td>
<td>goodness, beauty</td>
</tr>
<tr>
<td>3927</td>
<td>[ma:ji]</td>
<td>soiled clothes</td>
</tr>
<tr>
<td></td>
<td>[me:ji]</td>
<td>table</td>
</tr>
<tr>
<td>DIA 172</td>
<td>[ju:ji]</td>
<td>bet, gambling</td>
</tr>
<tr>
<td>3740</td>
<td>[bo:ja]</td>
<td>altern. form of [bo:ji]</td>
</tr>
<tr>
<td></td>
<td>[ra:je(n)]</td>
<td>king</td>
</tr>
</tbody>
</table>

These stops are unusual in respect of their being simultaneously short and voiceless; if we treat the fact that they are voiceless as their exceptional feature (rather than that they are short), we can account
for them by setting up at Coda the elements /T/, /T/ which are
defined by the second-order feature p (i.e. marked for voiceless
plosive articulation) just as described for the system at Cons Suff
in the preceding chapter (pp. 264-271). All the items cited above,
save for [pata], are loans.

/m/, /n/, /n/: these elements are set up in the first instance to
account for base-medial [m], [n], [ŋ], respectively.

/m/ is present just in the items 10, 23, 204, 909, and 926:

<table>
<thead>
<tr>
<th>Item</th>
<th>Allomorphs</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>548</td>
<td>[um]</td>
<td>paddy husks</td>
</tr>
<tr>
<td></td>
<td>[umm]</td>
<td></td>
</tr>
<tr>
<td>1645</td>
<td>[kem]</td>
<td>ear</td>
</tr>
<tr>
<td></td>
<td>[kevi]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[sima]</td>
<td>lion</td>
</tr>
<tr>
<td></td>
<td>[gamana]</td>
<td>odour</td>
</tr>
<tr>
<td></td>
<td>[samaya]</td>
<td>time</td>
</tr>
</tbody>
</table>

Note that the first two of these are alternative forms, while the
last three are all loans (via Kanarese).

/n/ and /ŋ/, however, are fairly common, in items such as 133,
818, 192, and 948:

<table>
<thead>
<tr>
<th>Item</th>
<th>Allomorphs</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>4119a</td>
<td>[mom]</td>
<td>sharp point</td>
</tr>
<tr>
<td>827</td>
<td>[onali]</td>
<td>sieve</td>
</tr>
<tr>
<td>3817b</td>
<td>[man]</td>
<td>sand</td>
</tr>
<tr>
<td></td>
<td>[mananji]</td>
<td>tacky secretion of jackfruit</td>
</tr>
</tbody>
</table>

/n/ and /ŋ/ at Coda may, in addition, underlie [mn], [n]; [nn],
[ŋ], respectively, depending on the length of the preceding vowel,
when no other element stands after them in the base; cf. the items
359, 563, 365, and 602:

<table>
<thead>
<tr>
<th>Item</th>
<th>Allomorphs</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>3732</td>
<td>[pon]</td>
<td>gold</td>
</tr>
</tbody>
</table>
4235 [a:ne] elephant
3817a [manni] mud, land property
3354 [ba:nne] open grazing land

As in the verbal system, base-final [m(m)] and [n(n)] are not to be accounted for by the system at Coda, but by that at Cons Suff (see below).

Finally, note that the items 193 and 365:

3817a [mana] sand
[manni] mud, land property

both share the same root, /man/. The first is formed from this by the presence of the Voc Suff element /a/; the second shows no suffixal element at all, the base-final consonant is geminated, and ["i"] is written in by R13.

/r/, /r'/: the reasons for setting up /r'/ beside /r/ have been described in discussing the system at Peak. These elements at Coda account for all instances of base-medial [r] in the data, as in the items 69, 836, and 875:

192 [ares] half
614 [uripe] small bag for betel quid
449 [eraki] eaves

Base-finally, they also underlie [r] after a long root vowel, as in the items 577 and 673:

1869 [ko:re] tusk
3126 [ne:ri] truth

In these cases, of course, the apico-alveolar tap may represent /r/, /r'/ at Cons Suff.

Finally, as was found in the verbal system, these elements may be realised as voiceless dental stop articulations: this may happen as
the result of the automatic gemination rule, where /r/, /r'/ stand in base-final position in underlying structure, after a short root vowel; or they may be followed by */ after a long root vowel. In the first case, they will yield [tt], in the second, [t]. Exemplification of the first case is hard to find in the data, but the item 144 and its related form are certainly relevant:

3903 [ mar' ] state of being opposite
[mattiyan'di' ] day after tomorrow
(Cf. 1 [andi' ], that day)

As far as the operation of */ is concerned, consider the following lexical relationships, involving the items 629 and 743:

1353 [ki:ti' ] torn piece
[kiri' ]--
[k"ri' ]--
tear (intr); Class 1 verb

2379 [na:ta' ] small
[na:ri' ]--
smell (intr); Class 1 verb.

/1/, /1/: these are set up here to account for all instances of base-medial [l] and [l], as in the items 13, 863, 161, and 881:

710 [eli' ] rat
3551 [polace' ] dawn
1160 [kasla' ] threshing floor
1523 [kuliri' ] cold (climate)

In base-final position in underlying structure, /1/ accounts for [11] after a short root vowel and [l] after a long root vowel; similarly, /1/ accounts for most instances of [11] and [l] (however, /1/ and /1/ have also (marginally) to be set up at Cons Suff, and may underlie some instances of these lateral articulations). Cf. the items 235, 659, 217, and 642:
3294 [palli] lizard
1852 [ko:li] stick
1156 [kalli] thief (fem)
1886 [go:li] agony, struggling

Finally, /l/ also has to be set up at Coda, and underlies certain instances of [l]; these are dealt with separately, below.

/s/: this is realised everywhere as [s]; it never occurs long in the language. It occurs base-medially in the items 58, 62, 667, etc.:

[bisi] heat
4187 [masi] charcoal
~ [masi]
4055 [mosale] crocodile
~ [mosale]
and base-finally in such items as 566, 609, and 766:

[a:se] wish, desire
3996 [mi:se] moustache
~ [mi:se]
[sa:sa] effort

/s/: apart from the items just cited (alternative forms), this occurs base-medially just in the item 22, and base-finally just in the item 741; it is realised as [z] in each case:

[kusi] happiness
~ [kusi]
[de:sa] country, land

Each of these items is a loan, via Kanarese.

In addition to the foregoing, the elements /r/ and /l/ are set up in the system at Coda, and are dealt with here.
one reason for setting this up in the verbal system was in order to derive the relatively infrequent -BB type of cluster in (C)VBB bases (-BB standing for a geminate voiced stop cluster). This had the advantage of avoiding the necessity of establishing the voiced stop elements /b/, /d/, and /g/ at Coda and/or Coda Suff, just for these base types. The ratio of the occurrence of -BB to -FP in (C)VCC bases was noted as 1:4 (p. 246). In the nominal system, the ratio is just less than 1:4, and hence such an approach is viable here also. Furthermore, in the nominal system this not only avoids the necessity of specifying at Coda /b/, /d/, and /g/, but also /d/ and /j/; cf. the items 242, 301, 343, 207, and 368:

<table>
<thead>
<tr>
<th>Item</th>
<th>2526</th>
<th>[tandi]</th>
<th>offer of marriage to girl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>205</td>
<td>[akki]</td>
<td>husked rice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[-ari]</td>
<td>in [puttari], harvest festival</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[-ari]</td>
<td>in [tanneri], sheaf of ripe paddy</td>
</tr>
<tr>
<td>Item</td>
<td>228</td>
<td>[nucci]</td>
<td>broken rice grains</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[nuri]</td>
<td>small bits of broken rice</td>
</tr>
</tbody>
</table>
It was noted in the preceding chapter that /r/ has two main phonological characteristics: first, it is realised as [r] when it is operated on by the realisation rules (i.e. the feature x in the matrix of Figure 14 has no direct articulatory effect), and secondly it does not satisfy the condition for C₁ in the epenthetic vowel rule PIII:

9.  \( C₁ + C₂ \rightarrow C₁ + V C₂ \).  \( (C₁ \neq \text{P}, 1) \)  \( \text{PIII (i)} \)

This means that it may come to stand immediately in front of an element in the system at \text{Cons Suff} in the terminal sequence. Hence, if we set up the roots:

- Item 476  \( /\text{tar}/- \)
- Item 205  \( /\text{ar}/- \)  \( /\text{er}/- \)
- Item 228  \( /\text{nur}/- \)
- Item 406  \( /\text{or}/- \)

the following terminal sequences will be yielded:

- Item 476  \( /\text{tarNt}/ \)  offer of marriage to girl
  \( /\text{tar}/- \)  give (to 1st/2nd person)
- Item 205  \( /\text{arkki}/ \)  husked rice
  \( -/\text{ari}/ \)
  \( -/\text{eri}/ \)
- Item 228  \( /\text{nurccoi}/ \)  broken rice grains
  \( /\text{nuri}/ \)  small bits of broken rice
The realisation rule R4 then realises /t/ as [d] after /u/, and /p/ as [b] after /r/. R5 realises /r/ as [b] before the single base-final element /p/, but as [r] otherwise: thus /r/ is [r] intervocally, before /u/, before /w/, and before the geminate consonants /kk/ and /cc/. Finally, R6 provides the appropriate realisation of /u/. At the phonetic level, AS6 simplifies the 3-consonant clusters by deleting the first consonant ([r]) in each case, yielding [tandi], [akki] and [nucci].

Note that item 205 shows variant root forms; they differ only in respect of vowel quality, but this variation cannot be accounted for by rule. External evidence for this particular analysis comes from entries for related languages at DED 178: "Ta. ari 'rice, paddy, ear of paddy'; ha. ari 'grain of rice freed from chaff, seed, grain'.

/1/: this element was set up at Coda in the verbal system primarily in order to allow for the statement of certain verb–noun lexical relationships. Since the concern of Chapter 5 was mainly with verb–verb relationships, the function of /1/ was only briefly considered. Further details regarding this element are accordingly given here. Consider the following sets of related items:

Item 153 3537 [pulü] worm
[pünger] rot, fester a little; Class 1 verb

Item 461 4098 [munde] screwpine
[mullü] thorn
First, it should be noted that not only noun-verb but noun-noun relationships are involved in these sets. Secondly, /l/, like /r/, has two principal phonological characteristics: it is realised as [l] when it is present in the terminal sequence of systematic phonemes; and it fails to satisfy the condition for C₁ in PM3(i). Hence, it is possible for /l/ to stand immediately in front of an element from the system at Cons Suff. Note that, if PM3 were able to insert an epenthetic vowel between /l/ and the following Cons Suff element, the condition for PM 8 would now be satisfied:

10. \[ LVCV( (N)C ) ] \rightarrow CV( (N)C ) ] \] (PM6)
and the long root vowel in items 561, 600, 705, 718, and 744 would be incorrectly shortened. In fact, no phonological mutation rules apply to these sequences.

Hence, if we note that in certain cases the Cons_Suff element is followed by /*/ (triggering the operation of PM2), and if we set up the following roots:

- Item 153: /pul/-
- Item 461: /mul/-
- Item 561: /a:l/-
- Item 600: /ba:l/-
- Item 705: /ca:l/-
- Item 718: /ki:l/-
- Item 744: /ni:l/-,

then it will be seen that the following terminal sequences will be yielded (omitting irrelevant details):

- Item 153: /pulu/-  worm
  /pullNk/-  rot, fester a little

- Item 461: /mullNte/-  screwpine
  /mull/-  thorn

- Item 561: /a:lcce/-  day of week
  /a:l/-  rule

- Item 600: /ba:lcce/-  act of living
  /ba:lkke/-  in [ba:ke kud]-
  /ba:l/-  way of life
  /ba:l/-  (child) lives, rule
Item 705  
/ˈkɔːlp/  
+  
death, corpse
+  
/ˈkɔːl-/  
die

Item 718  
/ˈkiːltə/  
+  
place below, down
+  
/ˈkeːlkt/  
the East
+  
/ˈkiːl/  
state of being below

Item 744  
/ˈniːlə/  
length
+  
/ˈniːlt/-  
stretch out straight (intr)

At this point, the realisation rule R6 realises /l/ everywhere as [l]; R1-4 also rewrite /k/ and /t/ as [g] and [d] after the nasal /N/, and rewrite single /p/, /t/, and /t/ after /l/ as [v], [d], and [q], respectively. That is to say, /l/ functions like /N/ and the phonological vowels in respect of the voicing of following single stops. Finally, [i] is inserted by R13 after lexeme-final consonants, and AS9 mutates this to [u], after [a(:)v]-. The phonetic mutation rules AS6-7 subsequently adjust the length of consonant duration after a long vowel, and simplify those clusters in which [l] is involved as the first element by deleting it.

3.4 Cons Suf

The system here is shown in Figure 15. It represents a rather fuller version of what was set up at this position in verbal base structure; the additional elements are all of relatively low frequency, while those that are common to the two systems account for roughly three-quarters of all those included here. As noted above, with respect to /p/ at Code, certain instances of /p/, /t/, /t/, /c/, and /k/ at Cons Suf underlie -BB base-final elements in (C)VCC bases. It has also been seen that they may underlie base-final consonants in
other (C)VC and (C)VC bases; in what follows, only unambiguous cases of elements at Cons Suff are considered, for the most part.

/p/: this accounts for [b] after a homorganic nasal, as in the items 440, 788, and 956:

<table>
<thead>
<tr>
<th>Item</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>2731</td>
<td>[tumbi]</td>
<td>flying beetle</td>
</tr>
<tr>
<td>3361</td>
<td>[pa:mbi]</td>
<td>snake</td>
</tr>
<tr>
<td>3316</td>
<td>[parambi]</td>
<td>large flat pasture land</td>
</tr>
</tbody>
</table>

It is realised as [p] when followed by /a/, as in the item 838:

<table>
<thead>
<tr>
<th>Item</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>[erape]</td>
<td>beggar</td>
</tr>
</tbody>
</table>

Otherwise, it is laxed, but there are very few instances of this in the data. We have seen, in discussing Coda, that item 705:

<table>
<thead>
<tr>
<th>Item</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>[ca:vu]</td>
<td>death, corpse</td>
</tr>
</tbody>
</table>

shows [v] which must be a realisation of /p/ at Cons Suff since it
follows /1/ at Coda. Additionally, item 900:

1537 [koravu] defect
also shows /n/ of this system. In each of these cases, the preceding environment does not contain a front vowel, and /n/ is therefore realised as a bilabial continuant; this in turn provides the environment for the [u]-form of the enunciative vowel, by the operation of AS9.

Two further points have to be made here: first, that [v] in such items as 907:

S 167 [karava] clay pot
probably does not represent any element in underlying structure (see pp. 321-323); and secondly, that items such as 840, 878, etc.:

799 [odeve] break
265 [arivi^] knowledge
show an unusual second base vowel which cannot be accounted for by the epenthetic vowel rule in the usual way. It will be seen, in the following chapter, that these are complex lexemes, and that the vowels in question are in fact realisations of underlying elements. It will also be shown that the item 881:

1374 [kodavi] Coorg (the land)
which shows final [i] in contrast (at the systematic phonetic level) with the [u] of [koravu], is also of complex structure, and that there are independent grounds for stating that [i] in this item represents /i/ (at Voc Suf) in the underlying structure. This has the advantage of accounting for this one case of systematic phonetic contrast between [i] and [u] outside the (C)V+C+V lexeme type.

/t/: this is set up to account for [d] after the homorganic nasal
in such items as 467, 787, and 949:

1548 [kundi] mountain
2021 [ca:ndi] sandalwood
1700 [kodande] double handful

It is realised as [t] when followed by */:/, as in the item 827:

3280 [parati] cotton cloth

There are no unambiguous instances in the data where it is realised as [d] following a vowel; in each case, the [d] may result from /t/ at Coda.

/t/: this is realised as [d] after the homorganic nasal in the items 449, 780, and 950, etc.:

962 [gande] spleen

106 [a:ndi] mango stone
[parande] gizzard of fowl

When it is followed by */:/, [t] is yielded, as in the item 869:

2102 [iriti] darkness

and it underlies [d] otherwise, as in the item 820:

1059a [karadi] bear.

/c/: this is established in this system to account for [j] after the homorganic nasal in such items as 431 and 945:

363 [iŋi] ginger
842 [olaŋji] fly

(No instances of [ŋj] after a long root vowel occur in the data.)

It is realised as [c] when followed by */:/, as in the item 821:

1184 [kenacì] dream

Otherwise, it is realised as [y], as in the item 926:

[samayà] time
Note that [y] here cannot be a low-level glide, since that would have to be labial, between [a] and [a]. This is the only unambiguous instance of [y] from /c/ at Cons. suff.

/k/: this accounts for [y] after the homorganic nasal, in the items 453, 782, and 954, etc.:

2445 [tahęge] younger sister
2368 [ne:ŋgi] plough
1279 [kadaŋgi] ditch without water

It is realised as [k] when /a/ follows, as in the item 842:

1277 [kaḍake] bed, bedding

and otherwise as [g], as in the item 883:

1382 [gudigi] thunder.

/b/, /j/: these are set up here to account for instances of intervocalic [b], and [j] (where /p/, /c/, would yield [v], [y]), respectively. Cf. the items 798, 935, and 823:

1063 [kaybi] sugarcane
1550 [kuruhe(n)] shepherd

Possibly the -[yb]- sequence in the first of these items represents a regular derivation from underlying -/kap/-, where the medial vowel is inserted by the epenthetic vowel rule: /p/ is realised as [v], which then mutates to [b] when it stands immediately after [y] (from /c/), after the epenthetic vowel is deleted. Since this is the only example of the type, however, deriving the [b] by rule is not an appropriate procedure, and /b/ is set up, marked for voice, in the system at this place. The next item shows the base-medial vowel -[u]-, which is possibly accountable for by rule as the appropriate
realisation of the epenthetic vowel /i/ in this environment (i.e. when followed by /b/): but this again is the only example of its type, and it seems much more probable that [u] here represents underlying /u/ in the structure of what is a complex lexeme. Complex lexicem structure is certainly the case with regard to item 919:

3613 [perija] increase, excess

which shows a second vowel [u] which cannot be accounted for by the epenthetic vowel rule and which therefore has to be derived from /i/ in the underlying representation of a complex structure. These two items therefore fall within the scope of Chapter 6.

/g/, /g/, /g/: it was discovered (pp. 263-270), when analysing verbal base structure, that the system of elements required to account for all clear cases of Coda representations contained only /n/ and /n/ of the row of elements defined by the feature \( n \). It was also found that base-final nasal consonants were in any case rare, only [-mm], [-nn], [-nn], [-n] occurring, in (C)VCV bases, and [-n] in one (C)VCC base. Of these, some [-nn] and [-nn] could be accounted for by /n/ and /n/, respectively, at Coda. For the others, it was decided to set up the sequences -/Ng/, -/Vt/, -/Vt/, and -/Ng/, and some evidence in support of this was considered.

PK7 operates on these sequences:

\[
\begin{bmatrix}
  k \\
  t \\
  t \\
  p \\
\end{bmatrix} \rightarrow \begin{bmatrix}
  \tilde{n} \\
  n \\
  n \\
  m \\
\end{bmatrix}
\]  

(PK7)

to yield the appropriate nasal consonants, in those cases where the element following /n/ has not had PK2 applied to it (i.e. where it is followed by */*/).
As far as the nominal system is concerned, the situation is much less constrained and the picture correspondingly less clear. It has been seen that /m/ is required at Coda, on the basis of 5 clear instances; /n/ and /ŋ/ are also set up in that system, but /r/ and /v/ are not required. The /m/, /n/, /ŋ/ at Coda therefore, may account for final -[mm], -[nn], -[ŋn], respectively, in (C)VCC bases; and for final -[m], -[n], -[ŋ], respectively, in (C)VVC bases. But we also have to account for a few instances of base-final -[m], -[n], -[ŋ], in (C)VSC and (C)VVC bases in the nominal system, and for these the marginal elements /m/, /n/, and /ŋ/, respectively, may be required at Cons Suff (see below). There is also the possibility, however, that certain -[mm]/-[m] result from -/ŋg/, and (in particular) that -[ŋŋ]/-[ŋ] result from -/ŋg/; note that there is no unambiguous case for setting up /ŋ/ at either Coda or Cons Suff. The velar nasal consonant does not occur in the nouns under consideration here.

Concerning /ŋŋ/, there is some supporting evidence in the nominal system from the alternative form of item 222:

1450  [kummi]   }  comb teak
~ [kumbili]

This suggests that -[nn] in the first form is, diachronically, a development from the homorganic nasal plus stop type of base-final element shown in the second form.

Concerning /ŋg/, the following items are involved: 216, 218, 230, 258, 595, and 742:

DIA  85    [k"ani]      virgin
1371  [kumni]       (Coorg) child
3097  [nemni]   }       chest (of body)
~ [nemni]
3572 [kunne] unmarried girl

[puñe] cat

[nainña] coin

For certain of these, evidence from cognate forms in related languages supports the analysis proposed here; DEO has the following entries for 3571:

"Ta. kunçu 'young of birds and various animals'; Na. kunnu, kunçi ',young, small, infant'."

For 3097, it has the following entries:

"Ta. neñcu, neñcam, 'mind,..., breast, bosom, chest,...'; Na. neñcu, neñnu, 'heart, breast'."

The alternative Malayalam forms in each case are particularly relevant to Coorg.

Internal evidence of a sort is available in respect of item 395, which has a number of related forms:

4119a [minña] state of being in front

[muñgay] forearm

(Cf. [kay], arm, hand)

[mumbi] predominance

[muppode] previous

[mone] sharp point

4119b [moniyandi] day before yesterday

We have to recognise here the root forms /mi/- /mun-/ /mu/- /mon/- (see the following chapter for further details); [minña] shows /-nɔ/ after the first of these. We therefore extend the operation of FK7 to include the following subrule:

12. \( N_0 \rightarrow \tilde{n} \) (FK7)

Finally, /n/ is set up here to account for the items 877, 897, and 903:
For these forms, see the discussion of Coda in the preceding chapter. It is of course possible that they show /h/ at Cons Suff followed by /x/; but it is more natural to set up /S/ in their underlying structure, which thereby corresponds closely to that for the related verb forms, and explains why it is that all these nouns show a voiceless velar stop in base-final position.

/P/, /T/, /C/, /H/: these are set up to account for a relatively small number of items which show a voiceless stop after a homorganic nasal. Two of these items, 436 and 496, show the identical element /T/ which had to be set up at this position for their related verb form:

1408 [kunti] lame person (fem)
[kunte(n)] id. (masc)
[kunt]- be lame

The other elements may be illustrated by the items 452, 429, and 815:

[jompe] bunch (keys, flowers, etc.)
3597 [ačči] tile
1034 [kavčiki] vital spot

/m/, /n/, /n/: these elements are set up here to account for instances of base-final -[m], -[n], -[n], respectively, in (C)VSC and (C)VVC bases, as found in the items 814 and 824; 796 and 915, and 831 (the only instance):

4169 [mayme(n)] cross-nephew
2529 [talam] hair (of head or body)
4339 [bayne] eggplant
There is no evidence to suggest that any instances of a nasal consonant in this position derive from the -NP type of cluster considered earlier, though of course this possibility may be realised after further data collection.

Note that item 860:

3511 [pudume] wonder, marvel

is probably to be taken as a complex lexeme, since it shows a second vowel [u], in respect of which exactly similar arguments hold as were given above regarding [kurube(n)].

/1/, /l/: these are set up to account for the relatively few cases of base-final [1], [l], in (C)VSC and (C)VCVC bases, as in the items 792 and 844:

1125 [gavli] big lizard
941 [kadale] Bengal gram

/r/: this element is realised as [r] in items such as 789 and 849:

DIA 30 [ayri] low caste Coorg, carpenter
1423 [kudire] horse

/ɑ/: this is realised as [a], in base-final position of (C)VSC and (C)VCVC bases, as in the item 896:

[manasi] conscience, mind.

### 3.5 Voc Suff

The system of elements operating at this place in the base structure is shown in Figure 16. As with the verbs, this system is established in order to account for the final vowel in (C)VC+V bases;
however, as we have noted in the introductory section to this chapter, an element at this place in nominal lexeme structure may be followed by an element at Noun. This situation of course could not arise in verbal lexeme structure where I and I (from Verb) are rewritten simply as abstract class features, with no direct segmental realisation at the systematic phonetic level. As was seen earlier (pp. 303-306), none of the elements at this system expresses distinctions of gender.

/ɪ/: this accounts for all instances of base-final [i] in (C)VVC lexemes, as in the item 7:

63 [adi] place below

As noted earlier, it is also set up in the underlying structure of item 1 (and 2-6):

479 [oy] (finger, toe) nail

and is deleted by the phonetic mutation rule A35. It also accounts for base-final [i] in those (C)VVCV(C) lexemes where the second vowel is a base-final element (i.e., not inserted by the epenthetic vowel rule), and the following consonant is not an element at Cons Suff, but the palatal approximant [y] inserted by the phonetic mutation rule A38. The following are the items concerned: 911-2, 917, 920, 933, and 936:
DIA 199 [taliya]  plate
2869 [todiya]  small garden
DIA 257 [paliya]  wooden stool
3497 [podiya]  sari
  [podeya]
1379 [kudiye(n)]  man of toddy tapper caste
  ["kendiye(n)]  trickster (masc)

Note that the last two items cited here are related to items 20 and 24 which show no element at Noun:
1379 [kudi]  family of servants living in one hut
994 [kendi]  bird trap, cunning

/e/: this is set up to account for base-final [e] in (C)VC+V bases, as in the item 68:
  16 [age]  paddy seedling

It also accounts for base-final [e] when it is followed in underlying representation by an element at Noun; in all such cases, the palatal continuant [y] is inserted by ASB after [e]. The items involved are 914, 928-9, and 940:
2957 [nadeya]  passage to shrine of temple
436 ["elige(n)]  youth
510 [cede(n)]  husband
3714 [poleye(n)]  low caste man

The first and last of these items are related to (C)VC+V lexemes (i.e. not showing an element at Noun), namely the Class 3 verb 18, and item 118 of the nouns:
2957 [nada]-  walk; Class 3 verb
3714 [pole]  pollution

Note that the continuant inserted by ASB is palatal only after the
front vowels, [i] and [e]; after [a], [i] and [u] it is the bilabial continuant. Hence, item 930:

510 [oðevo(n)] master, god

shows base-final [v] from /p/ at Cona Suff.

/a/: this is set up to account for base-final [a] in (C)VCV bases, as in the item 157:

560 [ora] mortar of stone or wood

It also underlies [a] in this position when it is followed by an element at Noun, after the bilabial continuant [v] inserted by A86. The items concerned are 907, and 943:

S 167 [karava] clay pot
4270 [badave(n)] poor man

The last of these is related to the following item, which is a complex nominal lexeme in [-tana] (the first part of the complex shows no element at Noun):

4270 [badatana] poverty

/ï/, /u/: the contrast between [ï] and [u] at the systematic phonetic level is marginal; for most items (20 altogether), we can set up the element /ï/, which is realised as [u] if the preceding Coda element is /r/ and the root vowel is either /u/ or /o/ and as [i] in all other cases. This yields 5 instances of [u], in the items 147-50, and 155; and 15 instances of [i], as in the item 139:

1483 [kurcu] seed
1537 [koru] defect
[koru] management
[guru] teacher
[suru] beginning
1070 [kari] intestines
The realisation rule R9 handles this conditioned variation; we therefore extend R9 with the following subrule:

13. \( X \rightarrow \text{[back of tongue highest, lips rounded]} /Xw(F\text{r})l\text{I}(\text{r})/ \) (R9)

On the other hand, /u/ at Voc Suffix is set up to account for the base-final vowel in the items 145–6, and 151–4:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>[alu]</td>
<td>shell, cowrie</td>
</tr>
<tr>
<td>953</td>
<td>[kadu]</td>
<td>mustard seed</td>
</tr>
<tr>
<td>2460</td>
<td>[tadu]</td>
<td>lateness</td>
</tr>
<tr>
<td>2959</td>
<td>[nadi]</td>
<td>middle</td>
</tr>
<tr>
<td>3537</td>
<td>[pulu]</td>
<td>worm</td>
</tr>
<tr>
<td>3906</td>
<td>[malu]</td>
<td>chillies</td>
</tr>
</tbody>
</table>

/u/ is set up in the matrix shown in Figure 16 under the second-order feature \( W \) (i.e., is marked for lip-rounded articulation).

However, when an element at Noun follows, the contrast between [i] and [u] is lost; this may be treated as a result of the fact that the bilabial continuant is inserted after [i] or [u] in this environment by A8 (since they are not front vowels, defined by the feature \( j \)); a further phonetic mutation rule adjusts [i] to [u] in the environment of following [v] (A89). Just two items in the data show [u] in this position (which may therefore be the realisation of /i/ or /u/ at Voc Suffix): 918 and 932:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3295</td>
<td>[puluva]</td>
<td>coral</td>
</tr>
<tr>
<td>1230</td>
<td>[kiduve(n)]</td>
<td>hawk</td>
</tr>
</tbody>
</table>

Finally, note that in this system /i/ occurs not as a type of /i/ marked for retracted articulation but as a distinct, unmarked element; the same was found regarding /i/ at this position in verbal base structure.
This is represented by */ as described in the previous chapter. It is set up here, as in the verbal system, to account for the occurrence of base-final voiceless stops in positions other than immediately after a short root vowel; see for example, the contrast in these positions in the items 640 and 645; 801 and 800; and 883 and 888:

<table>
<thead>
<tr>
<th>Code</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>1563</td>
<td>[gudi]</td>
</tr>
<tr>
<td>2323</td>
<td>[cuti]</td>
</tr>
<tr>
<td>2537</td>
<td>[tavi]</td>
</tr>
<tr>
<td>1973</td>
<td>[cavi]</td>
</tr>
<tr>
<td>1382</td>
<td>[gudigi]</td>
</tr>
<tr>
<td>3451</td>
<td>[puriki]</td>
</tr>
</tbody>
</table>

As with */ from Suffix₂ in the verbal system, this element plays no part in the statement of lexical relationships.

3.7 Nom

This is represented by */.

We may recall here the general considerations set out in the previous chapter concerning the stating of lexical relationships (pp. 214-215). It was argued that it is necessary to have a model which is generatively linear where this is indicated by the data, and generatively parallel otherwise. It was later shown that certain voice-related verbs could be stated in a linear way, and to this end */ from Volit₁ was set up and distinguished from */ from Suffix₂.

In the nominal system also, it is possible to generate certain lexemes linearly; that is, they are relatable to other lexemes as derived forms to directly-generated forms. This, of course, represents the strongest hypothesis in respect of any lexical relationship; while
the weakest is that formalised in the generatively parallel approach, which simply states that two lexemes are each derived from a common root. The nominal lexemes which it is possible to derive linearly are set out below. It will be seen that each of these save one is related to a verbal lexeme, from which it is possible to say that it is derived, by the process of suffixing Nom, and the consequent operation of LS18:

4. \begin{align*}
\text{ Nom } & \left\{ \begin{array}{l}
[\text{i, -p}] \\
[\text{t, +p}]
\end{array} \right\} \text{ Nom } # \\
\rightarrow & \text{ Nom } # \\
\text{ Noun } # \\
\text{ (LS18)}
\end{align*}

Note that this rule formalises the fact that these are deverbal nominal lexemes; it applies after the full development of the node Verb (under Classifier) has taken place, and reclassifies the lexical structure in which Nom is operative as a nominal lexeme. This is allowed for by LS3, which does not restrict the occurrence of Nom to those underlying structures in which Classifier is rewritten as Noun (see the discussion of the generative component, pp. 313-315).

However, both LS8 and LS18 allow for Nom also to mediate noun-noun relationships, and one example of this is found in the data: see the last pair of items below.

After all LS rules have applied, and before the rules of the phonological component begin to operate, the underlying structures of the derived nominal lexemes are as follows (omitting irrelevant details):

Deverbal nominal lexemes:

<table>
<thead>
<tr>
<th>#</th>
<th>a#</th>
<th>uprooting from position</th>
</tr>
</thead>
<tbody>
<tr>
<td>432</td>
<td>#[[el + k + *]]</td>
<td>a#</td>
</tr>
<tr>
<td>606</td>
<td>#[[or + k + *]]</td>
<td>a#</td>
</tr>
<tr>
<td>1219</td>
<td>#[[ka:c + *]]</td>
<td>a#</td>
</tr>
</tbody>
</table>
Denominal nominal lexeme:
1206 #[kaːt + *] i# bison

3.8 Noun

It was seen earlier that the system of elements which operates at this place in lexemic structure is relevant in a not wholly thoroughgoing way to the determination of certain referential phenomena; to the extent that gender exists in Coorg, it is expressed at this place in the lexeme, and hence the development of Noun is relevant to the semantic specification of nominal lexemes. We have also seen that the systematic phonetic elements occurring at this place may have a marked or an unmarked function with respect to referential properties; hence the first rule which develops the node Noun is as follows:

15. Noun → \{ Mk \} \{ UNk \} (LS19)

Note that this rule, applying after LS18, rewrites Noun in identical fashion regardless of whether it is yielded directly from Classifier (by LS3) or from the operation of Nom on a verbal class specification from I, II.
Marked function may be in respect of human male, human female, plural, inanimate, or nonhuman animate properties of the referent, so the next rule expands \( Mk \) as follows:

\[
16. \quad Mk \rightarrow \begin{cases} 
\text{MASC} \\
\text{FEM} \\
\text{FLUR} \\
\text{INAN} \\
\text{AN} 
\end{cases} \quad \text{(LS20)}
\]

Where there is no gender marking, the nominal lexeme may show final \([i], [e], \text{or } [a]\) at this position, or the enunciative vowel \(["i"]\)/\([u]\). For the first three of these elements, we set up /i/, /e/, /a/, respectively, in the following rule:

\[
17. \quad \text{UNk} \rightarrow (\{/i/\}) \quad \text{(LS21)}
\]

The parentheses around the braces indicate that \( \text{UNk} \) may have no realisation at all, in which case \(["i"]/[u]\) will be inserted when the realisation rules operate.

Finally, we require the following rules for the marked cases:

\[
18. \quad \text{MASC} \rightarrow \left\{ \begin{array}{c}
/\text{an}/ +\text{masc} \\
/\text{i}/ -\text{masc} \\
/\text{e}/ -\text{masc} \\
/\text{a}/ -\text{masc} \\
\end{array} \right. \quad \text{(LS22)}
\]

\[
19. \quad \text{FEM} \rightarrow \left\{ \begin{array}{c}
/\text{i}/ -\text{masc} \\
/\text{e}/ -\text{masc} \\
/\text{a}/ -\text{masc} \\
\end{array} \right. \quad \text{(LS23)}
\]

\[
20. \quad \text{FLUR} \rightarrow \left\{ \begin{array}{c}
/\text{al}/ +\text{plur} \\
\end{array} \right. \quad \text{(LS24)}
\]

\[
21. \quad \text{INAN} \rightarrow \left\{ \begin{array}{c}
/\text{a}/ -\text{anim} \\
\end{array} \right. \quad \text{(LS25)}
\]
Note that, for the gender marking to be made available to the semantic component, the specification of the appropriate phonological forms for these abstract elements has to be carried out within a labelled domain, defined by the boundary elements \( + \) \( - \).

4.0 The rules cited in this chapter

4.1 The lexeme structure rules

\( AN \rightarrow \begin{array}{c}
\begin{cases}
\text{\textit{Voice Suffix}}/\text{\textit{Verb}} \\
\text{\textit{Nom}} \\
\text{\textit{Suffix}}_2 \\
\end{cases}
\end{array} (L326) \)

\[ L38. \text{ Affix}_2 \rightarrow \begin{cases}
\text{\textit{Nom}} \\
\text{\textit{Suffix}}_2 \\
\end{cases} \]

\[ L310. \text{ NCT: Peak} + \begin{cases}
\text{\textit{Volit}}_1 \\
\text{\textit{Volit}}_2 \\
\text{\textit{Voc Suff}} \\
\text{\textit{Nom}} \\
\end{cases} \]

\[ L318. \# \ldots \text{Nom} \# \begin{cases}
[i, - p] \\
[\pm t, \pm p] \\
\end{cases} \rightarrow \# \ldots \text{Nom} \# \text{Noun} \# \]

\[ L319. \text{ Noun} \rightarrow \begin{cases}
\text{\textit{Mk}} \\
\text{\textit{UMk}} \\
\end{cases} \]

\[ L320. \text{ Mk} \rightarrow \begin{cases}
\text{\textit{MASC}} \\
\text{\textit{FEM}} \\
\text{\textit{PLUR}} \\
\text{\textit{IMAN}} \\
\text{\textit{AN}} \\
\end{cases} \]
LS21. \text{UMk} \rightarrow \{ /e/ \} \{ /a/ \}

LS24. \text{MASC} \rightarrow \{ /an/ \} +\text{masc}\}

LS25. \text{FEM} \rightarrow \{ /e/ \} -\text{masc}\}

LS26. \text{PLUR} \rightarrow \{ /el/ \} +\text{plur}\}

LS27. \text{IMAN} \rightarrow \{ /a/ \} -\text{anim}\}

LS28. \text{AN} \rightarrow \{ /an/ \} +\text{anim}\}

* For LS22-3, see the list of rules at the end of Chapter 6 (p. 427).

4.2 The phonological mutation rules

FM3(i) \[ c_1 + c_2 \rightarrow c_1 + vc_2 \quad (c_1 \neq \text{\`i}, \text{\`i}; c_2 \neq \text{\'y}) \]

FM4. \[
\begin{bmatrix}
  i \\
  u
\end{bmatrix}
\rightarrow
\begin{bmatrix}
  e \\
  o
\end{bmatrix}
/ \ldots c + a.
\]

FM7. \[
\begin{bmatrix}
  b \\
  c \\
  t \\
  g
\end{bmatrix}
\rightarrow
\begin{bmatrix}
  n \\
  n \\
  n
\end{bmatrix}
\]

FM8. \[
\text{LCV( (N)c )} \rightarrow \text{CV( (N)c )}
\]
4.3 The realisation rules

\[ R7. \quad IV \rightarrow \begin{cases} 
[\text{occlusion, groove friction}] / B(j) \\
[\text{occlusion}] / A \uparrow X \downarrow j() \\
[\text{obstruction}] / A 
\end{cases} \]

\[ R9. \quad X \rightarrow \begin{cases} 
[\text{no articulatory effect}] / \_ \_1 \\
[\text{lips rounded}] / \begin{cases} 
A() \uparrow j() (L)^{B}r \\
Xw() B(z) II() 
\end{cases} \\
[\text{lips unrounded}] / \begin{cases} 
B(\_ \_ I) \\
B(\_ \_ II) \\
B(\_ \_ III) 
\end{cases} \\
[\text{front of tongue highest, lips spread}] / \_ j 
\end{cases} \]

R13. Insert: \begin{cases} 
[\text{constriction, back of tongue highest, lips unrounded}] \\
A(\_ \_ I) \\
B(\_ \_ II) \\
C(\_ \_ III) \\
D(\_ \_ IV) 
\end{cases} \]

4.4 The articulatory sequence rules
AS9. \[ \text{[lips unrounded]} \rightarrow \text{[lips rounded]} \]

\[
\begin{align*}
\text{constriction,} & \quad \text{obstruction,} & \quad \text{open tract,} \\
\text{back of tongue} & \quad \text{bilabial place} & \quad \text{of articulation} \\
\text{highest,} & \quad \text{[ ]} & \quad \text{[ ]} \\
\end{align*}
\]

\[
\begin{align*}
\text{open tract,} & \quad \text{v.c.s} & \quad \text{obstruction,} & \quad \text{constriction,} \\
\text{continue to} & \quad \text{vibrate,} & \quad \text{bilabial p.} & \quad \text{back of} \\
\text{unaltered} & \quad \text{of v.} & \quad \text{vocal tract} & \quad \text{tongue} \\
\text{vocal tract} & \quad \text{[ ]} & \quad \text{[ ]} & \quad \text{highest,} \\
\text{[ ]} & \quad \text{[ ]} & \quad \text{[ ]} & \quad \text{[ ]} \\
\end{align*}
\]

AS10. Erase:\ [lips unrounded]

\[
\begin{align*}
\text{constriction,} & \quad \text{constriction} \\
\text{back of tongue} & \quad \text{midopen tract} & \quad \text{open tract} \\
\text{highest,} & \quad \text{[ ]} & \quad \text{[ ]} \\
\text{lips unrounded} & \quad \text{[ ]} & \quad \text{[ ]} \\
\end{align*}
\]
CHAPTER SIX

The Structure of Complex Lexical Items
1.0 Introduction

We now consider those forms (nearly all of them nouns) which do not show the canonical shapes on the basis of which the analysis in the previous chapter was established. However, it turns out that the notion of a Base (with Root, and optional Affix₁ and Affix₂) and Classifier, is relevant to the more complex noun forms also. What we investigate here is how far the analysis presented earlier may be extended to include other base-shapes, and what modifications are required to the generative component of the lexicon to allow for such extension. After this, the four main types of complex nominal are examined in some detail; and it is shown also that the modified generative component is able to account for two of the three verbal lexemes which were noted as falling outside the scope of the discussion in Chapter 4 (see p. 208 above, and pp. 392 and 416 below). Finally, a further case of possible linear generation is considered (pp. 420-427).

1.1 Preliminaries to the analysis of complex nominal structure

The noun forms we are considering here fall into four groups. These are briefly considered here in order to throw light on the ways in which the generative power of the model of lexeme structure has to be increased.

1.1.1 Set 1

Noun forms in this set are composed of (at least) two lexemes, conjoined into a unit which behaves syntactically like a single lexeme and which in many cases has a single reading assigned to it in the lexicon which is not analysable simply in terms of the combined readings of its component lexemes. The first element of such a
complex may consist of a verbal or a nominal lexeme; it stands in relation to the second element, which is always a nominal lexeme, as modifier to head. In the syntactic string, the complex receives a single set of case and number affixes, which occur in lexeme-final position; hence the first lexeme of such a complex, even if it is a nominal, never shows such inflectional marking. It should be noted here that we are using the term 'lexeme' in a purely formal sense; a given lexeme may occur in such a complex as we are considering but nowhere else in the language, and in this case its status as a lexeme is determined by the requirements for its formal generation. One formal property of the simple lexeme is that it shows one main stress, on the first syllable, which contains the root vowel. In the examples that are cited in this chapter, main stress is indicated at the systematic phonetic level by [' ] before the syllable concerned; stress assignment in complex nominals is frequently a valuable guide to their internal structure.

Examples of Set 1 nominals are:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Transcription</th>
<th>English Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1702/1012</td>
<td>['kotti'katti]</td>
<td>billhook</td>
</tr>
<tr>
<td>178/805</td>
<td>['akki'yotti]</td>
<td>rice roti</td>
</tr>
<tr>
<td>3319/106</td>
<td>['ma:ge'ya:ndi]</td>
<td>mango stone</td>
</tr>
<tr>
<td>302/3856</td>
<td>['a:na'ke'mara]</td>
<td>castor-oil plant</td>
</tr>
<tr>
<td>302/726</td>
<td>['a:na'keme]</td>
<td>castor oil</td>
</tr>
<tr>
<td>1346/4230</td>
<td>['ki:'la:ndi]</td>
<td>last year</td>
</tr>
</tbody>
</table>

(wherever possible, DED, DEDS, and DBIA references are given; where only one lexeme in the compound is thus identifiable, the reference number is placed before or after the slash according to whether the lexeme concerned is the first or second member of the complex.)
In the first of these items, neither ['atta] nor ['betta] occur as independent lexemes elsewhere in the language; the second item is made up of ['kotti] which occurs only here, but is apparently related to

1709 [kodali] sickle

by the root /kot/- [ 'katti] occurs independently, with the sense 'knife'; however, most informants regard [ 'kotti'] katti] as a sort of ['matti]', 'axe'. Thus far, stress has been seen to occur with the lexeme-initial element of each of the component lexemes; but the next two items show stress occurring with -['yo]-, and -['ya:]-, of the second lexemes, where the palatal continuant is not a part of either lexeme but a low-level glide introduced by rule (A38).

The next two items show how stress marking, which is determined with reference to the syllable at the systematic phonetic level, may fail to coincide with a lexeme boundary; in the first of these it does so coincide, starting first with ['a:nake] (only occurring in this complex), and then with ['mara] (an independently occurring item, with the sense 'tree'), but does not do so in the second item with respect to the second element; ['a:nak]- in this item is related to ['a:nake] of the preceding item, and the second element is identifiable with ['enne], an independently occurring lexeme, with the sense 'gingily oil'. The same situation is found in the last item also: the first element of the complex corresponds to the lexeme ['ki:li'], 'state of being below'; while the second lexeme is ['a:ndi'], 'year'. Concerning the first elements of each of these items, we may set up the lexemes ['a:naki] and ['ki:li]: the first of these occurs only in the complex form illustrated here, while the second may be identified with the independent lexeme ['ki:li'], 'state of
being below'. In each case, the enunciative vowel is lost when the second element of the complex has an initial vowel. Note that in such cases the lexeme is isomorphic with the base at the systematic phonetic level; but these items are nevertheless treated as constituting two lexemes in order to avoid the peculiar distributional pattern that would unjustifiably exist otherwise, where no lexeme which did not show an element at Node could occur as the first element of a complex nominal where the second element was a lexeme having an initial vowel.

1.1.2 Set 2

Nominal lexemes in this set show a base-like first element, followed by a second element which shares certain properties in common with the lexeme. Thus for example

726/726 ['ellene] gingily oil

looks as though it is composed of a first element ['ell]- plus a second element ['-ene], and, apart from the fact that there is only one stress for the whole item, its composition looks rather similar to that found in nominals of Set 1: thus, the first element could be taken as a lexeme rather than a base (with the enunciative vowel lost because of the initial vowel of the following element, by the operation of AS10), while the second could be analysed as a type of (C)Vc+V nominal (such as ['mara]). However, this not only fails to account for stress assignment in such cases, but also ignores the relationship that holds between the second element ['-ene] and the independent lexeme ['enne] (with the same sense as ['ellene]).

There is a further fact to account for in this case, however; informants regarded the form ['ell'enne] as an alternative pronunciation of ['ellene] (the first alternative is recorded by DED, as 'ell 'enne').
Consider also the item:

2513/112 ['tammante(n)'] younger brother

The last element here is apparently -'ane(n)', which is related to the independent lexeme ['anne(n)'], 'elder brother'. Note that if we recognise this relationship by treating -'ane(n)' as in some sense derived from (as a 'reduced' form of) ['anne(n)'], we shall be able to maintain the restriction formulated in the previous chapter against -'e(n)' occurring at Voc Suff. ['tamm]-- does not occur elsewhere in Coorg, but is recognisable as having the formal properties of a base, and is cognate with independently occurring lexemes in a number of related languages; cf. the DED entries for 2513:

"Ta. tampi 'younger brother...'; Ka. tampa, tampan 'younger brother'; Ka. tamma 'younger brother'".

Consider also:

3112/176 ['nellaki] (in ['nellaki 'bolica], sacred lamp).

Each of the component elements is identifiable here; ['nell]-- corresponds to ['nelli], 'paddy', while -'aki' is a 'reduced' form of ['akki], 'husked rice'.

In the last two items cited above, no alternative pronunciation *['tam'mante(n)'], *['nell'akki] is possible.

Finally, note that in an item such as

1/3 630 ['appara] that side

no 'reduced' form of the second element is possible, in segmental terms; it is related to the independent lexeme ['para], 'side, area', with a short medial consonant. This is the case with all (C)V(C)-V lexemes in this construction. However the fact that the item above belongs in this set of nominals is signalled by the lack
of main stress on \(-[\text{para}]\) in this construction; it shows its 'reduced' form suprasegmentally.

Thus, with regard to this set of nominals, we have to account for the notion of a 'reduced' lexeme, and also show the similarities that hold between this type of construction and that found in Set 1. In a large number of cases, the forms of lexical items in Set 1 are identical to those of Set 2, save for the distinct construction involved; this gives rise to the following alternations (the list is not exhaustive, as not all informants agree concerning certain items):

<table>
<thead>
<tr>
<th>Set 1</th>
<th>Set 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>726/726</td>
<td>'ell'emne</td>
</tr>
<tr>
<td>4057/46</td>
<td>'mutt'ajje(n)</td>
</tr>
<tr>
<td>2150/710</td>
<td>'cind'eli</td>
</tr>
<tr>
<td>766/170</td>
<td>'e:lakki</td>
</tr>
<tr>
<td>3740/133</td>
<td>'bo:jape(n)</td>
</tr>
<tr>
<td>3740/232</td>
<td>'bo:jave(n)</td>
</tr>
<tr>
<td>1/178</td>
<td>'avl'akki</td>
</tr>
<tr>
<td>216/</td>
<td>'uditale</td>
</tr>
<tr>
<td>3804/DIA316</td>
<td>'madibate</td>
</tr>
<tr>
<td>929/1371</td>
<td>'kadekuni</td>
</tr>
<tr>
<td>1705/423</td>
<td>'kodiyele</td>
</tr>
<tr>
<td>167/3911</td>
<td>'aramane</td>
</tr>
<tr>
<td></td>
<td>'kadi'kone</td>
</tr>
<tr>
<td>?1683/</td>
<td>'kaykane</td>
</tr>
<tr>
<td>1522/3911</td>
<td>'kuliman</td>
</tr>
<tr>
<td>2655/</td>
<td>'tirigani</td>
</tr>
<tr>
<td>Set 1</td>
<td>Set 2</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td>3322/3893</td>
<td>'panima'le</td>
</tr>
<tr>
<td>3796/1663</td>
<td>'ma'nskey</td>
</tr>
<tr>
<td>3608/3768</td>
<td>'pom'nakka(1)</td>
</tr>
<tr>
<td>1348/3556</td>
<td>'kip'punai</td>
</tr>
<tr>
<td>4173/3958</td>
<td>'meppuni'</td>
</tr>
<tr>
<td>4402/3911</td>
<td>'ba:mane'</td>
</tr>
</tbody>
</table>

Finally concerning Set 2, the first element of the complex never shows an element at Noun, and never shows the enunciative vowel [i] even when the second element begins with a consonant, as in the case of [pommaka(1)]. Hence the highest node that we need set up to account for the first element is Base.

### 1.1.3 Set 3

A number of items can only be analysed as composed of a base (first element) plus lexeme (second element). This set has been kept as small as possible; thus all items which are ambiguous as between Sets 1 and 3, by virtue of the first element being of (C)V0-V form (which may be analysed either as a base or as a lexeme) have been included in Set 1. Since Set 3 would in any case be much smaller than Set 1, this procedure only follows the trend of the data. Items in this set show the same stress pattern as those in Set 1, but comprise a first element which is like that of Set 2 items in that it never shows the final enunciative vowel (even when followed by a second element with an initial consonant) or element at Noun. For example:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3302/3057</td>
<td>'pan'ni:ri</td>
</tr>
<tr>
<td>4057/308</td>
<td>'mut'ta:y'</td>
</tr>
<tr>
<td>4173/3930</td>
<td>'me:'ma:di</td>
</tr>
</tbody>
</table>
The second element in each of these items is an independently occurring lexeme in the language: [\'ni:\iri\], 'water'; [\'ta:y], 'grandmother'; and [\'ma\:di\], 'upper storey'. The first element of the first item corresponds to the lexeme [\'pani\], 'fever'; that of the second to [\'mudi\], 'state of being old'; and that of the third to the first element in another Set 3 item:

4273/1239 [\'me\:i\:'ga\:li\] top part of foot
(cf. [\'ka\:li\], foot, leg).

In the case of certain items of the form (C)VCVCV, it is not possible to decide whether they represent the Set 1 pattern or that of Set 2. For example, the loanwords:

[\'a\:'ka\:'\sa\] sky
[\'a\:'sa\:'mi\] individual
[\'sa\:'ma\:'na\] things

may be analysed as showing an initial element (C)VC which is a lexeme, followed by another lexeme VCV, with predictable loss of the enunciative vowel by AS10. In all cases where such an analysis is possible, the items concerned have been included in Set 1. Just the item [\'me\:'ma\:di\] and the following two:

4057/DIA 219 [\'mu\:'de\:vi\] quarrelsome woman
/DIA 179 [\'me\:'jo\:di\] pair of socks

can definitely be placed in this set, as comprising the initial elements [\'mu\:], [\'me\:], respectively, followed by the lexemes [\'de\:vi\], 'goddess', [\'jo\:di\], 'pair'.

1.1.4 Set 4

This is the final set: it contains those items which are apparently to be analysed as comprising a lexeme (first element) followed by classifier. Thus for example
is entered in DED at 985 (with a query as to whether it is related to 1209), but my informants' intuitions linked it only with:

1209 ['kam']- see, seem; Class 3 verb

By this analysis, it is probably made up of the first element ['kam']-, itself made up of ['kand']- (past stem) plus -[a] (the negative suffix), followed by -["(n)], with a bilabial continuant inserted by the low level rule AS8 between the vowels [a]-[e].

Against this, however, it may be argued that it does not account for the nasality on the last two vowels, and that the structure of this item is therefore as follows: a first element ['kam']-, followed by an element related to the masculine singular proform ['ave(n)].

In this case, of course, it would be a Set 2 nominal, thus accounting for the stress reduction on the second element.

But consider the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA106</td>
<td>'kupiyas</td>
<td>Coorg man's coat</td>
</tr>
<tr>
<td>1398</td>
<td>'kuttuvas</td>
<td>big copper pot</td>
</tr>
<tr>
<td>1905</td>
<td>'cattuvas</td>
<td>flat wooden spoon</td>
</tr>
<tr>
<td>3637</td>
<td>'po:liyas</td>
<td>basketry box (gift to bride)</td>
</tr>
<tr>
<td></td>
<td>'&quot;surriye(n)&quot;</td>
<td>sun</td>
</tr>
</tbody>
</table>

where the second element seems to be one of the Noun elements -[a], -["(n)], preceded by a predictable glide. Further evidence which may be construed as supporting this analysis is found in forms such as:

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>834b</td>
<td>'okkase</td>
<td>state of being together</td>
</tr>
<tr>
<td>3115</td>
<td>'nellike</td>
<td>gooseberry</td>
</tr>
<tr>
<td>3467</td>
<td>'pi:reke</td>
<td>very bitter small cucumber</td>
</tr>
</tbody>
</table>

where the first item has the alternative form ['okka], the second is
recorded by DED in the same entry as:

"Ta. nelli 'omblic nyrobalan'...; Ma. nelli id."

and the third is related in my data to ['pi:re], 'sponge gourd'.

It will be noted, however, that this analysis for these items entails setting up elements at Classifier with an initial consonant, and this fact may be taken as a contingent disadvantage of the proposal. On the other hand, there is evidence to suggest that this type of Classifier element is required in the system anyhow; consider nominals such as:

799 ['oleve] break
3613 ['perija] increase, excess
3686 ['podike] cover
3686 ['podi] covering, blanket
3714 ['polati] low caste person (fem)
4524 ['bolica] lamp

In these items, the medial vowel cannot be accounted for by the epenthetic vowel rule (see the previous chapter, especially the discussion of Cons Suff), and hence has to be derived from an element at Voc Suff. In a number of cases, including all those illustrated above, there is internal evidence to support such an analysis:

799 ['ole] break (intr); Class 2 verb
3613 ['peri] increase (intr); Class 5 verb
3686 ['poda] thatch, cover; Class 5 verb
3714 ['pole] pollution
4524 ['boli] light

These lexical relationships clearly suggest that the correct analysis of, for example, ['podike] is ['podi] followed by [-ke], where the final element is apparently a Classifier element with an initial consonant. However, it should be stated that this set of nouns
represents the area of greatest uncertainty in the framework of this study.

1.2 The lexeme

The foregoing considerations require certain modifications to be made to the generative component of the lexicon. Taking the simplest case first, nominals of Set 1 must be accounted for by a derivation which starts with the rule:

1. \text{Lexeme} \rightarrow \#\text{Lexeme}\# \#\text{Lexeme}\# \quad (L31)

This straightway accounts for those nominals of Set 1 which consist of just two conjoined lexemes (the vast majority); a schema involving three conjoined lexemes, or more (the data shows no evidence that more than three are ever required) is of course derivable from a reaplication of 1 above, and requires no further modification to the rules.

Nominals of Set 3 require a rule of the form:

2. \text{Lexeme} \rightarrow \text{[Base]} \#\text{Lexeme}\# \quad (L31)

Nominals of Set 4 require the rule:

3. \text{Lexeme} \rightarrow \#\text{Lexeme}\# \text{Classifier} \quad (L31)

Thus far, the proposed rules for expanding \text{Lexeme} (including LS1 set up in the previous two chapters) may all be collapsed as:

4. \text{Lexeme} \rightarrow \{ \#\text{Lexeme}\# \text{Classifier} \} \quad (L31)

where all options are taken up.

However, nominals of Set 2 are still to be accounted for. We have seen that their second element is a 'reduced' type, and we formalise this here by setting up the node \text{Postbase}, marked off by the
distinct boundary elements ≠ ≠ . This requires the rule:

5.  \[ \text{Lexeme} \rightarrow [\text{Base}] \not \rightarrow \text{Postbase} \]  \hspace{1cm} (LS1)

The node Postbase has a rather limited set of realisations; at the systematic level the only possible form for elements derived from it is \((C)V(C)\). In this connection, two points have to be made.

(a) There is no possibility of a long first vowel in postbase elements at the systematic phonetic level. This could be analysed as either the result of a restriction on the occurrence of the length element /I/ under Postbase, or the result of an obligatory length-reduction rule. The following items suggest that the latter alternative is correct:

993 ['kannadi] glass, mirror
1192 [ka:pa]le'(n)] (palace) guard
37 ['aŋgadi] shop, stall

Concerning the first item, cf. the DED entry at 993:

"Ta. kannati, kannati, 'mirror of metal or glass...' (< kan, 'eye' + ati, 'mirror, crystal');...Tu. kannadi, kannadi, 'glass, mirror...'.

The second item shows [ka:p] (as in [ka:'pa:d] 'protect'; Class 1 verb) followed by [-a]le'(n)] which appears to be related to [-a]le'(n)] in

4045 [muṭṭa]le'(n)] fool (masc)

and certain other nominals with human male referents. Finally, the last item here is cognate with the following forms recorded by DED at 37:

"Ta. aṅkati, 'bazaar, bazaar street';... Ka. aṅgadi, 'shop, stall'.

(b) There is a voicing contrast between stops in the medial -C- position of postbase elements; see for example: 
This is best handled, in view of the sort of relationship that holds between \{-aki\} and \{'e:laki\}, 'husked rice', in terms of the automatic gemination rule formulated in the previous two chapters. Hence \{-ige''(n)\} may result from a -BB type of cluster (derived from /p\k/) in the following terminal sequence: -/iggan/. Alternatively, we have to allow for the possibility that it derives from the terminal sequence -/aikan/. In the first case the reduction is with respect to the consonant cluster -/gg/-; in the second it is with respect to the long vowel. But if we allow for long vowels in this way (see also (a) above), then we also have to set up \text{Suffix}_2 in order to preserve the voicing contrast in stops in cases where long vowels occur in the terminal sequence.

Everything that has been noted above about postbase elements is consistent with allowing Postbase to be expanded as Base plus Classifier: hence we require a further LS rule of the form:

6. Postbase $\rightarrow$ [[Base]$\rightarrow$ Classifier $\land$ Classifier] (LS1)

With this, the modification of the generative component is completed, and the final form of the first LS rule, superseding that given in the earlier chapters, is as follows:

7. \begin{align*}
\text{Lexeme} & \rightarrow \left\{ \begin{array}{c}
\text{Postbase} \rightarrow \left\{ \begin{array}{c}
\text{Base} \land \text{Lexeme} \\
\text{Base} \land \text{Postbase} \\
\text{Base} \land \text{Classifier}
\end{array} \right\} \\
\text{Classifiers}
\end{array} \right\}
\end{align*} (LS1)
2.0 The structure of complex nominals

We now examine in rather more detail the formal properties of the complex nominal lexemes, particularly with respect to the later rules (realisation rules and phonetic mutation rules) required; we take largely for granted the phonological systems and rules for generating the component Base Classifier structures which are involved in these nominals, since these are essentially the same as described in the previous chapter. We are concerned here mainly with nominals of Sets 2-4, since those of Set 1 are quite straightforward for the most part.

2.1 Set 1: Lexeme = Lexeme

The generalised schema which accounts for most of the nominals of this type (Set 1) is shown in Figure 1:

![Figure 1: The generalised structure of complex nominal lexemes, Set 1](image-url)

2.1.1 Lexeme = Base Classifier

It will be seen below that certain nominals in this set require that a constituent Lexeme node be expanded as Base Postbase.
387

Base Lexeme, Lexeme Classifier, or Lexeme Lexeme, as allowed for in the form of LS1. For the moment, however, we concentrate on the more common expansion of each constituent Lexeme node as Base Classifier. Within this type, each Base node is represented by the full set of possible canonical forms:

\[(C)VCC\]
\[(C)VNC\]
\[(C)Vc\]
\[(C)Vnc\]
\[(C)Vsc/(C)VcVc\]
\[(C)Vsc/(C)VcVnc\]
\[(C)Vcv\]

The examples discussed below are arranged in this order, first with reference to the first element, and then to the second.

1. (i) (C)VCC- and (C)VCC-.
   3726/3112 ['pole'nelli] grainless paddy ear
   178/305 ['akki'yotti] rice bread
   Cf. 3726 ['polli] emptiness (of seed pod), light weight (of money)
   3112 ['nelli] paddy
   178 ['akki] husked rice
   305 ['otti] cake, bread

(ii) (C)VCC- and (C)VNC-.
   4098/3326 ['muli'pandi] porcupine
   ['buddi'vante(n)] wise man
   3903/1 ['matti'yandi] day after tomorrow
   1756 ['kop'pumbi] ear ornament
The loan ["budd'van'ta"(n)] shows the unusual element [v] (from /v/ at Onset) in its second element, and the relatively rare -[nt]- (from /NT/ at Cons.Suff).

["kop'pumbi"] shows no element at Classifier either in the first lexeme or the second; the enunciative vowel is lost before the initial vowel of the second lexeme.

Cf.  4098  ["mulli"]  thorn
     3326  ["pandi"]  pig
     ["buddi"]  wisdom
     3903  ["mari"]  state of being opposite,counter
     1  ["andi"]  that day

1756  DED records "Ta. koppu, 'Women's ear ornament...'.

(iii)  (C)VCC- and (C)VC-.

4524/3999?  ["bolli'mi:ni"]  morning star
     2002/341  ["ca:v'a:ce"]  Tuesday
     3609a/342  ["pon'na:li"]  woman

Informants related ["mi:ni"] in the first item to 3999 ["mi:ni"], 'fish', but also related each of these to 3994 ["minn"]- 'lighten, flicker'; Class 1 verb. This would require setting up root variants here, as /mi:n/- N /min/-.

In the case of the second item, informants recognised a relationship between the first element and ["ca:vu"]; this would require a root variation /ca:l/- N /ca/- (see the previous two chapters for the root-final element here). The systematic phonetic sequence -[lv]- after a short vowel is adjusted to -[vv]- (by AS6).

Cf.  4524  ["bolli"]  silver
     3999  ["mi:ni"]  fish
     2002  ["ca:vu"]  death, corpse
341 [ 'a:ce ] day of week
3608a [ 'ponni" ] wife, female
342 [ 'a:li ] servant

(iv) (c)VCC- and (c)VCN-.
856/3361 [ 'olle'pa:m'bi" ] water snake
3109/2381 [ 'nin'na:ndi" ] yesterday
3106/2021 [ 'netta'ca:ndi" ] sp. red sandalwood

[ 'nin'na:ndi" ] shows a first element [ 'nim" ] which occurs in the data only here.

The last item shows the relatively infrequent Cons Suff
realisation -[He]- (from /HC/).
Cf. 856 DED records "Ka. olle, 'kind of amphisbaena'.
3361 [ 'pa:m'bi" ] snake
3109 DED records "Ka. ninne, 'time lately passed'.
2381 [ 'a:ndi" ] also in [ 'moni'ya:ndi" ], day before yesterday
3106 DED records "Ka. nettra, 'blood'.
2021 [ 'ca:ndi" ] sandalwood

(v) (c)VCC- and (c)VCC-.
3608a/1423 [ 'ponni"kudire" ] mare
2092/78 [ 'jib'ba:ake" ] young, tender areca nut
Cf. 3608a [ 'ponni" ] wife, female
1423 [ 'kudire" ] horse
2092 [ 'jibbi" ] young, tender areca nut
78 [ 'adake" ] areca nut

(vi) (c)VCC- and (c)VCC-.
No examples.
(vii) (c)VCC- and (c)VCV

3112/1493 ['nellii’kuru] rice with the husk
Cf. 3112 ['nellii'] paddy
1493 ['kuru'] seed

2. (i) (c)VNC- and (c)VCC-.

['andi’kotti'] evening star

['andi'] occurs just here and in ['andi’mundi’ne:ra], '(time of) twilight'. ['kotti'] occurs just here and in ['pola’kotti'], 'morning star'.

(ii) (c)VNC- and (c)VNC-.

No examples

(iii) (c)VNC- and (c)VNC-.

363/2927 ['inji’to:ta] ginger estate
2626/341 ['tinga’la:ce] londay
1788/290 ['kon’da:ta] praise

Note that a following vowel in this construction is one of the environments where the final element of -/a1/ at Classifier is realised.

Cf. 363 ['inji'] ginger
2927 ['to:ta'] estate
341 ['la:ce'] day of week
2626 ['tinga(l)] month, moon
1788 ['kol] take; defective verb
290 ['a:t] make move violently; Class 1 verb, derived by Volit)

Regarding the last two items, cf. the DED entry 1788:

"Ta. ...kont-atu, 'to enjoy a person’s society, praise..."."
(iv) (C)VNC- and (C)\text{\textbar}VNC-. No examples.

(v) (C)VNC- and (C)VCVC-. No examples.

(vi) (C)VNC- and (C)\text{\textbar}V\text{\textbar}VNC-. No examples.

(vii) (C)VNC- and (C)VCY.

\begin{itemize}
  \item 2306/3856 ['te\text{\textbar}ni''mara] coconut tree
  \item Cf. 2806 ['te\text{\textbar}ni\text{\textbar}ge] coconut
  \item 3056 ['mara] tree
\end{itemize}

3. (i) (C)\text{\textbar}V- and (C)VCC-.

\begin{itemize}
  \item 2376/3299 ['na''ra''panni] naval fruit
  \item The first element here shows [r] from /r/.
  \item Cf. 2378 DED records "Ka. n\text{\textbar}ral(e), 'Eugenia jambolana Lam.'
  \item 3299 ['panni'] fruit
\end{itemize}

(ii) (C)\text{\textbar}V- and (C)VNC-.

No examples.

(iii) (C)\text{\textbar}V- and (C)\text{\textbar}V-

\begin{itemize}
  \item /3999 ['e::ti''mi::ni] sp. flat edible fish
  \item 2352/ ['so::ma::ri] lazy person (masc/fem)
  \item Cf. 3999 ['mi::ni] fish
  \item 2352 DED records "Ta. com\text{\textbar}ri, com\text{\textbar}ri, 'sluggard...''
\end{itemize}

Here also may be noted the complex verbal lexeme cited at the beginning of Chapter 4 (p. 208):
1192/290 ['kaːpaːd']- protect; Class 1 verb
Cf. 1192 ['kaːpale(ː)'] (palace) guard
290 ['aːd']- dance; Class 1 verb

(iv) (C)VC- and (C)VNC-.
1673/3361 ['keːrəpaːmbi'] sp. non-poisonous snake
1348/4230 ['kiːlaːndi'] last year
Cf. 1673 DED records "Ka. kere, 'rat snake'.
3361 ['paːmbi'] snake
1346 ['kiːli'] state of being below
4230 ['aːndi'] year

(v) (C)VC- and (C)VCVG-.
1826/76 ['goːtadake] fullgrown, tough areca nut
Cf. 1826 DED records "Ka. gotu, 'state of being full-grown but hard'.
76 ['tadake] areca nut

(vi) (C)VC- and (C)VCVNc-.
No examples.

(vii) (C)VC- and (C)VCV.
768/3882 ['eːlaːmale] cardamom plantation
Cf. 768 ['eːlaki] cardamom seed
3882 ['male] hill, jungle land

4. Here there is only pattern (iv), (C)VNC- and (C)VNC-.
3919/106 ['манːègeyaːndi] mango stone
Cf. 3919 ['манːège] mango
106 ['aːndi] (mango) stone
5. (i) (C)VCVC- and (C)VCC-.
957/1091 ['kadace'kallii] mortar and pestle
Cf. 957 ['kade]-
1091 ['kallii] stone

(ii) (C)VCVC- and (C)VNC-.
No examples.

(iii) (C)VCVC- and (C)VCC-.
1523/ ['kuliri'ka:la] cold season
Cf. 1523 ['kuli]-
[ 'ka:la] season, time

(iv) (C)VCVC- and (C)VNC-.
No examples.

(v) (C)VCVC- and (C)VCC-.
No examples.

(vi) (C)VCVC- and (C)VCC-.
No examples.

(vii) (C)VCVC- and (C)VCC.
168/3856 ['arali'mare] pipal tree
Cf. 168 DSD records "Ka. arali, 'F. religiosa'".
3856 ['mare] tree

6. (i)-(vii) (C)VCC-.
No examples.
7. (i) (c)VCV and (c)VGC-.

800/1012 ['odi'katti] Coorg sword
     ['cy'patti] evening

The second item here shows the operation of AS5 which deletes the Voc_Suff realisation [i] immediately after [y] (from /c/ at Coda).

Cf. 800 DED records "Ka. udi, 'hip, waist'".

1012 ['katti] knife

(ii) (c)VCV and (c)VNC-.

3411/3831 ['pada'mande] back of the head

1379/ ['ku'tumba] household

The second item is illustrated here as a tentative classification only; we have to derive -[t]- from /T/ at Coda, followed by [" from /i/ at Voc_Suff, which is deleted (like the enunciative vowel, to which it is phonetically identical) before the following vowel by AS10. This would require recognizing the root alternation /'kut/- = /ku?/- for this and related items.

Cf. 3411 DED records "Ka. pada, 'the back'".

3831 ['mande] head

1379 ['kudi] family of servants living in one hut

(iii) (c)VCV and (c)VC-.

3911/ ['mane'ka:re(n)] man of a house

DIA 289 ['marinya:di] respect

DIA 196 ['dala'va:y] military commander

3531/ ['po'la:ka] morning

4487 ['bi'ra:ni] pagoda (= 4 rupees)

 ['vi'ca:ra] trial

 ['ka'ce:ri] office
[-ke:re"(n)] is by far the most frequent (C)V- second element in complex nominals of Set 1; it is a masculine suffix in all cases (feminine form [-karati]).

'[dala'va:y] has the alternative form '[dala'ba:y] which shows the more usual [b] as the realisation of Ocept in the second lexeme.

The remaining four items may be analysed as the result of deletion of [i] (from /i/ at Voc.Suff); this is the same solution as was advanced for '[ku'tumba] above, and has the advantage of accounting for the non-occurrence of [i] in this position when a vowel follows. That is, [i] is deleted in the environment of a following vowel whether it is enunciative [i] or from /i/ at Voc.Suff. Note that the items ['vi'ce:ra] and ['ka'ce:ri] thereby require that /C/ (marked for voiceless articulation) be set up at Coda.

Cf.

3911

['mañe] house

3531

['pola] dawn; Class 2 verb.

(iv) (C)V- and (C)\~VNC-.

4119b/2361

['moni'ya:ndi] day before yesterday

['pi'ra:nde(n)] madman

The first element of the first item represents a root variant /mon/- with /mun/- (as in ['mumbi'], 'predominance') and /mi/- (as in ['minna'], 'state of being before').

['pi'ra:nde(n)] represents the same type of structure as that proposed for '[ku'tumba] and ['bi'ra:n]'.

Cf.

4119b DED records "Ta. mun-nal, 'yesterday'" (i.e. 'before-today').

2381

['a:ndi] also in ['nin'na:ndi], 'yesterday'.
1163/78 ['kali' yadake] wholly ripe areca nut

Cf. 1163 DED records "Ko. kali, 'to ripen well'.

78 ['adake] areca nut

(vi) (C)VCV and (C)VCVNC.

No examples.

(vii) (C)VCV and (C)VCV

701/3537 ['ere'pulu] earthworm, tapeworm

Cf. 701 ['ere] earthworm, tapeworm

3537 ['pulu] worm

2.1.2 Lexeme ≠ Base Classifier

As noted earlier, a number of Set 1 nominals show constituent lexemes which are expanded in other ways than as Base Classifier: these are detailed here.

1. First nominal: Base Postbase

   Second nominal: Base Classifier

(i) First nominal is of type 1 in Set 2 (see below).

   3564 ['ummati'pu:vi] sp. flower

   1915/3856 ['cappaye'mara] campaka tree

(ii) First nominal is of type 2 in Set 2 (see below).

   834/ ['ondane'ja:ga] headstation of district

(iii) First nominal is of type 3 in Set 2 (see below).

   302/726 ['a:nakene] castor oil

   302/3856 ['a:nake'mara] castor oil plant

   ['ji:ri:ge'sanna] type of small-grained paddy
(iv) First nominal is of type (vii) in Set 2 (see below).

37/  ['aŋgadi'ka:re(n)] shopkeeper
516/3856  ['umbala'mane] kitchen

Cf.  3564  ['pu:vi'] flower
      1915  DED records "Ka. campaka, 'Michelia champaca'.
      3856  ['mara] tree
      834  ['onə] one
      ['jaːga] place
      302  DED records "Ka. amanakku, 'castor oil plant'".
      726  ['enne] gingerly oil
      ['sanna] also in ['sanna'baːta], shee
      37  ['añgadi] shop, stall
      516  ['umna] eat (rice); Class 3 verb
      3856  ['mene] house

2. First nominal: Lexeme • Lexeme
   Second nominal: Base • Classifier

(i) First nominal is of type 2(ii) in Set 1 (no examples above).

4119/3128  ['andi'mundi'ne:ra] (time of) twilight

Cf.  ['andi] also in ['andi'kotti], evening
     4119  ['mund] - precede; Class 1 verb
     3128  ['ne:ra] time, sun

The first two lexemes make up a unit which then combines with
['ne:ra]. The sense is 'evening-precedence time', i.e. the time that
precedes the evening.

(ii) First nominal is of type 7(i) in Set 1 (see above).
(iii) First nominal is of type 7(ii) in Set 1 (see above).

/984 ['i'la:ti'kande] potato

Cf. ['oy'patti] evening
['i'la:ti] England
984 ['kande] root-stock, bulb

3. First nominal: Base Classifier
Second nominal: Base Postbase
The second nominal is of type 1 in Set 2 (see below).
112/2513 ['anne' tammane(n)] brother (older/younger)
Cf. 112 ['anne(n)] older brother
2513/112 ['tammane(n)] younger brother

4. First nominal: Base Classifier
Second nominal: Lexeme Lexeme
The second nominal is of type 3(iii) in Set 1 (see above).
DIA 179/ ['jo:di' sa:'ro:ti] two-horse carriage
Cf. DIA 179 ['jo:di] pair

5. First nominal: Base Classifier
Second nominal: Lexeme Classifier
The second nominal is of type 1(i) in Set 4 (see below).
/DIA 106 ['kala'kuppiya] (woman's) blouse
Cf. DIA 106 ['kuppiya] Coorg man's coat

6. First nominal: Lexeme Classifier
Second nominal: Base Classifier
The first nominal is of type 3 in Set 4 (see below).

<table>
<thead>
<tr>
<th>Code</th>
<th>Nominal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2363/1174</td>
<td>['navili'gari]</td>
<td>peacock's tail feather</td>
</tr>
<tr>
<td>/341</td>
<td>['padinace]</td>
<td>Wednesday</td>
</tr>
<tr>
<td>/3025</td>
<td>['kadipati'na:li]</td>
<td>forceful (astrological) day</td>
</tr>
<tr>
<td>/3999?</td>
<td>['barnatimini]</td>
<td>star</td>
</tr>
</tbody>
</table>

Cf. 2363 ['navili] peacock
     1174 ['gari] feather
     341 ['a:ce] day of the week
     3025 ['na:le] tomorrow
     /3999? ['ba:ne] sky

3999 See discussion of ['bolli'mimi] under 1(iii) above.

2.2 Set 2: Base Postbase

We have noted earlier three factors concerning the structures to be generated under Postbase:

(i) the lack of main stress on the first syllable
(ii) the lack of length contrast on the root vowel
(iii) the lack of contrast in consonant length in the position immediately following the root vowel.

Each of these is to be accounted for with reference to the boundary symbol /, and the realisations of phonological elements as affected by this symbol (including a number of sandhi forms) will be discussed in a detailed way.

First, however, the canonical forms that occur with this constructional type are illustrated. The arrangement of the items below is with reference to the base element of the construction, in the order followed above for Set 1; further ordering is with reference to the postbase element, such that items showing an element at Noun
(i.e. extra-basal, set off here by =) are ordered before those showing a final element at Voc.Suff (i.e. intra-basal, set off here by +).

Figure 2 shows the generalized schema required for the following examples:

![Diagram showing the structure of complex nominal lexemes, Set 2](image)

Figure 2: The generalized structure of complex nominal lexemes, Set 2

Types 1-7 below illustrate only postbases with no initial consonant; these are relatively straightforward, since the only type of mutation involved across the / boundary is that where a palatal or bilabial glide is inserted to break up a sequence of vowels, as noted earlier with respect to Set 1. Postbases with initial consonant will be dealt with later on (pp. 403-405).

1. (i) (c)VCC- and VC=Y

<table>
<thead>
<tr>
<th>Number</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>726/726</td>
<td>['ellenn']</td>
<td>gingly oil</td>
</tr>
<tr>
<td>4057/46</td>
<td>['mutterae(n)']</td>
<td>great grandfather</td>
</tr>
<tr>
<td>2790/</td>
<td>['topptita']</td>
<td>feather</td>
</tr>
</tbody>
</table>
The second element in ['töppi'] is obscure; it probably shows -[a] at Noun, with reduction of the base-final consonant or root vowel. However, it is possible that this postbase is of VC-V type with [a] from /ä/ at Coda, though this is statistically less probable.

(ii) (C)VC-C- and VC+V.

DIA 71 ['kandita] certainty

2. (i) (C)VC-C- and VC+V.

DIA 71 ['kandita] certainty

(ii) (C)VC-C- and VC+V.

Cf. 2190 DED records "Ta. cuntan, 'gray musk shrew'.

Cf. 710 ['ali] rat

Cf. 2975 ['namb]- trust; Class 1 verb.

[-ige] corresponds to Ta. -ikkai (e.g. DED records "Ta.
nampikkai, 'hope, trust, faith, vow'), a very frequent nominalising suffix.

3. (i) (c)VC- and VC=V.
   3740/232 [bo:jave(n)] mother's younger sister
   768/178 [e:la:k] cardamom seed
   Cf. 3740 [bo:ji] beauty, goodness
   232 [ave(n)] mother
   768 [ela:male] cardamom plantation
   178 ['akki] husked rice

   (ii) (c)VC- and VC+V.
   2674b/441 [te:neri] honeycomb
   4377/ [ba:dige] rest
   Cf. 2674b [te:ni] honey
   441 DED records "Ta. iravu, iral, 'honeycomb'".
   4377 [ba:]- fade, wither; Class 1 verb

4. (i) (c)VNC- and VC=V.
   No examples.

   (ii) (c)VNC- and VC=V.
   No examples.

5. (i) (c)VSC- and VC=V.
   1976/178 [avlaki] pounded rice
   Cf. 1976 DED records "Ta. aval, 'rice obtained from fried paddy by pestling it'".
   178 ['akki] husked rice
(ii) (C)VCVC- and VC+V.

/218 ['uditale] ironwood tree

Cf. 218 DED records "Ta. alli, 'ironwood tree'; Ka. alamar, allo, 'a sp. of Nemecylon'."

Note that the comparative data cannot be used to support a postbase analysis VC=V here, although this would make -[ale] strictly comparable to the second Ka. form.

6. (i) (C)VCVNC- and VC=V.

No examples.

(ii) (C)VCVNC-/C/VNC- and VC+V.

200/ ['alaubali] hurry
555/ ['oyndadi] place higher up

Cf. /200 [ala] grave; Class 3 verb
555 ['oynde'] high (adj.)
1 ['adi'] 3rd sing proform (inan; rem)

7. (i) (C)VC+V and VC=V.

No examples.

(ii) (C)VC+V and VC+V.

1705/423 ['kodiyele] betel leaf

Cf. 1705 DED records "Ta. kotti, 'creeper, umbilical cord'.
423 in ['alekanda] leaf

(DED records "Ta. ilai, 'leaf, petal'; but colloquial varieties of Tamil show [ela] .)

The following items all show postbase elements with an initial consonant. They are numbered in series with the foregoing.
8. (i) (C)VC- and CVC=V.

1607/ ['cembi:k(e)n] = sp. bird with red feathers

Cf. 1607 ['co:pi] = redness

We have here to set up the root variants /co:-/ ~ /cen/-; we also require /ken/- for items such as ['ken'de:hga], 'brown coconut'.

(ii) (C)VC- and CVC+V.

516/3537 ['um'bili'] = jungle leech

1348/3558 ['kippu:nj] = lower level in field

Cf. 516 ['um:nj] = eat (rice); Class 3 verb

3537 ['pu:lu:] = worm

1348 ['ki:lil] = state of being below

3558 ['meppuni] = higher level in field

Note that the first item requires setting up the root variants /pu/- ~ /pi/-, since, while the voicing of the initial consonant of the second element can be accounted for (see below), the vowel alternation cannot.

9. (i) (C)V- and CVC=V.

No examples.

(ii) (C)V- and CVC+V.

1592/ ['ku:kala] = rice pot

1592/ ['ku:padi] = food wrapped in plantain leaf

Cf. 1592 ['ku:li'] = (cooked) rice

The loss of the final consonant in the first element of each of these items is accounted for below.

10. (i) (C)VC+V and CVC=V.

929/1371 ['kadekuni] = youngest child
Note that in the last item /bar/- is a root variant with /ba:l/- (for the final element here, see the previous two chapters), and /bed/- as in ['badiki], 'property'.

(ii) (C)VC-V and CVC-V.

167/3911 ['aramane] palace

Cf. 167 DED records "Ta. araican, araican, araiyan, 'king'".

3911 ['mane] house.

Entries 1-6 above show a first element with a final consonant, followed (across the / boundary) by a postbase with an initial vowel; entry 7 shows a final vowel of the first element followed (across the / boundary) by an initial vowel of the postbase; the situation in entry 8 is where a final consonant of the first element is followed (across the / boundary) by an initial consonant of the postbase; and finally in entries 9 and 10 a final vowel of the first element is followed (across the / boundary) by an initial consonant of the postbase. However, we have seen, with respect to entry 9, that the first element probably has to be set up with a root-final consonant, which is later lost. We now turn to the formulation of the mutation phenomena across the / boundary.

First, the statement of consonant mutations across the / boundary is greatly complicated if the automatic gemination rule is allowed to operate in respect of the base-final consonant of the first element in this constructional type; hence a condition is placed on
the operation of this rule, that no postbase must follow in the same lexeme:

\[
\begin{align*}
(\text{i}) \ & \ u \rightarrow \hat{u} / \hat{u} \ (c) \quad \text{(Erase \[\]) \ (PM9(\text{i}))} \\
(\text{ii}) \ & \ c_i \rightarrow \hat{c}_i / \hat{c}_i \ (\text{NOT} / \hat{c}_i \ \text{/.../} \ (PM(\text{ii})) \\
\end{align*}
\]

Thus the representation of 'umbili' at this stage will be

/\text{un} / \text{pili} / (omitting irrelevant details), rather than the unnecessarily complex /\text{um} / \text{pili} /.

However, the first part of PM9 has operated, assigning stress to the root vowels; it would involve too many complicated restrictions on PM9 if stress reduction and vowel length reduction of postbase elements were to be accounted for by it alone. The question of stress and vowel length reduction is returned to later on.

This means that the representation of [\text{muttajo(n)}] at this stage will be (again, omitting irrelevant details) /\text{mit} / \text{ajjan} /.

If base-final /t/ of the first element were to be realised here, it would be as [\text{\text{d}}], which is not what is required. Hence, we need a phonological rule which will, in effect, operate as follows:

\[
\begin{align*}
(\text{PM10(\text{i})}) \ & \ Vc_i \neq V \rightarrow Vc_i \neq C_i V
\end{align*}
\]

thus eliminating the base-final consonant of the first element just in the case where (i) it is preceded by a short root vowel, and (ii) is followed by a vowel across the / boundary.

We also have to account for the mutation involved in [\text{kippuni}]; although this has the same canonical form as [\text{umbili}], it represents rather a different type, where the first element has no final consonant in underlying structure. Thus, the postbase is
-[puni], also found in ['mepuni], and the first element is ['ki]-, from /ki/-, a root variant with /ki:1/- (see the previous chapter). /ki/- also occurs in ['kikiru(n)], 'junior member of household'.

For such cases as these, we require the phonological rule:

10. \[ V \neq C_1 \rightarrow VC_1/C_1 \]  \(\text{(PM10}(\text{ii})\text{)}\)

No phonological rule is required in the case where a base-final vowel of the first element is followed by an initial vowel of the postbase.

Finally, we require a phonological rule to reduce the stress on the initial vowel of postbase elements:

11. \[ V \rightarrow V / \neq (C) \]  \(\text{(PM11}(\text{i})\text{)}\)

and also to reduce the length of unstressed vowels:

12. \[ VL \rightarrow V \]  \(\text{(PM11}(\text{ii})\text{)}\)

With this, the phonological mutation rules are complete. The realisation rules apply in the ordinary way to all the sequences of phonological elements, regardless of whether they have been generated as simple or complex lexemes. We now consider the systematic phonetic development of those consonants that represent systematic phonemes at the / boundary. The table in Figure 3 contains all the sequences across # that occur in the data.

The first two rows represent the situation in the terminal sequence as a result of the operation of PM10(i) and (ii), respectively. Since PM10(i) is similar in its mode of operation to PM9(ii), and is illustrated in entries 1 (i)/(ii) above, we shall not cite further instances here. PM10(ii) is illustrated only in one item (in 8 (ii) above), however; but it also operates in the following items:
<table>
<thead>
<tr>
<th>Base-final consonant of initial element</th>
<th>Initial consonant of postbase element</th>
<th>Systematic phonetic level</th>
<th>Systematic phonetic level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( C_i )</td>
<td>( C_i )</td>
<td>( C_iC_i )</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>( C_i )</td>
<td>( C_iC_i )</td>
</tr>
<tr>
<td>3</td>
<td>( n ) ( \neq ) {p, b}</td>
<td>( c )</td>
<td>( mb )</td>
</tr>
<tr>
<td>4</td>
<td>( n ) ( \neq ) {p}</td>
<td>( m )</td>
<td>( mb )</td>
</tr>
<tr>
<td>5</td>
<td>( c )</td>
<td>( s )</td>
<td>( y)</td>
</tr>
<tr>
<td>6</td>
<td>( p )</td>
<td>( t )</td>
<td>( vt )</td>
</tr>
<tr>
<td>7</td>
<td>( n )</td>
<td>( k )</td>
<td>( \hat{n}g )</td>
</tr>
<tr>
<td>8</td>
<td>( l ) ( \neq ) {p}</td>
<td>( m )</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 3**: Consonant mutations across the postbase boundary.

| 1/s 650  | ['appara'] | that side |
| 1346/1326 | ['kikkire(n)'] | junior member of household |
| 4173/3558 | ['meppuni'] | higher level in field |
| 4119a/   | ['muppode'] | state of being previous |
| Cf. 1    | ['adi']     | unmarked 3rd singular proform |
| S 630    | ['para']    | side, area |
The roots represented in the first elements of the complexes cited here are /a/- (variant of /a:/-, in ['a:le], 'by that way'), /ki/- (variant of /ki:l/-), /me/- (variant of /me:n/-), and /mu/- (variant of /mun/-<mon/-), respectively. Note that the postbase in the second item above must be set up with a long root vowel, in order to account for the occurrence of -[e(n)]; the vowel is reduced by Ph11.

Row 3 in the table in Figure 3 is illustrated by ['cembi"(n)] in entry 8 (i) above, and also by the items:

1607/2077 ['ken jeri] red squirrel
4518/S 630 ['bembara] place behind
8/1683 ['angay] palm of hand
Cf. 1607/2806 ['ken deŋge] brown coconut
2077 DED record "Kol. sidde, M.k. sidde, Kur. cirra, cidra, 'squirrel'.
4518 ['benmi] back (body part)
S 630 ['para] side, area
8/1238 ['anga:li] sole of foot
1683 ['kay] arm, hand

For the first elements here we set up the roots /ken/- (variant of /cen/- ~ /co:-/), /ben/-, and /an/-, respectively. For the terminal sequence of the postbase forms, we postulate -/bikken/ or -/bi:kken/ for ['cembi"(n)], and -/ceri/ for ['ken jeri]: note that the first
of these may in fact show initial /p/, but that there is no evidence for this. The last two items show -/para/ and -/kası/ in this position, respectively.

Row 4 is illustrated by '/um'ili/' in entry 6 (ii) above, and by

3608/3768  ['romma(k1)]  women, wives
Cf.  3608  ['romní']  wife, female
3768  ['maka(k1)]  children

The next two rows show particularly clearly the importance of restricting the operation of the automatic gemination rule to those cases where no postbase follows in the same lexeme: if it were allowed to operate in the case of the two items cited below, it would yield base-final -[cc] and -[pp], respectively:

4566/  ['baygala]  abuse
4255/2529  ['baytale]  hair parting
Cf.  4566  ['bayy]-  abuse; Class 4 verb
4255  DED records "Ks. bage, 'division'".
2529  ['tale]  end

Note that here, unlike after a base-final nasal consonant of the first element, the voicing contrast at Onset in the postbase is preserved.

Rows 7-8 show the consonant combinations that occur after a long root vowel of the first element: the first is illustrated by:

4173/1683  ['me:ñgay]  back of hand
Cf.  4173/1238  ['me:n'ga:li]  top part of foot
1683  ['kay]  hand

For the first element here we set up the root /me:n/- (variant of /me/-; we also require /me:l/- for the noun particle [me:le], in such constructions as ['me:jira 'me:le'], 'the top of the table').
Finally, row 8 is illustrated by the items ['ku:kala] and ['ku:padi] in entry 9 (ii) above, and also by:

4402/3911 ['ba:mane] house into which bride marries
Cf. 4402 ['ba:li] way of life
3911 ['mane] house

The first element here shows the root /ba:li-, as described in the previous two chapters. Note that after [l], as after [y] and [v], the voicing contrast at Cnasat in postbase is preserved.

For the rest of the consonant combinations that occur in this construction, the phonetic mutation rule AS5 adjusts the place of articulation of the base-final nasal consonant to that of the postbase-initial consonant, and AS6 adds a voicing feature to the latter if it is a single voiceless stop (the effect of these rules is given here in alphabetic notation):

AS6 simplifies the consonant clusters involving [l] by deleting it after a long vowel. Clusters involving [y] or [v] immediately before another consonant, preceded by a short vowel, are retained.

Thus far, we have dealt with stress and vowel length reduction in postbases, and also with consonant mutations across the / boundary. We have seen that the first two are phonological phenomena, and that certain consonant mutations involve phonological gemination, but that the remainder are handled at the systematic phonetic level. Finally, we need the phonetic mutation rule AS7, which reduces a
2.3 Set 3: Base *Lexeme

The generalised schema for the items that occur in this set is given in Figure 4:

```
#Lexeme#
<table>
<thead>
<tr>
<th>Base</th>
<th>#Lexeme#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root (+Affix₁)</td>
<td>Classifier</td>
</tr>
<tr>
<td>(Onset) Nucleus</td>
<td>Root (+Affix₁)(+Affix₂)</td>
</tr>
<tr>
<td>Peak (Coda)</td>
<td>Noun</td>
</tr>
<tr>
<td>(Onset) Nucleus</td>
<td>Peak (Coda)</td>
</tr>
</tbody>
</table>
```

Note that Affix₂ is not required under the first base node; and that Affix₁ under this node is never Voc_Suff.

Figure 4: The generalised structure of complex nominal lexemes, Set 3

This accounts for all the structural types that are illustrated below.

1. (i) (C)VC- and (C)VCC-.

1607/3556 ['kam\'butti\'] red anthill
4524/3528 ['bov\'pilli\'] dry grass, straw

Cf. 1607/2506 ['ken\'dange\'] brown coconut
3556 ['putti\'] anthill
4524 ['bolipi\'] white
(ii) (c)V(c) - and (c)VNC-.  
1607/2806 ["ken'denqe"] brown coconut  
2283/3326 ["ep'pandi"] porcupine  
Cf. 1607/3022 ["ken'na:y"] wild dog  
2806 ["te'nge"] coconut  
2283 DED records "Ta. ey, ey-ppanri 'porcupine'."  
3326 ["pandi"] pig  

(iii) (c)Vc- and CVC-.  
8/1238 ["aŋ'ga:li"] sole of foot  
1607/3022 ["ken'na:y"] wild dog  
3608/3022 ["pon'na:y"] bitch  
4057/308 ["mut'ta:y"] great grandmother  
Cf. 8/1683 ["aŋgyay"] palm of hand  
1238 ["ka:li"] leg, foot  
1607/2077 ["kenjeri-"] red squirrel  
3608 ["ponni"] wife, female  
3022 ["nay"] dog  
4057 ["mudi"] state of being old  
308 ["ta:y"] grandmother  

2. (i) (c)V(c) - and CVCC-.  
3087/DIA 269 ["nu':putti"] vermicelli rice  
3538/4520 ["pu:'bekki"] civet cat  
4400/DIA 233 ["pa:'pakki"] bat  
Cf. 3087 ["nu:li"] thread  
DIA 269 ["putti"] rice preparation
DED records "Ta. puruku, civet".

DIA 233
['paksi']

bird

(ji) (c)\(\overline{v}(c)\) and CVNC--.

Cf. 3161

['pacce']
green, blue, cold (of water)

4394/2734

['ba: vali']
bat

3161/3792

['pa: manji']
scum, lichen

4400
['ba:vali']

jungle cats of various species

DIA 233

['paksi']
bird

Note that this is the only example of its type in the nominal system, and has a Set 4 nominal as its second element. Here also, however, has to be noted the complex verbal lexeme cited at the beginning of
For the same reasons described above with respect to Postbase, we require that the automatic gemination rule be restricted from applying to base-final consonants where the base concerned is followed by a lexeme in the same lexeme; that is, we formulate PM9 as follows:

14. (i) \( V \rightarrow V_i (C) \) \( (\text{Erase } [\cdot]) \) \( (\text{FM9(i)}) \)

(ii) \( C_i \rightarrow C_i C_i / V_\_ \), NOT \( / V_\_ \) \( \{\#\cdots\#\} \) \( (\text{Erase } [\cdot]) \) \( (\text{FM9(ii)}) \)

Most importantly, this allows for the base-final \( [v] \) in the first element of \(["bov'pilli"]\), as described with reference to \(["bevtale"]\) in Set 2. We set up /bo/- as a root variant of /bol/-; base-final \( [v] \) in this item derives from /y/ at Cons Suff immediately following this root. In the items \(["ep'pandi"],["pu:'bekki"],["pa:'paki"],["pa:'manji"], and \/["mu:'de:vi"]\) the first element shows no base-final consonant, consisting only of the roots /e/-, /pu/-, /pa/- (which therefore is a variant of /be:/ in /ba:vali; or possibly this item shows the root /be:/, with /y/ at Cons Suff), /pa/- (distinct from the preceding root, and a variant of /pa:/ in /"pacce"; the latter item may however have the root /pa/-, with /o/ at Cons Suff), and /mu/- (variant of /mu/- in /"muttaj[e:n]".

PM10 applies to the first of these items, therefore:
to yield the geminate voiceless bilabial stop cluster. It does not, however, apply to the other items, since \(/l/ \) stands between \( V \) and the \( / \) boundary. Note that F10(i) never applies in the data for this set of nominals, since in every item the component lexeme that forms the second element of the complex shows an initial consonant.

Otherwise, where two consonants occur across the \( / \) boundary, no mutation takes place, as in the case of ['bov'pilli'], ['ken'na:y'], ['nu:l'putti'], ['ba:l'tumbi'], or ['ku:l'kudike'], as yielded by the realisation rules. However, the items ['ken'butti'], ['ken'dang'], ['a:n'ga:li'], ['pon'na:y'], ['me:a'ga:li'], and ['me:a:ma:di] all show the operation of the phonetic mutation rules AS3, 6 (given here in alphabetic form):

\[
\begin{array}{c}
\text{p} \\
\text{t} \\
\text{n} \\
\text{k} \\
\text{m} \\
\text{m} \\
\text{n}
\end{array} \rightarrow \begin{array}{c}
\text{mb} \\
\text{nd} \\
\text{ng} \\
\text{mm}
\end{array}
\]

In all cases except that of ['pon'na:y] the operation of the rule is functionally equivalent to its operation with respect to Set 2 nominals. However, the assimilation in place of articulation of the base-final nasal consonant has to be stated carefully; [n] assimilates to a following [m], but the retroflexion feature is not lost when the following consonant is [n]. Hence, the assimilation has first of all to be stated in terms of the categories Bilabial,
Dental, Palatal, and Velar; secondarily, the feature of retroflexion is spread through the geminate cluster.

Finally, the consonant clusters involving [1] or [2] after a long vowel are simplified by loss of the lateral consonant, by AS7.

2.4 Set 4: Lexeme Classifier

The generalised schema set out in Figure 5 accounts for the nominals of this set:

![Diagram of the generalised structure of complex nominals lexemes, Set 4]

It will be seen that Noun here is expanded as an optional Initial, followed by Noun. At Initial, a system of consonants operates which will be illustrated in Figure 6 below. At the node Noun under Noun, the same system of elements operates as has been recognised thus far. The nominals belonging to Set 4 are illustrated below.

1. (i) (c)vcc-.

<table>
<thead>
<tr>
<th>Dia</th>
<th>Nominal</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>'kuppiya'</td>
<td>Coorg man's coat</td>
</tr>
<tr>
<td>1388</td>
<td>'kuttuva'</td>
<td>copper pot</td>
</tr>
<tr>
<td>3115</td>
<td>'nelliike'</td>
<td>gooseberry</td>
</tr>
</tbody>
</table>
Cf. 3115 DED records "Ta. nelli, 'emblic myrobalan'."

The first two items show [y], [v], inserted by ASS. Note that -[ke] in [nellike] (also [pireke]; see 2 below) probably corresponds to [kay], '(unripe) fruit'. Clearly, this is suggestive insofar as the diachronic status of these elements at Noun is concerned. However, an analysis which attempted to derive them from the node Lexeme (introduced under Noun) would involve a number of serious complications, especially in stating the vowel mutation in this example.

(ii) (c)VNC-

1209 ['kandave(n)] stranger (masc)

By this analysis, this item shows a root variant /ka/- of /ka:/ in ['ka:n]- 'see, seem'; Class 3 verb. The [v] is inserted by ASS. However, the item is unusual in respect of its nasal vowels by this analysis, and it may be correct to include it in Set 2, with the postbase element ['ave(n)], related to the 3rd person masculine singular proform ['ave(n)].

2. (c)VC-

3637 ['po:liya] basketry box (gift to bride)
3467 ['pi:reke] small, very bitter cucumber
Cf. 3467 ['pi:re]

3. (c)VCV-

694 ['serivi] burning sensation in mouth
3686 ['podepi] covering, blanket
3511 ['pudume] wonder, marvel
3613 ['periya] increase, excess
799 ['odeve] break
Cf. 694 ['eri]- (mouth) has burning sensation; Class 2 verb
799 ['ode]- break (intr); Class 2 verb
3666 ['poda]- thatch, cover
3511/178 ['puttarì] rice harvest festival
3613 ['peri]- increase (intr); Class 5 verb

4. CVCC- + CVNC-.

This structure, found in only one item, shows expansion of the first component lexeme as two lexemes:

['buddi'ventige] state of being wise

Cf. ['buddi] wisdom

Finally, Figure 6 shows the system of elements operating at Initial; all these elements are of very low frequency in the data.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>r</th>
<th>j</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>p</td>
<td>t</td>
<td>t</td>
<td>k</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>b</td>
<td>j</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>P</td>
<td>T</td>
<td>C</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 6: The system of elements at Initial

/t, t, k/: these are set up to account for [d], [q], [q], respectively, as in:

3724 ['polidi] auspicious ceremony
/\: this is realised as [v], by R1 and R4 ([y], from /c/, does not occur in the data at this position), as in:

799 ['odeve] break

/\, /\: these account for [b], [j], respectively, as in:

1530 ['kurube(n)] shepherd
3613 ['periya] increase, excess

F, T, C, K/: are realised as the voiceless stops [p], [t], [k], respectively, as in:

952 ['kadipa] quickness
2132 ['cirate] leopard
4524 ['bolica] lamp
1376 ['kudike] cooking pot

/\: this underlies the one instance of [m] in:

3511 ['pulume] wonder, marvel

/\, /\: these are realised as [r], [l], respectively, as in:

2363 ['navili] peacock
554 ['usiri] breath

2.5 A further case of linear derivation

However, there is a further modification to be made to the system at Noun, in view of the rather large number of nominals that show a lexeme-final element [-e(n)] or [-e(n)] and have human male referents, and the relationship between these and nominal lexemes showing the lexeme-final element [-ati] and having human female referents. For example:

4270 ['badave(n)] poor man
Arguments have been presented in the previous chapter to show that such gender distinctions as exist in the Coorg nominal system are not appropriately to be handled in the syntactic base; however, we have also seen that this does not rule out the possibility of syntagmatic derivation of lexical items, and it has been argued that where this possibility of formulating lexical relationships exists (linear generative capability) it should be implemented, as representing a stronger hypothesis than does paradigmatic derivation (parallel generative capability). That is to say, it states not only that certain items are related, but also that one is basic and the other(s) derived in some way. Finally, we have seen that such a formulation allows for economy of statement regarding such items; since only the basic form has to be entered in full in the lexicon. A certain type of voice relationship between verbs has been treated in an operationally linear way (Chapter 4), and so has a certain type of derived nominal (Chapter 5). Moreover, it has been noticed that these two derivational relationships involve processes which are, in part, identical to each other (in respect of the operation of */s*/). This study will conclude with a further example where a linear derivation, also involving */s*/, seems to be indicated.

With a large number of gender-related nominals, a paradigmatic approach is the most reasonable; thus

87 ['ajje(n)] grandfather
['ajji] grandmother
are related to each other through the occurrence of either -['e(n)] or -[i] with the common element [ajj]-. Similarly, with

['obba(n)] one person (masc)
['obba(l)] id (fem)
and with

['dadde"(n)'] stupid person (masc)
['dadde'] id (fem)

there is no justification for setting up such rules as:

17. /æn/ → /i/ in env.

All the evidence suggests that [-[1],-[e] and -[a(1)] form part of the same paradigmatic system as -[e(n)]; for example, the pattern of their distribution, with respect to the base types they occur with, and the fact that not all feminine nouns in -[i],-[e] or -[a(1)] show corresponding masculines in -[e(n)].

On the other hand, if a paradigmatic analysis is adopted with regard to nominals in -[e(n)] /-[ati], then the system at Noun has to be modified in order to allow for an element of the unusual form VCV ([ati]). Furthermore, this canonical Noun form covers just the one type. So it might be argued that for this reason the paradigmatic approach has to be abandoned here. However, even if a syntagmatic approach is followed, the system at Noun will have to undergo some modification, so the argument above is not sufficient as it stands. The real reason why the paradigmatic generation of -[ati] nominals is inadequate is because this is unable to formalise the fact that all such lexemes have corresponding forms in -[e(n)], to which they are related as 'feminines' to 'masculines'. There is only one exception to this statement, in that ['polati'], 'low caste woman' has the corresponding masculine form ['poleye(n)]. In all other cases, it is possible to say both that no lexeme with -[e(n)] contracts a relationship with another in -[ati] unless its referent is a human male, and that all lexemes with [-ati] show this relationship.
In order to account for this situation, we need to introduce an element HUM (human) under Noun, which may be expanded as either MASC alone, or as MASC plus some 'feminising' element; this formalises the fact that, in these nominals, the most direct expression of the category 'human' is 'masculine'; only secondarily is it expressed by 'feminine'. We set up the feminising element FEMIN (distinct from FEM), and expand Noun as follows:

18. Noun → \{ Mk \}
\{ UMK \}
\{ HUM \}
\{ MASC \}
\{ FEM \}
\{ MUR \}
\{ INAN \}
\{ AN \}

19. Mk → \{ /l/ \}
\{ /e/ \}

20. UMK → ( \{ /e/ \} )
\{ /e/ \}

21. HUM → MASC (FEMIN)

Note that, up to the last rule here, little is changed from the system of LS rules given in Chapter 5; but now LS20 includes HUM as a rewrite of Mk. The next rule expands FEMIN:

22. FEMIN → /t + */ FEM

Here, it would be possible to write /tt/ for /t + */; and /i/ for FEM; however, the first would ignore the regular source for
geminate stops (other than in base-final position after a short root vowel), and the second would ignore the fact that -[i] in feminine nominals is already provided for in the system (we work within the system established thus far, as much as possible). LS24 now applies, to expand MASC.

It is at this point that we are able to justify the particular phonological form /an/ for this element, since we now have not only to account for the vowel quality of the masculine lexeme-final element, but also for the first vowel of the related feminine element -[ati]. The -[i][n]/-[ati] alternation will be handled at the systematic phonemic level as between -/an/ and -/ant + * i/, where /n/ is the element that accounts for the divergence in quality of the preceding vowel at the systematic phonetic level, and is defined by the abstract feature z; its feature specification is MInz. It functions phonologically as a trigger element in respect of the mutation rule MII2(iv) but in respect of nothing else; when it is followed by -/t + * i/, MII2(ii) applies, and the nasal consonant is lost, yielding the sequence -/atti/. MII2(ii) thus has to be modified slightly, as follows:

23. \( \left\{ \frac{N}{n} \right\} P_1 + * \rightarrow P_1 P_1 \) (MII2(ii))

In all other cases, the /n/ is retained, and MII2(iv) applies:

24. \( \alpha \rightarrow \gamma /_n^m / \) (MII2(iv))

/n/ is realised as [n]; but it does not constitute the necessary environment for the insertion of the enunciatif vowel [i] lexeme-finally, and we therefore have to restrict R13 as follows:
25. Insert: 
\[
\begin{array}{c}
\text{constriction,} \\
\text{back of tongue} \\
\text{highest,} \\
\text{lips unrounded}
\end{array}
\] / \{ \begin{array}{c}
A \\
\{ B \} \\
\{ C \} \\
\{ \{ D \} \} \\
\{ \{ E \} \} \\
\{ \{ F \} \} \\
\{ \{ G \} \} \\
\{ \{ H \} \} \end{array} \{ \begin{array}{c}
\{ I \} \\
\{ II \} \\
\{ III \} \\
\{ IV \} \\
\{ n \} \\
\{ x \} \end{array} \}
\]

(R13)

Hence, /h/ comes to stand in lexeme-final position at the systematic phonetic level, and is deleted unless another element follows under the same noun phrase node but external to the highest lexeme node. That is, it has no realisation when a lexeme is followed by another element (which may be a lexeme or a postbase or an element at Classifier) within the same lexeme (e.g. ['anne''tammane''(n)], not *['annan'tammane''(n)] or *['annan'dammane''(n)]; and it has no realisation when it occurs finally under the highest lexeme node but is followed by no syntactic element within the same noun phrase (as, for example the plural affix, in ['annan'ga(1)]; the case affixes, as in ['annana], ['annanda], ['annangi]; or the particles [e:], [a:], [o:] or [u:]). Such a situation clearly can be handled by realisation rules but not by phonetic mutation rules; we therefore need to supplement R2 and R4 with the following subrules:

26. \[ B \rightarrow \left[ \text{no articulatory effect} \right] / \_ \_ \_ \_ \text{Inz#} \] (R2)

27. \[ B \rightarrow \left[ \text{no articulatory effect} \right] / B \_ \_ \_ \text{nz#} \] (R4)
The LS rules 24-3 then follow, as given below, all save LS25
being identical in form to the corresponding rules in the preceding
chapter:

28. \[ \text{MASC} \rightarrow \{/an/ + \text{masc}\} \] \hspace{1cm} (LS24)

29. \[ \begin{align*}
\text{FEM} & \rightarrow \{\begin{array}{l}
/i/ \text{ ant + *} \\
/e/ \text{ else}
\end{array}\} - \text{masc}\} \hspace{1cm} (LS25)
\end{align*} \]

30. \[ \text{PLUR} \rightarrow \{/al/ + \text{plur}\} \] \hspace{1cm} (LS26)

31. \[ \text{INAN} \rightarrow \{/a/ - \text{anim}\} \] \hspace{1cm} (LS27)

32. \[ \text{AN} \rightarrow \{/an/ + \text{anim}\} \] \hspace{1cm} (LS28)

Note that the representation of \text{FEM} has to be partly context-
sensitive by this analysis, since only \{-i\} occurs after \{-at\} at
this position. Notice also that \text{AN} is represented by \text{/an/}; this is
because there is every reason, on formal and intuitive grounds, to
derive \{-e(n)\} in animate nouns from the same source as \{-e(n)\} in
masculines.

Finally, note that \{/1/ of the \text{FEM} and \text{PLUR} elements, which is
also defined by the feature \text{z}, having the specification \text{BrIIIz}, is
like \text{/n/ in that it does not satisfy the conditions for the insertion
of the enunciative vowel \text{[i]} lexeme-finally (see 25 above). However,
its behaviour is in other respects much simpler; it is realised
everywhere as \text{[i]}, and this is allowed for by the fact that the
feature \text{z} only provides the environment for no articulatory effect
with respect to the features B and I when it is preceded by the
feature n (see 26-7 above). When [1] is followed by a consonant (of the plural affix, or one of the case affixes), or when it stands in utterance-final position, it is deleted; otherwise (i.e. when followed by a vowel, of the accusative case affix, or one of the syntactic particles), it is retained. This is handled by AS6 at the systematic phonetic level.

3.0 The rules cited in this chapter

Only those rules are given here which have been introduced or modified in this chapter; for the articulatory sequence rules, see the relevant sections of the preceding chapters (pp. 267-90 and 371).

3.1 The lexeme structure rules

LS1

\[
\text{Lexeme} \rightarrow \{ \text{\#Lexeme\#} \} \{ \text{Classifier} \}
\]

\[
\text{Postbase} \rightarrow \{ \text{\#Base\#} \} \{ \text{\#Lexeme\#} \}
\]

\[
\text{Base} \rightarrow \{ \text{Base} \} \{ \text{Classifier} \}
\]

LS20. Mx \rightarrow \{ \text{HUM}, \text{MASC}, \text{FEM}, \text{PLUR}, \text{INAN}, \text{AN} \}

LS22. \text{HUM} \rightarrow \text{MASC (FEMIN)}

LS23. \text{FEMIN} \rightarrow \text{/t + * / FEM}
3.2 The phonological mutation rules

PM2(ii) \( \{ \{ N \} \} P_i + * \rightarrow P_i P_i \quad (P_i \neq g) \)

(iv) \( a \rightarrow e/ \quad n \)

PM9(ii) \( C_i \rightarrow C_i C_i / V \quad \text{[NOT: } \quad V \{ \# \text{...} \# \} \text{]} \quad \text{(Erase [ ])} \)

PM10(i) \( V C_i \neq V \rightarrow V C_i \neq C_i V \)

(ii) \( V \{ \# \} C_i \rightarrow V C_i \{ \# \} C_i \)

PM11(i) \( V \rightarrow V / \neq (c) \quad \text{(ii)} \)

VL \rightarrow V

3.3 The realisation rules
[no articulatory effect] / \text{NP} \{
\}

\{ \text{palatal p. of a.} / X(\text{L})^\text{II} \}
\{ \text{postalveolar p. of a.} / \text{I} \}
\{ \text{dental p. of a.} / \text{II} \}
\{ \text{alveolar p. of a.} / \text{II} \}
\{ \text{prepalatal p. of a., retroflex tongue tip} / \text{I} \}
\{ \text{postdental p. of a.} / \text{II} \}
\{ \text{dental p. of a.} \text{ else.} \}

\{ \text{no articulatory effect} / \text{NP} \}
\{ \}
\{ \}

\{ \text{occlusion} / \text{I} \}
\{ \text{obstruction} / X(\text{L})^\text{II} \}
\{ \text{contact, v.c.s vibrating} / \}
\{ \text{contact, velum lowered} / \text{II} \}
\{ \text{contact} \text{ else.} \}
R13. Insert: [constriction, back of tongue highest, lips unrounded] \[ A \{ I \} \{ b \} \{ p \} \{ n \} \{ x \} \]
APPENDIX I

Inventory of verbal lexemes, Classes 1-5. Items marked with an asterisk have a related form in Appendix II; those with two asterisks have two such forms. For further details regarding the arrangement of the inventory, see Chapter 4, pp. 197-205. Transcription is Emeneau type B (see Chapter 2, p. 100).

Items marked with an asterisk have a related form in Appendix II; those with two asterisks have two such forms. For further details regarding the arrangement of the inventory, see Chapter 4, pp. 197-205. Transcription is Emeneau type B (see Chapter 2, p. 100).
Class 1

(c)VC

1. DED 569 ur- (uruv- uri-)* melt (intr)
2. 606 or- (oruv- ori-)* fall asleep
3. 1086 kar- (karuv- kari-)* be digested
4. 2655 tir- (tiruv- tiri-)* turn round (intr)
5. 4112 mur- (muruv- muri-)* tighten (intr)
6. 432 el- (elu- eli-)* leave one's position

(c)VCC

7. 573 ukk- (ukkuv- ukki-)* boil over
8. 784 okk- (okkuv- okki-)* thresh (paddy)
9. 849 okk- (okkuv- okki-)* float away
10. 909 kakk- (kakkuv- kakki-)* vomit
11. 1689 kokk- (kokkuv- kokki-)* be bent
12. 2060 cikk- (cikkuv- cikki-)* become entangled
13. 2065 cikk- (cikkuv- cikki-)* become tired
14. 2333 cukk- (cukkuv- cukki-)* grow stout
15. 2333 cokk- (cokkuv- cokki-)* be fat, (liquor) intoxicates
16. (2625) tikk- (tikkuv- tikki-)* to wipe (slate clear of writing)
17. (2634) tikk- (tikkuv- tikki-)* strain (at delivery of child)
18. 2945 nakk- (nakkuv- nakki-)* lick
19. 3540 puck- (puckuv- pukki-)* boil (to loosen skin or husk)
20. (4010) mukk- (mukkuv- mukki-)* strain (at stool)
21. 4169 mukk- (mukkuv- mukki-)* smear
22. DBIA 5 agg- (agguv- aggi-)* (fire) consumes
23. DED 2334 ogg- (ogguv- soggi-)* (child) wriggles on belly
<table>
<thead>
<tr>
<th>No.</th>
<th>Tain.</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>DED</td>
<td>3076</td>
<td></td>
<td>enter by force</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>4371</td>
<td></td>
<td>bend down (intr)</td>
</tr>
<tr>
<td>26</td>
<td></td>
<td>3985</td>
<td></td>
<td>swallow</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td>3658</td>
<td></td>
<td>swell (grain, stomach)</td>
</tr>
<tr>
<td>28</td>
<td></td>
<td>4096</td>
<td></td>
<td>dive</td>
</tr>
<tr>
<td>29</td>
<td>(3233/3306)</td>
<td></td>
<td></td>
<td>go stooping, bending</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>4025</td>
<td></td>
<td>close</td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>3865</td>
<td></td>
<td>be pleased</td>
</tr>
<tr>
<td>32</td>
<td></td>
<td>1287</td>
<td></td>
<td>be got</td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>1391</td>
<td></td>
<td>pound</td>
</tr>
<tr>
<td>34</td>
<td></td>
<td>961</td>
<td></td>
<td>tie, build</td>
</tr>
<tr>
<td>35</td>
<td></td>
<td>1717</td>
<td></td>
<td>tap, beat (drum)</td>
</tr>
<tr>
<td>36</td>
<td></td>
<td>2466</td>
<td></td>
<td>ward, strike off</td>
</tr>
<tr>
<td>37</td>
<td></td>
<td>3119</td>
<td></td>
<td>shake sharply (intr)</td>
</tr>
<tr>
<td>38</td>
<td></td>
<td>3501</td>
<td></td>
<td>be born, sprout</td>
</tr>
<tr>
<td>39</td>
<td></td>
<td>3674</td>
<td></td>
<td>explode</td>
</tr>
<tr>
<td>40</td>
<td></td>
<td>4041</td>
<td></td>
<td>bump against</td>
</tr>
<tr>
<td>41</td>
<td>(4043)</td>
<td></td>
<td></td>
<td>reach, touch</td>
</tr>
<tr>
<td>42</td>
<td></td>
<td>678</td>
<td></td>
<td>say, tell</td>
</tr>
<tr>
<td>43</td>
<td></td>
<td>648</td>
<td></td>
<td>ooze</td>
</tr>
<tr>
<td>44</td>
<td>74</td>
<td></td>
<td></td>
<td>untie (knot)</td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>693</td>
<td></td>
<td>arrive</td>
</tr>
<tr>
<td>46</td>
<td></td>
<td>859</td>
<td></td>
<td>press, squeeze</td>
</tr>
<tr>
<td>47</td>
<td></td>
<td>1014</td>
<td></td>
<td>blaze</td>
</tr>
<tr>
<td>48</td>
<td></td>
<td>1154</td>
<td></td>
<td>wash (plate, hands)</td>
</tr>
<tr>
<td>49</td>
<td></td>
<td>1429</td>
<td></td>
<td>thrust, gore</td>
</tr>
<tr>
<td>50</td>
<td></td>
<td>1536</td>
<td></td>
<td>thrust with fist</td>
</tr>
<tr>
<td>51</td>
<td></td>
<td>1624</td>
<td></td>
<td>cut</td>
</tr>
<tr>
<td>52</td>
<td></td>
<td>1625</td>
<td></td>
<td>gore with horns</td>
</tr>
</tbody>
</table>
53  DED  1740  kott- (kottuv- kotti-)
54        2238  cutt- (cuttuv- cutti-)
55        3320  patt- (pattuv- patti-)
56        3686  pott- (pottuv- potti-)
57        4355  batt- (battuv- batti-)
58        4428  bitt- (bittuv- bitti-)
59        4519  bott- (bottuv- botti-)
60        (4156)  mett- (mettuv- metti-)
61        572   udd- (udduv- uddi-)
62        1536  gudd- (guiduv- guddi-)
63        2659  tidd- (tidduv- tiddi-)
64        3709  podd- (podduv- poddi-)
65        1336  kinn- (kinnuv- kinni-)
66        3322  pann- (pannuv- panni-)
67        3994  minn- (minnuv- minni-)
68        2498  tapp- (tappuv- tappi-)
69        2725  tupp- (tuppuv- tuppi-)
70        1025  kabb- (kabbuv- kabbi-)
71        2543  tabb- (tabbuv- tabbi-)
72        3255  pabb- (pabbuv- pabbi-)
73        1536  kumm- (kummuv- kummi-)
74        1634  kemm- (kemmuv- kemmi-)
75        2740  timm- (timmuv- timmi-)
76        1969  cell- (celluv- celli-)
77        2767  tull- (tulluv- tulli-)

pick up, peck
wind around (tr/intr)
climb
cover completely
go dry
sow
fear
smear, plaster (mud on wall)
rub
pound with fist
clean, settle (details of ceremony)
(good/evil influence)
possesses
tear into strips
drizzle
flicker, (lightning) flashes
escape
spit
seize with open mouth
embrace
(creeper) twines
churn
cough
sneeze
sprinkle, scatter
make small jumps
<table>
<thead>
<tr>
<th>Number</th>
<th>Code</th>
<th>Value</th>
<th>Yoruba Word</th>
<th>English Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>78</td>
<td>DED</td>
<td>3537</td>
<td>puŋe- (puŋuŋu- puŋi-)</td>
<td>rot, fester a little</td>
</tr>
<tr>
<td>79</td>
<td>DED</td>
<td>3962</td>
<td>mĩ̀j- (mĩjũu- mĩji-)</td>
<td>be left over</td>
</tr>
<tr>
<td>80</td>
<td>DED</td>
<td>1408</td>
<td>kũnt- (kũntuŋ- kũnti-)</td>
<td>be lame</td>
</tr>
<tr>
<td>81</td>
<td>DED</td>
<td>2712</td>
<td>tũnd- (tũnduŋ- tũndi-)</td>
<td>break (intr)</td>
</tr>
<tr>
<td>82</td>
<td>DED</td>
<td>3440</td>
<td>pund- (pũnduŋ- pundi-)</td>
<td>squeeze</td>
</tr>
<tr>
<td>83</td>
<td>DED</td>
<td>3696</td>
<td>pond- (pǒnduŋ- pondi-)</td>
<td>be raised, bounce</td>
</tr>
<tr>
<td>84</td>
<td>DED</td>
<td>3709</td>
<td>pond- (pǒnduŋ- pondi-)</td>
<td>be suited to</td>
</tr>
<tr>
<td>85</td>
<td>DED</td>
<td>4119</td>
<td>mund- (munduŋ- mundi-)</td>
<td>precede</td>
</tr>
<tr>
<td>86</td>
<td>DED</td>
<td>2735</td>
<td>dumb- (dũmbuŋ- dumbi-)</td>
<td>become full</td>
</tr>
<tr>
<td>87</td>
<td>DED</td>
<td>2975</td>
<td>namb- (nambuŋ- nambi-)</td>
<td>trust</td>
</tr>
<tr>
<td>88</td>
<td>VC</td>
<td>593</td>
<td>u:k- (u:kũu- u:ki-)</td>
<td>comb</td>
</tr>
<tr>
<td>89</td>
<td>VC</td>
<td>1658</td>
<td>ka:k- (ka:kũu- ka:ki-)</td>
<td>call</td>
</tr>
<tr>
<td>90</td>
<td>VC</td>
<td>2003</td>
<td>ca:k- (ca:kũu- ca:ki-)</td>
<td>rear a young one</td>
</tr>
<tr>
<td>91</td>
<td>VC</td>
<td>3083</td>
<td>nu:k- (nu:kũu- nu:ki-)</td>
<td>push</td>
</tr>
<tr>
<td>92</td>
<td>VC</td>
<td>4370</td>
<td>ba:k- (ba:kũu- ba:ki-)</td>
<td>pour off water from cooked rice</td>
</tr>
<tr>
<td>93</td>
<td>VC</td>
<td>1352</td>
<td>gi:c- (gi:cũu- gi:ci-)</td>
<td>make a scratch</td>
</tr>
<tr>
<td>94</td>
<td>DBIA</td>
<td>274</td>
<td>pu:j- (pu:jũu- pu:ji-)</td>
<td>do acts of worship</td>
</tr>
<tr>
<td>95</td>
<td>DED</td>
<td>4479</td>
<td>bi:j- (bi:jũu- bi:ji-)</td>
<td>wave (intr/tr)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4479</td>
<td>bi:d- (bi:duŋ- bi:di-)</td>
<td>(wind) blows, grind with stone</td>
</tr>
<tr>
<td>96</td>
<td></td>
<td>3927</td>
<td>ma:j- (ma:jũu- ma:ji-)</td>
<td>(clothes) soil</td>
</tr>
<tr>
<td>97</td>
<td></td>
<td>1566</td>
<td>ku:t- (ku:tuŋ- ku:ti-)</td>
<td>sharpen</td>
</tr>
<tr>
<td>98</td>
<td></td>
<td>2678</td>
<td>ti:t- (ti:tuŋ- ti:ti-)</td>
<td>rub, stroke</td>
</tr>
<tr>
<td>99</td>
<td></td>
<td>3144</td>
<td>no:t- (no:tuŋ- no:ti-)</td>
<td>look at</td>
</tr>
<tr>
<td>100</td>
<td></td>
<td>290</td>
<td>a:d- (a:duŋ- a:di-)</td>
<td>dance</td>
</tr>
<tr>
<td>101</td>
<td></td>
<td>877</td>
<td>o:d- (o:duŋ- o:di-)</td>
<td>run</td>
</tr>
</tbody>
</table>
ki:ruv- (ki:ruv- ki:ri-)*

te:r- (te:ruv- te:ri-)*

du:r- (du:ruv- du:ri-)

ko:r- (ko:ruv- ko:ri-)*

ka:r- (ka:ruv- ka:ri-)

i:r- (i:ruv- i:ri-)

se:d- (se:duv- se:di-)

co:d- (co:duv- co:di-)

ma:d- (ma:duv- ma:di-)

bo:d- (bo:duv- bo:di-)

4377  ba:d- (ba:duv- ba:di-)*

4548  bo:d- (bo:duv- bo:di-)

2857  de:t- (de:tuv- de:ti-)

2927  to:d- (to:duv- to:di-)

2844  te:d- (te:duv- te:di-)

2012  ca:d- (ca:duv- ca:di-)

1562  ku:d- (ku:duv- ku:di-)*

2247  ou:d- (ou:duv- ou:di-)

3121  ne:d- (ne:duv- ne:di-)

3348  pa:d- (pa:duv- pa:di-)

4392  ba:t- (ba:tuv- ba:ti-)

4531  ma:d- (ma:duv- ma:di-)

3931  ma:d- (ma:duv- ma:di-)

4247  ou:d- (ou:duv- ou:di-)

1847  ko:t- (ko:tuv- ko:ti-)

1341  ci:p- (ci:puv- ci:pi-)

1353  ki:r- (ki:ruv- ki:ri-)*

2154  u:t- (u:tuvc- u:ti-)

2310  se:d- (se:duv- se:di-)

346  a:r- (a:ruv- a:ri-)*

461  i:r- (i:ruv- i:ri-)

534  a:ruv- a:ri-)

650  u:r- (u:ruv- u:ri-)

776  "e:r- ("e:ruv- "e:ri-)

1236  ka:r- (ka:ruv- ka:ri-)

127  ke:r- (ke:ruv- ke:ri-)*

1313  ki:r- (ki:ruv- ki:ri-)*

2310  se:d- (se:duv- se:di-)

2310  se:d- (se:duv- se:di-)

2310  se:d- (se:duv- se:di-)

2310  se:d- (se:duv- se:di-)

2927  to:d- (to:duv- to:di-)

2844  te:d- (te:duv- te:di-)

2012  ca:d- (ca:duv- ca:di-)

1562  ku:d- (ku:duv- ku:di-)*

join (intr)

throw

stick (flower) in hair

search for

dig (a well)

push away

earn

sing

fade, (face) is downcast

beg

become mature

suck

fill by scooping

drive away

drive away

take up in hand

read

drink a deep draught

comb

become dry

saw (wood)

thrust stick to ground while walking

(liquor) rises to head

vomit

tear (intr)

go up to house
128  DED (1679) ke:ir- (ke:ruv- ke:ri-) winnow
129  1353 gi:r- (gi:ruv- gi:ri-) gash
130  2169 ci:r- (ci:ruv- ci:ri-) grumble
131  2048 ja:r- (ja:ruv- ja:ri-) slip, be slippery
132  2796 tu:r- (tu:ruv- tu:ri-) defecate
133  (2793) du:r- (du:ruv- du:ri-) complain
134  2379 na:r- (na:ruv- na:ri-) smell (intr)
135  3311 pa:r- (pa:ruv- pa:ri-)* fly, leap
136  3641 po:r- (po:ruv- po:ri-) transport by pack-animal
137  3960 ma:r- (ma:ruv- ma:ri-)* sell
138  3998 mu:r- (mu:ruv- mu:ri-) disregard, be superior to
139  2312 se:r- (se:ruv- se:ri-) join (intr)
140  4000 mu:s- (mu:sw- mu:si-) smell (tr)
141  341 a:i- (a:luv- a:li-) rule

(c)YNO
142  746 e:Ag- (e:riguv- e:iigi-) lengthen note
143  2777 ju:Ag- (ju:nguw- ju:ngi-)* sway (intr)
144  2573 ta:Ag- (ta:nguv- ta:ngi-)* lean (intr)
145  2777 tu:Ag- (tu:nguv- tu:ngi-)* hang (intr)
146  3052 ni:Ag- (ni:nguw- ni:ngi-)* go aside
147  4371 ba:Ag- (ba:nguv- ba:ngi-) become bent
148  4543 be:Ag- (be:nguv- be:ngi-) (rain) clears
149  4571 be:Ag- (be:nguv- be:ngi-) cut (plantain trunks at wedding)
150  3852 me:Ag- (me:nguw- me:ngi-)* mix thoroughly (intr)
151  4130 mu:ñj- (mu:njuw- mu:ñji-) suck (penis)
152  2680 ti:nd- (ti:nduv- ti:ndi-)* touch
153  3944 ma:nd- (ma:nduv- ma:ndi-) scratch
154 DED 3054 mi:nd- (mi:ndu: - mi:ndi-) swim

CVSC

155 1973 cav:- (cav:tu: - cav:ti-) step on, kick
156 2454 tav:- (tav:tu: - tav:di-) groove in dark

CVSNC

157 2386 navnd- (navndu: - navndi-) squeeze
158 4349 bevnd- (bevndu: - bevndi-)* be bent
159 2 249 kuynd- (kuyndu: - kuyndi-) feel prickly

(c)VVC

160 (203) alak- (alaku: - alaki-) stir with a ladle
161 636 ulik- (uliku: - uliki) flay
162 506 odik- (odiku: - odiki-) sweep
163 1385 kodak- (kodaku: - kodaki-) shake (tr)
164 2365 nerak- (neraku: - neraki-) groan
165 3623 porik- (poriku: - poriki-) pick up small objects
166 4402 badik- (badiku: - badiki-) live (happily)
167 2655 tirig- (tirigu: - tirigi-) wander
168 3262 baraj- (baraju: - baraji-) feel for something, grope
169 725 elid- (elidu: - elidi-) write
170 3729 porid- (poridu: - poridi-) undertake an office
171 578 urip- (uripu: - uripi-) play (flute)
172 4516 bevar- (bevaru: - bevari-) sweat
173 200 alas- (alasu: - alasi-) curry, rice spoils
174 Indo-Aryan gunis- (gunisu: - gunisi-) calculate
(c) VCVNC

175 DED (56) adaŋ- (adaŋuv- adaŋi-)* be within authority of, submit to

176 70 adaŋ- (adaŋuv- adaŋi-)* be piled in order

177 439 ेraŋ- (ेraŋuv- ेraŋi-)* (food) slips down throat

178 517 onaŋ- (onaŋuv- onaŋi-)* dry, wither

179 1096 kalaŋ- (kalaŋuv- kalaŋi-)* be stirred up

180 1501 kuĩŋ- (kuĩŋuv- kuĩŋi-)* shake (intr)

181 2655 teraŋ- (teraŋuv- teraŋi-)* move, shift (intr)

182 (2825) ेlaŋ- (ेlaŋuv- ेlaŋi-)* (water) settles and becomes clear

183 (3796) maɗaŋ- (maɗaŋuv- maɗaŋi-)* fold (intr)

184 3875 maŋ- (maŋuv- maŋi-)* lie down, neglecting work

185  "moliŋ- (moliŋuv- moliŋi-)* be pressed

186 (2213) curĩnd- (curĩnduv- curĩndi-)* shrink (intr)

187 839 olamən- (olamuv- olambi-)* gargle

188 dolam̃- (dolamuv- dolambi-)* gurgle

189 balam̃- (balamuv- balambi-)* serve (food)

Class 2

CV

1 3143 no- (novv- nond-)* pain (intr)

CVV

2 1197 ka- (ka:v- ka:nd-)* caw

3 1551 ku- (ku:v- ku:nd-)* crow

CVCC

4 1142 kayy- (kayyuv- kayyj-)* (time) passes
kayy- (kayuyu~ kayn\-\-n) be possible
kuuy- (kuuyu~ kuyn\-\-n)* (hole) is bored
kuyy- (kuyuyu~ kuyn\-\-n) feel prickly
meyy- (meyuyu~ meyn\-\-n)* (paddy) is well pounded, cleaned
koll- (kolluvu~ kond\-\-) kill
poll- (polluyu~ pond\-\-) stitch

ni:du (ni:duv~ ni:nd\-\-) stretch out straight (intr)
a:y- (a:yuv~ a:ñj\-\-) choose
ka:y- (ka:yuyu~ ka:nj\-\-) be hot, boil, bask in sun
ki:y- (ki:yuyu~ ki:nj\-\-) become rotten
tey- (te:yuyu~ teyn\-\-) wear off (intr)
pay- (payuyu~ payn\-\-) dash into
me:y (me:yuyu~ meyn\-\-) graze (intr)
ta:r- (ta:ruv~ ta:nd\-\-) descend, (sun) sets
ti:r- (ti:ruv~ ti:nd\-\-) be used up, finished
tey- (te:ruv~ te:nd\-\-) (man) becomes full-grown
tor- (toruv~ tornd\-\-) leak
ne:r- (ne:ruv~ ne:nd\-\*) hang (intr)
ne:r- (ne:ruv~ ne:nd\-\*) rise up, come to view
ne:r- (ne:ruv~ ne:nd\-\*) come to view
par- (pa:ruv~ pand\-\-) ladle, put on (clothing)
bi:r- (bi:ruv~ bimnd\-\*) (flowers) open
bur- (bu:ruv~ bun\-\*)
mu:r- (mu:ruv~ mund\-\*) disregard, be superior to
| 28 | DED | 98 | ani- \(\text{aniv- aniñj-}\) | wear, enjoy (jewels) |
| 29 | 176 | ari- \(\text{ariv- ariñj-}\) | (liquid) is strained |
| 30 | 265 | ari- \(\text{ariv- ariñj-}\) | find out |
| 31 | 213 | ali- \(\text{aliv- aliñj-}\) | dissolve (intr) |
| 32 | 366 | idi- \(\text{idiv- idiñj-}\) | (wall) falls, (land) slips |
| 33 | 426 | ili- \(\text{iliv- iliñj-}\) | descend, get ready |
| 34 | 565 | uri- \(\text{uriv- uriñj-}\) | burning sensation is felt |
| 35 | 846 | oli- \(\text{oliv- oliñj-}\) | halt for night, dwell |
| 36 | 843 | oli- \(\text{oliv- oliñj-}\) | fruit drops from tree abundantly |
| 37 | 1073 | kari- \(\text{kariv- kariñj-}\) | be singed |
| 38 | 1121 | kāvi- \(\text{kāviv- kāviñj-}\) | lie face down |
| 39 | 994 | keni- \(\text{keniv- koniñj-}\) | get stuck |
| 40 | 2072 | cedi- \(\text{cediv- cediñj-}\) | break with a crack (intr) |
| 41 | 2473 | tani- \(\text{taniv- taniñj-}\) | (thing) becomes cold |
| 42 | 1950 | tari- \(\text{tariv- tariñj-}\) | bend to one side (intr) |
| 43 | 2815 | tiri- \(\text{tiriv- tiriñj-}\) | come to be known |
| 44 | DBIA | 212 | tudi- \(\text{tudiv- tudiñj-}\) | be praised |
| 45 | DED | 2825 | teli- \(\text{teliv- teliñj-}\) | (sleep) leaves one |
| 46 | 2353 | tori- \(\text{toriv- toriñj-}\) | pour (tr) |
| 47 | (2343) | tori- \(\text{toriv- toriñj-}\) | (body-part) itches |
| 48 | 2986 | nali- \(\text{naliv- naliñj-}\) | play |
| 49 | 2387 | neri- \(\text{neriv- neriniñj-}\) | get entangled, (cloth) is wrung |
| 50 | 3297 | pali- \(\text{paliv- paliñj-}\) | speak ill of |
| 51 | 3435 | piri- \(\text{piriv- piriñj-}\) | disperse (intr) |
| 52 | 3686 | podi- \(\text{podiv- podiñj-}\) | cover completely in a heap |
poli- (poliv- poliñj-)* break (intr)
poli- (poliv- poliñj-)
npoli- (poliv- poliñj-)* bark repeatedly
increase (intr), (crops, cattle)
biri- (biriv- biriñj-)* open (jackfruit), dismantle (house)
mari- (mariv- mariñj-)* roll (intr), overflow
ade- (adev- adand-)* (gap) is stopped
ode- (odev- odand-)* break (pot) (intr)

kade- (kadev- kadand-)* grind with mortar and pestle
kale (kalev- kaland-)

poli- (polive poliñj-)*

biri- (birive biriñj-)*
mari- (marive mariñj-)*

(1142/1157)

kale (kalev- kaland-)

pale- (palev- paland-)
bare- (barev- barand-)*
bale- (balev- baland-)* (eyes) become blurred

(0)vCVC

urid- (uriduv- urind-)* roll (intr)

bale- (balev- baland-)* become full-grown

male- (malev- maland-)** turn face upwards (intr)
<table>
<thead>
<tr>
<th>Class 3</th>
<th>CO</th>
<th></th>
<th></th>
<th>1</th>
<th>DED</th>
<th>1607</th>
<th>(co:p- co:nd-)</th>
<th>become red</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c)VC</td>
<td>CO</td>
<td></td>
<td></td>
<td>2</td>
<td>407</td>
<td>ir- (ipp- inj-)</td>
<td>be (in place)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>2526</td>
<td>tar- (tapp- tand-)</td>
<td>give to 1st, 2nd person</td>
<td></td>
</tr>
<tr>
<td>(c)VCC</td>
<td>CO</td>
<td></td>
<td></td>
<td>4</td>
<td>4311</td>
<td>bar- (bapp- band-)*</td>
<td>come</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>516</td>
<td>unn- (umb- und-)</td>
<td>eat (rice)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>2670</td>
<td>tinn- (timb- tind-)*</td>
<td>eat (not rice)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>3043</td>
<td>mill- (nipp- nind-)</td>
<td>stand</td>
<td></td>
</tr>
</tbody>
</table>

<p>| CVC | CO | | | 8 | 1209 | ka:n- (ka:mb- kand-)* | see, seem |
| (c)VCV | CO | | | 9 | 312 | ara- (arap- arand-) | make hoarse noise, moo |
| | | | | 10 | 200 | ala- (alap- aland-) | crave |
| | | | | 11 | 252 | ala- (alap- aland-) | measure |
| | | | | 12 | 400 | era- (erap- erand-) | beg |
| | | | | 13 | 929 | kada- (kadap- kaland-)* | cross |
| | | | | 14 | 1166 | kara- (karap- karand-) | milk |
| | | | | 15 | 1092 | kala- (kalap- kaland-) | knead |
| | | | | 16 | 1395 | koda- (kodap- kodand-) | shake (body) (tr) |
| | | | | 17 | 2667 | tora- (torap- torand-) | open |
| | | | | 18 | 2957 | nada- (nadap- nadand-)* | walk, perform ceremony |
| | | | | 19 | 3255 | para- (parap- parand-)* | crawl |
| | | | | 20 | 3725 | pola- (polap- poland-) | open the mouth |
| | | | | 21 | 3897 | mara- (marap- marand-) | forget |</p>
<table>
<thead>
<tr>
<th>Class 4</th>
<th>(c)VC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DSD</td>
<td>375</td>
</tr>
<tr>
<td>2</td>
<td>1614</td>
<td>ked- (&quot;keduv- kett-&quot;)*</td>
</tr>
<tr>
<td>3</td>
<td>2163</td>
<td>cun- (&quot;cuduv- cutt-&quot;)</td>
</tr>
<tr>
<td>4</td>
<td>2865</td>
<td>tod- (&quot;toduv- tott-&quot;)</td>
</tr>
<tr>
<td>5</td>
<td>3190</td>
<td>pad- (&quot;paduv- patt-&quot;)*</td>
</tr>
<tr>
<td>6</td>
<td>3191</td>
<td>pad- (&quot;paduv- patt-&quot;)*</td>
</tr>
<tr>
<td>7</td>
<td>4419</td>
<td>bud- (&quot;buduv- butt-&quot;)*</td>
</tr>
<tr>
<td>8</td>
<td>2833</td>
<td>ter- (&quot;teruv- tett-&quot;)</td>
</tr>
<tr>
<td>9</td>
<td>3622</td>
<td>per- (&quot;peruv- pett-&quot;)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CVCC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1628</td>
</tr>
<tr>
<td>11</td>
<td>1763</td>
</tr>
<tr>
<td>12</td>
<td>3610</td>
</tr>
<tr>
<td>13</td>
<td>3704</td>
</tr>
<tr>
<td>14</td>
<td>4566</td>
</tr>
<tr>
<td>15</td>
<td>1641</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(c)VC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>3103</td>
</tr>
<tr>
<td>17</td>
<td>723</td>
</tr>
<tr>
<td>18</td>
<td>4402</td>
</tr>
<tr>
<td>19</td>
<td>4457</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(c)VCVC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>557 }</td>
</tr>
<tr>
<td>21</td>
<td>3751</td>
</tr>
<tr>
<td></td>
<td>DED</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>22</td>
<td>DED</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 5</td>
<td></td>
</tr>
<tr>
<td>(c)V</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>781</td>
</tr>
<tr>
<td>2</td>
<td>2904</td>
</tr>
<tr>
<td>CV</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1192</td>
</tr>
<tr>
<td>4</td>
<td>4057</td>
</tr>
<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>
19  DED  3588  pu:l- (pu:p- pu:t-)  bury

   (c)VCV
20  191  ara- (arap- arat-)  grind with rolling stone
21  266  ara-  (arap- arat-)  cut
22  346  ara- (arap- arat-)  (water) dries up
23   1175  ala- (alap- alat-)  sit
24  1305  kara- (karap- karat-)  become black
25      1321  kala- (kalap- kalat-)  scrape (yard clear of grass, weeds)
26      1809  koya-  (koyap- koyat-)  dig
27      1496  kora- (korap- korat-)  string (flowers)
28      (1305)  kara-  (karap- karat-)  bark
29      1504  kola- (kolap- kolat-)  (plant) shoots against planter
30      3050  nena- (nenap- nenat-)  think
31      3493  poda-  (podap- podat-)  flutter, tremble
32      3686  poda- (podap- podat-)  thatch, cover
33      3686  pola- (polap- polat-)  cover
34       67  adi- (adip- adic-)  (lightning) strikes
35  DBIA  44  udi- (udip- udic-)  (sun) rises
36  DED  694  eri-  (erip- eric-)  (mouth) burns
37      853  oli- (olip- olic-)  hide (intr)
38      839  oli- (olip- olic-)  wash (clothes)
39      945  kadi- (kadip- kadic-)  bite
40      kani- (kanip- kanic-)  throw
41      1158  kali- (kalip- kalic-)  play
42      1378  kudi- (kudip- kudic-)  drink
43      1533  kuri- (kurip- kuric-)  paint
44      1522  kuli- (kulip- kulic-)  take bath
boil, kiss, feel love for
(snake) strikes
cheat
chop up small
sprinkle
totter about
laugh
peel, hatch
learn
pluck
make (rope) by twisting
catch, hold
fry (rice, etc.)
pull up (plant, peg)
hammer, pound
snatch, pull
(animal) lusts for female
make a cut
approach
put on (sari)
cold feeling is
give to 3rd person
(body-part) swells
increase (intr)
carry
become white
71  DED  285  modi- (modip- modit-)  be sweet
72  1927  caye- (cayemp- cayent-)  chew
    caye- (cayemp- cayent-)
73  2026  taye- (tayep- tayet-)  level a field

APPENDIX II

Inventory of selected verbal lexems. In each entry
the basic form (from Appendix I or III) is given, followed
by one or two related forms. The order of classes is
Appendix I to Appendix II. In addition, derived forms of
verbs are presented first, followed by those of Class
3. For further details, see Chapter 4, pp. 277-8.
APPENDIX II

Inventory of derived verbal lexemes. In each entry the basic form (from Appendix I or III) is given, followed by its volitively related form. The order of classes in Appendix I is preserved; in addition, derived forms of Class 1 are presented first, followed by those of Class 5. For further details, see Chapter 4, pp. 205-8. Transcription is Emeneau type B (see Chapter 2, p. 100).
<table>
<thead>
<tr>
<th>Class 1</th>
<th>Class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c)VC</td>
<td>(c)VCVC</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>DED</td>
<td></td>
</tr>
<tr>
<td>569</td>
<td>ur-</td>
</tr>
<tr>
<td></td>
<td>melt (intr)</td>
</tr>
<tr>
<td>3</td>
<td>kar-</td>
</tr>
<tr>
<td>1086</td>
<td>be digested</td>
</tr>
<tr>
<td>4</td>
<td>tir-</td>
</tr>
<tr>
<td>2655</td>
<td>turn (intr)</td>
</tr>
<tr>
<td>5</td>
<td>mur-</td>
</tr>
<tr>
<td>4112</td>
<td>tighten (intr)</td>
</tr>
<tr>
<td>6</td>
<td>el-</td>
</tr>
<tr>
<td>432</td>
<td>leave one's position</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CVCC</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
</tr>
<tr>
<td>4096</td>
<td>muhn-</td>
</tr>
<tr>
<td></td>
<td>dive</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>(c)VC</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>a:d-</td>
</tr>
<tr>
<td>290</td>
<td>dance</td>
</tr>
<tr>
<td>102</td>
<td>ku:d-</td>
</tr>
<tr>
<td>1562</td>
<td>join (intr)</td>
</tr>
<tr>
<td>110</td>
<td>ba:d-</td>
</tr>
<tr>
<td>4377</td>
<td>fade (intr), face is downcast</td>
</tr>
<tr>
<td>121</td>
<td>a:r-</td>
</tr>
<tr>
<td>346</td>
<td>dry (intr)</td>
</tr>
<tr>
<td>126</td>
<td>ki:r-</td>
</tr>
<tr>
<td>1353</td>
<td>tear (intr)</td>
</tr>
<tr>
<td>127</td>
<td>ke:r-</td>
</tr>
<tr>
<td>2512</td>
<td>go up to house</td>
</tr>
<tr>
<td>135</td>
<td>pa:r-</td>
</tr>
<tr>
<td>3311</td>
<td>fly, leap</td>
</tr>
<tr>
<td>137</td>
<td>ma:r-</td>
</tr>
<tr>
<td>3960</td>
<td>sell</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CVNC</td>
<td></td>
</tr>
<tr>
<td>143</td>
<td>ju:nig-</td>
</tr>
<tr>
<td>2777</td>
<td>sway (intr)</td>
</tr>
<tr>
<td>144</td>
<td>ta:nig-</td>
</tr>
<tr>
<td>2573</td>
<td>lean (intr)</td>
</tr>
<tr>
<td>145</td>
<td>tu:nig-</td>
</tr>
<tr>
<td>2777</td>
<td>hang (intr)</td>
</tr>
<tr>
<td>146</td>
<td>ni:nig-</td>
</tr>
<tr>
<td>3052</td>
<td>go aside</td>
</tr>
<tr>
<td>150</td>
<td>me:nig-</td>
</tr>
<tr>
<td>3852</td>
<td>mix (intr)</td>
</tr>
</tbody>
</table>
CVSNC
158 DED 4349 bavn-- be bent
(c)CVSNC
175 (56) adang-- submit to
176 70 adang-- be piled in order
177 439 'eraang-- (food) slips down throat
178 517 onang-- become dry
179 1096 kalaang-- be stirred up
180 1501 kuliang-- shake (intr)
181 2655 terang-- shift (intr)
183 (3796) mading-- fold (intr)
185 moling-- be pressed
186 (2213) curind-- shrink (intr)
187 839 olamb-- gargle

CVSC
bavt-- bend (tr)
(c)VCVC
adak-- hold in closed hands
adak-- heap in order
erak-- let slip down throat
onak-- dry (tr)
kalak-- stir up, churn
kulik-- id. (tr)
terak-- id. (tr)
madak-- id. (tr)
molik-- press
curit-- id. (tr)
olap-- wash plates, pots

Class 2
CVC
11 3059 ni:d-- stretch (intr)
13 1219 ka:y-- boil (intr)
18 2597 tar-- descend
22 2373 ne:r-- hang (intr)
23 2380 ne:r-- rise up, come to view
26 4513 bi:r-- (flowers) open
    ~ bu:r--

Class 1
CVC
ni:t-- id. (tr)
ka:c-- id. (tr)
ta:t-- lower, close (window, door)
ne:t-- id. (tr)
    ~ ne:t-- lift
    ~ bi:t-- open (bag, knife)
    ~ bu:t--
ari- find out
ili- descend
teli- (sleep) leaves one
piri- disperse (intr)
tale- become weak
nele- get wet
bole- become full-grown
male- turn face upwards (intr)
urid- roll (intr)
turid- be rolled up
borad- be confused by fear
tinn- eat (not rice)
ka:n- see, seem
kada- cross
nada- walk
para- crawl
Class 4

CVC
2  DED  1614  ked-  be ruined
5  3190  pad-  lie fallow
6  3191  pad-  suffer
7  4419  bud-  let go

VC
17  723  c:1-  get up (intr)

CVC
19  4457  bu:1-  fall

Class 2

CVCC
4  1142  kayy-  (time) passes
6  1469  kuyy-  (hole) is bored
8  3982  keyy-  (paddy) is pounded

CVC
15  2845  te:y-  wear off (intr)
17  4179  me:y-  graze (intr)
19  2683  ti:r-  be used up

(c)VCV
29  176  ari-  (liquid) is strained
31  213  ali-  dissolve (intr)
32  366  idi-  (wall) falls
36  843  oli-  fruit falls from tree

Class 1

CVVC
kedit-  ruin
padit-  let lie fallow
padit-  make suffer
budit-  make to let go

VCC
"egg-  raise up

CVC
buk-  fell (tree), pour

Class 5

CVC
key-  pass (time)
key-  bore (hole)
key-  pound (paddy)

(c)VCV
ari-  strain (liquid)
ali-  id. (tr)
idi-  knock (wall) over
oli-  beat (fruit) from tree
<table>
<thead>
<tr>
<th>Page</th>
<th>Code</th>
<th>Number</th>
<th>Word</th>
<th>Meaing</th>
<th>Code</th>
<th>Number</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>DED</td>
<td>1073</td>
<td>kari-</td>
<td>be sunged</td>
<td>kari-</td>
<td>singe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td></td>
<td>1121</td>
<td>kavi-</td>
<td>lie face down</td>
<td>kavi-</td>
<td>turn face down (tr)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td></td>
<td>994</td>
<td>keni-</td>
<td>get caught</td>
<td>keni-</td>
<td>entangle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td></td>
<td>1950</td>
<td>tari-</td>
<td>bend to side (intr)</td>
<td>tari-</td>
<td>id. (tr)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>DBIA</td>
<td>212</td>
<td>tudi-</td>
<td>be praised</td>
<td>tudi-</td>
<td>praise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>DED</td>
<td>2387</td>
<td>neri-</td>
<td>(cloth) is wrung</td>
<td>neri-</td>
<td>wring (cloth, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td></td>
<td>3435</td>
<td>piri-</td>
<td>disperse (intr)</td>
<td>piri-</td>
<td>spread (leaves)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td></td>
<td>3725</td>
<td>poli-</td>
<td>break (intr)</td>
<td>poli-</td>
<td>id. (tr)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td></td>
<td>3716</td>
<td>poli-</td>
<td>increase (intr)</td>
<td>poli-</td>
<td>(god) increases (crops, cattle)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td></td>
<td>4438</td>
<td>biri-</td>
<td>open (jackfruit)</td>
<td>biri-</td>
<td>spread (leaves, blanket)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dismantle (house)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td></td>
<td>3898</td>
<td>mari-</td>
<td>roll (intr)</td>
<td>mari-</td>
<td>id. (tr)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td></td>
<td>73</td>
<td>ade-</td>
<td>(gap) is stopped</td>
<td>ade-</td>
<td>stop (gap)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td></td>
<td>799</td>
<td>ode-</td>
<td>be broken (pot)</td>
<td>ode-</td>
<td>break (a pot)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td></td>
<td>2294</td>
<td>jale-</td>
<td>sway (intr)</td>
<td>jale-</td>
<td>make sway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td></td>
<td>2460</td>
<td>tade-</td>
<td>be obstructed</td>
<td>tade-</td>
<td>obstruct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td></td>
<td>2655</td>
<td>tere-</td>
<td>thresh about</td>
<td>tere-</td>
<td>make to thresh about</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td></td>
<td>2211</td>
<td>tore-</td>
<td>(string) is wound round</td>
<td>tore-</td>
<td>wind (string) around</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67</td>
<td></td>
<td>3049</td>
<td>nere-</td>
<td>attain puberty</td>
<td>nere-</td>
<td>fill, load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68</td>
<td></td>
<td>3006</td>
<td>nele-</td>
<td>get wet</td>
<td>nele-</td>
<td>wash (clothes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td></td>
<td>4360</td>
<td>bare-</td>
<td>be fried</td>
<td>bare-</td>
<td>fry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72</td>
<td></td>
<td></td>
<td>bale-</td>
<td>(eyes) blur</td>
<td>bale-</td>
<td>id.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74</td>
<td></td>
<td>3880</td>
<td>male-</td>
<td>turn face upwards (intr)</td>
<td>male-</td>
<td>id. (tr)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VCO

35    | 848  | oli-   | halt for night, dwell | VC     | oy     | exhaust, finish |
Class 4

VC

17  723  "el" - get up (intr)

Class 5

VCV

"el" - raise
APPENDIX III

Inventory of irregular and defective verbal lexemes. Certain of these (marked with an asterisk) have derived forms, which are given at the end. For further details, see Chapter 4, p. 208. Transcription is Emeneau type B (see Chapter 2, p. 100).
Irregular verbs.

<table>
<thead>
<tr>
<th>DED</th>
<th>Base</th>
<th>Stem</th>
<th>Infinitive</th>
<th>1st person singular</th>
<th>2nd person singular</th>
<th>3rd person singular</th>
<th>1st person plural</th>
<th>2nd person plural</th>
<th>3rd person plural</th>
<th>1st person singular past</th>
<th>2nd person singular past</th>
<th>3rd person singular past</th>
<th>1st person plural past</th>
<th>2nd person plural past</th>
<th>3rd person plural past</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DED</td>
<td>282</td>
<td>aːɡ-</td>
<td>(aːp-, aːy-, aːn-, aː-)</td>
<td>become</td>
<td>plough</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>592</td>
<td>uːl-</td>
<td></td>
<td>(uːp-, uːt-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1788</td>
<td>konda-</td>
<td></td>
<td>(kondap-, koːnd-)</td>
<td>bring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2002</td>
<td>caːl-</td>
<td></td>
<td>(caːv, catt-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2958</td>
<td>nadi-</td>
<td></td>
<td>(nadip-, natt-)</td>
<td>die</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3531</td>
<td>pola-</td>
<td>(polav-, poland-)*</td>
<td></td>
<td>plant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>3686</td>
<td>poda-</td>
<td>(podap-, pott-)</td>
<td></td>
<td>dawn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3716</td>
<td>pola-</td>
<td>(polav-, poland-)*</td>
<td></td>
<td>cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3734</td>
<td>poːɡ-</td>
<td>(poːp-, poːy-, poːn-, poː-)</td>
<td>live happily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>4540</td>
<td>beːy-</td>
<td>(beːyuv-, benj-)*</td>
<td>(rice) cooks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>4565</td>
<td>bey-</td>
<td>(bepp-, becc-)*</td>
<td>keep, appoint</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Defective verbs.

<table>
<thead>
<tr>
<th>DED</th>
<th>Base</th>
<th>Stem</th>
<th>Infinitive</th>
<th>1st person singular</th>
<th>2nd person singular</th>
<th>3rd person singular</th>
<th>1st person plural</th>
<th>2nd person plural</th>
<th>3rd person plural</th>
<th>1st person singular past</th>
<th>2nd person singular past</th>
<th>3rd person singular past</th>
<th>1st person plural past</th>
<th>2nd person plural past</th>
<th>3rd person plural past</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DED</td>
<td>599</td>
<td>uːl-</td>
<td>(und-)</td>
<td>be (in a place)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>737</td>
<td>*enn-</td>
<td>(emb-, end-)</td>
<td></td>
<td>say</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1788</td>
<td>koll-</td>
<td>(kovv-, kond-)*</td>
<td></td>
<td>take</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2007</td>
<td>*caːy-</td>
<td>(caːŋj-)*</td>
<td></td>
<td>be straight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3755</td>
<td>poːr-</td>
<td>(only in negative, poːra)</td>
<td>be sufficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>4548</td>
<td>boːnd-</td>
<td>(boːndu, boːnda)</td>
<td></td>
<td>be wanted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bases derived from irregular and defective verbs.

Class 1

<table>
<thead>
<tr>
<th>DED</th>
<th>Base</th>
<th>Stem</th>
<th>Infinitive</th>
<th>1st person singular</th>
<th>2nd person singular</th>
<th>3rd person singular</th>
<th>1st person plural</th>
<th>2nd person plural</th>
<th>3rd person plural</th>
<th>1st person singular past</th>
<th>2nd person singular past</th>
<th>3rd person singular past</th>
<th>1st person plural past</th>
<th>2nd person plural past</th>
<th>3rd person plural past</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DED</td>
<td>282</td>
<td>aːk-</td>
<td>make stay in a place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3531</td>
<td>polat-</td>
<td>spend night till dawn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3716</td>
<td>polat-</td>
<td>make live happily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1788</td>
<td>kolit</td>
<td>fasten</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DED 2007  ca:·c-  straighten (hand)

Irregular

DED 4540  bey- (bepp-, becc-)  cook (rice)
APPENDIX IV

Inventory of nominal lexemes. This contains the data discussed in Chapter 5, and consists for the most part of simple lexeme types (in terms of the model described in Chapters 4 and 5). The arrangement of items largely follows the pattern of Appendix I, except that here the ordering with reference to final elements is as follows: \[-[i], -[e], -[i], -[u], -[a], -[e(n)], -[a(1)].\] (c)VS and (c)VS types, where S = -[y], are a special case of lexemes with final /i/, and are ordered immediately before the entries showing -[i]. Transcription is Emeneau type B, with the modification proposed in Chapter 2 (pp. 92-3).
(c) vs
1  479  oy  nail
2  1683  kay  hand, arm
3  1469  kuy  sting, hole
4  2894  tuy  the hiss of a snake
5  3104  ney  ghee
6  4162  may  body

(c) vuv
7  63  adi  place below, foot measure
8  373  idi  the whole
9  548  umi  rope-hung dish for keeping vessels in
          ummi  paddy husks
10  565  uri  burning sensation
11  695  eri  Eleusine coracana
12  710  eli  rat
13  837  oli  noise of a metal bell
14  945  kadi  bite
15  1073  kari  black
16  1171  kali  curry
17  1158  kiri  play
18  1324  kiri  lip
19  1379  kudi  family of servants living in one hut
20  1533  kuri  drawing, spot on forehead
21  kusi  happiness
      ~ kusi
22  1645  kemi  ear
      ~ kevi
<table>
<thead>
<tr>
<th>No.</th>
<th>Code</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>994</td>
<td>keni</td>
<td>bird-trap; cunning</td>
</tr>
<tr>
<td>25</td>
<td>1704</td>
<td>kodi</td>
<td>top, flag</td>
</tr>
<tr>
<td>26</td>
<td>1735</td>
<td>kodi</td>
<td>love, desire</td>
</tr>
<tr>
<td>27</td>
<td>1799</td>
<td>kori</td>
<td>sheep</td>
</tr>
<tr>
<td>28</td>
<td>1318</td>
<td>gili</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>1533</td>
<td>guri</td>
<td>aim</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>gedi</td>
<td>boundary</td>
</tr>
<tr>
<td>31</td>
<td>2223a</td>
<td>culi</td>
<td>leaf, shoot</td>
</tr>
<tr>
<td>32</td>
<td>1281</td>
<td>cedi</td>
<td>spark</td>
</tr>
<tr>
<td>33</td>
<td>2269</td>
<td>cedi</td>
<td>anger</td>
</tr>
<tr>
<td>34</td>
<td>2484</td>
<td>tadi</td>
<td>trunk (of tree, body)</td>
</tr>
<tr>
<td>35</td>
<td></td>
<td>tari</td>
<td>small bits (of rice after grinding)</td>
</tr>
<tr>
<td>36</td>
<td>2655</td>
<td>tiri</td>
<td>wick</td>
</tr>
<tr>
<td>37</td>
<td>2709</td>
<td>tuni</td>
<td>cloth</td>
</tr>
<tr>
<td>38</td>
<td></td>
<td>tudi</td>
<td>end, top</td>
</tr>
<tr>
<td>39</td>
<td>2764</td>
<td>tuli</td>
<td>drop of liquid</td>
</tr>
<tr>
<td>40</td>
<td>2828</td>
<td>teli</td>
<td>laughter</td>
</tr>
<tr>
<td>41</td>
<td>2699</td>
<td>dudi</td>
<td>drum</td>
</tr>
<tr>
<td>42</td>
<td>2981</td>
<td>nari</td>
<td>tiger</td>
</tr>
<tr>
<td>43</td>
<td>3089</td>
<td>nuri</td>
<td>very small bits of broken rice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>nucci</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>44</td>
<td>3072</td>
<td>nuli</td>
<td>cluster of paddy plants growing in one hole</td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>neri</td>
<td>pleat, tuck, fold (in sari)</td>
</tr>
<tr>
<td>46</td>
<td>3183</td>
<td>padi</td>
<td>door</td>
</tr>
<tr>
<td>47</td>
<td></td>
<td>padi</td>
<td>measure (2 seers?)</td>
</tr>
<tr>
<td>48</td>
<td>3209</td>
<td>pani</td>
<td>work</td>
</tr>
<tr>
<td>49</td>
<td></td>
<td>padi</td>
<td>slowness</td>
</tr>
<tr>
<td>50</td>
<td>3322</td>
<td>pani</td>
<td>fever</td>
</tr>
<tr>
<td>51</td>
<td>3412</td>
<td>pudi</td>
<td>handful, morsel</td>
</tr>
<tr>
<td>52</td>
<td>3546</td>
<td>puli</td>
<td>sour, orange, vinegar</td>
</tr>
<tr>
<td>53</td>
<td>3667</td>
<td>podi</td>
<td>powder</td>
</tr>
<tr>
<td>54</td>
<td></td>
<td>pori</td>
<td>puffed paddy</td>
</tr>
<tr>
<td>55</td>
<td></td>
<td>badi</td>
<td>side</td>
</tr>
<tr>
<td>56</td>
<td>4308</td>
<td>bari</td>
<td>side (of body, river, etc.)</td>
</tr>
<tr>
<td>57</td>
<td></td>
<td>bali</td>
<td>fart</td>
</tr>
<tr>
<td>58</td>
<td></td>
<td>bisi</td>
<td>heat</td>
</tr>
<tr>
<td>59</td>
<td>4502</td>
<td>bodi</td>
<td>act of shooting</td>
</tr>
<tr>
<td>60</td>
<td>4524</td>
<td>boli</td>
<td>light</td>
</tr>
<tr>
<td>61</td>
<td>3804</td>
<td>madi</td>
<td>ritual purity</td>
</tr>
<tr>
<td>62</td>
<td>4187</td>
<td>masi</td>
<td>charcoal</td>
</tr>
<tr>
<td>63</td>
<td></td>
<td>miti</td>
<td>limit</td>
</tr>
<tr>
<td>64</td>
<td>3800</td>
<td>mudi</td>
<td>heel of foot</td>
</tr>
<tr>
<td>65</td>
<td>3975</td>
<td>mudi</td>
<td>small unripe fruit</td>
</tr>
<tr>
<td>66</td>
<td>4057</td>
<td>mudi</td>
<td>old(ness)</td>
</tr>
<tr>
<td>67</td>
<td>4092</td>
<td>moli</td>
<td>subject of talk or song</td>
</tr>
</tbody>
</table>
age  paddy seedling
are  half
are  waist
ede  chest
er  worm
ele  betel leaf
"ede"  the company or proximity of a person
"ene"  double
ode  piece of something hollow
ore  state of coagulation of milk
vare  

er  sheath of knife
ole  hearth
vale  
kade  side
kade  end
kate  story
kare  stain
kare  bank
kale  scar, white spot on nail
kale  skill
kale  weeds
kede  white ant
kene  act of bellowing
kere  tank
kode  umbrella
kole  bunch of plantains
gale  long stick
line, margin
woman's hair-plait; hood of cobra
long thin pliable stick
obstacle
end
loop of rope, noose
thigh
a person's support
gourd
circle, going round
king, master, European
limb, part of body
grey(ness)
froth
that which fills up something
halting place
battle
drum
measure (10 seers)
old(ness)
cream
smoke
thatched roof
load
pollution
river
bare stripe, brand mark

bare steep slope

bare mud wall

bale net

bale bangle

bede intercourse of animals

bele cost

bole crop

mane house

mare place out of sight

male thick jungle land; cardamom plantation

male rain

mone calf of leg

mone sharp point

more lamentation

mole breast

iri night

"oli the inside

kadi ear (paddy, wheat)

kari intestines

tani coolness

tedi thunder

padi swamp

"bedi heat of sun

"bodi

"tani

"kari

"kadi

"oli

"iri

mari counter

alu cowrie
kadu mustard seed
kuru seed
koru defect
koru management
guru teacher
tadu lateness
nadu middle
pulu worm
malu chillies
suru beginning

ija trouble
ora mortar of stone or wood
kada debt
kada ocean
kala big pot
kala threshing floor
kela belly
keva wall
kora gullet, windpipe
koda pot, pitcher
kola pond or tank
kola flute
gida plant
cala determination, stubbornness
cela pus
jana people
467

tada, delay, tardiness

tara sort

dada noise of a thud

dada bank (sea)shore

daya kindness

dina day

naga jewelry

nela shade, shadow

nella ground

noga yoke

pata picture

pata kite

pana money

pata softness

para side

para pebble

peda name

bala force

buda origin; bottom of anything (e.g. tree)

bera finger, toe

mana sand

mana maund, quarter (= 18 lbs.)

mara tree

mida state of being on top

moda an article belonging to one

mona hare

~ mola
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>198</td>
<td>4106</td>
<td>mora</td>
<td>winnowing basket</td>
<td></td>
</tr>
<tr>
<td>199</td>
<td>4093</td>
<td>mola</td>
<td>cubit</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td>raja</td>
<td>holiday</td>
<td></td>
</tr>
<tr>
<td>201</td>
<td></td>
<td>rasa</td>
<td>sweetness</td>
<td></td>
</tr>
<tr>
<td>202</td>
<td></td>
<td>vara</td>
<td>small copper vessel for extruding rice paste</td>
<td></td>
</tr>
<tr>
<td>203</td>
<td></td>
<td>visa</td>
<td>poison</td>
<td></td>
</tr>
<tr>
<td>204</td>
<td></td>
<td>sima</td>
<td>lion</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(O)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>205</td>
<td>178</td>
<td>akki</td>
<td>husked rice</td>
<td></td>
</tr>
<tr>
<td>206</td>
<td>44</td>
<td>acci</td>
<td>jaggery cake</td>
<td></td>
</tr>
<tr>
<td>207</td>
<td>46</td>
<td>ajji</td>
<td>great grandmother</td>
<td></td>
</tr>
<tr>
<td>208</td>
<td></td>
<td>addi</td>
<td>obstacle</td>
<td></td>
</tr>
<tr>
<td>209</td>
<td>123</td>
<td>atti</td>
<td>sp. fig</td>
<td></td>
</tr>
<tr>
<td>210</td>
<td>390</td>
<td>itti</td>
<td>Ficus gibbosa</td>
<td></td>
</tr>
<tr>
<td>211</td>
<td>666</td>
<td>ecci</td>
<td>scraps of food</td>
<td></td>
</tr>
<tr>
<td>212</td>
<td>805</td>
<td>otti</td>
<td>rice bread</td>
<td></td>
</tr>
<tr>
<td>213</td>
<td>925</td>
<td>kajji</td>
<td>itch</td>
<td></td>
</tr>
<tr>
<td>214</td>
<td>DIA 68</td>
<td>kaddi</td>
<td>small stick, slate pencil</td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>1012</td>
<td>katti</td>
<td>knife</td>
<td></td>
</tr>
<tr>
<td>216</td>
<td>DIA 85</td>
<td>kamma</td>
<td>virgin</td>
<td></td>
</tr>
<tr>
<td>217</td>
<td>1156</td>
<td>kalli</td>
<td>thief (fem.)</td>
<td></td>
</tr>
<tr>
<td>218</td>
<td>1371</td>
<td>kummi</td>
<td>child</td>
<td></td>
</tr>
<tr>
<td>219</td>
<td>1390</td>
<td>kutti</td>
<td>non-Coorg child</td>
<td></td>
</tr>
<tr>
<td>220</td>
<td>1427</td>
<td>kutti</td>
<td>tall narrow container</td>
<td></td>
</tr>
<tr>
<td>221</td>
<td>DIA 108</td>
<td>kuppi</td>
<td>bottle</td>
<td></td>
</tr>
<tr>
<td>222</td>
<td>1450</td>
<td>kummi</td>
<td>Gmelina arborea</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Code</td>
<td>Word</td>
<td>Translation</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>223</td>
<td>1526</td>
<td>kulli</td>
<td>dwarf (fem.)</td>
<td></td>
</tr>
<tr>
<td>224</td>
<td>1777</td>
<td>kolli</td>
<td>small rocky stream</td>
<td></td>
</tr>
<tr>
<td>225</td>
<td></td>
<td>caddi</td>
<td>shorts</td>
<td></td>
</tr>
<tr>
<td>226</td>
<td>2135</td>
<td>cinni</td>
<td>small</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>} cenna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>227</td>
<td>2834</td>
<td>tetti</td>
<td>narrow walk to house</td>
<td></td>
</tr>
<tr>
<td>228</td>
<td>2643</td>
<td>dimmi</td>
<td>stopper</td>
<td></td>
</tr>
<tr>
<td>229</td>
<td>3069</td>
<td>nucci</td>
<td>broken grains of rice</td>
<td></td>
</tr>
<tr>
<td>230</td>
<td>3097</td>
<td>neññi</td>
<td>chest of body</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>} neññi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>231</td>
<td>3118</td>
<td>netti</td>
<td>forehead</td>
<td></td>
</tr>
<tr>
<td>232</td>
<td>DIA</td>
<td>pakki</td>
<td>penis</td>
<td></td>
</tr>
<tr>
<td>233</td>
<td>3207</td>
<td>patti</td>
<td>space before house, for spreading</td>
<td></td>
</tr>
<tr>
<td>234</td>
<td></td>
<td>patti</td>
<td>list</td>
<td></td>
</tr>
<tr>
<td>235</td>
<td>3294</td>
<td>palli</td>
<td>lizard</td>
<td></td>
</tr>
<tr>
<td>236</td>
<td>3309</td>
<td>palli</td>
<td>Poleye or Meide hut; village (in place names)</td>
<td></td>
</tr>
<tr>
<td>237</td>
<td></td>
<td>pucci</td>
<td>madwoman</td>
<td></td>
</tr>
<tr>
<td>238</td>
<td>3551</td>
<td>pulli</td>
<td>fuel, firewood</td>
<td></td>
</tr>
<tr>
<td>239</td>
<td>3600</td>
<td>potti</td>
<td>box</td>
<td></td>
</tr>
<tr>
<td>240</td>
<td>4277</td>
<td>batti</td>
<td>basket, measure</td>
<td></td>
</tr>
<tr>
<td>241</td>
<td>4278</td>
<td>batti</td>
<td>stomach</td>
<td></td>
</tr>
<tr>
<td>242</td>
<td>4351</td>
<td>balli</td>
<td>creeper</td>
<td></td>
</tr>
<tr>
<td>243</td>
<td>4524</td>
<td>bolli</td>
<td>silver</td>
<td></td>
</tr>
<tr>
<td>244</td>
<td>3782</td>
<td>macci</td>
<td>ceiling</td>
<td></td>
</tr>
<tr>
<td>245</td>
<td>4025</td>
<td>mucci</td>
<td>lid, cover</td>
<td></td>
</tr>
<tr>
<td>246</td>
<td>89</td>
<td>atte</td>
<td>water leech</td>
<td></td>
</tr>
<tr>
<td>247</td>
<td>88</td>
<td>atte</td>
<td>bark of tree</td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Num</td>
<td>Word</td>
<td>Translation</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>248</td>
<td>576</td>
<td>ucce</td>
<td>urine</td>
<td></td>
</tr>
<tr>
<td>249</td>
<td></td>
<td>ubbe</td>
<td>washerman's boiling-pot</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>699</td>
<td>emme</td>
<td>female buffalo</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td>726</td>
<td>enme</td>
<td>gingily oil</td>
<td></td>
</tr>
<tr>
<td>252</td>
<td>849</td>
<td>obbe</td>
<td>open drain</td>
<td></td>
</tr>
<tr>
<td>253</td>
<td>922</td>
<td>kacce</td>
<td>perineal cloth</td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>961</td>
<td>katte</td>
<td>bund, platform under tree</td>
<td></td>
</tr>
<tr>
<td>255</td>
<td>1149</td>
<td>katte</td>
<td>ass</td>
<td></td>
</tr>
<tr>
<td>256</td>
<td>1027</td>
<td>kappe</td>
<td>toad</td>
<td></td>
</tr>
<tr>
<td>257</td>
<td></td>
<td>kukke</td>
<td>small basket</td>
<td></td>
</tr>
<tr>
<td>258</td>
<td></td>
<td>kumme</td>
<td>unmarried girl</td>
<td></td>
</tr>
<tr>
<td>259</td>
<td>1396</td>
<td>kutte</td>
<td>log</td>
<td></td>
</tr>
<tr>
<td>260</td>
<td>1415</td>
<td>kumme</td>
<td>penis (vulgar)</td>
<td></td>
</tr>
<tr>
<td>261</td>
<td></td>
<td>kumme</td>
<td>barrel-shaped basket; stomach</td>
<td></td>
</tr>
<tr>
<td>262</td>
<td>1629</td>
<td>kette</td>
<td>wet mud, mire</td>
<td></td>
</tr>
<tr>
<td>263</td>
<td>1669</td>
<td>kokke</td>
<td>crook, hook</td>
<td></td>
</tr>
<tr>
<td>264</td>
<td>1761</td>
<td>komme</td>
<td>corn-bin</td>
<td></td>
</tr>
<tr>
<td>265</td>
<td>1402</td>
<td>gudde</td>
<td>heap</td>
<td></td>
</tr>
<tr>
<td>266</td>
<td>1610</td>
<td>gejje</td>
<td>small bell</td>
<td></td>
</tr>
<tr>
<td>267</td>
<td>1795</td>
<td>golle</td>
<td>anus</td>
<td></td>
</tr>
<tr>
<td>268</td>
<td>1876</td>
<td>cakke</td>
<td>jackfruit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>~ cekke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>269</td>
<td>1914</td>
<td>canne</td>
<td>buttocks</td>
<td></td>
</tr>
<tr>
<td>270</td>
<td></td>
<td>catte</td>
<td>market</td>
<td></td>
</tr>
<tr>
<td>271</td>
<td>1929</td>
<td>cappe</td>
<td>tastelessness, insipidity</td>
<td></td>
</tr>
<tr>
<td>272</td>
<td>2341</td>
<td>colle</td>
<td>nostril</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>~ solle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Code</td>
<td>Word</td>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>--------</td>
<td>-----------------------------------</td>
<td></td>
</tr>
<tr>
<td>273</td>
<td>1968</td>
<td>jalle</td>
<td>cane of sugar</td>
<td></td>
</tr>
<tr>
<td>274</td>
<td>2463</td>
<td>tatte</td>
<td>flat plate</td>
<td></td>
</tr>
<tr>
<td>275</td>
<td>2469</td>
<td>tatte</td>
<td>wooden cattle bell</td>
<td></td>
</tr>
<tr>
<td>276</td>
<td>1910</td>
<td>dadde</td>
<td>dull person (fem)</td>
<td></td>
</tr>
<tr>
<td>277</td>
<td>2883</td>
<td>donne</td>
<td>club</td>
<td></td>
</tr>
<tr>
<td>278</td>
<td>?3147</td>
<td>namme</td>
<td>festival</td>
<td></td>
</tr>
<tr>
<td>279</td>
<td></td>
<td>pacce</td>
<td>rottan basket</td>
<td></td>
</tr>
<tr>
<td>280</td>
<td>3161</td>
<td>pacce</td>
<td>green, blue, cold; emerald</td>
<td></td>
</tr>
<tr>
<td>281</td>
<td></td>
<td>patte</td>
<td>right of tenure of land</td>
<td></td>
</tr>
<tr>
<td>282</td>
<td>3206</td>
<td>patte</td>
<td>striped or spotted</td>
<td></td>
</tr>
<tr>
<td>283</td>
<td></td>
<td>patte</td>
<td>bark of tree, esp. cinnamon</td>
<td></td>
</tr>
<tr>
<td>284</td>
<td>?3449</td>
<td>palle</td>
<td>female of various animals</td>
<td></td>
</tr>
<tr>
<td>285</td>
<td></td>
<td>potte</td>
<td>belly</td>
<td></td>
</tr>
<tr>
<td>286</td>
<td></td>
<td>batte</td>
<td>path</td>
<td></td>
</tr>
<tr>
<td>287</td>
<td></td>
<td>batte</td>
<td>clothing</td>
<td></td>
</tr>
<tr>
<td>288</td>
<td></td>
<td>bille</td>
<td>badge, disc</td>
<td></td>
</tr>
<tr>
<td>289</td>
<td>4540</td>
<td>bekke</td>
<td>heat</td>
<td></td>
</tr>
<tr>
<td>290</td>
<td>4511</td>
<td>bonne</td>
<td>butter</td>
<td></td>
</tr>
<tr>
<td>291</td>
<td></td>
<td>macce</td>
<td>mole (on body)</td>
<td></td>
</tr>
<tr>
<td>292</td>
<td>4048</td>
<td>mutte</td>
<td>egg, testis</td>
<td></td>
</tr>
<tr>
<td>293</td>
<td>4157</td>
<td>mette</td>
<td>mattress</td>
<td></td>
</tr>
<tr>
<td>294</td>
<td>4167</td>
<td>melle</td>
<td>lightly, slowly</td>
<td></td>
</tr>
<tr>
<td>295</td>
<td></td>
<td>motte</td>
<td>egg, hill</td>
<td></td>
</tr>
<tr>
<td>296</td>
<td>2133</td>
<td>ratte</td>
<td>upper arm</td>
<td></td>
</tr>
<tr>
<td>297</td>
<td>2133</td>
<td>rekke</td>
<td>wing</td>
<td></td>
</tr>
<tr>
<td>298</td>
<td></td>
<td>sanne</td>
<td>gesture</td>
<td></td>
</tr>
<tr>
<td>299</td>
<td></td>
<td>sonne</td>
<td>zero</td>
<td></td>
</tr>
</tbody>
</table>
ukki — steel
uddi — common pulse
uppi — salt
ulli — inner thought
etti — bull, bullock
elli — gingily seed
okki — paddy to be threshed
katti — cot
katti — knot, bundle
kanni — eye, small hole
kalli — stone
kalli — liquor
kicci — fire
kutti — small piece of wood
kuppi — dropping of dung
kummi — mushroom
ketti — cut, blow
kokki — beak
kotti — shed
kotti — tip, nipple
ginni — joint in wrist, fingers
ginni — milk pudding; cheese
gotti — secret
gotti — something known
cilki — numbness of mouth from areca nut
cippi — shell
culli — spot, mark
small round metal box with lid
flea
intoxication fatness
name (songs)
tuft of hair
dirt (of body)
young tender areca nut
talk words language
flat land
a mistake
fire
south
cradle
stalk
small leaves
direction
4 pice; money
portion (land, house)
shoulder
rice, paddy
fruit
eagle
share
tooth
grass
wheat, rice preparation
pummi
putti
pokki
potti
ponni
ponni
polli
bitti
billi
bakki
benni
botti
manni
matti
macci
maddi
muggi
mutti
mutti
mulli
motti
motti
saddi
sotti
payyu
atta
udda

sore
white anthill
navel
a lie
wife, female
gold
empty, light
seed for sowing
bow (archery)
jungle cats
the back
kum-kum
mud, land property
axe
medicine
mould, mildew; smell from this
pearl
kiss
thorn
footprint, measure, steps
noise
property
cow
loft
length, height
poles in slots forming a gate
patrilineal joint family
beard
a little
sufficiency, suitability
nearness
inauguration as king; throne, kingship, crown
coral
giddiness; bile
stoutness
paddy (in [samna batta])
behind, place behind
ceiling joist
big hill, mountain
jaggery
base of fronds of coconut tree
flatness, destruction (in [matta maːd])
in front, further
kiss
anything substantial enough to be called into one's reckoning; account, sum
elder sister, elder female parallel cousin
grandfather
400 112 anne(n) elder brother, elder male parallel cousin
401 133 appe(n) father
402 154 amme(n) Amma Coorg
403 (232) amme(n) mother
404 163 ayye(n) father's brother, male parallel cousin, mother's sister's husband
405 232 avve(n) mother, mother's sister, female parallel cousin
406 834 obbe(n) one man
407 DIA 59 odde(n) man of snake charmer caste, man of stone cutter caste
408 1156 kalle(n) thief
409 1335 kinne(n) boy
410 (1526) kulle(n) dwarf
411 1773 kolle(n) blacksmith
412 DIA 120 golle(n) man of cultivator caste, milkman (low caste)
413 calle(n) wastrel, idler
414 1910 jadde(n) slow-witted and slow-moving fellow
415 2435 takke(n) chief man, village headman, man who superintends property and ceremonies of a god, leader
416 2466 tatte(n) goldsmith
417 DIA 248 patte(n) Brahmin (masc)
418 pukke(n) in [pace pukke(n)], sp. grasshopper
419 pucce(n) madman
420 pedde(n) idiot
421 3971 malle(n) cock
422 4020 mucce(n) langur
atta(1) cattle (pl)
ibba(1) two persons
obba(1) one person (fem)
takka(1) chief family (pl)
pajja(1) Holeya girl
makka(1) children (pl)

anci tile
andi evening
inji ginger
kañji rice-gruel
kandi passing place
kandi mark of blow, bruise
kindi small metal vessel with spout
kundi lame person (fem)
kondi buttock
nañji poison
nambi Malabar Brahman
pandi pig
mañji dew
<table>
<thead>
<tr>
<th>Page</th>
<th>Line</th>
<th>Word</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>445</td>
<td>84</td>
<td>onte</td>
<td>camel</td>
</tr>
<tr>
<td>446</td>
<td>884</td>
<td>kande</td>
<td>root-stock</td>
</tr>
<tr>
<td>447</td>
<td>1733</td>
<td>konde</td>
<td>tassels of sash; knob</td>
</tr>
<tr>
<td>448</td>
<td>8</td>
<td>gante</td>
<td>bell, time, hour</td>
</tr>
<tr>
<td>449</td>
<td>962</td>
<td>gende</td>
<td>spleen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>2194</td>
<td>cunde</td>
<td></td>
</tr>
<tr>
<td>451</td>
<td>2322</td>
<td>jonge</td>
<td>bunch, cluster (growing flowers, fruits)</td>
</tr>
<tr>
<td>452</td>
<td>2806</td>
<td>jompe</td>
<td>bunch (flowers, keys, etc.)</td>
</tr>
<tr>
<td>453</td>
<td>2445</td>
<td>tange</td>
<td>younger sister</td>
</tr>
<tr>
<td>454</td>
<td>DIA 187</td>
<td>tante</td>
<td>trouble, teasing</td>
</tr>
<tr>
<td>455</td>
<td>2879</td>
<td>tonde</td>
<td>coconut</td>
</tr>
<tr>
<td>456</td>
<td>238</td>
<td>punde</td>
<td></td>
</tr>
<tr>
<td>457</td>
<td>DIA 238</td>
<td>pane</td>
<td>dhoti</td>
</tr>
<tr>
<td>458</td>
<td>3440</td>
<td>munde</td>
<td>wetness</td>
</tr>
<tr>
<td>459</td>
<td>3831</td>
<td>mande</td>
<td>head</td>
</tr>
<tr>
<td>460</td>
<td>DIA 299</td>
<td>munde</td>
<td>widow</td>
</tr>
<tr>
<td>461</td>
<td>4098</td>
<td>munde</td>
<td>screw-pine</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>462</td>
<td>150</td>
<td>amb</td>
<td>arrow</td>
</tr>
<tr>
<td>463</td>
<td>iñgi</td>
<td>asafostida</td>
<td></td>
</tr>
<tr>
<td>464</td>
<td>DIA 77</td>
<td>kambi</td>
<td>pillar, pole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kamba</td>
<td></td>
</tr>
<tr>
<td>465</td>
<td>1408</td>
<td>kunti</td>
<td>lameness</td>
</tr>
<tr>
<td>466</td>
<td>1389</td>
<td>kundi</td>
<td>pit</td>
</tr>
<tr>
<td>467</td>
<td>1548</td>
<td>kundi</td>
<td>mountain</td>
</tr>
<tr>
<td>468</td>
<td>1461</td>
<td>kumbi</td>
<td>dry rot, rust</td>
</tr>
<tr>
<td>469</td>
<td>1759</td>
<td>kombi</td>
<td>branch, horn of animal</td>
</tr>
<tr>
<td>470</td>
<td>gumpi</td>
<td>crowd</td>
<td></td>
</tr>
</tbody>
</table>
tandi
scorpion
big stick
offer of marriage (to girl)
piece
stem of plantain
snout, face
antiquity
quarrel
village green
lightning
waistcloth
state of being in front
predominance
bank or edge of river
side
piece or lump of meat
odd bit of paddy (grain with husk) in cooked rice
pride
temporary structure built for wedding or festival, pandal
bamboo
turmeric
hubbub
sonta

kande(n)

kunte(n)

cinde(n)

punde(n)

bande(n)

mumde(n)

tingga(l)

po/nga(l)

ka:y

ca:y

ta:y

na:y

ba:y

a:ni

a:ni

a:di

a:li

i:ti

i:ti

e:ri

waist

male (of dogs and other animals, mostly wild; not of cats)
lame man
small man (comical)
quarrelsome fellow
shameless man
paramour
month
women (pl)

unripe fruit, kidneys
beauty
grandmother
dog
mouth

hard callous
nail (metal, wood)
beginning, origin
hall
spear

parapet of well, wall in paddy field
ladder
lane to house
share
bison
mongoose
wages
devil
hamlet
esteeem
fowl
wind
bull
slander
coir rope
coconut fibre, coir
caste
pair
beard
amulet
locket
act of transplanting
common cold
hut of a Kurumba
measure (2 seers)
peacock's tail feather
fear
niche over a door
male buffalo
remainder
ashes
fence
beauty, goodness
stake for threshing floor
soiled clothes
upstairs, upper storey
father's sister, etc.
long hole (of rat, jackal)
offering to a god
girl
gnat
fodder
table
woman of [meːdn] caste
ragi
queen
week, day of week
promise
elephant
tortoise
sugar-mill
wish, desire
reed
mango stone (= /korandi/)
slanting
screw-pine leaf, writing on same, ear ornament
crow
Randia dumetorum & uliginosa
bull (leader of herd)
basket
point in game
palace
tusk
wall
relationship, kinship
baldness
broom
bag
dancing girl
belt, sash
blood
care
dosa
tomorrow
directness, straightness
rope for drying clothes
cockroach
stone slab in bath pit
sp. gourd
594  pu:je  worship
595  pu:ne  cat
596 DIA  pe:te  market
597  po:ke  frog
598  po:le  like
599  ba:ke  in [ba:ke ku:d-], (woman) marries
600  ba:ce  act of living
601 DIA  ba:de  inner hall
602  ba:ne  open grazing land
603  ba:le  plantain
604  be:le  seed (coffee, groundnut, etc.)
605  bo:te  hunt
606  bo:re  different
607  bo:le  neck
608  ma:le  necklace
609  mi:se  moustache
610  mu:le  corner
611  mu:le  bone
612  ra:te  plank for pounding rice
613  Sa:le  school
614  a:di  dance
615  a:di  goat
616  a:ni  man, male
617  a:ti  state of being full-grown but not yet ripe
618  a:li  banyan
619  a:li  servant, person
620  i:di  singing ceremony before harvest festival
<table>
<thead>
<tr>
<th>Number</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>621</td>
<td>u:ni&quot;</td>
<td>gum (mouth)</td>
</tr>
<tr>
<td>622</td>
<td>w:ri&quot;</td>
<td>village</td>
</tr>
<tr>
<td>623</td>
<td>o:di&quot;</td>
<td>shell, skull</td>
</tr>
<tr>
<td>624</td>
<td>kardi'</td>
<td>jungle</td>
</tr>
<tr>
<td>625</td>
<td>kati&quot;</td>
<td>wind</td>
</tr>
<tr>
<td>626</td>
<td>kali&quot;</td>
<td>leg</td>
</tr>
<tr>
<td>627</td>
<td>kasi&quot;</td>
<td>pie</td>
</tr>
<tr>
<td>628</td>
<td>kali&quot;</td>
<td>grain</td>
</tr>
<tr>
<td>629</td>
<td>kiti&quot;</td>
<td>torn piece</td>
</tr>
<tr>
<td>630</td>
<td>kali&quot;</td>
<td>fastening</td>
</tr>
<tr>
<td>631</td>
<td>kali&quot;</td>
<td>state of being lower, below</td>
</tr>
<tr>
<td>632</td>
<td>kuti&quot;</td>
<td>gathering</td>
</tr>
<tr>
<td>633</td>
<td>kuti&quot;</td>
<td>shout, noise</td>
</tr>
<tr>
<td>634</td>
<td>kali&quot;</td>
<td>cooked rice</td>
</tr>
<tr>
<td>635</td>
<td>ke:ri&quot;</td>
<td>rope</td>
</tr>
<tr>
<td>636</td>
<td>ke:ki&quot;</td>
<td>the east</td>
</tr>
<tr>
<td>637</td>
<td>ko:di&quot;</td>
<td>rottenness</td>
</tr>
<tr>
<td>638</td>
<td>ko:pi&quot;</td>
<td>festivity</td>
</tr>
<tr>
<td>639</td>
<td>ko:li&quot;</td>
<td>stick</td>
</tr>
<tr>
<td>640</td>
<td>gu:di&quot;</td>
<td>pig-pen, fowl-house, nest</td>
</tr>
<tr>
<td>641</td>
<td>gu:mi&quot;</td>
<td>owl</td>
</tr>
<tr>
<td>642</td>
<td>go:li&quot;</td>
<td>struggling, agony</td>
</tr>
<tr>
<td>643</td>
<td>ca:ki&quot;</td>
<td>knife</td>
</tr>
<tr>
<td>644</td>
<td>ca:ni&quot;</td>
<td>span (measurement)</td>
</tr>
<tr>
<td>645</td>
<td>ca:li&quot;</td>
<td>(inherited) characteristic</td>
</tr>
<tr>
<td>646</td>
<td>ci:pi&quot;</td>
<td>comb</td>
</tr>
<tr>
<td>647</td>
<td>ci:ri&quot;</td>
<td>nit</td>
</tr>
<tr>
<td>648</td>
<td>cu:ti&quot;</td>
<td>thumb-forefinger span</td>
</tr>
<tr>
<td>649</td>
<td>cu:di&quot;</td>
<td>heat</td>
</tr>
</tbody>
</table>
needle
piece
scorpion
taste
red
bet, gambling
speed, loudness
bolt of door
stem
torch
honey
hiccough
black insect with poisonous bite
gun
small stream, drain, lake
skin, hide
dust
information laid against a person
district
fibre of plant, string
water
bundle of several paddy seedlings (DED has ni:ri)
thread
truth
song
milk
<table>
<thead>
<tr>
<th>Page</th>
<th>Code</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>676</td>
<td>3371</td>
<td>pāli</td>
<td>part, share</td>
</tr>
<tr>
<td>677</td>
<td>3381</td>
<td>pāli</td>
<td>bad, ruined</td>
</tr>
<tr>
<td>678</td>
<td>3591</td>
<td>pūri</td>
<td>female privates</td>
</tr>
<tr>
<td>679</td>
<td>3643</td>
<td>pēni</td>
<td>louse</td>
</tr>
<tr>
<td>680</td>
<td>3747</td>
<td>pōti</td>
<td>male goat</td>
</tr>
<tr>
<td>681</td>
<td>3724</td>
<td>pōdi</td>
<td>auspicious ceremony</td>
</tr>
<tr>
<td>682</td>
<td>(3708)</td>
<td>pōri</td>
<td>in [teŋge pōri], coconut fight</td>
</tr>
<tr>
<td>683</td>
<td></td>
<td>pōri</td>
<td>load</td>
</tr>
<tr>
<td>684</td>
<td>3151</td>
<td>pōli</td>
<td>daytime</td>
</tr>
<tr>
<td>685</td>
<td></td>
<td>baːti</td>
<td>duck</td>
</tr>
<tr>
<td>686</td>
<td></td>
<td>baːti</td>
<td>fingerful of food</td>
</tr>
<tr>
<td>687</td>
<td>4394</td>
<td>baːli</td>
<td>tail</td>
</tr>
<tr>
<td>688</td>
<td>4402</td>
<td>baːli</td>
<td>way of life</td>
</tr>
<tr>
<td>689</td>
<td>4405</td>
<td>baːli</td>
<td>in [baːli katti], long Coorg sword</td>
</tr>
<tr>
<td>690</td>
<td>4419</td>
<td>buːdi</td>
<td>toddy-tapper's hut</td>
</tr>
<tr>
<td>691</td>
<td>4554</td>
<td>beːri</td>
<td>root</td>
</tr>
<tr>
<td>692</td>
<td>4298</td>
<td>beːli</td>
<td>paddy field</td>
</tr>
<tr>
<td>693</td>
<td></td>
<td>beːvi</td>
<td>neem tree</td>
</tr>
<tr>
<td>694</td>
<td>3931</td>
<td>mādi</td>
<td>burned clearing in jungle</td>
</tr>
<tr>
<td>695</td>
<td>3920</td>
<td>māti</td>
<td>afterbirth</td>
</tr>
<tr>
<td>696</td>
<td>3947</td>
<td>māɾi</td>
<td>fathom</td>
</tr>
<tr>
<td>697</td>
<td>3999</td>
<td>mīːni</td>
<td>fish</td>
</tr>
<tr>
<td>698</td>
<td>4122</td>
<td>muːki</td>
<td>nose</td>
</tr>
<tr>
<td>699</td>
<td>4129</td>
<td>muːdi</td>
<td>face</td>
</tr>
<tr>
<td>700</td>
<td>4185</td>
<td>meːli</td>
<td>body</td>
</tr>
<tr>
<td>701</td>
<td>4015</td>
<td>moːri</td>
<td>buttermilk</td>
</tr>
<tr>
<td>702</td>
<td></td>
<td>saːli</td>
<td>row</td>
</tr>
</tbody>
</table>
tired, pulling feeling in legs

evil influence

corpse

tongue

½ seer measure

full moon day

biggest flat land of man's holdings, nursery field for paddy

anna (sixteenth of a rupee)

depth

field (any type: e.g. sports field)

more than enough, much

Malabar version of harvest festival

heat

trouble, rubbish

year, season, time

place below, down

quarrel, dispute, gathering

shallow well where water can be dipped by hand

coldness

wound

peg, post

thought

dung
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>726</td>
<td>2164</td>
<td>ci:la</td>
<td>bag</td>
<td></td>
</tr>
<tr>
<td>727</td>
<td>ja:ga</td>
<td>place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>728</td>
<td>ji:ra</td>
<td>cummin seed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>729</td>
<td>ji:va</td>
<td>life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>730</td>
<td>2359</td>
<td>jo:la</td>
<td>great millet</td>
<td></td>
</tr>
<tr>
<td>731</td>
<td>3014</td>
<td>nana</td>
<td>shame</td>
<td></td>
</tr>
<tr>
<td>732 DIA</td>
<td>182?</td>
<td>naya</td>
<td>dispute, justice, that which is right</td>
<td></td>
</tr>
<tr>
<td>733 DIA</td>
<td>208</td>
<td>taila</td>
<td>cymbal</td>
<td></td>
</tr>
<tr>
<td>734</td>
<td>ta:la</td>
<td>bolt on door</td>
<td></td>
<td></td>
</tr>
<tr>
<td>735</td>
<td>2680</td>
<td>ti:ta</td>
<td>excrement</td>
<td></td>
</tr>
<tr>
<td>736</td>
<td>tu:ka</td>
<td>weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>737</td>
<td>tu:ta</td>
<td>hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>738</td>
<td>2251</td>
<td>tu:ra</td>
<td>cane</td>
<td></td>
</tr>
<tr>
<td>739</td>
<td>2927</td>
<td>to:ta</td>
<td>garden, estate</td>
<td></td>
</tr>
<tr>
<td>740</td>
<td>du:ra</td>
<td>distance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>741</td>
<td>de:sSa</td>
<td>country</td>
<td></td>
<td></td>
</tr>
<tr>
<td>742</td>
<td>na:ña</td>
<td>coin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>743</td>
<td>2379</td>
<td>nata</td>
<td>smell</td>
<td></td>
</tr>
<tr>
<td>744</td>
<td>3059</td>
<td>ni:la</td>
<td>length</td>
<td></td>
</tr>
<tr>
<td>745</td>
<td>3128</td>
<td>ne:ra</td>
<td>sun, time</td>
<td></td>
</tr>
<tr>
<td>746 DIA</td>
<td>242?</td>
<td>pa:ta</td>
<td>lesson</td>
<td></td>
</tr>
<tr>
<td>747</td>
<td>pa:pa</td>
<td>sin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>748</td>
<td>pa:pa</td>
<td>small child</td>
<td></td>
<td></td>
</tr>
<tr>
<td>749</td>
<td>3372</td>
<td>pa:la</td>
<td>bridge made of tree, etc.</td>
<td></td>
</tr>
<tr>
<td>750</td>
<td>4410</td>
<td>ba:na</td>
<td>sky</td>
<td></td>
</tr>
</tbody>
</table>
751 ba:na arrow
752 ba:ra heaviness
753 3456 bi:ga lock
754 3740 bo:ja beauty, goodness
755 3946 ma:yā disappearance
756 mula origin
757 4131 mo:da cloud
758 DIA 304 mo:sa deceit
759 ro:ma hair (of body)
760 loska world
761 4389 va:ra rent, system of tenant farming
762 va:ra week
763 sa:pa curse
764 ū:la trident
765 2039 sa:la loan, debt
766 sa:sā effort, hard work
767 sa:hasa
768 1660 ke:me(n) barking deer
769 1820 ko:dā(n) monkey
770 cu:de(n) temperamental, peppery fellow
771 2580 ta:te(n) grandfather
772 2682 ti:ye(n) Tiyan man
773 ba:ve(n) elder male cross-cousin, brother-in-law
774 3945 má:ve(n) mother's brother, etc.
775 4178 me:de(n) man of drummer and umbrella-makers' caste
move

raje

DIA 219 de:va
god

3768 mo:va
daughter

VNCV(c)

106 a:ndi mango stone
887 o:ndi chameleon
2368 ne:ngi plough
3944 ma:ndi act of scratching
3919 ma:nge mango
4230 a:ndi year
1217 ke:mbi Oxytenanthera monostigma (prob.) (bamboo)
2021 ca:ndi sandalwood
3361 pa:mbi snake

VSCV(c)

ayri low caste Coorg, carpenter
DIA 80 kavdi shell cowrie
DIA 82 gavdi serving girl, handmaid, milkmaid
1125 gavli big lizard
<table>
<thead>
<tr>
<th>Page</th>
<th>DIA</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>793</td>
<td></td>
<td>1047 kaype</td>
</tr>
<tr>
<td>794</td>
<td></td>
<td>1984 cavte</td>
</tr>
<tr>
<td>795</td>
<td>DIA</td>
<td>203 davde</td>
</tr>
<tr>
<td>796</td>
<td></td>
<td>(4339) bayne</td>
</tr>
<tr>
<td>797</td>
<td></td>
<td>831 uyti</td>
</tr>
<tr>
<td>798</td>
<td></td>
<td>1083 kaybi</td>
</tr>
<tr>
<td>799</td>
<td></td>
<td>1469 kuyli</td>
</tr>
<tr>
<td>800</td>
<td></td>
<td>1973 cavti</td>
</tr>
<tr>
<td>801</td>
<td></td>
<td>2537 tavdi</td>
</tr>
<tr>
<td>802</td>
<td></td>
<td>2537 pavni</td>
</tr>
<tr>
<td>803</td>
<td></td>
<td>3704 poyti</td>
</tr>
<tr>
<td>804</td>
<td></td>
<td>4570 bayti</td>
</tr>
<tr>
<td>805</td>
<td></td>
<td>3793 bayti</td>
</tr>
<tr>
<td>806</td>
<td></td>
<td>3793 mayli</td>
</tr>
<tr>
<td>807</td>
<td>DIA</td>
<td>155 cavka</td>
</tr>
<tr>
<td>808</td>
<td></td>
<td>paysa</td>
</tr>
<tr>
<td>809</td>
<td>DIA</td>
<td>305 moyra</td>
</tr>
<tr>
<td>810</td>
<td></td>
<td>gavde(n)</td>
</tr>
<tr>
<td>811</td>
<td></td>
<td>tayre(n)</td>
</tr>
<tr>
<td>812</td>
<td>DIAS</td>
<td>18 mayme(n)</td>
</tr>
<tr>
<td>813</td>
<td></td>
<td>rayte(n)</td>
</tr>
<tr>
<td>814</td>
<td>DIAS</td>
<td>18 mayma(l)</td>
</tr>
</tbody>
</table>
kaviki — vital spot
baymbe(n) — hero

eraci — flesh, meat
onali — sieve
kadici — calf
karadi — bear
kenaci — dream
kodali — axe
koraji — marshy place
talami — hair of head or body
tolasi — sacred basil
melaci — moon
parati — cotton cloth
palaci — jack-fruit
poriki — mean fellow
polati — low caste woman
barani — large clay pot
mudiki — old woman
adake — areca nut
edige — cooking
alate — act of measuring
uripe — small bag for betel
edike — in front
erape — beggar
left
break
wooden pestle
bed, bedding
steps for getting over fence
Bengal gram, peanuts
the plains to the east of Coorg
valley
window
cooking pot
horse
diminishment
Agrostis linearis Retz. (sp. grass)
leopard
coconut shell
wing
temple
walking, behaviour
chess
vow
talk, gossip
wonder
cover
outside
dawn
right (hand)
horse-gram
seal
mosale } crocodile

arivi" knowledge

iriti" darkness

irili " night time

udipi " clothes

urupi" ant

usiri" breath

erivi" burning sensation in mouth

eraki" eaves

eliti" writing education

oraki" sleep

kadiki" man's earring

karski" carbon

karapi" blackness

kuliri" cold (climate)

kodavi" Coorg

gudigi" thunder

curiki" speed

tanipi" coolness

tampi" peacock

navili" covering, esp. blanket

podapi"
<table>
<thead>
<tr>
<th>Page</th>
<th>Line</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>3451</td>
<td>puriki</td>
<td>mosquito</td>
<td></td>
</tr>
<tr>
<td>3724</td>
<td>polidi</td>
<td>cutting of paddy at festival, etc.</td>
<td></td>
</tr>
<tr>
<td>4267</td>
<td>badakid</td>
<td>north</td>
<td></td>
</tr>
<tr>
<td>4402</td>
<td>badiki</td>
<td>property</td>
<td></td>
</tr>
<tr>
<td>4516</td>
<td>bevari</td>
<td>sweat</td>
<td></td>
</tr>
<tr>
<td>4524</td>
<td>bolaki</td>
<td>lamp</td>
<td></td>
</tr>
<tr>
<td>4524</td>
<td>bolipi</td>
<td>whiteness</td>
<td></td>
</tr>
<tr>
<td>3796</td>
<td>madaki</td>
<td>bend, fold</td>
<td></td>
</tr>
<tr>
<td>4516</td>
<td>manasi</td>
<td>conscience</td>
<td></td>
</tr>
<tr>
<td>4112</td>
<td>muriki</td>
<td>torsion cord</td>
<td></td>
</tr>
<tr>
<td>4153</td>
<td>medili</td>
<td>brain (food)</td>
<td></td>
</tr>
<tr>
<td>4074</td>
<td>moradi</td>
<td>foot of tree</td>
<td></td>
</tr>
<tr>
<td>1537</td>
<td>koravu</td>
<td>defect</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>agala</td>
<td>breadth</td>
<td></td>
</tr>
<tr>
<td>931</td>
<td>kadaga</td>
<td>thick metal bangle</td>
<td></td>
</tr>
<tr>
<td>952</td>
<td>kadipa</td>
<td>quickness</td>
<td></td>
</tr>
<tr>
<td>1166</td>
<td>karapa</td>
<td>milch cow</td>
<td></td>
</tr>
<tr>
<td>167</td>
<td>karava</td>
<td>clay pot with narrow neck</td>
<td></td>
</tr>
<tr>
<td>1639</td>
<td>kelasa</td>
<td>work</td>
<td></td>
</tr>
<tr>
<td>199</td>
<td>taliya</td>
<td>plate</td>
<td></td>
</tr>
</tbody>
</table>
912 2869 todiya small garden adjoining house
913 divasa day
914 2957 nadeya passage to shrine of temple
915 DIA 230 nevana pretence, false reason
916 padika slowness (of movement, wit)
917 DIA 257 paleya pretence, false reason
~ paliya wooden stool
918 3295 paluva coral
~ pavva
~ pavala
919 3613 periya increase, excess
920 3497 podeya sari
~ podiya
921 3531 polaca dawn
922 4524 bolica lamp
923 DIA 285 modira sweetness
924 sarira trunk (of body)
925 DIA 133 sadila looseness
~ sadala
926 samaya time

927 (200) alape(n) greedy man
928 436 eleye(n) youth
929 510 odeva(n) husband
930 510 odeve(n) master, god
931 935 kadame(n) sambur
932 1280 kiduve(n) kite, hawk
933 1379 kudiye(n) man of toddy tapper caste
934 1537 kurike(n) jackal, fox
11935  1530  kurube(n)  shepherd
11936  994   keniye(n)  trickster
11937  1374  kodave(n)  Coorg man
11938  1280  garude(n)  eagle
11939  3714  gidige(n)  kite, hawk
11940  3714  poleye(n)  low caste man
11941  290   manisie(n)  man
11942  4057  mudike(n)  man
11943  4270  badave(n)  poor man
11944  3838  madema  female cross-cousin, etc.

(c)Vovnvcv
11945  842   olanji  fly
11946  938   kadandi  wasp
11947  1722  korandi  mango stone
11948  1700  mananji  maninji  tacky secretion of jack-fruit
11949  1700  kodande  double handful
11950  509   udumbi  iguana
11951  411   irimbi  iron
11952  509   udumbi  iguana
11953  714   slimbi  bone
11954  1279  kadañgi  ditch without water
11955  955   kadimbi  small ball of rice
<table>
<thead>
<tr>
<th>Page</th>
<th>Code</th>
<th>Word 1</th>
<th>Word 2</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>956</td>
<td>3316</td>
<td>parambi</td>
<td></td>
<td>large flat pasture land</td>
</tr>
<tr>
<td>957</td>
<td>3355</td>
<td>palambi</td>
<td></td>
<td>mat</td>
</tr>
<tr>
<td>958</td>
<td>3897</td>
<td>marandi</td>
<td></td>
<td>forgetfulness</td>
</tr>
</tbody>
</table>
**Abbreviations**

AUPL Annamalai University Publications in Linguistics

BSOS Bulletin of the School of Oriental Studies (University of London)

FL Foundations of Language

IA Indian Antiquary

IIJ Indo-Iranian Journal

IL Indian Linguistics

JAOS Journal of the American Oriental Society

JAS Journal of the Asiatic Society (Calcutta)

JL Journal of Linguistics

JRASB Journal of the Royal Asiatic Society of Bengal

Lg Language (Journal of the Linguistic Association of America)

TPS Transactions of the Philological Society

UCPL University of California Publications in Linguistics


Dravlingpex Dravidian Linguistics Papers Exchange. Edited by H. Schiffman, Department of Asian Languages and Literature, University of Washington, Seattle.


_______ (1945). The Dravidian verbs 'come' and 'give'. *Lg* 21, 184-213.


AUPL vol. 22. Annamalainagar: Annamalai University.

(1971). Kodagu and Brahui developments of Proto-
Dravidian r. *LIJ* 13, 176-98.

Ellis, F.W. (1816). Note to the Introduction. In Campbell, A.D. 
*A Grammar of the Telogoo Language.* Madras: College 
Press.


Firth, J.R. (1934). A short outline of Tamil pronunciation. In 
Literature Society for India.

*Lg* 30, 360-7.

*Lg* 25, 29-50.


5, 23-38.


No. 7.

(forthcoming). Coorg verbal bases. In Eastman, C.N. & 


_____________ (1967). The main features of Modern Greek verb inflection. FL 3, 262-84.


____________________ (1858). Rajendranama. Virarajendra Vodeya.


Robins, R.H. (1959). In defence of WP. TPS, 116-44.


(Deccan College Linguistic Survey of India Series vol. 2). Poona: Deccan College Postgraduate and Research Institute.