A GRAMMAR OF RESÍGARO

Trevor R. Allin

A Thesis Submitted for the Degree of PhD
at the
University of St. Andrews

1976

Full metadata for this item is available in the St Andrews Digital Research Repository at:
https://research-repository.st-andrews.ac.uk/

Please use this identifier to cite or link to this item:
http://hdl.handle.net/10023/1012

This item is protected by original copyright
A GRAMMAR
OF
RESÍGARO

by

Trevor Reginald Allin
I declare that this thesis has been composed by me on the basis of work done by me in St. Andrews and Peru, and that it has not been accepted in any previous application for a higher degree. I was admitted under General Ordinance No. 12 in October 1970 and enrolled in May 1971 under the Ph.D. Resolution.

Candidate:

I certify that the conditions of the Ordinance and Regulations relating to the Degree of Ph.D. have been fulfilled.

Supervisors:
A GRAMMAR OF RESIGARO
by
Trevor Reginald Allin

ABSTRACT

The thesis gives a description within the framework of tagmemic theory of Resigaro, a South American Indian language of the Huitoto group, spoken in the region between the Amazon and the Putumayo, in north-eastern Peru.

The Introduction reviews critically previous work on the language, and sets out modifications in tagmemic theory which it is claimed avoid circularity and repetition and improve the description. Principal among these is a strict separation of the three modes of Contrast, Variation and Distribution, and the use of multiplication to derive structures.

Part I of the thesis describes the first two levels of the Phonological Hierarchy -- Phoneme level and Syllable level.

Part II describes the grammatical hierarchy, in which the following levels are set up:

- Root
- Stem
- Word
- (Group)
- (Piece)
- Phrase
- Clause
- Sentence

(Group and Piece are sub-levels affecting only the Verb class.) Each level is described in a separate chapter, starting at the lowest level (Root). Each class (Verb, Noun, Pronoun, etc.) is described in turn at each level at which it has elements.

At Phrase level, Phrases are described as being either Endocentric or Axis-Relator. Endocentric Phrases (Verb, Noun, and Numeral) are described first.

At Clause level, the description of Clause structure is preceded by a description of Clause-level tagmemes -- first the
nuclear, and then the peripheral tagmemes. It is indicated that this simplifies the presentation of Clause structure.

Under Clause structure, the Declarative clause is described first, and other Clause classes are derived from this, viz.: Interrogative, Imperative, Nominalized and Relativized.

The description of the Contrast and Variation modes of Sentence level is followed by an analysis of the first section of a text.

Appendix I presents a lexicon of Resigaro in two parts; Part I is Resigaro-Spanish-English, and Part II is Spanish-Resigaro.

Appendix II presents a 776-word four-language comparative word list for Resigaro, Sora, Ocaina and Huitoto Ruinane.

The thesis is concluded by a bibliography.
ACKNOWLEDGEMENTS

I wish to acknowledge my indebtedness to the many people without whose co-operation and assistance this thesis and the research on which it is based would never have been completed. First, I owe an enormous debt to the British and Peruvian Branches of the Summer Institute of Linguistics, and especially to the following members: Wesley and Eva Thieson and their children, who welcomed me as one of their own family, on my arrival in the Bora tribe; Ilo Leach, for helpful discussions on the Ocaina language, and many acts of kindness; Mary Ruth Wise, for guidance and encouragement in handling linguistic problems throughout my year in Peru; Stephen Levinschn (Colombia Branch) for similar assistance after my return to the U.K. I am aware of having omitted many names, but the only adequate list would include the names of all those I met in both the British Branch -- for help in preparing for my trip and at all stages through to the duplication of the thesis -- and in the Peru Branch, for making my year there trouble-free and enjoyable. My profound thanks go to Pablo Andrade Ocagane, for his patience and good-humour in answering my incessant questions, and to his sisters and mother, for all their help. Needless to say, my deep gratitude is extended to my supervisor, Douglas Gifford, for his friendship, help, encouragement, and boundless enthusiasm for the project at all times.
CONTENTS

Abbreviations & Symbols ........................................ vi
Some Resigaros .................................................. viii
Sketch Map I ..................................................... ix
Sketch Map II .................................................... x

0. Introduction ................................................. 1
0.1. The Language and the People ............................... 1
0.2. Previous References to the Resigaros, and work on the Language ............................. 3
0.3. The Basis of the Present Description ..................... 20
0.4. Theoretical Framework of the Present Description ............................. 24
0.5. Scope .................................................................... 39

PART I: PHONOLOGICAL HIERARCHY ............................. 42
0. Introduction ..................................................... 43
Chapter 1. Phoneme Level ........................................ 46
Chapter 2. Syllable Level .......................................... 75

PART II: GRAMMATICAL HIERARCHY ............................. 96
Chapter 1. Root Level ............................................. 97
1.1. Verb ............................................................ 97
1.2. Noun ........................................................... 98
1.3. Pronoun ....................................................... 99
1.4. Adjective ..................................................... 101
1.5. Adverb ........................................................ 102
1.6. Demonstrative ................................................ 103
1.7. Numeral ....................................................... 103

Chapter 2. Stem Level ............................................ 105
2.1. Verb ........................................................... 105
2.2. Noun ........................................................... 109
2.3. Pronoun ....................................................... 115
2.4. Adjective ..................................................... 119

Chapter 3. Word Level ............................................ 124
3.1. Verb ........................................................... 124
3.2. Noun ........................................................... 150
3.3. Pronoun ....................................................... 176
3.4. Adjective ..................................................... 193
3.5. Adverb ........................................................ 196
3.6. Demonstrative ................................................ 198
3.7. Numeral ....................................................... 200

Chapter 4. Group Level ........................................... 204
4.1. Verb ........................................................... 204

Chapter 5. Piece Level ............................................ 212
5.1. Verb ........................................................... 212

Chapter 6. Phrase Level ........................................... 218
6.1. Endocentric Phrases .......................................... 219
6.1.1. Verb ........................................................ 219
ABBREVIATIONS & SYMBOLS

1. Abbreviations

In the abbreviations that follow, capital letters are used to indicate tagmemes, levels, and major word classes, while lower case letters are used to indicate morphemes. Abbreviations indicating neither morphemes nor tagmemes or major word classes follow normal practice with regard to capitalisation or otherwise (e.g., Sp. for Spanish). Where no norm appears to exist, that form has been chosen which it is believed will be easiest to recognize (e.g., Orel for Object relativization).

A  Adjunct tagmene
A-R  Adjunct-phrase marker
Adct  Adjunct Phrase marker
Adv  Adverb
Adv  Adverbial Emphatic tagmeme
adv  adverbial emphatic morpheme
Adj  Adjective
AP  Adjunct Phrase
Att  Attributive tagmeme
aug  augmentative suffix
Aux  Auxiliary
aux  auxiliary indicator
B  Base
bas  basic filler of periph slot in VG
Ben  Benefactive tagmeme
bon  benefactive marker
BP  Benefactive Phrase
C  any consonant
C.L.  complete list
Cl  Clause
cl  class
clsfr  classifier suffix
CO  Causative Object tagmeme
Conc  Concomitant tagmeme
Cond  Conditional tagmeme
CondP  Conditional Phrase
conn  connector
CP  Concomitant Phrase
catv  causative
Ctv  Comparative tagmeme
CtvP  Comparative Phrase
d  Directional tagmeme
Dat  Dative tagmeme
dat  dative marker
DeclCl  Declarative Clause
Demo  Demonstrative
der  derivator
desid  desiderative clitic
dim  diminutive suffix
dir  directional marker
ditr  ditransitive
dual
DO  Dative Object tagmene
DOP  Dative Object Phrase
dub  dubitative clitic
Emph  Emphatic tagmeme
emph  emphatic morpheme
excl  exclusive
extrap  moved by extraposition
f  feminine
frus  frustrative clitic
future
fut  future clitic
H  Head tagmene
I  Instrument tagmene
ig  Interrogative tagmene
ig  interrogative morpheme
ImpCl  Imperative Clause
inptv  intransitive
incho  inchoative
incl  inclusive
incomp  incomplete clitic
intr  instrument marker
Int  Intensifier tagmene
int  intensifier morpheme
intent  stated intention clitic
Inton  Intonation Contour
intr  intransitive
IP  Instrument Phrase
L  Locative tagmene
Lim  Limiter tagmene
LP  Locative Phrase
M  Modifier tagmene
m  masculine
N.O.C.  may omit classifier
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg</td>
<td>Negative tagmeme</td>
</tr>
<tr>
<td>nlzr</td>
<td>nominalizer</td>
</tr>
<tr>
<td>nmb</td>
<td>number suffix</td>
</tr>
<tr>
<td>Nn</td>
<td>Noun</td>
</tr>
<tr>
<td>Nom</td>
<td>nominalized</td>
</tr>
<tr>
<td>NonCl</td>
<td>Nominalized Clause</td>
</tr>
<tr>
<td>MP</td>
<td>Noun Phrase</td>
</tr>
<tr>
<td>Nuc</td>
<td>Syllable nucleus</td>
</tr>
<tr>
<td>Num</td>
<td>Numerical</td>
</tr>
<tr>
<td>NumP</td>
<td>Numerical Phrase</td>
</tr>
<tr>
<td>C</td>
<td>Object tagmeme</td>
</tr>
<tr>
<td>Orel</td>
<td>Object relativization</td>
</tr>
<tr>
<td>P</td>
<td>Predicate tagmeme</td>
</tr>
<tr>
<td>Periph</td>
<td>Periphery</td>
</tr>
<tr>
<td>Phon</td>
<td>Phonemes</td>
</tr>
<tr>
<td>Pl</td>
<td>Plural</td>
</tr>
<tr>
<td>Pn</td>
<td>Pronoun</td>
</tr>
<tr>
<td>PP</td>
<td>Purpose Phrase</td>
</tr>
<tr>
<td>Ppsv</td>
<td>Purpose marker</td>
</tr>
<tr>
<td>priv</td>
<td>private</td>
</tr>
<tr>
<td>proc</td>
<td>progressive clitic</td>
</tr>
<tr>
<td>PHOP</td>
<td>proposition</td>
</tr>
<tr>
<td>px</td>
<td>prefix</td>
</tr>
<tr>
<td>Q</td>
<td>Quantifier tagmeme</td>
</tr>
<tr>
<td>QO</td>
<td>Quotative Object tagmeme</td>
</tr>
<tr>
<td>R</td>
<td>restricted</td>
</tr>
<tr>
<td>r</td>
<td>preceding tagmeme(s)</td>
</tr>
<tr>
<td>rec</td>
<td>recent past</td>
</tr>
<tr>
<td>recip</td>
<td>reciprocal</td>
</tr>
<tr>
<td>reflex</td>
<td>reflexive</td>
</tr>
<tr>
<td>RelCl</td>
<td>Relativized Clause</td>
</tr>
<tr>
<td>re1r</td>
<td>relator</td>
</tr>
<tr>
<td>rcm</td>
<td>remote past</td>
</tr>
<tr>
<td>rep</td>
<td>reportative clitic</td>
</tr>
<tr>
<td>rcss</td>
<td>restrictive suffix</td>
</tr>
<tr>
<td>Rt</td>
<td>Root</td>
</tr>
<tr>
<td>sg</td>
<td>singular</td>
</tr>
<tr>
<td>Snt</td>
<td>Sentence</td>
</tr>
<tr>
<td>Sp</td>
<td>Spanish</td>
</tr>
<tr>
<td>Src1</td>
<td>Subject relativization</td>
</tr>
<tr>
<td>St</td>
<td>Stem</td>
</tr>
<tr>
<td>sthg</td>
<td>something</td>
</tr>
<tr>
<td>sx</td>
<td>suffix</td>
</tr>
<tr>
<td>sy</td>
<td>syllable</td>
</tr>
<tr>
<td>T</td>
<td>Temporal tagmeme</td>
</tr>
<tr>
<td>trans</td>
<td>transitive</td>
</tr>
<tr>
<td>tritr</td>
<td>tritransitive</td>
</tr>
<tr>
<td>V</td>
<td>any vowel</td>
</tr>
<tr>
<td>Vb</td>
<td>Verb</td>
</tr>
<tr>
<td>VbPce</td>
<td>Verb Piece</td>
</tr>
<tr>
<td>Vd</td>
<td>voiced</td>
</tr>
<tr>
<td>Vl</td>
<td>voiceless</td>
</tr>
<tr>
<td>Vlasp</td>
<td>voiceless aspirated</td>
</tr>
<tr>
<td>Voc</td>
<td>Vocative tagmeme</td>
</tr>
<tr>
<td>voc</td>
<td>vocative morpheme</td>
</tr>
<tr>
<td>VP</td>
<td>Verb Phrase</td>
</tr>
<tr>
<td>1st p.</td>
<td>first person</td>
</tr>
<tr>
<td>2nd p.</td>
<td>second person</td>
</tr>
<tr>
<td>3rd p.</td>
<td>third person</td>
</tr>
</tbody>
</table>

2. Symbols

- [ ] phonetic brackets
- / \ phonemic brackets
- ( ) brackets in tagmeme formulae
- { } morphemic brackets
- V high tone (its absence indicates low tone)
- ~ nasalization
- ^ varies with (alloforms of a morpheme)
- x \ y x becomes y
- x | y x is derived from y
- x \ y syllable boundary between x and y
- x:y x is a slot; y is a class filling it
- is filled by
- -vii-
SOME RESÍGAROS

From left to right: Adelina, Rosa, and Pablo Andrade Ocagane, and Alicia Ocagane (their mother), with two of Adelina Andrade's children.
SKETCH MAP NO. II
Volume I
O. INTRODUCTION

O.1. The language and the people.

Resigaro is spoken by a handful of people living on the banks of a northern affluent of the Amazon in north-eastern Peru. These remnants of the Resigaro tribe live amongst the Ocaina and the Bora in the villages of Puerto Isango and Brillo Nuevo, respectively, on the banks of the Yaguasycu river, a tributary of the Ampiyacu, which flows into the Amazon at Pobas. The location of these villages in 1972 is indicated in sketch map II.

In 1915, Wiffen estimated that there were about 1,000 Resigaro between the Rucanane, the Nonuya and the Boro (sic.-- for Bora), along the banks of the Japurá (= Caquetá), to the north of the Kahuinari (= Cahuinari) river, in Colombia (cf. sketch map I).

In 1971-72 I found four adult speakers (Alicia Ocagane and her two daughters, Adelina and Rosa, and son Pablo) and six children in Puerto Isango. The children had Resigaro mothers and Ocaina fathers. There were also some Ocaina speakers (e.g., the teacher, José Andrade) who said that they were Resigaro, but

---

1 A letter dated 9th August 1974 from my main informant, Pablo Andrade Ocagane, indicates that the Puerto Isango community of some 200 Ocainas has relocated the village half-an-hour's journey (by canoe) downriver from the 1972 location. The Resigaro speakers in the community have moved along with the Ocainas.
no longer spoke the language.

In Brillo Nuevo I found one woman (Cecilia) of about fifty years old who was Resigaro, but was married to a Bora, and had not spoken the language for years, except on occasional meetings with the Resigares from Puerto Isango. There were also several other Bora speakers (e.g., Jihkyepa?) who said that they were Resigares, but had lost their parents when children, and had been brought up by Boras. They now spoke no Resigaro, but understood some of it.

From a comparative study of published vocabularies and grammatical descriptions, it is obvious that Resigaro is related historically to Bora, though the two languages are not at all mutually intelligible. Inasmuch as others affirm that Bora is related to Ocaina and Huitoto, Resigaro must be related to these, too, although these latter two languages sound totally different from Resigaro, and very few cognates between Huitoto and Resigaro are to be found in a comparison of approximately 370 words based on the Rowe Standard Comparative Vocabulary (tropical forest area) and the Swadesh list. A far more extensive comparison was made between Ocaina and Resigaro, involving nearly 2,000 words (including those on the above-mentioned lists), and similarly few cognates were found.

Appendix II lists the Ocaina, Bora and Huitoto words from the Rowe and Swadesh lists, alongside the Resigaro, for compar-
The present study provides conclusive evidence for the first time based on data gathered by a phonetically- and linguistically-trained investigator to confirm the place of Resigaro in the Arawakan family of languages, and this obviously has implications with regard to Bora, hitherto classified merely as "Huitotoan", along with Ocaina and Huitoto. The "Huitotoan" group is unclassified. If the relationship between Ocaina and Resigaro, and Huitoto and Resigaro, is viewed as confirmed -- which would appear to be the case, as indicated in Appendix II (though the relationship is more distant than with Bora) -- then these languages, too, are clearly to be classified as Arawakan.

0.2. Previous references to the Resigaros, and work on the language.

0.2.1. Casement and Hardenburg.

Two reports by "Consul" (later Sir Roger) Casement appear in Hardenburg's book of 1912. Casement had been sent to the Putumayo area to investigate reports of savage treatment of Indians employed to collect rubber for the Peruvian Amazon Company, which had a number of British shareholders.

Casement's first report (submitted in January 1911) refers to the "Nicigaros", Andokes and Boras as tribes of common origin with the Huitotos, "but wholly differing today in speech
from the Huitotos, as also from each other" (pp. 269-270).

The second report (submitted two months later) again refers to the same tribes, as well as to the Ocainas, and states that of the smaller tribes, "the Ricigaros and the Muananes are frequently mentioned" (p. 290).

The Huitotos are said to have been, according to accounts, the largest tribe, possibly numbering 30,000 before the first "Colombian invasion of the Putumayo regions took place, .... about 1886" (pp. 290, 294). However, by the time of Casement's investigations, they amounted to "nothing like that figure" (p. 290).

Further references describe a "Recigiro [sic] Indian boy" who was in the service of whites and half-breeds, and who executed several Boras, in obedience to orders from his masters (pp. 319-320).

Hardenburg (1912), who paints a vivid picture of brutal savagery against the Indians by the whites, also refers to the "Recigaros", which he says is merely one of many "sub-tribes" (along with "the Maynanes, Aifugas, ... the Yabuyanos, etc.") of the Huitoto tribe.

"Each of these sub-tribes has its own chief, called a capitán or tuchana, and appears to be quite independent of the rest. A sub-tribe may vary in size from 25 to 500 individuals and often more." (p. 150)
This seems to contradict Casement's statement of the previous year (reproduced in the same book), and the next paragraph goes even further:

"All these sub-tribes speak more or less the same language -- Huitoto, of which I give a few specimen words".

These words were gathered from "racionales" (p. 144), who, according to Casement, were so called "to distinguish them from the Indians" (emphasis mine). "Racionales" are described by Casement as "half-breeds mostly who can read and write" (p. 295).

Considering Hardenburg's naivety in using these people as informants, especially when he recognized that not all of them had a full command of the language (p. 144), it is not surprising that he should go on to say:

"It is a very simple language, with but little grammar, employing neither conjunctions nor articles" (p. 150).

This insight into the method of gathering language data is important, though it in this case refers to the Huitoto tribe, since it would appear that other travellers in the region during the first two or three decades of this century often used similar procedures.

0.2.2. Whiffen.

Whiffen's book of 1915 gives one the impression of being far less emotive and more factual in its approach than that of Hardenburg.
However, its main emphasis is anthropological, with a similar naivety with regard to language questions:

"To simplify transliteration, though at the sacrifice of the finer distinctions of the language, the orthographic system of the Royal Geographical Society has been used in this work... It consists in giving to the vowels in native words their Italian significance, and to the consonants that which they have in the English language.

"This system ordains that an approximation to the sound be aimed at only, as any system which attempted to represent the more delicate inflexions of sound and of accent would be so complicated that it would merely defeat itself" (p. 249 -- emphasis mine throughout).

It is a pity that Whiffen and the other writers who had contact with the tribes of the Putumayo-Amazon area were unfamiliar with the International Phonetic Alphabet, first published in *Le phonetique litteraire* in August 1880. Other comments by Whiffen make it abundantly clear that data gathered by such explorers must be regarded with a critical eye indeed:

"The endeavour to reproduce the guttural expressions of the Indian in Roman letters is rendered the more complex by the uncertainty of his utterance and the rural variations of his European interpreters. The same word phonetically transcribed by an Englishman, a German, a Frenchman, and a Spaniard bears little or no resemblance to a common inspiration. Each European observer conveys to his written word the error of his national idiosyncrasy of impression and pronunciation" (p. 248 -- emphasis mine).

Even though Whiffen gives few examples of language, and none of Resígaro, these comments are reproduced here in detail, since they help us to evaluate more accurately the data for Resígaro produced by Wavrin, who was active in the area only a few years after Whiffen (though his data was published much later, cf. 0.2.4., below).
Whiffen does, however, make frequent references to the "Resigero", who are listed in his index (p. 318), and he includes two photographs, one of ten Resigaro women, and another of eleven Resigaro women and girls (Plate XII, facing p. 78). He also lists the "Rochevoro" under "Some Micato Tribes of the Issa-Japora Watershed" (p. 297), though he elsewhere states that

"The 'Mayananos,' 'Rochevoro,' and 'Tabuyanos' mentioned by Hardenburg as 'Micato sub-tribes or naciones,' are not Micato at all" (p. 62).

Concerning the languages of these and other groups, he says,

"Tribes divided by the breadth of a narrow river speak languages that are mutually unintelligible. On the other hand, tribes distant by some hundreds of miles from each other possess a language with a common root, which is fundamentally different from those in use among the intervening peoples" (pp. 246-7).

These tribal migrations have continued since the time of Whiffen's explorations, influenced usually by the demands of white colonizers.

According to Whiffen,

"Of the thirteen languages tabulated ..., one of the most difficult, and the most guttural, is the tongue spoken by the Resigero group of tribes" (p. 43).

Whiffen contests the claim that the Mitotos were

"'the largest and most important tribe,' as ... many other language-groups are decidedly more important in both the social and scientific scale" (p. 62).

He produces his own estimate of the size of the tribes, "based roughly on the number of houses and the extent of country", though he adds that
"these figures must be taken as very approximate, and probably overestimated in some cases" (p. 59).

The statistics are as follows:

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Witoto group of tribes</td>
<td>15,000</td>
</tr>
<tr>
<td>Boro group</td>
<td>15,000</td>
</tr>
<tr>
<td>Dukaiya or Okaina group</td>
<td>2,000</td>
</tr>
<tr>
<td>Muenana group</td>
<td>2,000</td>
</tr>
<tr>
<td>Monuya group</td>
<td>1,000</td>
</tr>
<tr>
<td>Resigero group</td>
<td>1,000</td>
</tr>
<tr>
<td>Andoke group</td>
<td>10,000</td>
</tr>
<tr>
<td>Meninche group</td>
<td>15,000</td>
</tr>
<tr>
<td>Karahone group</td>
<td>25,000</td>
</tr>
</tbody>
</table>

An early indication of the decreasing size of these tribes is to be found in Whiffen's statement,

"The Boro and Resigero also intermarry -- at least cases of such marriages are known".

This, in spite of the fact that

"The Boro, Resigero and Okaina may not love each other, but they agree in their detestation of the Witoto" (pp. 60-61).

This detestation was shown by fighting and cannibalism:

"Most, if not all, of the Indians of the upper rivers are indisputably cannibals, especially the Boro, Andoke, and Resigero groups" (p. 120).

Whiffen also recounts the unusual case of a Resigero chief who collected a band of warriors to punish those members of his own tribe who submitted to the whites, in order to deter others from submitting. He states that in one place he found 38 dead
Rosigares -- men, women, and children -- killed by this group (pp. 63-64).

0.2.3. Tammann.

In his book published in 1930, Tammann states,

"Über die Rosigaro ist nichts Näheres bekannt. Sie gehören kulturell sicher zu der Uitoto-Boragruppe und sprachlich vielleicht in der Nähe der Bora. ... Es ist ein kleiner Stamm zwischen den Okaina, Bora, Nonuya und Muinane" (p. 583).

Tammann's map (facing p. 816) shows the Rosigaro further south than in Whiffen, just reaching down as far as the banks of the Putumayo, apparently along the banks of the Igarapé-paraná.

0.2.4. Rivet and Wavrin.

The only published article containing original data on the Rosigaro language is that by Rivet and Wavrin (Paris 1951). Rivet needs no introduction. Wavrin was a French marquis who explored the Amazon region in the twenties and subsequent years, and produced a series of travel books of a popular nature.²

None of these books refer to the Rosigaro, though frequent references are made to

"Les Boros [sic], les Huitotos, les Ocainas, les Andoques

et diverses tribus du bassin du Putumayo et du Caqueta" (e.g., 1948:43).

Information given is much the same as that found in other books referred to here. The presentation is according to subject matter, not tribe, and as there are no indices, references to specific tribes must be gleaned from the pages of the text.

However, on one trip (the date of which is not given), Wavrin obtained a list of Resigaro words and a few phrases (Rivet and Wavrin, 1951:204). No information is given on the source of this data, and the only references to the tribe or its location are summaries of the comments of other writers (Whiffen, Igualada, etc.).

It is unfortunate that Wavrin was not linguistically or phonetically trained, and languages occupy a very peripheral place in his writings, with only very occasional comments. It would regrettably appear that many of Whiffen's observations concerning the transcription of linguistic data apply in the case of Wavrin, as hinted at by the introductory comment "(ces) documents ... si insuffisants qu'ils soient ..." (p. 204), and as borne out by a study of the data given.

Within the limitations consequent on the data supplied, Rivet has produced an excellent article, demonstrating the appurtenance of Resigaro to the Arawak language block.

After a brief introduction, five pages are occupied by some
superficial comments on the grammar, which amount to intelligent guesses limited by the absence of texts (p. 206). The language data is contained in ten pages of vocabulary, which includes a small number of phrases. The article concludes with a 17-page comparative Resigaro-Arawakan vocabulary, which cites postulated cognates in 89 Arawakan languages. The map at the end is a simplification of that found in Whiffen (facing p. 58), thus showing the Resigaro in a location earlier than that indicated in Tussmann (1930), and far from that obtaining immediately prior to 1954 (data on files of Sumner Institute of Linguistics, Peru Branch).

0.2.4.1. Grammar.

Rivet succeeds in identifying some allomorphs of the pronouns (p. 204), though in the plural the forms given are confused and have been cleverly identified on the basis of Rivet's acquaintance with other Arawakan languages. Pronouns following or contained within the predicate are not recognized, however.

e.g.

vocab. item 217: "petit, matso(o)tsa" for matshō? tsu³ short he "he is short"

vocab. item 67: "court, teto-pi-le" for tuutuu pi-khā cut you-do "you cut"

vocab. item 238: "il prend, okepi-le" for oke? pi-khā grasp you-do "you grasp"

Details of the transcription I am using for Resigaro are to be found in Part I, below.
Rivet errs in suggesting that the prefix wa- may be the "article déterminatif" or "le prétix personnel ou possessif de la 3e personne du singulier" (p. 206), but scores with a third guess that it might be the 1st person plural personal or possessive prefix (it is both personal and possessive).

He identifies several errors in the data and glosses given (pp. 205, 207), but it is inevitable that he should miss many others, particularly in the section on the vocabulary.

Rivet observes "-ne-, -ni-" and says "l'on peut se demander si elles ne correspondent pas à un duratif" (p. 208). Here he is wrong, since this is the recent past clitic, which he unfortunately fails to observe, in consequence of the large number of phrases containing this clitic but glossed in the present (p. 207, etc.). He merely states,

"Les documents ne nous permettent pas de découvrir comment les Rosigoro forment les différents temps de leurs verbes" (p. 207).

A final "-k, -ka, -kha, -ki" is tentatively related to the augmentative or superlative of some Arawakan languages (p. 208), and on the basis of a single word, a hypothetical morpheme "-tsani" is also identified as augmentative. Both of these are errors.

"-tsani" is not a separate morpheme in the word in question, since the morpheme breaks and gloss are not as indicated:
Rivet and Wavrin have

"kono-tzani, aware" for gi-notshani
he-be-stingy "he is stingy"

"-ka" appears to correspond to khá, "to do" (cf. 4.1.2.2.1., below).

e.g. tsa-ne-khā-ka "il tousse" for tsa-rí she? khá
he rec cough do
past
"he coughed"

tatapi-ka "court" ("short") is an error for
tuutuu pi-khá
cut you-do
"you cut"

This may also be the case with "-ká", though the only example given is confused, since no part corresponds to the second person singular glossed (though "nó(he)" may be an allomorph of the third person plural sa-). The most probable origin of the phrase is given hereunder, and a comparison of the two forms exemplifies the problems encountered in checking the accuracy of the data given.

hanakaka(i)nó(he)-khá "tu blesses"
for amógi kainf[e]? i - khá

tapir kill you - do "(You (pl)) Kill the tapir!"

4 Presumably Wavrin gave Spanish "corto" ("short"), which can also mean "I cut", and in reply was given "you cut". The same Resigaro phrase, transcribed slightly differently -- ta(w)ta(w)pi-ka -- reappears later, inexplicably glossed as "nous vivons".

5 The glottal in [ ] is present etically, but not normally indicated in the present description, since it is morphophonologically conditioned (cf. 1.2.3.3.2., below).
In this example, the i is the imperative form of the second
person non-singular marker. The object may be other than that
given, for instance fumaci "our father", though this particular
possibility is less probable than that given above.

Another possible source of the phrase given is

khôkakâvâtei na-khâ
fight-recip they-do "They do battle, they fight"

"-ki" and ",-k" may correspond to the Verb word Order 3

Directional suffix {-ki} "to come from" (cf. 3.1.2.4., below).

e.g. tsa-ni-kamâ-ki "il s'enivre" for tsa-ni kamâ-ki
he rec get-come-from
past drunk
"He has come from getting drunk"

no-neto-k "il mange" for no?nitêki
I-eat-come-from
"I come from eating"

It is inevitable that occasionally a final -k(i) should be
erroneously interpreted as this same morpheme.

e.g. advevôwâ(he)-k(û) "il vole" for adovigî "bird, he who
flies"

In none of these cases is the postulated suffix identifiable
with the augmentative, which in Resigaro is -kobê.

0.2.4.2. Resigaro Vocabulary.
The vocabulary contains 301 entries, listed according to the alpha­
betical order of the French glosses. These entries form the basis
for Rivet's grammatical comments, discussed above.

As the examples already given indicate, the semantic errors
and irregularities of transcription make identification of the
forms given often difficult and occasionally impossible. The
transcription used is not specified, and appears to be of the "homo-made" variety, as recommended in 'Dissertation. The inconsist-
encies are too numerous to list exhaustively, though amongst the
most notorious are the following:--

a) Different symbols are used to indicate the same sounds.
e.g. i) "tz" and "θ" for ts -- even in the same word:-

hsiatsooks "bois" for itsits6 "firewood"

ii) "dz", "dr^^", "r^^" and "r" for 6

"dz": w(h)6-podzi "nombril" for ve?ph6s6 "our navel"

"dr^^": dar^uhulki "fourmi curuinsse" for hundungi "curuinsse

ant"

"r^^": hor^one "genou" for ho?d6na6 "knee"

"r": hierawadZowi "rouge" for ked6vii?ovf "that

which is red"

iii) VhV, VaV, VhV, Vh, V, and VV for VV

If the - indicates a tone, whether high or low, there is nothing
to indicate this. It may indicate a longer vowel, which would
do away with the need for VV in Wavrin's transcription, unless
three or four degrees of length are claimed.

"VhV": noho-t6 "fille" for no6t6 "my daughter"

6 Cecilia, who was my informant for a brief while in Brillo Nuevo,
said [dr] where all my other informants said [d]. However, both
she and they said that she did not speak Resigaro well, since she
was separated from her people and spoke Bora all the time. Hence
data from her is not included in the present description. It may
be that she spoke a dialect of Resigaro and that Wavrin's inform-
ants came from the same group. This might explain some of the
more consistent differences between his data and mine, though it
does not account for the inconsistencies. In any case, it is clear
that the language in both instances is the same one -- down to the
people's name for their own group: Wavrin: r^q(h)panihi6n for
dafquini6. Further, my informants were aware that the Spanish
name for them is "Resigaro".
"VhV": ov(h)ëhokí "étoile" for hiviigi "star"
"VhV": tomhåtsi "cotton" for tshóaxåtsi "cotton"
"Vh": no(h)ö-dëa(h)në "fils" for no?zågni "my son"
"V": hëdra"ëu "sang" for iidd "blood"
"V": këwë "fleur" for giivi "flower"
"Vv": ëëtsë "nungs" for iitså "cloud"

b) The same symbols are used to indicate different sounds.

E.g. i) "h" for h, ʔ and vowel length (cf. above) -- even in the same word:

hahëhië "ciel" for hëhië "sky"

ii) "e" for Ts and t

For Ts: hen(h)ëëi "herbe" for hëmitzi "grass"
For t: hënëcë "nouche" for heëë "fly"

iii) "dz" (or "dë") for d, ñ, and ñ

For d: w(h)ë-podzi "nombril" for ve?phâdë "our navel"
For ñ: tadë(hi)ki "manioc" for kajjigi "yucca"
For ñ: dzëhodze "cinq" for së?osë "five"?

c) The same word is written differently if it occurs more than once (except when copied under various headings, such as "chicha de banane", listed under "banane" and "chicha").

E.g. i) inë(a)rë "femme", inahërëë "femme"

for infadë "woman, wife"

ii) hen(h)ëëi "herbe", hëmitzi "ris"

for hëmitzi "grass"

7cf. Bora [tsa?chtså?], "five".
iii) ētsē "nuage", hō(o)tan "pluie"  
    for iftshē "cloud"

iv) kihēki, kihō(ho)ki "lune"  
    for kegī "moon"

It must be emphasized that only some of the inconsistencies  
are given above, and only a few examples in each case, since to  
treat this problem exhaustively would require reproducing almost  
the entire Rivet-Nawrin vocabulary.

In spite of these problems of form and meaning, a thorough  
check of this vocabulary has been made in comparison with  
the lexicon I have compiled (cf. Appendix I, below) and the grammatical  
description which forms the basis of this thesis. This  
has permitted the positive identification of 201 entries, though  
in 59 cases the gloss given is substantially or even totally  
wrong. See examples above, and the following:  
i) fōghikō "vent" for fōo gi-khā "he (it) blows"  
ii) matsū(a)ka "haricot" for matshaakā "peanut"  
iii) kotsedžohiki "feu" for kotshejovigi "that which burns"  
etc.

Of the remaining 100 items, in 72 cases the Resigaro given  
is so totally different from that which I have for the same or  
related glosses that one must assume that a different word was  
given, the exact meaning of which is not yet clear. In many of  
these cases, too, the gloss may be inaccurate, and this and the  
vagaries of the transcription may be hiding words which are known
but have not yet been recognized.

The 28 outstanding items are words for which I have no entry in my lexicon. Some of these words were elicited, but produced the reply that no such words existed (e.g. "bow [and arrow]", "more" -- though "more than" is attested --; "goodbye"). Others (such as "generous", "to accept", etc.) may be revealed by further research.

0.2.4.3. Rosígaro-Arawakan Comparative Vocabulary.

This is detailed and thorough, clearly placing Rosígaro in the Arawakan phylum, in spite of some false cognates, and the present data substantiates Rivet's claim in this regard.

The map has already been commented upon (cf. 0.2.4., above).

0.2.5. Kingsley Noble.

In his study published in 1965, Kingsley Noble includes Rosígaro data taken from Rivet and Mavrin as part of his evidence concerning "Proto-Arawakan and its Descendants". He shows a score of cognates, and concludes that Rosígaro is "Proto-Northern" (cf. his diagram on p. 108). No original data on Rosígaro is produced, nor are any significant comments made, apart from the suggested classification.

0.2.6. Other Classifiers.

Most classifiers refer to each other, and to the early sources
(Hardenburg, Whiffen, Tessmann), and rarely is any new information produced.

The Handbook of South American Indians (1950 et. al.) reproduces most of the data seen elsewhere, and adds no new information as regards the Rosigaro (cf. 3:750, 5:85, 404, 6:247). According to the Handbook (6:247), Ortiz (1942 -- not seen) refers to the "Rosigaro" and doubts their relationship to the Huitotos.

Murdock (1951) lists the "Witoto" family as being in Colombia, and in a map on p. 14 shows an overlap into Peru. He comments,

"This group includes the Andoke, Bora (Miranya), Coeruna, Mucano, Bonoya, Ocaina, Crejon, Rosigaro and Witoto (Witoto) tribes, whose languages are tentatively assigned to a single linguistic stock, the Witotoan."

McQuown (1955:537) lists "Rosigaro", with the suggestion that it may be extinct, and the comment that its classification is doubtful.

Girard (1958) refers once to the "Rosigaro" (p. 131), referring to Hardenburg (1912:150). He indicates that they came with other groups to the region of the Yahuasyacu (sic) "hace unos 40 años" (p. 53).

de Castellvi and Espinosa Perez (1958) classify "Rosigaro" as Macro-Arawak, subclassification: Central, and refer to correspondence with Rivet, who informed them that
"El Marqués de Navarre recogió en uno de sus viajes un vocabulario de este dialecto que, según nos informó el Prof. Rivet, se encuentra en su poder" (p. 247).

Tovar (1961:16.4) says that Igualada and de Castelvi (1940 -- not seen) calculated about ten speakers of "Rosigaro" or "Resigaro" for the Amazon-Caquetá region. His map no. 3. shows "Resigaro" at location 32, apparently on the Peruvian-Colombian border on the Putumayo.

0.3. The basis of the present description.

The data on which this description of Resigaro is based was gathered by the author in Peru between July 1971 and July 1972. Three months were spent in the Bora village of Brillo Nuevo and the Ocaina village of Puerto Isango.

0.3.1. Informants.

Data was initially gathered in Brillo Nuevo from Cecilia, but since other Resigaro speakers subsequently told me that she made mistakes when speaking, and she herself seemed to lack confidence in Resigaro, this data has not been included in the present study.

Thus, the present description is based on an analysis of various types of speech (and a small amount of writing) by four adult Resigaro speakers in Puerto Isango.

Alicia Ocaina, who was married to an Ocaina, never spoke any language other than Resigaro, which her husband had learnt
to understand. Likewise, she apparently understood Ocaina.
In 1972 she was about fifty years old.

Her two daughters, Adelina and Rosa Andrade Oceanga, were bilingual in Resigaro and Ocaina, though they understood very little Spanish, and spoke even less. They both had Ocaina husbands, and in 1972 Adelina was 27 and Rosa, 23. Adelina had four children, and Rosa, two. Those children who were old enough to speak spoke some Resigaro, but most of the time they communicated in Ocaina.

Alicia’s son, Pablo Andrade Oceanga, was the only one with a reasonably good knowledge of Spanish (by local standards). He had attended the bilingual school in the village, and had completed the five-year primary course, learning to read and write in Ocaina and Spanish. In 1972 he was 21 and was unmarried. He became my main informant in September 1971 and worked with me solidly until I left Peru in July 1972. He was always helpful and enthusiastic, and soon learnt to write his own language, using the alphabet I developed from my phonemic analysis of the language. In November 1971 he accompanied me to the Summer Institute of Linguistics’ jungle base at Yarinacocha, near Pucallpa, on the Ucayali, where we worked on the language for the next eight-and-a-half months.

0.3.2. Corpus.
0.3.2.1. Legends.
In Puerto Isango, Adelina Andrade Oceanga told me twenty trad-
Additional tales, all of which I tape-recorded, I subsequently transcribed these stories and translated them roughly into Spanish, with Adelina's brother Pablo, who did a lot of the work. This formed $306\frac{1}{2}$ quarto pages of text (handwritten), which were repeatedly referred to in the course of language analysis and write-up. Seven of these tales (accounting for about 40% of the total material) were subsequently studied in further detail, and part of one of them is included in II.9., below, with morpheme-by-morpheme and free translations and grammatical analysis.

0.3.2.2. Other Stories.
Alicia Ocagane spoke about the recent history of the tribe, telling of the sufferings and killings experienced under the whites. She also spoke of the animals of the forest, and sang some of the traditional fiesta songs. All this material was tape-recorded, transcribed, and translated, although the songs have not been referred to in the present analysis, since they would appear to represent an older form (and definitely a different style) of the language, which Pablo could not always fully

---

8 Adelina has a slight speech defect which results in almost constant nasalization. S.I.L. member Miss Ilo Leach, who has worked in Adelina's village for many years, analyzing the Ocaina language, has noticed this in Adelina's speaking of Ocaina (in which nasalization is rare) (Personal communication). However, I do not suspect anything as serious as a cleft palate, since Adelina's pronunciation is otherwise problem-free, and she does not betray the sorts of impediments normal in cases of cleft palate. Perhaps the problem is in some way related to her control of her valum. None of the other informants had any such problem.
understand well enough to explain the meaning.

Rosa Andrade Ocaíara was much less of a talker, though she did re-tell a few Bible stories she had heard from missionaries. These stories were recorded, written down, and translated.

0.3.2.3. Conversation and letters.

When Pablo was in Yarinacocha with me, he decided to write to his mother and sisters, in Resigaro. In Puerto Isango, the schoolteacher (himself a Resigaro) was able to read this letter to Alicia, Adelina, and Rosa, and he wrote down a reply from them in Resigaro. Pablo kindly let me have copies of these letters, having corrected the spelling errors in the letter written by the teacher. He also wrote on another occasion, and corrected two letters that I wrote in Resigaro.

In June 1972, S.I.L. member Ilo Leech visited Puerto Isango, and recorded messages in Resigaro from Pablo's mother and sisters, and conversation between them. I have a copy of this tape and a transcription and translation of its contents.

0.3.2.4. Lexicon.

As part of the research undertaken in Peru, a tri-lingual lexicon was compiled of all Resigaro words encountered, with Spanish and Ocaina equivalents. Approximately 2,000 entries were made. (The lexicon is included as Appendix I, with the Ocaina deleted,
and English glosses substituted.)

0.3.2.5. Other material.
When I was busy with other work, Pablo translated St. Mark's Gospel from the Ocaina, and completed this as far as the end of the fourth chapter. Subsequently, we checked this together, and translated it into Spanish.

All these above sources provided valuable insights into the language, and, supplemented by material elicited from Pablo, form the basis of the description which follows.

0.4. Theoretical framework of the present description.
The aim of the thesis is to provide a general description of the Rucigaro language. Thus, the emphasis is not theoretical, and a model has been chosen which will, it is believed, facilitate the comparison of this language with others, particularly those which may prove to be related to it. The model referred to is tagmatics.

0.4.1. The Three Hierarchies.
Tagmatics views language as consisting of three independent but inter-locking hierarchies: phonological, grammatical, and lexical.

Each hierarchy consists of units at different levels, and a unit at any given level (except the lowest) consists normally of units from the level immediately below it, and functions (except in the case of the highest level) as an element in the level
immediately above it.

Thus, the **phonological hierarchy** has at its lowest level the phoneme, which is distributed in the syllable, at the next level in this hierarchy. This, in turn, may be distributed in a stress-group or phonological word, which is distributed in a yet higher-level phonological unit.

The **grammatical hierarchy** has as its minimum unit the tageme, which is distributed in a higher-level unit called a syntagneme (Longacre 1964a:15n10).

A tageme is a slot-class correlative (Pike 1967:196, etc.) (= Longacre's "function-set correlation" (1965a:65n3)). That is to say, a slot (function) at a given level is filled (manifested) by a member of a class (set). That which functions as a tageme at one level may be a syntagneme at a lower level. Thus, the concept of levels is fundamental to tagemetics.

The **lexical hierarchy** has as its minimal unit the "lexeme" (Longacre 1964b), which is distributed in higher-level lexical units, called "L-syntagnemes" by Longacre (1964b:20). The lexical hierarchy has not been developed in detail by tagemicians, though Wise has suggested a possible approach in her 1968 Ph.D. thesis (written under Pike's supervision) (Wise 1971a).

0.4.2. The Three Modes.
In addition to the three **hierarchies** indicated above, Pike states
that language can be viewed as being "trinodally structured". By this, he indicates a convenient framework within which language units of any hierarchy can be viewed and described. The three nodes are Contrast Node, Variation Node, and Distribution Node (originally named Feature, Manifestation, and Distribution Nodes, respectively, by Pike).  

Here is an example from the phonological hierarchy, phoneme level:

From the point of view of the Contrast node, each phoneme of any given language is described in terms of its contrastive-identificational phonetic features.

From the point of view of the Variation node, the variant manifestations, or allophones, of each phoneme are described.

From the point of view of the Distribution node, the distribution of each phoneme in units of the next level "up" in the phonological hierarchy (the syllable) is described.

The same descriptive procedure can be repeated at each level of the hierarchy.

It is of fundamental importance that Variation and Distribution nodes be distinguished, a point which most tagmemists seem to have failed to realize, if one is to judge from published

---

9These may be compared to Halliday's scales of abstraction, where Feature node parallels Halliday's abstract, Manifestation node parallels his concrete, and Distribution node parallels his syntagmatic.
materials. Likewise, the importance of levels must be emphasized.

0.4.2.1. Structure and Distribution.

In handling constructions at any level, it is clear that they can be viewed from two points of view:

1) In terms of their internal structure
2) In terms of their ("external") distribution.

In the early formulation of the theory, Pike combined these two, by speaking of internal and external distribution, respectively. This led to inconsistencies of the sort to be seen in Pickett (1960):

"CRITERIA OF CLASSIFICATION. Two criteria of classification have been applied to the data: external distribution and internal structure. Frequently the two give the same results."

-- but only as long as one remains at a very superficial level of analysis.

"In other cases they result in different divisions, in which case distribution is made primary, with internal structure determining subgroupings or (in one case) hypergroupings not part of the primary division." (p. 18)

"TYPES AND CLASSES. Use has already been made of the terms 'types' and 'classes' in reference to structures at each level. Types are emically contrastive structures. ... Classes of structures are, in general, more inclusive than types; i.e., they are groups of structure types which have some feature of distribution, internal composition [why this?] or meaning in common." (p. 19)

Thus, "contractive structures" or "common features of internal composition" at one moment lead to the establishment of
types, and at another to the establishment of classes. And sometimes classes are primary, while on other occasions, types are primary.

But this leads to a contradiction with Pike's establishment of the three nodes, as Crawford rightly pointed out (1963: 96, 179-180). So-called "internal distribution" (i.e., internal structure) is in fact part of the contrast (or feature) node, with the details of variant forms described under the variation (or manifestation) node. Pike subsequently (1967: 460) accepted this modification.

External distribution, on the other hand, has no place in the variation node, and should be described in the distribution node (though it may also be referred to in the contrast node -- so long as circularity is avoided -- since distribution may be a distinctive, contrastive feature of a unit.\(^{10}\)

Nevertheless, other tagmemicists have continued to fail to

\(^{10}\) I view contrast node as not being on a par with variation and distribution nodes, since aspects of variation and distribution are in themselves contrastive and identificational.

Thus, contrast node is merely a convenient bringing-together of some of the most salient characteristics of the other two nodes. This means that it cannot do other than repeat information given in greater detail in the variation and distribution nodes.

It may be argued that this node is therefore superfluous to the description, as a separate section. However, it is retained in the present work as an introduction to each structure at each level, since it helps the reader to focus on the particular aspect of the language which is to be analysed.
distinguish structure and distribution, with resultant contradictions in their work. Thus, in his grammar of Lomani, where he ostensibly presents his material in terms of the three nodes throughout, Trail first includes distribution under the contrast node, then sub-classifies units under the manifestation (i.e., variation) node on the basis of structure and distribution, and so finally, under the distribution node itself, is reduced to a mere repetition of what he has already said—omitting the details, at that, even though they are more relevant here than anywhere else.

At Word level, for instance, he says:

"Words are classified by their occurrence [i.e., distribution] in higher level structures, typically in phrases, and are sub-classified by their internal structure." (pp. 133-134)

In the Contrast mode, he includes distribution:

"5.1. Nouns.
5.1.1. Contrast. Nouns have the following distinguishing features: A. They fill the head slot in noun phrases or the locative or temporal slots on clause level..." (p. 134)

In the Variation (his "Manifestation") node of the noun word he says:

"5.1.2. Nouns have been sub-divided on the basis of their external distribution and internal structure. These sub-divisions and their manifestations are described in this section" (p. 134, emphasis mine).

Thus, on p. 139, Trail's description of the distribution node of noun words is as follows (I quote the section in its entirety):

"5.1.3. Distribution. Nouns fill the head slot in noun phrases or the locative or temporal slot in clauses."

Much confusion can be avoided by distinguishing construct-
ion types and distribution classes, to use a valuable terminological distinction suggested by John Bender-Samuel, though incorporated by him into a different theoretical framework (1963:61).\(^1\)

To give an example from Rosigaro:

Two types of noun stem are set up on the basis of (internal) structure, and one of these types has three variant sub-types, making four structurally different groups. Three sub-classes\(^2\) are set up on the basis of distribution in units of the next level "up". Theoretically, at least, both types and all three sub-types can occur in two of the three sub-classes, with one type also occurring in the third sub-class. If we fail to distinguish between structure and distribution, and further use the same term -- "sub-classes" -- in both cases, as in "rail (and others), we have the possibility of nine "sub-classes" of

\(^{1}\)Brend has made use of this terminology within the context of tagmemics (1968:19), but since her description only handles one level, it is not clear what the implications would be in terms of the entire hierarchy.

\(^{2}\)The term "sub-classes", rather than "classes", is adopted to distinguish between subdivisions of the major sets of units throughout the language, and the sets themselves. The sets are termed "classes", and the subdivisions "sub-classes". An alternative solution, adopted by Pike (1965) is to use the term "hyper-class" for "set", as defined here, and "class " for subdivisions thereof (e.g., op. cit., p. 12). This conforms to Pike's earlier use of the prefix "hyper" for sets of sets, yet since this terminology has now fallen somewhat into disuse, with the recognition of tagmemes at different levels, and the adoption of Longacre's "syntagmeme" to replace "hypergramme", the more generally-accepted terms "class" and "sub-class" are here preferred. The basic structural divisions of classes at any given level (e.g., of noun stems) are termed "types", and subdivisions of types are termed "sub-types".
noun stems. This contributes nothing to our understanding of the structure and distribution of noun stems in Resigaro, on the contrary only serving to confuse the picture.

0.4.3. Levels.
Fundamental to the distinction between Structure and Distribution is the concept of levels, since structures typically consist of units that are members of sub-classes at the level below, and distributional sub-classes typically occur in types at the next level up.

To illustrate, again, from Resigaro: at word level, two types and six sub-types of noun word are set up on the basis of internal (structural) differences. Traditional taxonomic practice would have us trace back those six sub-types to root level, i.e., noun root sub-type i occurs in noun stem sub-type i, which occurs in noun word sub-type i, etc. This is a consequence of Pike's original formulation of the model, as stated by Pickett (1960:90):

"... the original approach was specifically designed to cut 'vertically' through all such levels by a unit-within-unit approach."

However, this method introduces unnecessary complexity and redundancy throughout the description, by repeating the same information many times.

In terms of the Resigaro example given above, sub-classification according to word-level suffixes (which affect the struc-
ture of the word, and lead to the two types and six sub-types mentioned above) is relevant at word level, but if this is carried down to root level, along with the confusion of structure and distribution which led to nine "sub-classes" at stem level (also, by the same procedure, traced back to root level), then 54 "sub-classes" of Resigare noun roots are theoretically possible -- and this without sub-classifying the words according to their co-occurrence with one or more of the 30-odd classifier suffixes, which would yield a theoretically-possible 4,320 noun root sub-classes, at least.

A prime example of the consequences of this technique is to be found in the ten grammatical descriptions produced by members of the Bolivian Branch of the Summer Institute of Linguistics, under the direction of Esther Matteson (Matteson, 1967a and b).

Thus, in the Ese'eja Grammar by Shoemaker and Shoemaker (Vol. I, pp. 209-283) -- to take a random but typical case -- somewhat more than 60 verb phrase classes are set up (I:230) on the basis of the distribution of 13 different types of verb phrase in six clause types.

In the first place, the types and classes are confused, as in Trail. 13

13There are not 60-odd verb phrase classes, but six, at most, and this may be reducible to four -- Ditransitive, Transitive Intransitive and Stative, with a Quotative multiplication of
Secondly, the relevance of levels is not recognized. Thus, a page-and-a-half of formulae tell us that

"Vb [i.e., VP] lla = + Nuc:Vb nuc lla ....
Vb [i.e., VP] 13 = + Nuc:Vb nuc 13 ...."

etc. (pp. 231-2)\textsuperscript{14}

This is followed through to verb nucleus level, where we learn that

"Vb nuc lla = + H:vb ll ....
Vb nuc 13 = + H:vb 13 ...." etc. (pp. 237-8)

At word level, the formulae are repeated:

"vb ll = + Base: vb stem ll ....
vb 13 = + Base: vb stem 13 [sic] ...." etc. (pp. 262-4)

The apparent "skewing" here and in other cases reinforces the fact that distinctions established at one level are not necessarily relevant at other levels. In the case in question, this leads to a progressive simplification of classes at lower levels. Thus,

"vb stem ll = + Base: vb r 10 ...." etc. (pp. 266-8)

The format is a barrier to comprehension. This is in part a consequence of the above faults. In the midst of so

Transitive and Intransitive classes to yield Quotative Transitive and Quotative Intransitive. All 13 types of verb phrase occur in the Ditransitive class, and similarly in the Transitive and Intransitive classes, while only Independent types occur in Quotative Transitive and Intransitive classes, and in the Stative class. The major part of this might be storable in terms of a restriction on the co-occurrence of Quotative and Dependent multiplications, which in turn leads to the question as to whether Quotative has been included in the right axis. However, it is not relevant to explore these possibilities here.\textsuperscript{14} Other information in the formulae but not relevant to the present discussion is omitted.
much repetition -- both by repeating details at all levels, and by failing to collapse formulas at any given level -- significant details are easily overlooked by the reader, and generalizations are ignored by the writers. This is the case with all the grammars in the two volumes of this publication.

It is clear that Matteson recognized all these problems.

In the introduction to volume I she states,

"... the Ignacio grammar demonstrates devices for separating distribution from composition [i.e., structural] classes, introducing the former at the first level on which they are relevant, rather than carrying them through various levels for which they have no significance as has sometimes been done because of their correlation or partial correlation to composition classes." (I:9)

She adds the comment that

"Such devices are not limited to use in the Ignacio grammar."

However, an examination of the "devices" by reference to the sections she mentions reveals that they amount to subdividing classes established higher up (and dubbed "super-tagnones" -- cf. I:108), and designating the sub-divisions by a combination of capital letters and numbers. But this technique completely misses the point, failing to see the relation of construction types and distribution sub-classes to each other, and to specific levels of the grammatical hierarchy, and the relevance of the modal system to the whole problem.

The concept of levels, whose importance has been emphasized
by Longacre, avoids such unrealistic sub-classifications, by limiting the domain of sub-classification in any given case to the level (or levels) at which it is relevant, while the concept of the three modes of contrast, variation and distribution as developed by Pike provides a clear framework within which construction types and distribution classes and subclasses can be consistently handled.

There is an interlocking between levels, but it is between the distribution sub-classes of one level and the variation (or manifestation) types at the next level up, and not between the sub-classes of one level and the sub-classes of the next level. This may be clarified in the following diagram:

```
Sentence level   types
               ↑
Clause level    (types
               ↑ (sub-classes
Phrase level     (types
               ↑ (sub-classes
Word level       (types
               ↑ (sub-classes
Stem level       (types
               ↑ (sub-classes
Root level       sub-classes
```

i.e., sub-classes fit into types in the next level up, usually in the same class (noun stem sub-class distributed in noun word type, etc.) up to and including phrase level, from where

15. A practice long accepted by tagmecists in syntax, but ignored in morphology.
on up different sorts of relationships begin to appear (such as that between subject and predicate, etc.). Occasionally some sub-classes at a given level may be distributed in types of another class (as when the members of a sub-class of noun stems are distributed both in a type of noun word and a type of numeral word). Also, there may be level-skipping, recursiveness or backlooping, which is not included in the diagram. (The sub-levels of Group and Piece are also omitted, as they only affect one class in Rosigaro.)

Thus, in this context, there are four relations that are not normally relevant, and one that is:-

i) the grouping into construction types at one level is not relevant to the grouping into construction types at any other level;

ii) the grouping into construction types is not relevant to the classification into distribution sub-classes at the same level or any other level except that immediately below it;

iii) the classification into distribution sub-classes at one level is not relevant to the classification into distribution sub-classes at any other level;

iv) the classification into distribution sub-classes is not relevant to the grouping into construction types at the same level or any other level except that immediately above it.

(Points ii) and iv) ignore the possibility of level-skipping, etc., for simplicity of argument.)

The one significant relation is this:-
that between the classification into distribution sub-classes
at one level and (typically) the grouping into construction
types at the next level up.16

This does not deny the fact that the major classes that
are set up normally follow through from phrase level down to
root level. Thus, typically, a Noun Phrase has a noun word
as its head, a noun word has a noun stem as its base, and a
noun stem has a noun root as its base, etc. This following-
through of the classification from one level to another re-
fects the fact that such a procedure is relevant to the data
in question (and exceptions to the general pattern are indicated).
When we say that sub-classes at a given level are distributed
in types of the next level, we are not denying their distrib-
ution in units of a given class at the next level, since types
are no more than structural variants of a class, at a given
level. However, to relate the sub-classes of a given level
to the sub-classes of the next (or any other) level is erroneous.

In consequence of the distinctions made above, in the
following description construction types are presented under

16 Halliday (1961:261) defines "class" in substantially the
same way, when he says,
"... a class is always defined with reference to the
structure of the unit next above, and structure with
reference to the classes of the unit next below. A
class is not a grouping of members of a given unit which
are alike in their own structure. In other words, by
reference to the rank scale, classes are derived "from
above" ... and not "from below"..." (Emphasis Halliday's.)
the variation node for the major class and level in question (and are enumerated with Roman numerals), while distributional sub-classes are presented under the distribution node for the class and level in question (and are enumerated with Arabic numerals). I have yet to see any other tagmemic description that follows this format, and yet it seems the only way to present the data without doing violence to the concept of nodes. It seems to me that Pike laid open the way for the sort of treatment I suggest (or, even more than this, required it) in his development of nodes. As Pickett says,

"Pike's definition of a distribution class is the list of forms (potentially ranging from one morpheme to full sentences) which occur in any one tagmemic slot. Such a distribution class combines groups of very different internal structure." (1960:95, emphasis mine.)

0.4.4. Multiplication.

Thus far, two techniques for reducing the great tagmemics problem of repetition have been discussed: the distinction between variation and distribution nodes, and the related concept of levels.

A third, and complementary, technique is that of matrix multiplication, which has been developed by Pike since about 1962 (Pike 1962, 1963, 1970). This combats the segmentation of earlier tagmemics which often obscured relations and led to avoidable repetition.

By means of multiplication of a matrix by a given factor,
new matrices can be derived (1962:226-229). Thus, for example, English passive sentences can be derived from active sentences. This development obviously owes a lot to the appearance of Transformational-Generative grammar in the late 50's.

In the present description, multiplication is used to derive Interrogative, Imperative, Nominalized and Relativized clauses from the basic Declarative clause.17

0.5. Scope.
In the present thesis, the bottom two levels of the phonological hierarchy are described (phoneme level and syllable level), as an introduction to the description of the grammatical hierarchy, which forms the main section of the thesis. A description of the tones and tonal morphophonemics of Rosigaro is beyond the scope of the present description, though tones are indicated throughout.

The grammatical hierarchy is described from root to sentence, the levels being:

- Root
- Stem
- Word
  (Group)
  (Piece)
- Phrase

17 cf. Longacre, 1965b.
Clause
Sentence
Group and Piece are best considered as "sub-levels", since they are only relevant to the description of the verb. Since the Sentence is the highest level analysed, its distribution is not given, though a sample text is analysed at the end of the grammar section.

As indicated above, the lexical hierarchy is the one on which least work has been done by tagmemicists. Longacre has pointed out the importance of separating the lexicon from the grammar:

"Lexicon is a third mode [i.e., hierarchy] of linguistic structuring. It is sufficiently separate from grammar that the description of the interplay of item and context, of idiom formation, and of lexical strings ... is a study within itself. Attempts to incorporate the lexicon directly into the grammar will lead only to the oversimplification of the former or to the endless atomization of the latter" (1964a:8).

The size of the task is also recognized by him:

"To describe a language exhaustively (a task as yet seriously attempted by no one), three volumes are needed: a phonological statement, a grammatical statement, and a highly sophisticated dictionary" (1964a:8).

A fulfillment of Longacre's requirement that the dictionary be "highly sophisticated" would be beyond the scope of the present work, since it would make the thesis overlong to go into the necessary detail with some 2,000 entries, and the alternative of presenting merely a sample lexicon such as that in Loos (1969), where only 73 items are handled, though
in considerable detail, or in the style of Katz and Fodor (1963:186) on the one word "bachelor", was considered unacceptable. 18

Therefore, as in Trail, 1970, the complete lexicon compiled during the research project is included. This consists of the basic lexical units only, and in this description the whole section forms an appendix, for reference, and to form the basis of future analysis.

18 The fact that Loos's thesis is cast in a Transformational format does not affect the relevance of this comparison, since to be valid, the tagmemic model would have to produce a dictionary of similar sophistication, and Loos's sample lexicon illustrates the sort of limitations such a requirement imposes on research projects in which analysis of the lexicon is not the major objective.
PART I:

PHONOLOGICAL HIERARCHY
0. Introduction.

In describing the three nodes, above (section 0.4.2.), an example was given from the phonological hierarchy, phoneme level. This indicated that phoneme contrasts are described under the contrast node, allophonic variation described under the variation node, and distribution under the distribution node.

However, while this presentation might be theoretically satisfying, in practical terms it is at least inconvenient, if not inappropriate, and tagmemists have generally described the phonological hierarchy without reference to the three nodes (e.g. Elson (ed.), 1967).

Even Kenneth Pike has not followed this presentation completely. In the article he co-authored with Rachel Saint in Studies in Ecuadorian Indian Languages: I (Elson (ed.), 1962), though the description is in terms of the three nodes, a concession is made to convenience in that first consonants are described in terms of each of the three nodes, and then vowels are described in the same way (cf. p. 2).

Other articles (by other authors) in the same publication reduce these six sections to five, by grouping consonants and vowels for distribution, though separating them for the other nodes (see, for example, Borjan (pp. 45-59)).
In the present description, it has been thought preferable to reduce this further to the original format of the three nodes (i.e., in three sections), by changing slightly the components of each section.

Thus, on the phoneme level, for instance, contrast node summarizes the contrastive-identificational features of phonemes in two matrices and a short statement (for suprasegmentals).

Detailed exemplification of the phonemes, justifying their establishment as separate units, is reserved for the variation node. This is considered appropriate since the variant manifestations of the phonemic unit (an abstract entity) are the phonemes, just as the variant manifestations of the Noun Phrase, for instance (in the grammatical hierarchy), are different types of NP. Inherent in the establishment of different types -- in any hierarchy -- is their contrast with other types at the same level.

In this, the presentation of the phonology in this description parallels that of the grammar, where the contrast node merely indicates briefly the contrastive characteristics of the levels and units in question as a whole, in justification of the establishment of that level (and, in the grammar, the particular class -- noun word versus verb word, etc.). It also has the advantage of permitting the allophones of a
phoneme to be described at the same time that the phoneme is described, instead of in a totally different section, as in the articles in Elson, 1962, referred to above.
Chapter 1

PHONE LEVEL

The phoneme level is set up as the lowest level in the phonological hierarchy. Phonemes are distributed in units of the next level of the phonological hierarchy, the syllable. Types of phonemes are set up on a structural basis -- i.e., according to certain phonetic characteristics. Classes of phonemes are set up on the basis of distribution in the syllable.

1.1. Contrast.

The contractive-identificational features of phonemes are best summarised in two matrices (one for contoids and the other for vocoids) and a short statement (for suprasegmentals).

---

1 The distinctive feature, referred to in 1.1.2., below, might be considered as constituting a lower level than that of the phoneme. However, this approach is not adopted here, since the distinctive feature represents a greater degree of abstraction than the phoneme, and has no independent status apart from its co-occurrence with other distinctive features in the phoneme. This description takes as starting point the distinctive feature as the basis for separating phonemes.

2 It is worthy of note that the three types of phoneme (Contoid, Vocoid, and Suprasegmental) are co-extensive with the three distribution classes (named Consonant, Vowel, and Tone). However, the sub-types of phonemes bear no noticeable correlation to the distribution of the members of each class, except in the few cases indicated in Part I, Chapter II, below.

3 Pike's useful distinction between contoid/vocoid and consonant/vowel is retained, since the membership of the classes Consonant and Vowel is clearly dependent on distributional features, which cannot determine the establishment of types on the same level, as
<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plosives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vl. asp.</td>
<td>h&lt;sup&gt;4&lt;/sup&gt;</td>
<td>t</td>
<td>t&lt;sup&gt;y&lt;/sup&gt;</td>
<td>k</td>
<td>?</td>
</tr>
<tr>
<td>vd.</td>
<td>b</td>
<td>d</td>
<td>d&lt;sup&gt;y&lt;/sup&gt;</td>
<td>g</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vl. asp.</td>
<td>t&lt;sup&gt;sh&lt;/sup&gt;</td>
<td>c&lt;sup&gt;h&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Affricates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vl.</td>
<td>ts</td>
<td>c&lt;sup&gt;?&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vd.</td>
<td>dz</td>
<td>j</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vl.</td>
<td>f</td>
<td>s</td>
<td>z</td>
<td>h</td>
<td></td>
</tr>
<tr>
<td><strong>Fricatives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vd.</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vl.</td>
<td>m</td>
<td>n</td>
<td>ŋ</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nasals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vd.</td>
<td>n</td>
<td>n</td>
<td>ŋ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1.1. Contoid Matrix.

Outside the system: /r/, /x/ (cf. 1.2.1.5., below)

indicated in 0.4.2. and 0.4.3., above. The fact that in Resigaro the membership of the structural types of phoneme is co-extensive with that of the distributional classes should not be allowed to undermine this distinction, as otherwise one would end up with circularity. cf. K.L. Pike, 1943:

"If the phonetician first delimits supposed articulatory classes by phonemic features, how can he then describe the phonemes with articulatory methods? Any such attempt presents a vicious circle of phonemics to phonetics, with the phonetician starting at phonemics," (pp. 77-78) cf. also K.L. Pike, 1947:13bn-14an.

Contoids and vocoids are defined in phonetic terms. A vocoid is a sound in which the air escapes out of the mouth over the centre of the tongue, without pronounced or localized friction in the mouth. (cf. K.L. Pike, 1947:4b-5a; 1967:332) A contoid is any nonvocoid.

<sup>4</sup>/p<sup>h</sup>/, /th<sup>h</sup>/, etc. are for convenience subsequently written ph, th, etc.
Table 1.2. Vowoid Matrix.

<table>
<thead>
<tr>
<th>Front</th>
<th>Central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (spread)</td>
<td>i</td>
<td>u</td>
</tr>
<tr>
<td>Mid (spread/round)</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Low (neutral)</td>
<td>a</td>
<td></td>
</tr>
</tbody>
</table>

Suprasegmentals: High tone: '
Low tone: (Absence of ')

1.2. Variation.

Phonemes are grouped into types on the basis of certain characteristics of phonetic structure.

- **Phon** = All Consonoids
- **Phon** = All Vowoids
- **Phon** = Suprasegmentals

In establishing the identity of phonemes, their contrastive nature is fundamental. Thus, each posited phoneme is contrasted with all other posited phonemes with which it might conceivably be in a non-contrastive relationship. This results in repeated application of the commutation test on pairs of phonemes differing by one distinctive feature at a time. Ideally, the words in which these phonemes appear in the examples given are identical at all other points (i.e., minimal pairs). When such a clear minimal pair is available, only one example
is given. When the pairs are only nearly minimal, if there may appear to be any doubt concerning the presence of an enic contrast, two or even three examples are given.

1.2.1. Phoneme type i: Conoids.

In Rosigaro there are 30 conoid phonemes, which contrast in four ways as to type and five as to point of articulation, and also as to presence or absence of voicing and aspiration. In this description, the articulation type is taken as primary, resulting in four sub-types of phoneme type i: 

Phoni.i = Plosive
Phoni.ii = Affricate
Phoni.iii = Fricative
Phoni.iv = Nasal

In addition to these 30 conoid phonemes of four sub-types, there are also a fricative and a flap that are not part of the system.

1.2.1.1. Phoneme type i, sub-type i: Plosives.

There are three series of plosives -- voiced, voiceless, and voiceless aspirated -- at four points of articulation: labial\(^5\), alveolar, palatal, and velar, with a hole in the slot

\(^5\)The terms used to describe the points of articulation are not to be considered as descriptive, but rather, contrastive in terms of the system. Thus, "labial" refers to phonemes in which the main articulators are both lips, yet the title "bilabial" is unnecessary, since there are no labio-dental sounds in the language. Similarly, /\(\text{ty}\)//, /\(\text{dy}\)//, /\(\text{h}\)// and /\(\text{h}\)// are realized with the tongue further forward in the mouth than the other phonemes labelled "palatal", being in fact palatalized alveolars;
where a voiceless aspirated palatal might be expected. There is also a glottal stop.

1.2.1.1. /ph/ is an aspirated voiceless bilabial plosive. Its contrastive nature may be derived from the following minimal and near-minimal pairs:

- /ph/-/p/ phiigl "banana tree" / piigi "ant-eater"
- /ph/-/b/ pho?khoötsi "fan" / bo?otáhi "plate"
- /ph/-/f/ phöogikhá "he agitates" / füogikhá "he blows"
- /ph/-/th/ hada?phoötsihá "song" / a?nithoötsihá "kitchen"
- /ph/-/kh/ hada?phoötsigl "a singer (m)" / tho?khoötsi "pestle"
- /ph/-/w/ nophá "I tread" / nómá "I bite"

1.2.1.2. /p/ is an unaspirated voiceless bilabial plosive. Its contrastive nature may be derived from the opposition /ph/-/p/ (above), and from the following minimal and near-minimal pairs:

- /p/-/b/ po?vu "you are getting yourself wet" / bo?otáhi "plate"
- /p/-/f/ páni "your saliva" / füüchá "our lake"
- /p/-/o/ pöötsigá "frog" / füogikhá "he blows"
- /p/-/t/ po?vu "you are getting yourself wet" / pito?vá "you take (sthg) out"
- /p/-/k/ gipaáni "his house" / gikaáni "his bitter yucca"

Whereas /g/, /ð/, etc. are palatales. However, the contrast is again between purely alveolar phonemes and those in which a palatal position of the tongue plays an integral part. (cf. Bloch, 1950:91 fn 13)
par tā "to lock" / ka r tā dā kā "(a species of bird)" (Sp.: chachalaca)

/p/-/m/ p a r t o c n a c "a watchman" / na?pa chā na?pi "Without winning, I go"

1.2.1.1.3. /b/ is a voiced bilabial plosive with optional onset of voice before the release, particularly in initial position or for emphasis. When realized, this results in the sound [pʰ]. Its contrastive nature may be derived from the oppositions /ph/-/b/ and /p/-/b/ (above), and from the following minimal and near-minimal pairs:

/b/-/v/ be?cē "new" / ve?fi "here"
/b/-/n/ boc?gikā "he paddles" / noigikā "he mixes (sthg)"
/b/-/d/ bo?tēki "plate" / do?tēki "that one (f)"
/b/-/g/ bo cō dokki "she sweeps" / go?dokki "she puts a stick in the ground"

1.2.1.1.4. /th/ is an aspirated voiceless alveolar plosive. Its contrastive nature may be derived from the opposition /ph/-/th/ (above), and from the following minimal and near-minimal pairs:

/th/-/t/ tho k hō to sīl "pestle" / tōdō k sākā "toad"
/th/-/d/ tho k hā mā "Keinami Huitotos" / do kā mō "she is dripping wet"
/th/-/ty/ tā gī sā "he sinks (in a canoe)" / tyā dīlō "grandfather"
/th/-/kh/ thi thī? sā "(a species of monkey)" (Sp.: sumilec- cito) / khi gī "maternal uncle"
/th/-/tsh/ giʔtɛθɛ "he breaks (the shell of peanuts)"
/ giʔtɛθɛ "he kills, hits (s.o.)"
/th/-/čh/ tʰoɡikʰă "he shakes (sthg)" / čhöɡikʰă "he spits"
/th/-/n/ giʔtá tʰáʔjá "this one (:) sinks (in a canoe)"
/ maʔpú "they win"

1.2.1.1.5. /t/ is an unaspirated voiceless alveolar plosive.
Its contrastive nature may be derived from the oppositions
/p/-/t/ and /th/-/t/ (above), and from the following minimal
and near-minimal pairs:
/t/-/d/ tɒmɔd "the sea" / dɛʃ "tree bark"
/t/-/ty/ tɑŋjɔ "grandmother" / tyaʔdio "grandfather"
/t/-/k/ gifotápa "he is frightening (s.o.)" / gifokápa
"he is frightened [progressive]"
/t/-/ts/ giʔtã "he fasts" / giʔtsu "he scorns"
/t/-/č/ toogikʰă "he breaks (sthg)" / čoɔgikʰă "he kisses"
/t/-/n/ toʔvɯ "to get, to obtain" / mɛʔvu "I walk"

1.2.1.1.6. /d/ is a voiced alveolar plosive with optional
onset of voice before release, particularly in initial pos-
ition or for emphasis. When realized, this results in the
sound [²d]. The contrastive nature of this phone may be
derived from the oppositions /t/-/d/, /th/-/d/ and /t/-/d/
(above), and from the following minimal and near-minimal
pairs:
/d/-/dy/ doovã "(a type of almond)" / dyoomáʔs? "proud"
huɗuŋí "curuhuinse ant" / dyuɕi "(a man's name)"
/d/-/z/ do?kḥa "he falls a tree" / go?kḥa "to put a stick in the ground"

/d/-/dz/ duugiẓa "he stays" / dzu?giẓa "it shrinks"

/d/-/j/ dā?nə "it (a tree) falls" / jā?nə "to keep vigil, to wait"

/d/-/n/ do?n̩iṭa "she eats" / no?n̩iṭa "I eat"

1.2.1.1.7. /ty/ is a voiceless palatalized alveolar plosive, in which the initial position of the tongue may be slightly retracted from the position for /t/. Its contrastive nature may be derived from the oppositions /th/-/ty/ and /t/-/ty/ (above), and from the following minimal and near-minimal pairs:-

/ty/-/dy/ tyu11gi1ū "parakeet" / dyu11gi1ū "wooden buttons for flooring and walls"

tya?d11o "grandfather" / gadya?no1ū "I get angry"

/ty/-/ʕ/ tya?d11o "grandfather" / ćašhū "charcoal"

tyo?tyū? "pretty" / ćoo?kḥa "to kiss"

/ty/-/ts/ tyū?o?tyū? "butterfly" / tsō?vū "(an animal something like a dog)" (Sp.: comadreja)

rya?d11o "grandfather" / tsa?i "armadillo"

/ty/-/ʕ/ tya?d11o "grandfather" / našḥa "silence"

tyu?dū "small woodpecker" / ūke? tsō "she gets better, stronger"

These last two pairs are not completely satisfactory, and an argument (admittedly, a rather improbable one) could be brought for environmental conditioning here. Even without such an argument, it might be claimed that the lack of examples of contrast
in identical environments is sufficient reason to justify the uniting of the two phones in one phoneme, perhaps with some such rule as the following:

/TY/ (the hypothesized phoneme) is realized

a) as [ty] in the context of another alveolar stop in the next syllable; and

b) as [ɾ] in the context of a nasal in a contiguous syllable, or a velar stop in the next syllable.

This rather dubious rule does not, however, account for such cases as tyo?tyo? "pretty" or tyrugii"parakeet" (part (a)), nor does it account for cases such as wi?i"to make a hole" (part (b)). It would, perhaps, be possible to redefine the rule in such a way that these and other cases would be taken care of, but such expansion of the rule could only be made at the cost of further loss of credibility.

Lost an appeal to credibility and probability is considered insufficient reason for opposing the union of these two phones in one phoneme, the following additional reasons are given:

1. The lack of clear minimal pairs for /ty/ and /ɾ/ would appear to be non-significant and merely a reflection of the low frequency of occurrence of these two phones, and the limits to the amount of data gathered and analyzed to date.

2. The voiced counterparts (/dy/ and /ɾ/) of these phones
are clearly separated, and to unite the latter would thus
destroy the two-way pattern of oppositions (voiceless/voiced
and nasal/oral), giving

\[ /Ty/ \]
\[ /dy/ \]
\[ /\tilde{a}/ \]

where the distinctive feature between \(/dy/\) and \(/\tilde{a}/\) is nasality,
while that between these two and \(/Ty/\) is voice and, depending
on the allophone, presence or absence of nasality. The set
of oppositions is seen much more clearly if the two allophones
of the proposed phonemes are set up in a matrix with the pho-
phones \(/dy/\) and \(/\tilde{a}/\):

- Nasality  + Nasality
- Voice  \([ty]\)  \([\tilde{a}]\)
+ Voice  \(/dy/\)  \(/\tilde{a}/\)

Such a matrix lends strong weight to the interpretation of
\([ty]\) and \([\tilde{a}]\) as two separate phonemes, \(/ty/\) and \(/\tilde{a}/\).

3. This matrix could be expanded by taking into account the
labial and alveolar positions, where the same set of distinc-
tive features is clearly emic (cf. examples in the relevant
sections of this chapter). It is here claimed that \([ty]\) and
\([\tilde{a}]\) demonstrate the same emic set of contrasts in palatal pos-
iton.

This argument, which owes a lot to Pike's premise "sound
systems have a tendency toward phonetic symmetry" (1947:59b,
116-121), has in recent years received added support from an-
other direction, namely the concept of markedness in generative
phonology as developed by Chomsky and Halle (1968), which in turn stems from Prague School phonology and the subsequent theory of binarism proposed by Jakobson. 6

According to Postal (1968: 178), if a marked value of a feature occurs, the unmarked value must also occur. Taking [+ Voice] as the marked value of plosives in Resigaro7, in which /b/, /d/, /dy/ and /g/ are thus marked, and /p/, /t/ and /k/ are attested8, the presence of marked /dy/ implies an unmarked /ty/.

The argument for the nasal /m/ is less strong, since while the presence of a marked value implies the presence of the unmarked value too, the converse is not the case. In the case of nasals, the Naturalness Condition (Postal, op.cit., pp. 80-81) would presumably require that the marked value for nasals be [- Voice]. (This also follows from Chomsky and Halle, op.cit., p. 413 and p. 405, (XV).) In Resigaro, /w/ and /n/ are thus marked, and unmarked /i:/ and /n/ (implied by the presence of the marked nasals) are indeed attested. Unmarked /n/ is also attested, though from this alone the presence of marked /n/ cannot be inferred. However, since marked nasals do occur at other points of articulation,

6cf. Jakobson and Halle, 1956, especially pp. 29-32, where their 12 binary oppositions are listed and described, and pp. 44-49, where the establishment of this "dichotomous scale" is defended. 7cf. Chomsky and Halle, 1968:413. 8We here ignore, as irrelevant to the present argument, the series /ph/, /th/, /kh/, which would have [- Voice] [+ Asp.].
this would strengthen the argument for the presence of a
marked palatal nasal /ɔ/.

4. Finally, though the only difference between /ty/ and
/ɔ/ is one of the position of the velum, the oral/nasal dis-
tinction is generally accepted as being sufficient to prevent
the union of consonant phones under the criterion of phonetic
similarity, unless the structure of the phonemic system of
the language as a whole would justify such a union. The con-
trary is the case concerning the structure of the phonemic
system in Resigaro, as has been demonstrated in 1-3, above,
where it is seen that nasality is a distinctive feature of
the language. On this point, Lounsbury says,

"It is generally assumed that the allophones of a phoneme
are in some sense equivalent stimuli. They are defined so
that they share the same distinctive features (features that
function as cues for differential responses in the given
language) and differ from one another only by nondistinc-
tive features (those which do not function as cues)."
(1963:569)

1.2.1.1.8. /dy/ is a voiced palatalized alveolar plosive in
which the initial position of the tongue may be slightly re-
tracted from the position for /d/. No early onset of voice
such as would produce [ⁿdy] has been observed (possibly be-
cause of the infrequency of occurrence of this phone). The
contrastive nature of /dy/ may be derived from the oppositions
/d/-/dy/ and /ty/-/dy/ (above), and from the following minimal
and near-minimal pairs:–

/dy/-/ʒ/ dyoomâ?o?i "proud" / ʒoðâ "parrot"
gadya?giža "he gets angry" / gadjep "field"

/dy/-/dz/ duñüsikü "(a species of palm tree)" (Sp: huanan) / dzu?gikña "he shrinks (it)"
gadya?giža "he gets angry" / dzu?gikña "he throws water on the fire"

/dy/-/ñ/ dyooms?i?i "proud" / ño?u?tsa "it is smooth"
gadya?giža "he gets angry" / ñaa?ñé "their thing"

1.2.1.1.9. /kh/ is an aspirated voiceless velar plosive.
Its contrastive nature may be derived from the oppositions
/ph/-/kh/ and /th/-/kh/ (above), and from the following minimal and near-minimal pairs:-

/kh/-/k/ nokhâ "I make, I do" / nokh "I cook"
/kh/-/ñ/ khüigı "maternal uncle" / giiví "flower"
/kh/-/ñh/ khü?akhì? "later" / ñhü?ke?ì "maraca"
    khüigı "maternal uncle" / ñhipì "its outside"

1.2.1.1.10. /k/ is an unaspirated voiceless velar plosive.
Its contrastive nature may be derived from the oppositions
/kh/-/k/, /p/-/k/ and /t/-/k/ (above), and from the following minimal and near-minimal pairs:-

/k/-/g/ kajigì "yucca" / ga?jigìhi "(a man's name)"
    kuuhuf "walking stick" / guupiža "you meet"
/k/-/ñ/ koo?ph?tì "to abhor" / ñoo?khoštsì "a kiss"
    kajigì "yucca" / ña?hikña "to become charcoal"

1.2.1.1.11. /g/ is a voiced velar plosive with optional onset
of voice before the release, particularly in initial position or for emphasis. When realized, this results in the sound [ʔ]. The contrastive nature of this phoneme may be derived from the oppositions /b/-/g/, /d/-/g/, /ku/-/g/ and /k/-/g/ (above), and from the following near-minimal pair:- /g/-/j/ godōhi "Doros" / jodoofiga "waterfall"

1.2.1.12. /ʔ/ is a glottal stop. Its contrastive nature may be derived from its opposition to the other voiceless plosive phonemes, the voiceless glottal fricative, and zero, as shown in the following minimal and near-minimal pairs:-

/ʔ/-/p/ giifi "this one (m)" / gipifi "his anteater"
/ʔ/-/t/ dootθei "that one (f)" / dotēkhē "her (species of fruit)" (Sp.: shapaja)
/ʔ/-/k/ doθi "this one (f)" / dokō "towards her"
/ʔ/-/h/ doθi "this one (f)" / dokō "for her" (benefactive)
/ʔ/-/θ/ tseuθa "he requests" / tsēʔa "he hears"

1.2.1.2. Phoneme type i, sub-type ii: Affricates.

There are three series of affricates — voiced, voiceless, and voiceless aspirated — in two points of articulation, alveolar and palatal.

1.2.1.2.1. /tsh/ is an aspirated voiceless alveolar affricate. Its contrastive nature may be derived from the opposition /th/-/tsh/ (above), and from the following minimal and near-minimal pairs:-

/tsh/-/ts/ iftshá "smoke" / iftsa "to let go, to release"
/tsh/-/dz/ tsh66edokhá "she scoops out" / dzood66a "she takes a quick dip (in the water)" (i.e., "she goes into the water, and comes out again quickly")

/tsh/-/ chá/ tshiiipi "tail" / chápipó "its outside"

tshonaatshi "cotton" / cháni "sister" (vocative)

/tsh/-/s/ tshás6thooná "glue" / ñ66oochá "one (tin, pot, etc.)"

1.2.1.2.2. /ts/ is an unaspirated voiceless alveolar affricate. Its contrastive nature may be derived from the oppositions /t/-/ts/, /ty/-/ts/ and /tsh/-/ts/ (above), and from the following minimal and near-minimal pairs:

/ts/-/dz/ tsaagí6 ña "he shouts for joy" / dzaagíkhá "he throws water on the fire"

/ts/-/ chá/ tsh66ovígikhá "he sharpens (sthg)" / ñoo6vágikhá "he will kiss (s.o.)"

/ts/-/s/ tsa??i "armadillo" / sa??i "one (bunch of fruit)"

1.2.1.2.3. /dz/ is a voiced alveolar affricate. No early onset of voice such as would produce [n ثdz] has been observed. The contrastive nature of this phoneme may be derived from the oppositions /d/-/dz/, /dy/-/dz/, /tsh/-/dz/ and /ts/-/dz/ (above), and from the following near-minimal pairs:

/dz/-/j/ dzaakhotá "to cause to throw water on the fire" / j6666ovói "life"

dze6j6 "to get out" / j666vi "wolf"

1.2.1.2.4. / chá/ is an aspirated voiceless palatal affricate.
Its contrastive nature may be derived from the oppositions /\text{th}/- /\text{th}/, /\text{kh}/- /\text{th}/ and /\text{tsh}/- /\text{th}/ (above), and from the following minimal and near-minimal pairs:

/\text{th}/- /\text{t}/  
\begin{align*}
\text{\vogikhu "he spits"} & / \text{\vogikhu "he kisses"} \\
\text{\hak\vogikhu "to chew"} & / \text{\jak\text{"field"}} \\
\text{\fo\o\vogikhu "my neck"} & / \text{\noco\vogikhu "my beard"} \\
\text{\vogikhu "he spits"} & / \text{\vogikhu "he pours water"}
\end{align*}

1.2.1.2.5. /\text{\v}/ is an unaspirated voiceless palatal affricate. Its contrastive nature may be derived from the oppositions /\text{t}/- /\text{t}/, /\text{ty}/- /\text{t}/, /\text{ch}/- /\text{t}/ and /\text{th}/- /\text{t}/ (above), and from the following minimal and near-minimal pairs:

/\text{\v}/- /\text{\j}/  
\begin{align*}
\text{\vogikhu "he kisses"} & / \text{\jool\vogikhu "waterfall"} \\
\text{\vogikhu "he pours water"} & / \text{\vogikhu "he pours water"} \\
\text{\hak\vogikhu "charcoal"} & / \text{\hak\vogikhu "to disperse"}
\end{align*}

1.2.1.2.6. /\text{\j}/ is a voiced palatal affricate, in which no early onset of voice prior to release has been observed. Its contrastive nature may be derived from the oppositions /\text{d}/- /\text{\j}/, /\text{dy}/- /\text{\j}/, /\text{g}/- /\text{\j}/, /\text{ch}/- /\text{\j}/ and /\text{th}/- /\text{\j}/ (above), and from the following near-minimal pairs:

/\text{\j}/- /\text{\zh}/  
\begin{align*}
\text{\n\zh\vogikhu "I escape"} & / \text{\n\zh\vogikhu "I dig"} \\
\text{\gijogikhu "his spade"} & / \text{\izogikhu "ghost, spirit"}
\end{align*}

1.2.1.3. Phoneme type i, sub-type iii: Fricatives.

There are two series of fricatives — voiceless and voiced —
in four points of articulation -- labial, alveolar, palatal and glottal -- with holes in the slots where voiced alveolar and voiced glottal fricatives might be expected.

1.2.1.3.1. /f/ is a voiceless bilabial fricative. Its contrastive nature may be derived from the oppositions /ph/-/f/ and /p/-/f/ (above), and from the following near-minimal pairs:
/f/-/v/ fio?gikhā "he whistles" / viogikhā "he mixes (sthg)"
flinokhā "I push" / vivi?gā "rapids"
/f/-/m/ fipohi "our land" / mepkā "piranha"

1.2.1.3.2. /v/ is a voiced bilabial fricative. Its contrastive nature may be derived from the oppositions /b/-/v/ and /f/-/v/ (above), and from the following near-minimal pair:
/v/-/i/ vatsōgī "turkey buzzard" / natshaṅkā "peanut"
It has two allophones:
    [β], occurring before /i/ and /e/
    [w], occurring elsewhere
    e.g. i) [β]:--
       Before /i/: non6aavī [nɔn6ʔa:βi] "my lip"
       " /e/: vedensā [be?e?nːa] "clothing"
ii) [w]:--
       Before /a/: vatsōgī [watsōɡi] "turkey buzzard"
       " /o/: vontsnā [wontːnːa] "our teeth"
       " /u/: nodo?phaavā [nodo?phaː:wː] "I work"
/v/ cannot be viewed as a vocoid merely functioning as a con-

sonant, because of its major continuant allophone [p].

1.2.1.3.3. /s/ is a voiceless\(^9\) alveolar fricative. Its contrastive nature may be derived from the oppositions /tʃh/-/s/ and /ts/-/s/ (above), and from the following near-minimal pairs:

/s/-/ʃ/ soo?gikhi "he sucks" / Šoogikhi "he pours water"

/s/-/ʃ/ sabo?gikhi "he sinks (sthg)" / Šakoo?giči "banana"

1.2.1.3.4. /z/ is a voiceless palatal fricative. Its contrastive nature may be derived from the oppositions /ʃh/-/z/-/z/-/ʃ/ (above), and from the following near-minimal pairs:

/z/-/ʃ/ gižakoo?giči "his banana" / gižakovči "his life"

tsa giščtš "he makes him eat meat" / ižo "ghost, spirit"

/z/ has a series of palatalized allophones with varying degrees of palatalization, which occur in free variation with the non-palatalized variant. The palatalization tends to be especially pronounced before /a/, and to a lesser extent before /o/ and /u/, in that order. Weak palatalization of /z/ is occasionally heard before /o/, but palatalization is rarely heard before /i/, with the exception of [ʃiʔtʃi] (/ʃiʔtyu/) "gorilla", where the strong palatalization is probably due to the influence of the palatal plosive in the next syllable. Examples of palatal-

\(^9\)Though /s/ is opposed to no voiced fricative at the same point of articulation, since there is a hole in the pattern at the point where /z/ would be expected, voicelessness is considered as odd in terms of the system as a whole, even though it is not contrastive in this limited context. (cf. discussion under 1.2.1.1.7., above.)
ized allophones of /ɹ/ follow, the presentation commencing with the cases of strongest palatalization and progressing through to the cases of weakest palatalization:

Before /a/: /ðakoo?gi?i/ [ʃdakɔːgiʃi] "a bunch of bananas"

/e/: /æhʃ/ [ʃæhʃ] "turkey"

/u/: /uukhoštseẖa/ [ʃuuk hošt seẖa] "advice"

Before /e/:

/o/: /oʃedʃ/ [ʃoʃedʃ] "mother-in-law"

/i/: /iʃiṉe/ [ʃiʃiṉe] "dawn"

But, with /ty/ in the next syllable:

/ʃiʃtyu/ [ʃiʃtyu] "gorilla"

1.2.1.3.5. /ʃ/ is a voiced palatal fricative in which the degree of friction varies freely from very pronounced to very light. In a frequently-occurring allophone, friction is totally absent, and the phoneme is realized as [ʃ]. The informant is completely unaware of this fluctuation, and readily produces and accepts all allophones in all contexts, even when the same morpheme is pronounced several times in succession, sometimes with the same allophone and sometimes with a different one.

The contrastive nature of this phoneme may be derived from the oppositions /ʃ/-/ʃ/ and /ʃ/-/ʃ/ (above).

---

10 cf. Walton and Walton, "Phonemes of [Bora] Muinane" (1967: 41). The variation that they cite for [ʃ] and [ʃ] is from one idiolect to another.

Leach (1969:164) indicates that in Ocaina the phoneme /y/ has allophones ranging from [ʃ] to [ʃ].
/ʃ/ cannot be viewed as a vocoid merely functioning as a consonant, because of its frequently-occurring allophones with friction.

1.2.1.3.6. /h/ is a voiceless glottal fricative. Its contrastive nature may be derived from the opposition /ʔ/ - /h/ (above), and from its opposition to zero in the following minimal pair:

/h/-/∅/ haagizá "it sinks" / aagizá "he is surprised"

1.2.1.4. Phoneme type i. sub-type iv: Nasals.
There are two series of nasals -- voiceless and voiced -- in three points of articulation: labial, alveolar, and palatal.

1.2.1.4.1. /m/ is a voiceless bilabial nasal with slight final onset of voice. Its contrastive nature may be derived from the oppositions /m/-/w/, /p/-/w/ and /f/-/w/ (above), and from the following minimal and near-minimal pairs:

/m/-/m/ nomá "I bite" / nomá "I sleep"
/m/-/n/ netá "to try (taste) (sthg)" / noptá "I answer"

/m/-/ŋ/ nöŋkoni? "dull" / nöŋkotá "to cause to press"

1.2.1.4.2. /n/ is a voiced bilabial nasal. Its contrastive nature may be derived from the oppositions /n/-/m/, /v/-/m/ and /m/-/m/ (above), and from the following minimal and near-

\[ \text{cf. footnote 9 to 1.2.1.3.3., above.} \]
minimal pairs:

/\m/\-\n/  ma\ap\a  "bee"  /  na\ap\a  "spotted cavy"
/\n/-\n/  ma\#\n\m\a  "cassava bread"  /  \#a\#\n\m\a  "their thing"

1.2.1.4.3. /\n/ is a voiceless alveolar nasal with slight final onset of voice. Its contrastive nature may be derived from the oppositions /\th/-/\n/, /\t/-/\n/ and /\m/-/\n/ (above), and from the following minimal and near-minimal pairs:

/\n/-\n/  \#n\?\n\n\m  "I walk"  /  no\?\n\n\m  "I am wet"
/\n/-\n/  \#n\n\?\n\n\k\n\n  "they run"  /  \#e\?\n\n\kh\n\a  "to press"

1.2.1.4.4. /\n/ is a voiced alveolar nasal. Its contrastive nature may be derived from the oppositions /\d/-/\n/, /\m/-/\n/ and /\n/-/\n/ (above), and from the following near-minimal pairs:

/\n/-\n/  n\n\n\n\n\n\m\n\n\n\n\n\n\n  "married woman"  /  h\n\n\n\n\n\n\n\n\n\n  "nightingale"
  nono\n\n\n\n\n\n\n\n\n\n  "my beard"  /  \n\n\n\n\n\n\n\n\n\n  "my neck"

1.2.1.4.5. /\n/ is a voiceless palatal nasal with slight final onset of voice. Its contrastive nature may be derived from the oppositions /\ty/-/\n/ (cf. discussion under 1.2.1.1.7., above), /\n/-/\n/ and /\n/-/\n/ (above), and from the following near-minimal pair:

/\n/-\n/  ma\n\n\n\n\n\n\n\n\n\n  "silence"  /  ma\n\n\n\n\n\n\n\n\n\n  "iguana"

1.2.1.4.5. /\n/ is a voiced palatal nasal. Its contrastive nature may be derived from the oppositions /\d/-/\n/, /\m/-/\n/, /\n/-/\n/ and /\n/-/\n/ (above).
1.2.1.5. Outside the System.

1.2.1.5.1. /r/ is a voiced alveolar flap which has been attested in only three forms:

i) a person's name: /mi?ir?hi/

ii) the onomatopoeic imitation of a bird song: /vara?vara?/

iii) the modification of a Spanish word not yet fully incorporated into the language: /bibriaa/ from the Spanish Biblia, "Bible".

1.2.1.5.2. /x/ is a voiceless velar fricative, contrasting with the voiceless glottal fricative /h/, which occurs throughout the language. /x/ occurs only in the morpheme /xuu-/, constituent in the noun /xuukho?tsi/ "Sunday" and the verb /xuu ]?i/ "to rest" — both of these words apparently coined recently to handle terms introduced by missionaries.

1.2.2. Phoneme type ii: Vocoids.

There are five vocoid phonemes in Resigaro, distinguished by

\[12\text{All the data so far available leads to the conclusion that /r/ and /x/ fall outside the phonological system of Resigaro. However, it could be argued that /x/ fills the "hole" at the voiceless velar fricative position, and perhaps even that /r/ has evolved from a voiced alveolar fricative (another "hole"), although this is less convincing, and /r/ is at the present time not at all fricative. For the reasons given in 1.2.1.5.1. and 1.2.1.5.2., /r/ and /x/ are at present considered to be marginal, and outside the system.}\]

\[13\text{It is interesting to note that there are both glottal and velar voiceless fricatives in Ocaina, the language of my informant's father, which he also speaks fluently. However, the Resigaro words for "Sunday" and "to rest" are not direct loans from Ocaina, in which the words are jayOyuxüna and jayOyovu, respectively. (cf. Agnew and Pike, 1957, and Leach, 1969.}\]
three degrees of opening -- high, mid, and low -- and three areas of articulation -- front, central, and back. Three vocoids are pronounced with spread lips, one with rounded lips, and one with neutral lips. The vocoids are described with reference to the system of cardinal vowels developed and recorded by Daniel Jones (cf. 1960:31-39 and Cardinal Vowels (n.d.)), and adopted by the International Phonetic Association (cf. 1949:4-7). The vocoids are not sufficiently numerous or varied in form to merit the establishment of types of vocoid.

1.2.2.1. /i/ is a high front vocoid pronounced with spread lips. Its contrastive nature may be derived from the following minimal and near-minimal pairs:

/i/-/e/  [pi?gɪ] "anteater" / [pɛ?gɪ] "yucca flour"
/i/-/u/  [nʌpɪ] "underneath" / [nʌpʌ] "spotted cavy"

/i/ has two allophones: [i], a slightly lowered and retracted close front spread vocoid similar to Cardinal Vowel 1;

[i], a somewhat raised and retracted half-close front spread vocoid between Cardinal Vowel 2 and Cardinal Vowel 1.

[i] occurs word-finally, and [i] occurs elsewhere.

* e.g. /pi?mɪ/ [pɪ?mɪ] "hummingbird"
   /adovɪmɪ/ [adɔvɪmɪ] "birds"

1.2.2.2. /e/ is a mid front vocoid pronounced with spread lips.

14For the interpretation of long vocoids as sequences of two short vocoids, cf. section 1.2.2.6., below.
Its contrastive nature may be derived from the opposition /i/-/e/ (above), and from the following minimal pairs:
/e/-/a/ meegi "cascava" / maagi "(a species of fruit);" 
/e/-/o/ non só "my tooth" / non só "my mouth"
/e/ has two major allophones: [e], a slightly lowered half-close front spread vocoid similar to Cardinal Vowel 2; 
[ε], which is lower (close to Cardinal Vowel 3).
[e] occurs word-finally, and [ε] occurs elsewhere.
  e.g. /hef1?/ [hificio] "white" /vonènè/ [wonicè] "our teeth"

1.2.2.3. /æ/ is a low central vocoid pronounced with neutral lips, with allophones ranging freely from slightly raised open to half-open position (IPA: [ə]). The contrastive nature of this phoneme may be derived from the opposition /e/-/a/ (above), and from the following minimal pair: -
/æ/-/o/ tha?giżá "it sinks" / tho?giżá "he arrives"

1.2.2.4. /o/ is a mid back vocoid pronounced with rounded lips. Its contrastive nature may be derived from the oppositions /e/-/o/ and /a/-/o/ (above), and from the following minimal pair: -
/o/-/u/ nífkó "no" / nífkó "fruit"
/o/ has two major allophones: [ɔ], a slightly raised half-open back rounded vocoid similar to Cardinal Vowel 6; 
[ɔ], a half-close back rounded
vocoid similar to Cardinal Vowel 7. 

[o] occurs word-finally, and [ɔ] occurs elsewhere.

e.g. /onɔ?k6/ [ɔnɔ?k6] "snake"

1.2.2.5. /u/ is a high back vocoid pronounced with spread lips. Its contrastive nature may be derived from the oppositions /i/-/u/ and /o/-/u/ (above). /u/ has two major allophones:

[ʊ], a slightly lowered and fronted close back spread vocoid similar to Cardinal Vowel 16;

[ʌ], a slightly lowered version of Cardinal Vowel 17.

[ʌ] occurs when the preceding syllable contains an /i/. [ʊ] occurs elsewhere.

e.g. /sii?ʌ/ [su:ʌ] "others"

/səʊ?k6/ [so:kʌ] "to suck"

1.2.2.6. These five short vocoids are matched by another five vocoids with identical tongue positions and lip shapes that are approximately twice as long as those described above (that is, are two moras long). These long vocoids are interpreted as a sequence of two identical short vocoids, as they parallel sequences of unlike (short) vocoids found in the language.

15 To handle differences of vocoid length, it is useful to adopt the term mora, which is defined as "usually comprising a short vowel or half a long vowel" (K.L. Pike, 1947:144a). Vocoids (and syllables) can then be described as being one, two, or more, moras long (cf. 1.2.2., below, and Bearth 1971:45), and the same term proves useful in the description of tone (cf. 1.1.2.3., below).

16 cf. Bearth: "Les noyaux syllabiques composés de deux voyelles
The interpretation of long vocoids as sequences of two short vocoids is also supported by the tone patterning of the language, as only high and low level tones occur on short (or single) vocoids, while gliding tones may occur on sequences of two unlike vocoids and on long vocoids. Thus, to interpret long vocoids as sequences of two short vocoids simplifies the analysis and description of tones, and makes this more consistent.17

In consequence of this interpretation, the etically long vocoids are handled together with other vocoid sequences under Syllable structure, in 1.2.2., below.

1.2.2.7. The above vocoids occasionally have nasalized allophones when occurring in the context of a nasal contoid.

* e.g. /témoc/ [têmɔʔ] or [têmː] "sea"

This nasality is not emic, and the informant is unable to distinguish any differences when morphemes are repeatedly pronounced, sometimes with nasalized vocoids, and sometimes with non-nasalized vocoids. Moreover, his pronunciation of vocoids

différentes entrent dans les mêmes combinaisons, soit avec des éléments prosodiques, soit avec des segments voisins dans la chaîne, que les noyaux syllabiques unis et longs. Il faut conclure de ce parallélisme que les voyelles longues ... constituent une succession de deux phonèmes vocaliques identiques." (1971:38) 17

Pike adopted a similar solution for handling Mixteco long vowels and gliding tones: "Mixteco long vowels must be regarded as constituting two basic units of length since (1) every long vowel carries two tones; (2) no short vowel carries two tones; (3) the long vowels are paralleled by clusters of diverse vowels, each vowel having its own tone; ..." (1948:79, fn 3)
in the context of nasal contents fluctuates freely between nasalized and non-nasalized, even when repeating the same morpheme several times.

1.2.3. Phoneme type iii: Suprasegmentals.

There are two contrastive pitch levels in Rosigaro, which are referred to as high and low tone. The emic nature of this opposition may be derived from the following minimal pairs:

- gi?i "this one (m)" / gi?i "meat, flesh"
- non? "my mouth" / non? "I spear (a fish)"

Glides only occur on sequences of two vowels, and are handled as sequences of high + low or low + high tone (cf. 1.3.3., below), and in consequence the system is one of register, not contour, tones.18

1.3. Distribution.

Phonemes are distributed in the syllable. Classes of phoneme are set up on the basis of this distribution.

18 cf. Pike, 1948:59: "In general, a pure register system is one in which one-mora tonemes are level; a pure contour system contains one-mora gliding tonemes." i.e., the unit of pitch placement is one mora long, as in Bearth (1971:52): "La définition de la mère implique qu'un monôme à deux voyelles comporte deux points de substitutions tonales."

Thiesen and Thiesen (personal communication, and MS Phonemes of Bora, Walton and Walton (1967), and Leach (1969) all adopt a similar solution in handling Bora, (Bora) Muinane, and Ocaina, respectively.
1.3.1. Class 1, "Consonants".
This consists of all type i phonemes (i.e., all conoids),
which are distributed in onset and coda of the syllable.
The members of this distribution class are called "Conson-
ants". Class 1 is sub-divided into two sub-classes.
Sub-class 1.
This consists of all consonants, which may occur initially
in the syllable (in the onset).
e.g. ʃa "we" (1st p. pl. incl)
  kɛ "hand"
  gi.ʔ19 "this one (m)"
Sub-class 2.
This consists of /ʔ/, which, in addition to its possibility
of occurrence initially in the syllable, may also occur fin-
ally in the syllable (in the coda).
e.g. mi.ʔo.ʔɔ "thus, so"

1.3.2. Class 2, "Vowels".
This consists of all type ii phonemes (i.e., all vocoids), which
are distributed in the nucleus of the syllable. The members of
this distribution class are called "Vowels".
e.g. ʔɛ.ʔa "to fly"

1.3.3. Class 3, "Tones".
This consists of the type iii phonemes (i.e., the two supraseg-

19 The full-stop indicates syllable division (cf. 2.2.3.1, below).
mental phonemes). The members of this distribution class are called "Tones". They occur on the vowel or vowels in the nucleus of the syllable. One tone phoneme occurs on each vowel, if two vowels are present in a syllable. These may be identical (both high or both low), or one may be high and the other low, resulting in a phonetically rising or falling glide. Such glides may not occur on a single-mora syllable (i.e., on one (short) vowel), and hence are interpreted as high + low or low + high (cf. 1.2.). Some examples illustrate some possible tone sequences:

- foogikhů "he makes a fire" / főgikhů "he blows"
- peēgi "sparrow-hawk" / peēgi "starch"
- nāagĩ "friend (m)" / naāgĩ "anger"
Chapter 2
SYLLABLE LEVEL

The syllable level is set up as a level of the phonological hierarchy above the phoneme and below the phonological word. The syllable may be described as
"the smallest unit of recurrent phonemic sequences" (Haugen, 1956:126).

2.1. Contrast.
In Resigaro, the syllable has the following contrastive-identificational features:

i) It has an obligatory nucleus consisting of one or two members of phoneme class 2 (vowels).

ii) It has an optional onset and coda, each consisting of one member of phoneme class 1 (consonants).

2.2. Variation.

\[ \text{Syll} = \pm \text{Onset: } C_{1.1} + \text{Nuc: } (V \uparrow V) \pm \text{Coda: } C_{1.2} \]

This yields eight syllable types. To facilitate the description and comparison of these types, it is convenient to consider the two different vocalic nuclei possible as basic, and to describe the consonantal onset and coda as modifications of these basic types.

i.e. \[ \text{Syll}_i = \pm \text{Onset: } C_{1.1} + \text{Nuc: } V \pm \text{Coda: } C_{1.2} \]

\[ \text{Syll}_{ii} = \pm \text{Onset: } C_{1.1} + \text{Nuc: } V \downarrow V_{2} \pm \text{Coda: } C_{1.2} \]

1 Numerals refer to sub-classes of consonants which may occur in the positions indicated.
2 In the case of vowels, sub-script numerals merely serve to distinguish the two vowels in the nucleus.
There are four sub-types of syllable type i:

\[\text{Syll}_{i.1} = + \text{Onset: C, Nuc: V, Coda: C}_1\]

\[\text{Syll}_{i.1} = + \text{Onset: C, Nuc: V, Coda: C}_1\]

\[\text{Syll}_{i.1} = + \text{Onset: C, Nuc: V, Coda: C}_1\]

\[\text{Syll}_{i.1} = + \text{Onset: C, Nuc: V, Coda: C}_1\]

Examples of the sub-types of syllable type i are to be found in table 2.1, which follows the comments on each of the sub-types. In the discussion that follows, syllables are referred to in terms of their fillers only, for ease of comparison with the examples given.

2.2.1.1. Syllable type i, sub-type i: /V/.

All vowels may occur in this sub-type.

2.2.1.2. Syllable type i, sub-type ii: /CV/.

All vowels may occur in this sub-type. All consonants may occur in this sub-type, but /ʃ/ and /ʒ/ may not occur when the syllable is word-initial.

2.2.1.3. Syllable type i, sub-type iii: /CV/.

All vowels except /u/ are attested in this sub-type. Only /ʃ/ may close syllables in Resigaro.

2.2.1.4. Syllable type i, sub-type iv: /CVC/.

All vowels may occur in this sub-type. As stated above, only /ʃ/ may close the syllable. The non-occurrence of a few con-
sonants before some vowels would not appear to be significant (cf. discussion of this in notes on Table 2.1., below).

Examples of Syllable Type i, Sub-types i-iv.

<table>
<thead>
<tr>
<th>Sub-types</th>
<th>Sub-type i: /V/</th>
<th>Sub-type ii: /CV/</th>
<th>Sub-type iii: /VC/</th>
<th>Sub-type iv: /CVC/</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>/1.3.1/ &quot;wife&quot;</td>
<td>/1.3.2/ &quot;meet&quot;</td>
<td>/1.3.3/ &quot;to go&quot;</td>
<td>/1.3.4/ &quot;you go&quot;</td>
</tr>
<tr>
<td>e</td>
<td>/2.3.5/ &quot;rainbow&quot;</td>
<td>/2.3.6/ &quot;hand&quot;</td>
<td>/2.3.7/ &quot;to flee&quot;</td>
<td>/2.3.8/ &quot;your navel&quot;</td>
</tr>
<tr>
<td>a</td>
<td>/3.3.9/ &quot;to be awake&quot;</td>
<td>/3.3.10/ &quot;hen&quot;</td>
<td>/3.3.11/ &quot;to eat&quot;</td>
<td>/3.3.12/ &quot;beside him&quot;</td>
</tr>
<tr>
<td>o</td>
<td>/4.3.13/ &quot;(a species of plant)&quot; (Sp. daledalê)</td>
<td>/4.3.14/ &quot;my mouth!&quot;</td>
<td>/4.3.15/ &quot;to fish with poison&quot;</td>
<td>/4.3.16/ &quot;to put a stick in the ground&quot;</td>
</tr>
<tr>
<td>u</td>
<td>/5.3.17/ &quot;saliva&quot;</td>
<td>/5.3.18/ &quot;your saliva&quot;</td>
<td>---</td>
<td>/5.3.19/ &quot;pretty&quot;</td>
</tr>
</tbody>
</table>

Table No. 2.1.

1. Syllables being exemplified are underlined.
2. The table gives an example of each sub-type for each of the five vowels (except /u/ in sub-type iii, which is not attested). In the case of sub-types ii and iv, the choice of initial consonant in the examples is non-significant. The vowels are given this priority over the consonants since they fill the nucleus of the syllable, while the consonants fill the margins (onset and coda). However, it is appropriate to signal certain non-occurrences of sequences of consonants and
vowels. In some cases, such non-occurrences may be significant, while in others this would appear not to be the case.

A summary of the possible sequences of consonant plus vowel may be seen in Table 2.2. This is based on an examination of all syllables beginning with CV-, regardless of whether this is followed by a further vowel and/or a consonant.

<table>
<thead>
<tr>
<th></th>
<th>e</th>
<th>a</th>
<th>o</th>
<th>u</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ph</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>p</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>b</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>th</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>t</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>d</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ty</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>dy</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>kh</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>k</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>g</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tsh</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ts</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>dz</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Table No. 2.2. Possible sequences of consonant and vowel in syllables with initial CV-.

It will be noted that 15 of the 30 consonants occur before all vowels, and a further three before all vowels except /u/. This non-occurrence appears to be non-significant,
and merely a reflection on the lower frequency of occurrence of the latter phoneme.

Likewise, the non-occurrence of /b/, /d/, /dz/ and /m/ before /i/, and of /th/, /g/ and /s/ before /e/, appear unsystematic and non-significant, in the light of the occurrence of other members of the same sets (voiced plosives, voiced affricates, etc.) in these positions, and thus these sequences might be expected if the corpus were expanded.

/ǐ/ is the only consonant not attested before /o/, which is again clearly non-significant. This phoneme is not attested before /i/, either, and it might be questioned whether this is significant, though the occurrence of /ǐ/ before /i/ would appear to undermine such a suggestion.

/ty/, /dy/, /ț/ and /ž/ do not occur before /i/ or /e/, and this would appear to be the only potentially-significant co-occurrence restriction in CV sequences in Resigaró. It should be noted, however, that palatal /țh/, /ț/ and /ž/ all occur before /i/ and /e/ (as does /ĩ/, while /ǔ/ is only attested before /e/, to date). Thus undermines the possibility that the non-occurrence of sequences with /ț/ and /ž/ might be significant, particularly since both phonemes are of quite infrequent occurrence.

But the non-occurrence of /ty/ and /dy/ before /i/ and /e/ may be significant. These two phonemes appear to be al-
most marginal to the phonemic system of Resigaro, and are
an incomplete set within the plosive series, lacking an as-
spirated member. They are, furthermore, of very infrequent
occurrence.

2.2.2. Syllable type ii: +Onset:C₁.₁ +Nuc:V₁V₂ +Coda:C₁.₂

There are four sub-types of syllable type ii:-

Syll₁₁.₁ = + Nuc: V₁V₂
Syll₁₁.₁i = + Onset: C + Nuc: V₁V₂
Syll₁₁.ⅲi = + Nuc: V₁V₂ + Coda: C
Syll₁₁.ⅳi = + Onset: C + Nuc: V₁V₂ + Coda: C

Examples of the sub-types of syllable type ii are to be found
in Tables 2.4. and 2.5., which follow the comments on each
of the sub-types. In the discussion that follows, syllables
are referred to in terms of their fillers only, for ease of
comparison with the examples given.

First, it is appropriate to look at the possible sequences
of vowels in syllable type ii.

2.2.2.0. Vowel Sequences in Syllable type ii.

There are the following restrictions on the vowels which may
co-occur within one syllable in Resigaro:-

1. For any vowel in V₁ position, the same vowel may occur in
V₂ position (i.e., an etic long vocoid is realized). The vast
majority of vowel sequences are of this nature.

2. For each of the vowels occurring in V₁ position, the follow-
ing vowels are attested in $V_2$ position (in addition to sequences of the same vowel, already referred to above):

/\i/ + /\o/, /\u/; /\e/ + /\i/, /\u/; /\a/ + /\i/, /\e/, /\u/; /\e/ + /\i/, /\e/; /\u/ + /\i/, /\a/.

This is a total of 11 sequences of different vowels within the same syllable, i.e., eleven different diphthongs. A further two sequences of different vowels are attested (/\i/ + /\e/ and /\o/ + /\u/), although these do not occur in the same syllable (cf. section 2.2.3., below). If we add to these 13 possibilities the five sequences of the same vowel referred to in (1), above, we have a total of 18 vowel sequences in Resigaro, of which 16 may occur in the same syllable. These co-occurrences are shown in the following matrix, in which bracketed values refer to the two sequences which are not attested in the same syllable.

<table>
<thead>
<tr>
<th>$V_1$</th>
<th>$V_2$</th>
<th>i</th>
<th>e</th>
<th>a</th>
<th>o</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>+</td>
<td>(+)</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>
</tr>
<tr>
<td>a</td>
<td>+</td>
<td></td>
<td>+</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>o</td>
<td>+</td>
<td>+</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>
</tr>
</tbody>
</table>

**Table No. 2.3.** Attested Vowel Sequences.

This table shows that three vowels (/\i/, /\e/ and /\o/) do not occur before /\a/, and three (/\e/, /\a/ and /\u/) do not occur before /\o/. Further, /\u/ does not occur before /\e/.

There
would appear to be no significant pattern in these non-occurrences, except that high vowels /i/, /u/ are not followed by mid vowels /e/, /o/ (except for /io/, and mid vowels are not followed by the low vowel /a/.

2.2.2.1. Syllable type ii, sub-type i: /V1V2/.

a) When V1 is the same as V2: all five vowel sequences described in paragraph (1) of the preceding section may occur in this sub-type.

b) When V1 is not the same as V2: the only diphthong attested in this sub-type is /ai/, which occurs in two words (cf. Table 2.5., below).

2.2.2.2. Syllable type ii, sub-type ii: /CV1V2/.

a) When V1 is the same as V2: all five vowel sequences described in paragraph (1), above, may occur in this sub-type. Also, all consonants are attested for initial position, except /b/, /ć/ and /ś/ (cf. discussion of Table 2.2., above).

b) When V1 is not the same as V2: of the eleven diphthongs attested, nine occur in this sub-type. Since there are so few words containing diphthongs in Resigaro, there are consequently few consonants attested for initial position before

---

3 All other two-place combinations of high, mid and low vowels do occur (with a few exceptions):-

  - high + high: ii, ii, ui, uu
  - high + low: ua (but *ia)
  - mid + mid: ee, oo, oe (but *eo)
  - mid + high: ei, eu, oi (but ou not in same syllable)
  - low + low: aa
  - low + mid: ae (but *ao)
  - low + high: ai, au
then, though examples are to be found of plosives, affricates,
fricatives and nasals, and of voiced, voiceless, and voice-
less aspirated consonants, though not all the combinatorial
possibilities are attested.

2.2.2.3. Syllable type ii, sub-type iii: /\(V_1V_2C/\).

a) When \(V_1\) is the same as \(V_2\): vowel sequences /ii/, /ee/ and
/as/ occur in this sub-type. Only /\(/ occurs syllable-final-
ly in Resigarco, as stated above.

b) When \(V_1\) is not the same as \(V_2\): no diphthongs are attested
in this sub-type in Resigarco. This demonstrates the relative
infrequency of occurrence of this syllable-type, and the rel-
ative infrequency of occurrence of diphthongs.

2.2.2.4. Syllable type ii, sub-type iv: /\(CV_1V_2C/\).

a) When \(V_1\) is the same as \(V_2\): all five vowel sequences may
occur in this sub-type. The following eleven consonants are
not attested for the Onset position: /b/, /dy/, /kh/, /ʔ/, /th/,
/dz/, /θh/, /ʃ/, /f/, /z/ and /m/. This apparently haphazard
selection of consonants represents no systematic pattern, and
would appear to be merely a reflection on the lower frequency
of occurrence of syllable type ii, sub-type iv, as compared
with syllable type ii, sub-type ii. /b/ is the only consonant
which occurs in neither syllable type, but then it is a con-
sonant of very infrequent occurrence.

As stated above, Coda position can be filled only by /ʔ/.

b) When \(V_1\) is not the same as \(V_2\): of the eleven diphthongs
attested in Resigaro, five occur in this sub-type. These include the two (/ae/ and /oe/) which do not occur in syllable type ii, sub-type ii. Again, very few consonants are attested in the Onset position, owing to the combination of the infrequency of occurrence of this syllable type and the infrequent occurrence of diphthongs. Up to the present time, only /k/, /f/, /s/ and /n/ have been observed in this position before diphthongs. As always, only /ʔ/ can occur in the Coda position.

Examples of Syllable type ii, Sub-types i-iv.

<table>
<thead>
<tr>
<th>Sub-types</th>
<th>Sub-type i: /VV/</th>
<th>Sub-type ii: /CVV/</th>
<th>Sub-type iii: /VVC/</th>
<th>Sub-type iv: /CVVC/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucleus</td>
<td>/iːni/ &quot;dog&quot;</td>
<td>/iːgi/ &quot;husband&quot;</td>
<td>/iʔiːʔiː/ &quot;possession&quot;</td>
<td>/ʔʔiʔʔiːʔiː/ &quot;your intestines&quot;</td>
</tr>
<tr>
<td>ii</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ee</td>
<td>/eːn̥i/ &quot;thunder&quot;</td>
<td>/jeːvi/ &quot;wolf&quot;</td>
<td>/ʔeʔiːʔiː/ &quot;to fish with hook &amp; line&quot;</td>
<td>/ʔʔeʔiːʔiː/ &quot;your fishing hook&quot;</td>
</tr>
<tr>
<td>aa</td>
<td>/aːme/ &quot;mother&quot;</td>
<td>/kaːd̪i/ &quot;roof&quot;</td>
<td>/ʔaʔiːʔiː/ &quot;father&quot;</td>
<td>/ʔʔaʔiːʔiː/ &quot;to bury&quot;</td>
</tr>
<tr>
<td>oo</td>
<td>/ʔoː&quot;already&quot;</td>
<td>/p̪oːt̪iːɡ̪i/ &quot;frog&quot;</td>
<td>-----</td>
<td>/ʔʔoːʔoː/ &quot;to be hot&quot;</td>
</tr>
<tr>
<td>uu</td>
<td>/ʔaːuːʔiː/ &quot;one (rope)&quot;</td>
<td>/ʔuːk̪iː/ &quot;to prevent&quot;</td>
<td>-----</td>
<td>/ʔʔeʔiːʔiː/ &quot;many&quot;</td>
</tr>
</tbody>
</table>

Table No. 2.4. Syllables Containing Sequences of Like Vowels.

[See page 85 for syllables containing diphthongs.]

cf. 2.2.3., below, on rules of syllable division.
<table>
<thead>
<tr>
<th>Sub-type</th>
<th>i: /VV/</th>
<th>ii: /CVV/</th>
<th>iii: /VCV/</th>
<th>iv: /CVVC/</th>
</tr>
</thead>
<tbody>
<tr>
<td>i + o</td>
<td>---</td>
<td>vic.khá</td>
<td>---</td>
<td>fic.khá</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;to mix (e.g. food)&quot;</td>
<td></td>
<td>&quot;to whistle&quot;</td>
</tr>
<tr>
<td>+ u</td>
<td>---</td>
<td>aa.tshíú</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>e + i</td>
<td>---</td>
<td>tsei.nó?</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;long&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ u</td>
<td>---</td>
<td>kaá.dóu.ma</td>
<td>---</td>
<td>seu.khá</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;to froth (a river)&quot;</td>
<td></td>
<td>&quot;to cut&quot;</td>
</tr>
<tr>
<td>a + i</td>
<td>ai.já.há</td>
<td>nai.koo.gí.gí</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>&quot;near&quot;</td>
<td>&quot;herbal healer&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ e</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>kóo.mé?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;what will it be?&quot;</td>
<td></td>
<td>&quot;what will it be?&quot;</td>
</tr>
<tr>
<td>+ u</td>
<td>---</td>
<td>boo.jáá</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;anklebone&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o + i</td>
<td>---</td>
<td>hoi.khá</td>
<td>---</td>
<td>hoi.khá</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;to rub, polish&quot;</td>
<td></td>
<td>&quot;to stir&quot;</td>
</tr>
<tr>
<td>+ e</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>see.khá</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;to stir&quot;</td>
<td></td>
<td>&quot;to scratch&quot;</td>
</tr>
<tr>
<td>u + i</td>
<td>---</td>
<td>háa.ku.dáí</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;(a species of bird)&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ a</td>
<td>---</td>
<td>tua.já</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;to jump&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table No. 2.5. Syllables Containing Diphthongs.

1. No diphthongs are attested in this sub-type. The column is retained in the table to emphasize this fact.

2. The only other diphthong in this sub-type is ai.tea.bó?, an introducer for reported speech.

3. Sp.: montete
2.2.3. Rules of Syllable Division.
The example 86 uu. "one (rope)" in Table 2.4 raises the question as to how the first syllable division was arrived at. The following rules permit an unequivocal determination of the position of syllable boundaries in otherwise doubtful cases.

2.2.3.1. Rule 1.
This rule recognizes the basic syllable pattern of Rossignol as being CV. Closed syllables and syllables consisting only of a vowel or vowels are less frequent in a dictionary count. Only /?/ can close a syllable, but it can also occur syllable-initially. Thus, given a sequence

CVV

(where, in this case, C = any consonant other than /?/), the syllable boundary occurs before the /?/:

CVV

just as would be the case with a non-suspicious sequence

CVCV

(again, where C = any consonant other than /?/). In other words, /?/ is only assigned to syllable-final position if it is followed by zero (a word-boundary), or by another consonant.

In consequence, a closed syllable cannot be followed within the same word by a syllable with an initial vowel, since in such a case the syllable boundary occurs before the /?/, which is assigned to the following syllable.
The placing of a syllable boundary in a sequence
\(+C+V+V+\) is dependent on the following rules:

2.2.3.2. Rule 2.
In any sequence of two vowels, if the vowels are identical, they belong to the same syllable.

\textit{e.g.} n\textipa{a.pi} "night"
\textipa{n\textipa{a.pi}} "underneath"
\textipa{n\textipa{a.p\textipa{a}}} "spotted cavy"

2.2.3.3. Rule 3.
In any sequence of two vowels, if the vowels are not identical, the sequence represents one syllable (a diphthong) or two syllables, in accordance with the following rules (which are based on perceived acoustic impressions):

3a. If both vowels have the same tone, or the sequence is of a high followed by a low, they represent one tonic (and cotic) syllable.

\textit{e.g.} n\textipa{o.i.kh\textipa{a}} "to rub, polish"
\textipa{bo\textipa{o.\textipa{u}}} "anklebone"
\textipa{aa.t\textipa{a}.sh\textipa{u}} "chili"

3b. If the tone of the first vowel is low and that of the
second vowel is high, the sequence represents two etic (and
otic) syllables.

e.g. té.tyo.1 "island"
  paa.ça.6 "spider"
  ve.mi.6 "our eye"5

Note also the sequences /i/ + /o/ and /o/ + /u/, which have
only been attested as members of two contiguous syllables:
  ke.o.pi.6? "before, previous"
  no.vé.fo.6 "my heart"

It is important to note that rule 3 is based on an ob-
servation of the etic syllables in the language, and does not
result in the establishment of an artificial etic syllable of
different extension than the observed etic syllable. (i.e.,
the "rules" are descriptive of what does happen, not prescrip-
tive (with a view to establishing a certain interpretation)).6

Words of the type exemplified under Rule 2 and Rule 3a,
above, contain vowel clusters. i.e., a vowel cluster is defined
as a sequence of vowels occurring in the same syllable. Words

5Note Wavrin's transcription of "lake" (p.215) and "our eye"
(p.217): "lake" (há.ne.6) : (h)ə(n)əhə
"our eye" (vé.mi.6) : wa-tnlhə (sic - t is error by
Wavrin) Both cases clearly indicate that he perceived three
syllables in each word.

6This effect of a high tone on syllable boundaries may be ex-
plicable on phonetic and physiological grounds, in that high
tone is generally produced more energetically than low tone.
i.e., stress and high tone co-occur, the former being one of
the aspects of the manifestation of the latter (though not a
very pronounced aspect). Thus, when a high tone is produced
after a low tone, it is inevitable that an extra "pulse" be
realized and observed.
of the type exemplified under Rule 3b, above, contain vowel sequences which are not clusters, since they occur in different syllables.

2.2.3.4.  Rule 4.
In any sequence of three vowels, two contiguous vowels must be identical and the remaining vowel must be different. The syllable boundary occurs between the two like vowels and the different vowel.

E.g.  aa:i  "yes"

hi.po.ee.ru.66 "rope, string"

2.2.3.5.  Rule 5.
This rule handles an exception to Rule 4, namely

hiff?o  "this (horn)"

This Rule has two parts:

5a. No syllable nucleus is longer than two vowels long. (This restriction is based on observed phonetic form, not on theoretical considerations.)

5b. A sequence of two like vowels with the same tone has priority over a sequence of two like vowels with different tone, in determining syllable boundaries. (The comment in the previous paragraph applies equally here, too.)

Thus, this word has three (emic and etic) syllables:

7Two exceptions to this rule are discussed under Rule 5.
2.3. Distribution.
The syllable is distributed in the phonological word. This is not analyzed in the present description, and in consequence, details of distribution cannot be given. However, possible sequences of two syllables in phonological words of two or more syllables are described.

2.3.1. Permitted Sequences of Syllables.
Given eight types of syllable, any sequence of two syllables theoretically yields 64 possible combinations. Of these, 16 are excluded by the first of the rules of syllable division (cf. 2.2.3.1., above).

Of the 48 remaining possible combinations of syllable types, a further 15 are not attested (cf. Table 2.6., below).

Four of these (matrix cells 20, 24, 56 and 64) may be accounted for by pointing out that a sequence of two closed syllables is extremely rare (especially a sequence in which one

---

There is one exception to Rule 4 that is not covered by Rule 5, and this is the word *hihuu* "pigeon, dove", in which all the vowels after the first syllable have the same tone and are etically one syllable. However, my informant recognized this as an unusual word (by laughing when I asked him to say it). It is clearly of onomatopoeic origin, and is thus defined as being not necessarily subject to the rules of syllable structure, the same as certain imitative sounds which do not, however, have the status of words, and which have been heard in some texts, particularly in traditional fiesta songs.
of the syllables has the structure CVVC).

Empty cells 3, 5 and 7 (V + (V+V+C)) reflect the fact that syllable type i, sub-type i (V) only occurs initially, when (with only one exception) it is followed by a consonant-initial syllable, or finally (as in 2.2.3.3.b, above).

Empty cell 35 (VV + VC) likewise reflects the fact that syllable type ii, sub-type i (VV) occurs only word-initially, or medially, before a consonant-initial syllable (with one exception, indicated in cell 33).

No sequences of four vowels have been attested in Resiguaro\(^9\), which accounts for empty cells 37, 39, 45 and 47 ((C)VV + WV(C)).

Syllable type ii, sub-type iii (VVC) only occurs word-initially, which accounts for empty cell 15, as well as cells 7, 39, and 47 (whose non-occurrence has also been explained on other grounds).

Empty cell 43 (CVV + VC) is apparently a reflection on the infrequent occurrence of syllable type i, sub-type iii (VC) in positions other than word-initial, and empty cell 40 a reflect-

\(^9\)Such sequences are attested in Bora, where they consist of two sequences of two like vowels. cf. Thiesen, MS, Phonemes of Bora. Long vowel sequences are a characteristic of more distantly-related Huitoto Muinane. cf. Minor, 1956.
ion on the infrequent occurrence of syllable type ii, sub-
type iv (CVVC).

A matrix showing the possible sequences of syllable types
between any two syllables is now presented. This is followed
by a list giving examples of each cell showing a positive value.

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>V</th>
<th>CV</th>
<th>VC</th>
<th>CVC</th>
<th>VVC</th>
<th>CVV</th>
<th>VVC</th>
<th>CVVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>CV</td>
<td></td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>VC</td>
<td></td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>-</td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>CVC</td>
<td></td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>+</td>
</tr>
<tr>
<td>VV</td>
<td></td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CVV</td>
<td></td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>VVC</td>
<td></td>
<td>49</td>
<td>50</td>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td>55</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>CVVC</td>
<td></td>
<td>57</td>
<td>58</td>
<td>59</td>
<td>60</td>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>+</td>
<td>x</td>
<td>-</td>
</tr>
</tbody>
</table>

**Table 2.6. Attested Sequences of Syllable Types**

**Key:** + = "realized" - = "unrealized" x = "not possible"

Numbers refer to examples below.

1. a.心血管 "that one"  
2. u人民医院 "saliva"  
3. --  
4. a.心血管 "to cause a tree to fall"  
5. --  
6. a.心血管 "stick"
7. --
8. a.nii? "to be healthy" 33. a.ni "yes"
9. tê.ni? "island"
10. no.nô "my tooth"
11. he.?o.pi.ô? "before"
12. i.po.gi? "green"
13. o.pi.pi uu?ô "liana cord"
14. ka.ni?de.ô "sweet potato"
15. --
16. a.nô.phô? "many"
17. x
18. a?nâ.pi "to warn oneself"
19. x
20. --
21. x
22. a?nâ.pi "arm"
23. x
24. --
25. x
26. i.dô?vi? "thus"
27. x
28. i.nô?ko? "lazy"
29. x
30. tho?.kho6.taii "postle"
31. x
32. hai?.peô? "to be hot"
33. a.ni "yes"
34. a.ô "mother"
35. --
36. (tsô) i.ô?po.gi.khô "he helped (him)"
37. --
38. ii.vi? "horn"
39. --
40. --
41. tya.?di.o "grandfather"
42. a.nâ.dô "macaw"
43. --
44. tsei.nô? "long"
45. --
46. heo.nâ.gi "paternal uncle"
47. --
48. i.nâ.vi?nhô.po? "to get better, to recover"
49. x
50. aô?.pe "father"
51. x
52. cei.phô?po.gi.khô "he fished"
53. x
54. iii.ô?ô "belly"
55. x
56. --
57. x
58. kho?.kho.thô "limit"
59. x
60. (tsa) nə.to.ˈvəʔə.ɡəʔ.pe 62. hənʔ.ˈkən.əvə "to comb oneself"  
   "they got (it)"  
61. x  63. x  64. --

2.3.2. Consonant Clusters.

If we apply to consonants the definition of "cluster" given for vowels (cf. 2.2.3.3., above), the following definition of a consonant cluster results:

A consonant cluster is defined as a sequence of consonants occurring contiguously in the same syllable.

It follows from this definition and the description of syllable types given above that there are no consonant clusters in Resígaro. However, there are consonant sequences, which occur over a boundary between two syllables. Since /ʔ/ is the only consonant that can close a syllable, the only sequences are of this phoneme followed by any other consonant except itself and /ph/ /th/, /ch/, /ʃ/ and /h/. The non-occurrence of these latter five consonants would appear to be non-significant, and they might be expected to occur if the corpus were further expanded.

2.3.3. Higher-level Sequences.

Two other fundamental and recurring changes involving sequences of units higher up the phonological hierarchy must be referred to, since they affect the phonological form of structures in Resígaro. Both may be viewed as consequent on the concatenation of phonological words.

2.3.3.1. /u/ > /a/.

A word-final /u/ always becomes /a/ before another word in the
same utterance (a phonological phrase).

c. g. tsodá?pá gi-né
gi-1106
she-sings him-with "She sings with him"

(But final /u/ does not usually change before a suffix.)

2.3.3.2. /ʔ/. 

When a word with a final vowel is followed by a word with an initial vowel in the same utterance, a glottal stop is interposed. Since this may be considered as a feature of juncture belonging to neither of the words in question, and since this rule is absolutely regular, with no exceptions, the glottal is not indicated in examples from the language in this thesis (except when they are written in phonetic, not phonemic, script).

c. g. /ʔ aʔ:ní6/ is [ʔ + + aʔ:ní6] "I eat"

I eat
PART II:

GRAMMATICAL HIERARCHY
Chapter 1
ROOT LEVEL

The root is set up as the lowest level of the grammatical hierarchy. Roots are divided into classes on the basis of their distribution in stems of different classes. Thus, verb roots are typically distributed in verb stems, noun roots in noun stems, etc. Sub-classes of each major class are set up on the basis of distribution within types of, normally, the next level in the same class. Thus, verb root sub-class 1 is distributed in verb stem type 1, etc. (The concept of the relation between sub-classes at one level and types at the next level up is discussed in detail in section 0.4.2.1. of the Introduction, above.)

1.1. Verb Root.
1.1.1. Contrast. Verb roots (Vbrt) have the following contrastive-identificational features:–
i) They have no internal grammatical structure.
ii) They fill the Base slot in verb stems.

1.1.2. Variation. Verb roots consist of a single morpheme.

E.g. i?pi "to go"

a?nitā "to eat"
khā "to do"
1.1.3. Distribution.
The members of the class of verb roots are distributed in the Base slot in the verb stem. Sub-classes of verb roots are set up on the basis of distribution in different types of verb stem.

1.1.3.1. Sub-class 1.
These verb roots occur only in verb stem type i, "Simple".
E.g. a?nutá "to eat"

1.1.3.2. Sub-class 2.
These verb roots occur in verb stem type i, "Simple", and type ii, "Complex".
E.g. apó "to be awake"
    ifá "to fear"
    ińá "to sleep"

1.1.3.3. Sub-class 3.
These verb roots occur in verb stem type ii only.
E.g. tsa?vu- root of tsa?voottá "to make safe a firearu"
    hetsamá- " " hetsamató "to ask a question"

1.2. Noun Root.
1.2.1. Contrast.
Noun roots (NnRt) have the following contrastive-identificational features:

i) They have no internal grammatical structure.
ii) They fill the Base slot in noun stems.

1.2.2. Variation.

Noun roots consist of a single morpheme.

e.g. -k6₁ "hand"

vaʔa₂ "machete" (root)

m Glyph "bees"

atsa "son"

1.2.3. Distribution.

The members of the class of noun roots are distributed in the Base slot in the noun stem. Since all members share the same distributional possibilities, no sub-classes are set up.

1.3. Pronoun Root.

1.3.1. Contrast.

Pronoun roots (PnRt) have the following contrastive-identificalional features:-

i) They have no internal structure.

ii) They fill the Base slot in pronoun stem.

¹ A hyphen precedes -k6, "hand", since, in common with all body parts, and certain other words, it must be possessed. All words of this type are indicated by a preceding hyphen in the lexicon. The form that this possession takes is indicated at Phrase level -- cf. 6.1.2.2., below.

² A hyphen follows vaʔa-, "machete" (root), since, in common with a large number of other noun roots in Resigaro, it must bear a classifier suffix. All roots of this type are indicated by a following hyphen, and are described at Word level -- cf. 3.2.2., below.
1.3.2. Variation.

There are eight pronoun roots, each of which consists of a single morpheme:

- かつ First person singular
- ふ Second " "
- つ Third " " -- masculine
- つ " " " -- feminine
- ふ First person non-singular -- inclusive
- ぬ " " " -- exclusive
- か) Second " "
- い) " "
- つ Third " "

For the second person non-singular, い is used in the imperative, and か is used elsewhere.

1.3.3. Distribution.

The members of the class of pronoun roots are distributed in the Base slot in the pronoun stem. Sub-classes of pronoun roots are set up on the basis of distribution in different types of pronoun stem:

1.3.3.1. Sub-class 1.

This consists of the following pronoun roots, which are distributed in pronoun stem type i:

- かつ 1st p. sg.
- ふ 1st p. non-sg., incl.
- ふ 2nd p. sg.
- い 2nd p. non-sg., impv.
- つ 3rd p. sg., m.
- つ 3rd p. non-sg.
- つ 3rd p. sg., f.
1.3.3.2. Sub-class 2.

This consists of the following pronoun roots, which are distributed in pronoun stem type ii:

\[ \text{ts₃} \quad \text{3rd p. sg., n.} \quad \text{muu-} \quad \text{1st p. non-sg., excl.} \]
\[ \text{ts₆} \quad \text{3rd p. sg., f.} \quad \text{h₂} \quad \text{2nd p. non-sg.} \]
\[ \text{f₆} \quad \text{1st p. non-sg., incl.} \quad \text{₃₃} \quad \text{3rd p. non-sg.} \]

1.3.3.3. Sub-class 3.

This consists of the following pronoun roots, which are distributed in pronoun stem type iii:

\[ \text{f₆} \quad \text{1st p. non-sg., incl.} \quad \text{₃₃} \quad \text{3rd p. non-sg.} \]
\[ \text{h₂} \quad \text{2nd p. non-sg.} \]

1.4. Adjective Root.

1.4.1. Contrast.

Adjective roots (AjRt) have the following contrastive-identification features:

i) They have no internal grammatical structure.

ii) They fill the Base slot in adjective stems.

1.4.2. Variation.

Adjective roots consist of a single morpheme.

[The membership of these sub-classes is not exclusive; some pronoun roots occur in more than one sub-class. If mutually-exclusive sub-classes were set up, five sub-classes would be required: Sub-cl 1: ₃₃, ph₆, i- in PnSt i Sub-cl 2: muu- in PnSt ii Sub-cl 3: ts₃, ts₆ in PnSt i and ii Sub-cl 4: h₂ in PnSt ii and iii Sub-cl 5: f₆, ₃₃ in PnSt i, ii and iii This procedure is not adopted here, since it adds to complexity without revealing anything of structural importance.]
1.4.3. Distribution.
The members of the class of adjective roots are distributed in the Base slot in the adjective stem and in the Base slot in noun stem type ii, sub-types ii and iii. Since all members share the same distributional possibilities, no sub-classes are set up.

1.5. Adverb Root.
1.5.1. Contrast.
Adverb roots (AdvRt) have the following contrastive-identificational features:-

i) They have no internal grammatical structure.
ii) They level-skip, filling the Base slot in adverb words.

1.5.2. Variation.
Adverb roots consist of a single morpheme.

e.g. kapi- "quickly"
     kence?ja- "slowly"

1.5.3. Distribution.
The members of the class of adverb roots level-skip, being distributed in the Base slot in the adverb word. Since all members share the same distributional possibilities, no sub-classes are set up.
1.6. Demonstrative Root.

1.6.1. Contrast.
Demonstrative roots (DemonRt) have the following contrastive-identificational features:

i) They have no internal grammatical structure.

ii) They level-skip, filling the Base slot in demonstrative words.

1.6.2. Variation.
There are two demonstrative roots, each of which consists of a single morpheme.

hi- "this"

ho- "that"

1.6.3. Distribution.
The members of the class of demonstrative roots level-skip, being distributed in the Base slot in the demonstrative word. Since both members share the same distributional possibilities, no sub-classes are set up.

1.7. Numeral Root.

1.7.1. Contrast.
Numeral roots (NumRt) have the following contrastive-identificational features:

i) They have no internal grammatical structure.

ii) They level-skip, filling the Base slot in numeral words.\(^4\)

\(^4\)In following a purely structural approach in the presentation
1.7.2. Variation.

There are two numeral roots, each of which consists of a single
morpheme:

- m6- "one"
- ni- "two"

1.7.3. Distribution.

The members of the class of numeral roots level-skip, being
distributed in the Base slot in the numeral word. Since both
members share the same distributional possibilities, no sub-
classes are set up.

Of this data, the numerals (as all other entities) are described
a step at a time, progressing from one level to the next. Should
it be desired to see all the numerals at a glance (for compar-
ative purposes, etc.), these will be found in the appendices.
Numerals 1-10 are listed in numerical order in Appendix II (entries
180-189), and may also be found (among with all other numerals)
listed in alphabetical order for Rosigaro and Spanish in Appen-
dix I.
Chapter 2

STEM LEVEL

The stem is set up as a level of construction above the root and below the word. Stems are divided into classes on the basis of their distribution in word classes. Thus, verb stems are typically distributed in verb words, noun stems in noun words, etc. Types are set up within each class, on the basis of internal structure. Sub-classes of each major class are set up on the basis of distribution within types of, normally, word level classes.

2.1. Verb Stem.

2.1.1. Contrast.

Verb stems (VbSt) have the following contrastive-identificational features:

i) Their Base is typically filled by a verb root.

ii) Complex verb stems are formed by verbal derivators.

2.1.2. Variation.

Verb stems are grouped into types on the basis of internal structure.

2.1.2.1. Verb Stem Type i, "Simple".

\[ \text{VbSt}_i = + \text{B:VbRt}_{1/2} \]

e.g. a?mitā "to eat"
ifá  "to fear"

imá  "to sleep"

2.1.2.2. Verb Stem Type ii, "Complex".

\[ VbSt_{ii} = + B: VbRt_{2/3} + \text{derivator: cstv/incho/rest} \]

There are three sub-types of verb stem type ii.

2.1.2.2.1. Sub-type i, Causative.

The derivator is added in accordance with the following rule:

\[ \ldots CV(V) > \ldots C\delta(\delta) + -\tau^2 \]

Many complex verb stems are derived from verb roots by this derivator, and the effect is to change an intransitive into a transitive.

E.g. ifá "to fear" > ifotá "to frighten"

apé "to be awake" > aphotá "to awaken (s.o.)"

This example illustrates the occasional increase in voicing lag that occurs when the causative is added to some verb roots or stems. (cf. 3.3.2.1.1., below, especially fn 6)

ha?pu "to cross (a river)" > ha?potá "to save (from danger)"

i?tu "to fast" > i?totá "to wean (s.o.)"

mi?tsu "to boil (intrans)" > mi?tsotá "to boil (sthg)"

a?mu "to burn oneself (accidentally)" > a?motu "to burn (sthg)"

---

1 The small amount of derivation at verb stem level is a consequence of the large-scale derivation at Group level (cf. Chapter 4, below). As explained there, this derivation cannot be handled at Word level or lower, due to the lack of internal cohesion of the resultant units.

2 Here, absence of a tone mark indicates that tone may be high or low, 'indicating that it is (or becomes) low, and ' indicates that it is high.
2.1.2.2.2. Sub-type ii, Inchoative.

The derivator is added in accordance with the following rule:

\[ ...CV(V) > ...\hat{C}(\hat{V}) + -ka\hat{a} \]

Verb stems using this derivator are nowhere near as numerous as those using the causative derivator.

* e.g. \( \text{fif} \) "to fear" > \( \text{fifaka} \) "to become frightened, to repent"

\[ \text{ap} \hat{a} "\text{to be awake"} > \text{apoka} "\text{to wake up (intrans)}" \]

\[ \text{im} \hat{a} "\text{to sleep"} > \text{ima} \hat{a} "\text{to go to sleep}" \]

In a few cases, \(-ka\hat{a}\) varies freely with \(-i\hat{a}\) on a verb root.

* e.g. \( \text{ima} \hat{a} - \text{ima} \hat{a} "\text{to go to sleep}" \\

2.1.2.2.3. Sub-type iii, Restrictive.

This derivator is added in accordance with the following rule:

\[ ...CV(V) > ...\hat{C}(\hat{V}) + -\hat{a} \]

A few verb stems use this derivator (but cf. 2.1.2.2.4., below).

* e.g. \( \text{a?v\Theta\hat{a}} "\text{to burn a field"} > \text{a?v\Theta\text{no}} "\text{to burn superficially}" \)

\[ (?)\text{vano} "\text{to enter (a house)}" > (?)\text{vano} "\text{to visit}" \]

In both these cases, the root \( \hat{a} \) is voiced before suffixation, though postulated examples in section 2.1.2.2.4. indicate that other final-syllable consonants in the root are not voiced.

2.1.2.2.4. "Fossilized" Derivations.

There are some apparently complex verb stems containing verb roots which are no longer used except with one of the derivators. There is obviously a danger of identifying as a derivator occurrences of \(-t\hat{a}, -ka\hat{a} \) or \(-i\hat{a}\) which are no more than the final syllable of a simple stem consisting of a verb root.
only -- a single morpheme. The following are some of the verb stems which may be analyzable as verb root + derivator.

**Possibly containing causative derivator:**
- tsootú "to annoy"

**Possibly containing restrictive derivator:**
- a?nana "to squeeze out"
- i?kaanú "to vomit"
- i?lotu "to be standing up"
- hekona "to harvest yucca"
- kapom "to throw, to cast"
- o?dama "to fish with barbasco poison"

**Reduplicated Roots.**

Another type of verb stem which might be claimed to be complex is that containing a reduplicated verb root. However, this is no longer productive at this level, and the postulated root is not evidenced in a non-reduplicated form. So such rare cases as are observed are interpreted as simple verb roots, e.g. d6?ed6?6 "to nod one's head (when sleepy)"

### 2.1.3. Distribution.

The members of the class of verb stems are distributed in the Base slot in the verb word. Since all members share the same

---

3In some cases, the Basic or other constituent of the peripheral slot in the complex verb group, or in the case of a simple verb group, the entire verb group, is repeated to emphasize the gradual nature of an action, but this is in the first case at another level, and secondly is not reduplication in the strict (i.e., morphological) sense of the word. cf. 4.1.2.3., below.
distributional possibilities, no sub-classes are set up.

2.2. Noun Stem.

2.2.1. Contrast.

Noun stems (NnSt) have the following contrastive-identifi-
cational features:

i) Their Base slot is typically filled by a noun root.

ii) Complex noun stems are formed from members of other
classes by nominal derivators.

2.2.2. Variation.

Noun stems are grouped into types on the basis of internal
structure.

2.2.2.1. Noun Stem Type i, "Simple".

NnSt\textsubscript{i} = + B:MnRt

e.g. -hen\textsubscript{66} "ear"

amo\textsubscript{66} "tapir"

ofi\textsubscript{76} "yens"

2.2.2.2. Noun Stem Type ii, "Complex".

Complex noun stems consist of a Verb Group, a component of a
Verb Group, an adjective, or a relator, plus a nominalizer.

Three sub-types are established.

2.2.2.2.1. Sub-type i, "Concrete Nominalization".

NnSt\textsubscript{ii.i} = + B:VG + Nl\textsubscript{76}: -f\textsubscript{76}

This type of nominalization forms nouns that refer primarily
to concrete objects.

All types and sub-types of Verb Group may occur.

The derivatory rules are the following:-

1) A final-syllable voiceless stop becomes aspirated, and a voiced nasal becomes voiceless. 

ii) Final i, e and o do not change. Final u becomes o.

iii) -itsbi is added to the resultant form.

---

1) Illustrating i) and iii), above:

-hip6 "to wash" > hipho6tsig6 "soap"
-tsa?td "to carry a weight" > tsa?tho6tsi "a weight"
-pi?ko "to throw away" > pi?kho6tsig6 "one who throws away"
-vano6 "to command" > vano6tsih6 "law"

2) Illustrating ii) and iii), above:

-?no6 "to play" > no6ntsisi "a toy"
-ko6 "to sell" > kono6tsi "merchandise"
-in6 "to harpoon, spear" > no6tsig6 "a lance, an arrow"
-a?ni6 "to eat" > a?nitho6tsi "food, a meal"

In all the above examples, the filler of the Base slot
has been a Type i Verb Group. There follow examples of Type

---

*This demonstrates the operation of the movement of Voice Onset
Timing in the opposite direction to that described in section
3.3.2.1., below. i.e., increasing the lag in this case.

*There is no final a, except where this is derived morpho-
phonically from u.

*The initial i is deleted here, and also in

-?no6 "to drink" > no6tsih6 "a drink",
but is retained in the following two cases (apparently because
of the following glottal):

i?tsi6 "to drink" > i?do6tsig6 "a drink"
i?tsi6tsi6 "to sit down" > i?tsiho6tsig6 "a seat, a bench"
ii (sub-types i and ii) Verb Groups in the Base slot:

**VG**$_{ii,i}$:

thó? kňá "to grind" $>$ thó?khočtsi "a pestle"

**VG**$_{ii,ii}$:

hooní i?votá "to freeze" $>$ hooní?i?vothočtsí "ice"

When a type ii sub-type i noun is possessed (cf. 6.1.2.2., below), -tsi $>$ -iňá.

-e.g. fio?khočtsí "a whistle" $>$ nocio?khočná "my whistle"

(referring in both cases to the concrete object (Sp. silbato)).

2.2.2.2.2. Sub-type ii, "Abstract Nominalization".

MnSt$_{ii,ii} = +B:VG_{i/i,i}/AjRt +Mlzr$_{ii}: \{?ká\} - \{-tsi\}

This type of nominalization forms nouns that refer primarily to events or qualities.

The derivatory rules are the following:-

i) B:VG$_{i}/AjRt : Mlzr$_{ii}: ?ká-tsí

ii) B:VG$_{ii,i} : Mlzr$_{ii}: -ká-tsí/mí

-tsí/mí indicates that the two forms vary freely here.

-e.g. 1) With Base filled by VG$_{i}$:

iňá "to sleep" $>$ iňaakátsí "sleepiness"

cmá "to bite" $>$ cmáakátsí "a bite"

When a word ending in a vowel is followed by one beginning with a vowel, the juncture feature glottal stop occurs (cf. 1.2.3.3.2., above). The nominalization is viewed as operating on the whole VG to produce what is grammatically one noun stem (even if it may be possible to view this as not being a single phonemic unit). It is therefore convenient to write this without a break, and hence it becomes necessary to indicate the glottal stop.
2) With Base filled by Adjective Root.
ka?mu- "fermented" \(\rightarrow\) ka?naakatsi "something fermented"
ke?pi- "satisfied" \(\rightarrow\) ke?pikatsi "satisfaction"

3) With Base filled by VG
fio? khä "to whistle" \(\rightarrow\) fio?khâkatsi) "a whistle" (the noise -- Sp. sil-bido)
šo6nē jā "to tell lies" \(\rightarrow\) šo6nējâkatsi) "a lie" (the action of telling a lie)

2.2.2.2.3. Sub-type iii, "Agent Nominalization".

Nnst_{ii.iii} = +B:AdjRt/bas/relrR + Nlzr_{iii} -minângi
"bas" is the basic filler of the peripheral slot in VG_{ii.i}.
"relrR" is the relator in the Axis-Relator Locative Phrase,
sub-type iii: -a?n Hä, "beside" (cf. 6.2.10.2.2.iii, below).

This type of nominalization forms nouns that express a characteristic attribute of a person.

e. g. 1) With Base filled by Adjective Root.
fi6 "lazy" \(\rightarrow\) fi6minângi "a lazy person"

2) With Base filled by basic filler of VG periphery.
haând khä "to steal" \(\rightarrow\) haândminângi "a thief"

3) With Base filled by relator.
-a?n Hä "beside" \(\rightarrow\) a?nminângi "servant"

[^8]: Contrast with the noun šo6nē "a lie" (the false word itself -- cf. -hä in description of classifiers, in 3.2.2.2.1., below).
[^9]: This case demonstrates an increase in voicing lag for the nasal in the root, as for sub-type i, above, though the same does not happen with the n in the next example, nor with the n in the following one.
2.2.2.2.4. Postulated Reduplicated Forms.

It may appear that there is another sub-type of complex noun stem, in which there is reduplication. However, such forms would have to be derived from a hypothetical base form, since the reduplicated forms are not reducible to non-reduplicated elements occurring elsewhere. Furthermore, the reduplication observed in nouns is highly irregular; and, most important, is no longer productive. Thus, these apparently reduplicated forms are viewed as simple, non-reduplicated stems. Some examples are:

- t6?et6bd "mushroom"
- todet6od6 "(a type of dance)"
- thiithif6 "(a species of monkey)" (Sp.: simileoncito)
- ty6?oty6bd "butterfly"
- tsh6?tshopi "(a species of bird)"
- tshii?tshif6 "cricket"

2.2.3. Distribution.

The members of the class of noun stems are distributed in the base slot in the noun word, in numeral word type ii, and in adjective stem type iii. Sub-classes of noun stems are set up on the basis of this distribution.

2.2.3.1. Sub-class 1.

These noun stems occur in noun word type i, "simple". They are further sub-divided according to their occurrence in sub-types of this type:
Sub-class 1.1. This consists of noun stems that are basically plural.

  e.g. mkapha "bees"
        hadan?pho4tsi "songs"

Sub-class 1.2. This consists of noun stems that refer to uncountables.

  e.g. hooni "water"
        pha "all"

2.2.3.2. Sub-class 2.

These noun stems occur in noun word type ii, "complex". They are further sub-divided according to their occurrence in sub-types of this type:-

Sub-class 2.1. This consists of noun stems referring to people.

  e.g. ke?vi?kagi "chieftain"
        phaigfi "old man"

Sub-class 2.2. This consists of noun stems referring to non-human animates.

  e.g. maa?to "iguana"
        hivi?gi "star" (sic)
        ona?k6 "snake"

Sub-class 2.3. This consists of noun stems referring to body parts.

  e.g. -hitak6 "nose"
        -migi "forehead"

Sub-class 2.4. This consists of all noun stems not yet accounted for.

  e.g. va?na- "machete"
2.2.3.3. Sub-class 3.
This consists of two noun stems which, in addition to their
distribution in the noun word, also occur in numeral word
type ii:
po?ts$69u" centre"
$p^10 "all"

2.2.3.4. Sub-class 4.
This consists of those noun stems which, in addition to their
distribution in the noun word, also occur in adjective stem
type iii.
e.g. onitsi "bot-fly larva"

2.3. Pronoun Stem.
2.3.1. Contrast.
Pronoun stems (PnSt) have the following contrastive-identific-
cational features:—

i) Their Base slot is filled by a pronoun root.

ii) Complex pronoun stems are formed by pronominal derivators.

---

10 $p$ is clearly a noun stem in Rosigaro, even though the English
glass "all" is not. It may occur with various classifiers.
e.g. $p$-komj
all village "all the villages"
$p$-pok$5 all day "all the days"
$p$-?os$?ku-a$ all hand al rest "all two hands" (i.e., "both hands"
— used to signify the number "ten")
2.3.2. Variation.

Three types of pronoun stems are set up on the basis of internal structure:

\[ \text{PnSt}_i = +B: \text{PnRt}_1 \]
\[ \text{PnSt}_{ii} = +B: \text{PnRt}_2 + \text{Der: } \text{Specifier: } -\text{the} \]
\[ \text{PnSt}_{iii} = +B: \text{PnRt}_3 + \text{Der: } \text{husi/-npi} \]

2.3.2.1. Pronoun Stem Type i, "Basic".

Type i pronoun stems consist of a pronoun root, sub-class 1, only:

\[ \text{mō } \] First person singular
\[ \text{pā } \] Second " "
\[ \text{tsō } \] Third " " -- masculine
\[ \text{tsō } \] " " -- feminine
\[ \text{mō } \] First person non-singular, inclusive
\[ \text{i } \] Second " " imperative
\[ \text{mō } \] Third " "

In all pronoun stems ending in \( u \), this becomes \( a \) in all contexts except clause-finally (cf. 1.2.3.3.1., above).

2.3.2.2. Pronoun Stem Type ii, "Deictic".

Type ii pronoun stems consist of a pronoun root, sub-class 2, + a derivator, + a specifier. They indicate deixis.

The pronoun root is assimilated to the derivator in accordance with the morphophonemic processes described at word level (3.3.2.1.), since it is at that level that such assimilation is
most widespread. This results in the following changes:

3rd p. sg., n. tsā > gi-
3rd p. sg., f. tsā > do-
3rd p. non-sg. sā > na-

1st p. non-sg., excl. muu-) do not change, in accordance with the same assimilation rules (except that the u of hu becomes a)
2nd p. non-sg. hu- ) cept that the u becomes a, as indicated above (though in all other contexts it assimilates in accordance with the rules indicated in 3.3.2.1., below).

The vowel of the derivator has the same quality as that of the preceding assimilated pronoun root, but is always short, yielding the following forms:

3rd p. sg., n. gi-?ā "this one" (m)
3rd p. sg., f. do-?ā "this one" (f)
1st p. non-sg., incl. fa-?ā "we" (inclusive)
1st p. non-sg., excl. muu-?āll "we" (exclusive)
2nd p. non-sg. ha-?ā "you"
3rd p. non-sg. na-?ā "they"

The specifier -thē "distant" may be added to the above forms, when this is semantically meaningful. In practice, this restricts its occurrence to third person pronouns:

---

The base form of this is presumably *muu-?ā, but since a final u always becomes a before another word (but not normally before a suffix), and since this pronoun is nowhere attested finally, the only form observed is muu-?ā.
2.3.2.3. Pronoun Stem Type iii, "Dual".
Type iii pronoun stems consist of a pronoun root, sub-class 3, + one of the dual markers: -musi "masculine dual"
           -nupi "feminine dual"
The assimilated form of the pronoun root occurs, except (as in type ii, above) in the case of 1st person non-singular, inclusive, fa-.
famusi "we (incl) two" (m)   famupi "we (incl) two" (f)
hamusi "you two" (m)         hamupi "you two" (f)
namusi "they two" (m)        namupi "they two" (f)

2.3.3. Distribution.
The members of the class of pronoun stems are distributed in the Base slot in the pronoun word. Sub-classes of pronoun stem are set up on the basis of this distribution.

2.3.3.1. Sub-class 1.
This consists of all type i pronoun stems, which occur in pronoun word type i.

2.3.3.2. Sub-class 2.
This consists of all type ii and type iii pronoun stems, which occur in pronoun word type ii.
2.4. Adjective Stem.

2.4.1. Contrast.

Adjective Stems (AjSt) have the following contrastive-identificational features:

i) Their Base is typically filled by an adjective root.

ii) Further types of adjective stem are derived from the basic form by morphophonemic processes principally involving addition and deletion of geminate vowels and glottal stops.

2.4.2. Variation.

Three types of adjective stem are set up on the basis of internal structure.

AjSt_i = + B:AjRt  "Basic"

AjSt_ii = + B:AjRt + der_i  "Derived i"

AjSt_iii = + B:AjRt/NnSt + der_ii  "Derived ii"

where der_i and der_ii stand for two different derivatory processes.

2.4.2.1. Adjective Stem Type i, "Basic".

Type i adjective stems consist of an adjective root only.

e.g. ami- "healthy"

ha?mo?- "hot"

kašo- "good"

12 There is also evidence which suggests that some adjectives are derived from verbs, though this is rare and would appear to be no longer active. An example of such a fossilized form is predicative adjective ponuyu? "to be embarrassed, shy" (glossed in Spanish by informant as dar vergüenza) and verb poni "to be ashamed, embarrassed" (glossed in Spanish as avergonzarse).
The resultant form attributes a quality to a noun.13
e.g. əmii ətsəŋi ... "The healthy man ..."
    healthy man
kaŋəi ñaŋná ... "The good child ..."
good child
cojəi ənaŋi ... "The small tapir ..."
small tapir

(In each of these examples, the final syllable of the adjective is the classifier -- cf. 3.4.2.1., below.)

2.4.2.2. Adjective Stem Type ii: "Derived i".

Type ii adjective stems consist of an adjective root modified in accordance with the following morphophonemic rules:-
i) If not already long, the vowel of the final syllable is lengthened.
e.g. ha?no?- "hot" > ha?noo? "(to be) hot"
    ka?nu- "fermented" > ka?nuu? "(to be) fermented"

This has the effect of shortening the length of any long vowel previously in any other syllable of the adjective root.14

e.g. kaŋə- "good" > kaŋəu? "(to be) good"
oja- "small" > oja? "(to be) small"

ii) A glottal stop is added finally, if one is not already present.
e.g. əmii- "healthy" > əmii? "(to be) healthy"
əho?hu- "soft" > əho?huu? "(to be) soft"

13 This is related to distribution, and at word level, but examples are given at this stage, as the best way of indicating the semantic differences which form an inherent part of each type of adjective stem.
14 This could also be described in terms of a shift of vowel length, though such an approach would not account for the lengthening of vowels in stems where the root contained no long (or geminate) vowels, hence the preference for viewing this as a two-stage process.
The resultant form predicates a state concerning the person/thing thus qualified.

e.g. amii? tsé "He is healthy"

kašoo? tsé "She is good"

2.4.2.3. Adjective Stem Type iii: 'Derived ii'.

Type iii adjective stems consist of an adjective root or a noun stem\(^{15}\) modified in accordance with the following morphophonemic rules\(^{16}\):

i) Any long vowel in the filler of the Base slot is shortened.

e.g. amii- "healthy" \(\rightarrow\) amí "(to become) healthy"

oja- "small" \(\rightarrow\) oja "(to become) small"

enitsi "bot-fly larva" \(\rightarrow\) enitsi "(to become) worm-infested"

ii) If the filler of the Base slot contains two glottals, the first of these is deleted:

e.g. ha?mo?- "hot" \(\rightarrow\) ha?mo? "(to become) hot"

(If the filler only contains one glottal, this is not deleted.

---

\(^{15}\)It would be possible to establish two sub-types here, but this is not done, since so few cases of adjective stems derived from noun stems are attested, and since the same morphophonemic rules apply as with adjective roots. Such a procedure would merely complicate the presentation. We thus follow Pike's criterion (cf. 1967:472) of requiring two structural differences before establishing different types. Derivation from adjective root and noun stem is shown in the following description.

\(^{16}\)In some cases certain vowel changes also occur, but these changes are as yet unpredictable and analysis of them must await the obtaining of further data.

e.g. phemo?i? "fat" \(\rightarrow\) phede? "(to become) fat"

me?ki? "strong" \(\rightarrow\) meke? "(to become) strong"
e.g. ka?nu "fermented" : ka?nu "(to become) fermented"
ño?hu- "soft" : ño?hu "(to become) soft"

The resultant form predicates a process concerning the person/thing thus qualified.

e.g. ami tsō "He gets (becomes) healthy"

healthy he

enitsi tsō "She gets worms" (i.e., "becomes infected with intestinal worms")

gets-worms she

ka?na tsō "It ferments"

ferments it

2.4.3. Distribution.

The members of the class of adjective stems are distributed in the Base slot in the adjective word, in the Base slot in the adverb word, and in the Peripheral slot in the verb group.

Sub-classes of adjective stems are set up on the basis of this distribution.

2.4.3.1. Sub-class 1.

This consists of type i adjective stems, which occur in adjective word type i, "Attributive".

e.g. kaño "good"

aijā³q? "near"

2.4.3.2. Sub-class 2.

This consists of type ii adjective stems, which occur in adjective word type ii, "Predicative I", and in the adverb word.

17 Types and sub-classes of adjective stems are almost completely co-extensive -- a consequence of the fact that the structural differences that lead to the establishment of different types bring about semantic changes which affect the distribution.
2.4.3.3. Sub-class 3.
This consists of type iii adjective stems, which occur in adjective word type iii, "Predicative ii".

2.4.3.4. Sub-class 4.
This consists of adjective stems (of all three types) which, in addition to their distribution in types of the adjective word (indicated in sub-classes 1-3), also occur in the periphery slot in verb group type ii, sub-type i.

(For further details, cf. verb group, section 4.1.2.2.1., below.)
Chapter 3
WORD LEVEL

The word is set up as a level of construction above the stem and below the phrase. Words are divided into classes on the basis of their distribution in phrase level tags (except in the case of the verb word, which is distributed in the sub-level, Group). Types are set up within each class on the basis of internal structure. Sub-classes of word classes are set up on the basis of distribution in types of phrase (or the group, in the case of the verb) and, occasionally, in other structures.

3.1. Verb Word.

3.1.1. Contrast.

Verb words (Vb) have the following contrastive-identificational features:-

i) Their Base is typically filled by a verb stem.

ii) They co-occur with reflexive/reciprocal, causative/inchoative, directional, and progressive suffixes.

iii) Their basic (i.e., declarative) form is subject to modification by the imperative mood.

3.1.2. Variation.

Formula:-

\[ Vb = \_px:Pn/priv +B:VbSt\alpha +sx 1\alpha: reflex/recip +sx 2: cstv/incho +sx 3: dir +sx 4: prog \]

124
The use of \( \alpha \) in this formula obviates the need to establish two types of verb word, according to whether or not suffixes of order 1 may be added to the stem. Initially, it may appear that this is dependent on transitivity -- order 1 suffixes being applicable only to transitive verbs. However, they cannot be applied to all transitive verbs. (For instance, not at all with verbs such as \( \text{i?kem} \) "to vomit", \( \text{hē6?mē} \) "to roast", and very improbable with such verbs as \( \text{a?mitē} \) "to eat".) Likewise, there are some intransitive verbs to which they are applied. (For instance, \( \text{e?do} \) "to work" \(^1\), \( \text{*ne?mitotu-} \) stem of "to suffer" \(^2\).)

Thus, the restriction of application of order 1 suffixes appears to be more a \textit{lexical} (and in consequence, \textit{semantic}) one than a \textit{structural} one, and is therefore considered not adequate for the establishment of different types of verb word -- especially since all suffixes of orders 2-4 may be added in almost all cases (subject to restrictions indicated in the relevant sections, below).

\textit{Imperative} is not indicated in the above formula, since it consists of both segmental and suprasegmental elements. The \textit{formula} thus indicates the \textit{declarative} form of the verb only.

\(^1\)In Resigaro this verb is clearly intransitive, though it may be made transitive by addition of the causative suffix. \textit{cf.} \(3.1.2.3.\), below.

\(^2\)This verb is not attested without the reflexive suffix.
3.1.2.1. Prefixes.

Pronouns and the privative prefix are assimilated to the verb stem in accordance with the rules given in 3.3.2.1., below. There, three types of verb (and noun and relator) are set up on the basis of this assimilation. However, those are morphophonological, and not grammatical, types, and therefore are not relevant here.

e.g. Stem: h66?;ná "to roast"
      h66?ná "I roast"
      ph66?ná "you roast" (singular)
      m66?nákáa ... ³ "without roasting ..."

Stem: a?mitú "to eat"
      no?mitú "I eat"
      pa?mitú "you eat"
      ma?mitákáa ... "without eating ..."

Stem: mama "to call"
      nomáa "I call"
      pima "you call"
      mnamákáa ... "without calling ..."

Special Case.
The verb kemá "to say" loses its initial syllable when assimilated to a pronoun or privative prefix:

Hoaa kemá ... "John says ..."

gimá ... "he says ..."

³The inchoative suffix must co-occur with the privative in this construction. For details, cf. Verb Piece type ii, sub-type ii (section 5.1.2.2.2., below).
3.1.2.2. Suffix Order 1: reflexive/reciprocal.

The addition of these suffixes has an effect on the distribution of the verb at clause level. When either of them is added to a transitive verb, it occurs in an intransitive, instead of a transitive, clause. i.e., the verb is "demoted" one step on the transitivity scale. However, transitivity is not considered a relevant structural feature at word level, for the following reasons:

i) All verbs are fed through all levels, and at verb word level distributional sub-classes are set up on the basis of occurrence in different types of Verb Group, where degree of transitivity is not relevant.

ii) Likewise, Verb Groups are divided into distributional sub-classes on the basis of their occurrence in different types of Verb Piece, where, again, transitivity is not a relevant feature.

iii) The Verb Piece is distributed in the Verb Phrase, again not on the basis of transitivity, and it is only in establishing different sub-classes of the Verb Phrase according to occurrence in different clause types that transitivity is relevant.

This follows from the strict separation of structural types and distributional classes and sub-classes, and the demarcation of levels, established in the introduction, and avoids endless repetition throughout the levels, and other problems indicated in that discussion.
-phavyā and -kokāvā are probably both analyzable into two morphemes -- phav-va and kok-va -- since -va is occasionally omitted in phavyā. However, the function of the postulated morpheme -va is not clear.4

3.1.3.3.1. Reflexive: -phavyā.

E.g. haa?phavyā "to comb oneself" < haa? "to comb (s.o.)"

hipāphavyā "to wash oneself" < hipā "to wash (s.o., sthg.)"

Often, the verb stem is rarely, or never, attested without the reflexive suffix, and in those cases, the inflection has virtually established a new word in which there is little or no awareness of the original form.

E.g. hoka?phavyā "to get dressed, to get into (a canoe, etc.)"

< he?ku "to bite" (of insects)

In spite of this, -phavyā is not considered as a stem-level derivational suffix, for the following reasons:

i) It is actively used at word level.

ii) It is not closely bound to the verb stem, and is in fact the most mobile of verb suffixes, occurring sometimes after temporal and imperative clitics and the auxiliary indicator in verb piece type ii, sub-type i (cf. 3.1.2.6.1.2.2.(ix), and 5.1.2.2.1.). It also occasionally occurs after the Order 2 suffix inchoative, and the Order 3 directional suffixes (cf. 3.1.2.4., below).

E.g. mepākāphavyā no?pi "Without washing myself I go"

4cf. omission of the final syllable of t6?va, "to obtain", in 4.1.2.2.
mokan?kaphaavá no?pi "Dressing myself, I go"

3.1.2.2. Reciprocal: -kakává. 5

e.g. maan?kakává "they comb each other's hair"
< hao? "to comb"
(cf. maan?phaanvá "they comb their (own) hair")

mepákakává "they wash one another" < hipá "to wash"
(cf. mepáphaanvá "they wash themselves")

nanovívipákakává "they speak to each other"
< nánovípi "to speak"

When the reciprocal is added to the verb khá "to do", this
is usually replaced by (ii) hà "to be". (The (ii) is except
on rare occasions omitted.)

e.g. (i) módí kaiına na-khá
tapir die they-do "They kill the tapir"

But kaiına neežá - kakává
die they-be recip "They kill one another"

Contrast kaiına neežá
die they-be "They die"

(ii) mó phede? na-khá
ne greet they-do "They greet me"

But phede? neežá - kakává
greet they-be recip "They greet one another"

As the above examples demonstrate, a restriction conse-
quently on the use of the reciprocal suffix is the limitation
of the subject to the plural -- another semantic restriction

5When the reciprocal has been added, the verb is often dist-
ributed in a clause containing the concomitant phrase, cf.
6.2.5.2.1., below. See also comments on the clause at the
beginning of this section.
with inevitable (but not language-specific and therefore not significant) structural consequences.

3.1.2.3. Suffix Order 2: Causative/Inchoative.

These suffixes have also been described as derivators at stem level, in the formation of complex stems. This does not preclude their functioning as inflectional suffixes at word level, and in fact both suffixes may occur on complex verb stems consisting of a verb root + either derivator. 6

With causative derivator at stem level.

e.g. mi?tsotá "to boil (sthg)"

i) + causative verb word suffix:

\[\text{tshonáya tsó hooni mi?tsototá} \]
her-mother her water boil-cs-cs

6 This analysis does not deny the validity of other methods of handling this sort of problem, such as in a non level-oriented approach (e.g. the ordering of "higher predicates" in various types of generative semantics, as in Franz, 1971: Chap 4, Landsman & Franz, 1972:123-194). The present description has the advantage of clarifying the different function of the same suffix at different grammatical levels, as in the following example:-

\[
\begin{array}{c}
\text{tša-mí ma s?ofá - kâkávótá} \\
\text{past them fear-cs recip-cs} \\
\text{rt deriv} \\
\text{VbSt: frighten Sx 1 Sx 2} \\
\text{Vb}
\end{array}
\]

"He made them frighten one another"

Here the causative suffix has functioned as a derivator at stem level, boosting an intransitive verb root (s?ofá, "to fear") to a transitive stem ("to frighten"). It has then functioned as an inflectional suffix at word level, boosting a transitive stem to a ditransitive verb. Only one object tagmem is present in the clause, since the reciprocal suffix denotes the verb one step on the transitivity scale, as indicated in 3.1.2.2., above.
"Her mother makes her boil the water"

ii) + inchoative verb word suffix:

\[ \text{tsö hooni mi?tsotaka} \]
\[ \text{she water boil-incho} \quad \text{"She begins to boil the water"} \]

With inchoative derivator at stem level.

e.g. \[ \text{ifa?o?} \quad \text{"to become frightened, to repent"} \]

i) + causative verb word suffix:

\[ \text{tsö tsö ifakoota} \]
\[ \text{he her become cs} \quad \text{"He makes her become frightened"} \]

frigmented

ii) + inchoative verb word suffix:

\[ \text{gifakaka? - mi} \]
\[ \text{he-repent-incho-rec} \quad \text{"He began to repent" (Lit.: "He began to become frightened")} \]

Causative and inchoative suffixes modify stems to which they are added in exactly the same way as at stem level (cf. 2.1.2.2.1. and 2.1.2.2.2., above).

3.1.2.3.1. Causative: -tä.

e.g. \[ \text{tshonava dotskaté nähigá do-khotá} \]
\[ \text{her-mother her-brother shelter she-do cs} \]

"Her mother makes her shelter her brother"

When the causative is added to the verb (ii)\[ii\] "to be", this is obligatorily replaced by kha, "to do". 7

e.g. \[ \text{mitshá-mí gi-žá} \]
\[ \text{get-up rec he-be} \quad \text{"He got up"} \]
\[ \text{past} \]

Becomes

\[ \text{tsa-mí mitshá gi-khotá} \]
\[ \text{him-rec get-up he-do cs} \quad \text{"He made him get up"} \]
\[ \text{past} \]

7Contrast the opposite (and optional) effect of the reciprocal suffix -- cf. 3.1.2.2.2., above.
3.1.2.3.2. Inchoative: -kā.

E.g. vakhā giśa-kaā
     ill he-be-incho "He becomes ill"

(Cf. vakhā giśa "He is ill")

giṭōnā - kaā
he-standing-incho "He stands up"

(Cf. giṭōnā "He is standing")

The inchoative is occasionally optionally followed by -nā, the meaning of which is unclear.

E.g. giṭōnā-kaānā "He stands up"

For discussion of -nā, cf. 3.1.2.5.1., below.

Order 1 suffix -phaavā sometimes moves right, to occur after the inchoative suffix.

E.g. mōpākaā-phaavā no?pi
     I-wash-incho-reflex I-go "Washing myself, I go"

Cf. 3.1.2.2.1. (ii), above.

3.1.2.4. Suffix Order 3. Directional.

There are two verbal8 directional suffixes:

-keś "to go to"

\{-ki\} "to come from"

They are added in accordance with the following rules:-

i) Any verb stem final vowel other than /i/ is changed to /e/. /i/ does not change.9

ii) -keś or \{-ki\} is added to the resultant form.

---

8 To avoid confusion with directional phrase relators -kā "to" and -khō "from". Cf. 6.2.9.2., below.

9 Cf. Directional Imperative, 3.1.2.6.2.1., rule (xii), below, and verb group type ii, sub-type i, 5.1.2.2.1.
iii) \{-ki\} -ki, -ke

-ki occurs after /e/
-ke " " /i/

Directionals are not added to directional verbs or to verbal constructions indicating direction (e.g., Verb Piece type ii.ii; verbs with imperative directional suffixes -- cf., 3.1.2.6.2., rule (x), below).

3.1.2.4.1. -keš "to go to"

e.g. no?mîtekeš "I go to eat" < a?mitâ
nokhonikeš "I go to laugh" < khoni
boto? dokhokeš "She goes to sweep" < boto? khû
tua gižêkeš "He goes to jump" < tua jâ
gi-manâa vate?keš "We go to know (meet) him" < manâa tê?

noke?keš "I go to open"

Additional changes with -phaavâ.

Following some verb stems, the vowels of both syllables of this Order 1 suffix may change to /e/, or only the vowel of the last syllable, as indicated by rule (i), above.

e.g. nodo?phaavâ-keš } "I go to work" < odê?phaavâ
    nodo?pheevâ-keš } "I go to work"

No meaning difference is obvious, though the change of vowel in the first syllable may indicate the presence of motion in the working, as well as in the going to it.

Also, this Order 1 suffix may sometimes be permutated to
a position following the directional, in which case, the vowel change occurs in the stem, and not the suffix.

*e.g. no?pāpheevēkeē*  
no?pēkeēphaavū  "I go to wash myself"  < hīpāphaavū  
(In this particular case the change of all vowels in -phaavū when preceding the directional would appear to be obligatory.)

In some cases, -phaavū cannot follow the directional, and the vowels of the first syllable do not change.

*e.g. noo?phaavēkeē* "I go to comb my hair"  < haa?phaavū  
no?ka?phaavēkeē  "I go to enter (a house, a canoe); I go to dress"  < hoka?phaavū

The use of this directional suffix results in a meaning which parallels that obtained by verbal piece type i:i with the verb i?pī "to go".

*e.g. a?mitē thē no?pī* "I go to eat"

*cf. section 5.1.2.2.1., below.*

3.1.2.4.2. {-ki} "to come from".

*e.g. no?mitēki* "I come from eating"  
nokhonikē  "I come from laughing"

10 A clarification of the possible differences of meaning here must await further research. My informant assured me that both forms were "the same", but this may merely reflect the difficulty he would have in expressing such fine distinctions in Spanish. It may be that the first form means "I wash myself -- go to do", while the second may be "I go to wash -- reflexive"
vatapōnikē "We come from dreaming" < tapōni "to dream"
boto? dokheki "She comes from sweeping"
no-nāgi- noj ji? gižeki "He comes from meeting
my-brother-with
with my brother"
< ji? jā "to meet"

No additional rules appear to apply in the case of
-phaavā, before this directional marker (yet it is attested
in less cases than -ke6, and it is thus possible that further
data might reveal similar changes).
e.g. nodo?phaavēki "I come from working"
    noka?phaavēki "I come from dressing, from entering"

But after tōʔ, -kā is aspirated:
e.g. gi-manā no-toʔkhi "I come from knowing him (meeting
him for the first time)"
This would appear to be irregular. It is not due to the
preceding glottal, as indicated by aʔkā, "to open":
    nokeʔkī "I come from opening".

The following example illustrates the use of a direc-
tional after the Order 2 causative suffix:
    nošōteki "I go to cause to eat meat" (i.e., "I go to
    feed (the children, etc.) with meat")
    < šā "to eat meat"

The use of this suffix results in a meaning which closely
approximates to that obtained by the Adjunct Phrase with the
verb tsâ?(nu) "to come".

e.g. no?mitâko? notesâ? "I come from eating"

However, this latter structure may also be glossed as "Eating, I come", or "After eating, I come", cf. 6.2.8.2. (iii-iv), below.

3.1.2.5. Suffix Order 4. Progressive.

Progressive aspect is indicated by verbal suffix -pa. (Contrast the tense markers, which are clitics, and principally do not go on the verb -- cf. 7.2.1.2.6., below.)

e.g. gïnâpa "He is sleeping" (cf. gïnâ "He sleeps"

kainâe gïnâpa "He is dying" (cf. kainâe ci gižâ

"He has already died")

3.1.2.5.1. -nâ.

The progressive is optionally followed by -nâ, the meaning of which is not clear, though it is probably to be identified with the -nâ occurring after inchoative in final position, as indicated in 3.1.2.3.2., above.

e.g. gïnâpanâ "He is sleeping"

If the inchoative is non-final, -nâ does not occur, unless -pa is final:-

[11] Though -koâ parallels verb piece ii.i with i?pa in meaning, and (-ki) closely approximates to Adjunct Phrase with tsâ?(nu), these latter two constructions should not be taken to be parallel. In the former the verb is not marked for person and is dependent on an auxiliary verb; in the latter the verb is marked for person, typically has the inchoative marker, and fills the Axis slot of an Axis-Relator phrase. cf. relevant sections for further details (references as above).
gi?tsakaf-nf "He sat down"

gi?tsakaf-nf-pa-nu "He was in the process of sitting down"

(Here the temporal clitic -nu precedes the progressive suffix.)

This -nu may be related to the syllable occurring at the end of the verbs i?pi "to go" and tsaf "to come" when they are dependent or in the negative imperative, but which is otherwise always omitted with i?pi and only rarely included with tsaf.\(^{12}\)

e.g. (i) a?nitse no?pi

<table>
<thead>
<tr>
<th>eat</th>
<th>aux I-go</th>
<th>&quot;I go to eat&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>VbPce_ii.1</td>
</tr>
</tbody>
</table>

Contrast:

<table>
<thead>
<tr>
<th>kaa_ja_i gi-kha</th>
<th>a?nitse no?pi-_na_ - n_</th>
<th>want</th>
<th>he-do</th>
<th>eat</th>
<th>aux I-go</th>
<th>ppsv</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>P:VP:VbPce_ii.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Axis:NonCl</td>
<td>relr</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"He wants me to go to eat"

(ii) no?mitaka\_f notsa\_?

<table>
<thead>
<tr>
<th>I-eat-_incho I-come</th>
<th>&quot;I come from eating&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjunct Phrase</td>
<td></td>
</tr>
</tbody>
</table>

Contrast:

\(^{12}\)In this connection, it may be questioned whether the generally-omitted -nf of a?na\_f "to give" is related. The answers to these questions must await further research.
"He wants me to come from eating"

In both examples, the vowel of -ná becomes a before suffixation, and this is lengthened and a glide added by nominalization. In the second example, the stem glottal also moves right one syllable before suffixation.

+++

The above verb word suffixes may be followed by a number of clitics -- reportative, frustrative, desiderative/stated intention, temporal and dubitative/incompletive -- but since these are not specifically verbal suffixes, but may occur on other clause-level tagmemes (and do when such are present), details are given in the description of the clause, in 7.2.1.2.6., below. One example is included here:

he-eat report frus desid remote past

"It is said that he wanted to eat (but he didn't eat)"

3.1.2.6. Imperative Mood.

This is not a suffix order, but a different mood (preceding paragraphs describe the declarative). The imperative in Resi-garo is very rich, and its various forms are marked by both segmental and suprasegmental features, as indicated in the
description which follows.

The imperative applies to verb words marked for the second person -- singular, dual, or plural -- only, and only in the present. It may be affirmative or negative. There are two types of imperative: basic imperative, and directional imperative.

3.1.2.6.1. Basic Imperative.
3.1.2.6.1.1. Affirmative.
(i) Singular.
Rule i. The normal second person singular pronoun pha proceeds the verb stem, to which it is obligatorily assimilated.
Rule ii. If the penultimate and antepenultimate syllables of the stem consist of a single vowel each, and have low tone, this becomes high.

e.g. pa?mita "drink!(sg.13)" (cf. pa?mita "you drink")
    pi?pi "go!"  (cf. pi?pi "you go")

If the verb stem consists of a single syllable, the imperative is homophonous with the assimilated form of the declarative.

e.g. boto? pikhá "sweep!" (cf. boto? pikhá) "you sweep")
    pha boto? khá "you sweep")
    ee?phi pikhá "fish!" (cf. ee?phi pikhá) "you fish")
    pha ee?phi khá "you fish")
    pišá "eat meat!" (cf. phi ša) "you eat meat")

13 Not repeated in succeeding glosses, since all examples in this section are of the singular, as indicated by the paragraph heading.
Rule iii. The underlying initial i of the copulative verb, which is deleted (with very rare exceptions) in the declarative, is retained in the imperative.

*ex. tua pia "jump!" (cf. pha tua j) "you jump"

Rule iv. In hip "to wash" and mit "to smoke (food -- as a preservative process)", i > ii :-

phip "wash!" (cf. phip) "you wash"

phipaphaav "wash yourself!" (cf.pha hipaphaav) "you wash yourself"

pinitu "smoke (it)!" (cf. pha mit) "you smoke (it)"

(ii) Dual.

Rule v. The second-person non-singular (i.e., dual and plural) imperative pronoun i- precedes the verb stem, to which it is obligatorily assimilated. (This results in i > $ before h- and V- initial verbs.)

Rule vi. Dual marker -musi (m) or -mupi (f) is added to the end of the verb (which results in the usual change of final u to a, and movement one syllable to the right of any glottal stop closing the penultimate syllable in the verb).

Rule ii, above (tone change), also applies in the dual.

*ex. a?mitamusi "eat! (dl)" (cf. hamusia nit "you (dl) eat")

14 Not repeated in succeeding glosses, since all examples in this section are in the dual, as indicated by the paragraph heading. To facilitate comparisons, the masculine dual marker is given in all examples in this section. The feminine dual marker could equally-well occur in all cases.
\[ i?\text{pinusi} \ "go!" \quad (\text{cf.} \ hamusi \ i?\text{pi} \ "you go") \\
\]
\[ \text{had\text{"a}?musi} \ "sing!" \quad (\text{cf.} \ " \quad \text{had\text{"a}?p\u0151} \ "you sing") \\
\]
\[ i\text{"\text{"a}?musi} \ "eat neat!" \quad (\text{cf.} \ " \quad \text{\"a}? \ "you eat neat") \\
\]
\[ \text{boto? ikh\text{"a}?musi} \ "sweep!" \quad (\text{cf.} \ " \quad \text{boto? k\"a}? \ "you sweep") \\
\]
\[ \text{ee?phi ikh\text{"a}?musi} \ "fish!" \quad (\text{cf.} \ " \quad \text{ee?phi k\"a}? \ "you fish") \\
\]

Rules iii and iv, above, apply also in the dual.

\[ \text{e.g.} \ (\text{Rule iii}) \\
\]
\[ \text{tua i\text{"a}?musi} \ "jump!" \quad (\text{cf.} \ hamusi \ tua \ ji? \ "you jump") \\
\]
(Rule iv)
\[ \text{hi?pinusi} \ "wash!" \quad (\text{cf.} \ " \quad \text{hi?p\u0151} \ "you wash") \\
\]

It is noted that \(-\text{musi}/-\text{mupi}\) cannot precede the reflexive:-
\[ \text{hi?p\text{"a}?phaavn\text{"a}?musi} \ "wash yourselves!" \quad (\text{cf.} \ hamusi \ hi?p\text{"a}?phaavn\text{"a}? \ "you wash yourselves") \\
\]

(iii) Plural.

Rules ii-v, above, apply. No suffix is added. Thus, when \(i > \emptyset\), the plural imperative may be homophonous with the unaffixed form of the verb, or differentiated from it only by tone.

\[ \text{e.g.} \ a?\text{mit\u0111} \ "eat! \ (p1^{15})" \quad (\text{cf.} \ a?\text{mit\u0111} \ "to eat", \ha?\ha? a?\text{mit\u0111} \ "you (pl) eat") \\
\]
\[ i?\text{pi} \ "go!" \quad (\text{cf.} \ i?\text{pi} \ "to go", \ha?\ha? i?\text{pi} \ "you go") \\
\]
\[ \text{had\text{"a}?p\u0151} \ "sing!" \quad (\text{cf.} \ had\text{"a}?p\u0151} \ "to sing", \ha?\ha? had\text{"a}?p\u0151 \ "you sing") \\
\]

\[ ^{15}\text{Not repeated in succeeding glosses, since all examples in the second person in this section are of the plural, as indicated by the paragraph heading.} \\
\]
3.1.2.6.1.2. Negative.

The negative imperative may be derived from the affirmative imperative, above, by addition of the negative imperative clitic {-mn?u} (which changes a final u to a, and moves one syllable to the right any glottal stop closing the penultimate syllable).

3.1.2.6.1.2.1. Allomorphs of the Negative Imperative Clitic.

{-mn?u} 

a) -ma?u

This occurs immediately following khā or (ii)ka.17 Thus, it does not occur in the dual, since the verb is then suffixed.

e.g. Singul ar Plural

"Don't sweep!" boto? pikhāma?u boto? ikhāma?u

"Don't jump!" tua piižāma?u tua iižāma?u

16This clitic may also be used to indicate the desiderative, subject to the limitations indicated in 7.2.1.2.6.3.1., below.
17And on all verbs with imperative directionals -- cf. 3.1.2.-6.2.2., below.
b) - mâ

This occurs nonfinally on the verb, or on the basic or other filler of the peripheral slot in the complex verb group. 18

<table>
<thead>
<tr>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Don't work!&quot;</td>
<td>podo?máphaavá</td>
<td>odo?máphaavámusí</td>
</tr>
<tr>
<td>&quot;Don't sweep!&quot;</td>
<td>boto?má pikhá</td>
<td>boto?má ikhámusí</td>
</tr>
<tr>
<td>&quot;Don't jump!&quot;</td>
<td>tuamá piižá</td>
<td>tuamá iižámusí</td>
</tr>
</tbody>
</table>

c) - má?

This occurs elsewhere i.e., finally on all verbs 21 except khá and (ii) já, and after -musi/-mupí on these verbs.

<table>
<thead>
<tr>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Don't eat!&quot;</td>
<td>pá?mitámá?</td>
<td>i?mitámusimá?</td>
</tr>
<tr>
<td>&quot;Don't go!&quot;</td>
<td>pi?pinamá?</td>
<td>i?pinamusimá?</td>
</tr>
<tr>
<td>&quot;Don't sweep!&quot;</td>
<td>---</td>
<td>boto? ikhámusimá?</td>
</tr>
<tr>
<td>&quot;Don't jump!&quot;</td>
<td>---</td>
<td>tua iižámusimá?</td>
</tr>
</tbody>
</table>

In the last two examples, the dual forms are variants of those exemplified under - mâ.

3.1.2.6.1.2.2. Application of {-na?u} to verbs.

The above remarks concerning the allomorphs of {-na?u} serve

---

18 Or on the head verb of a complex verb piece, when an imperative directional is present -- cf. 3.1.2.6.2.2., below.
19 The singular and plural forms here are variants of those exemplified under -na?u.
20 Footnote 19 applies.
21 Except when these contain imperative directionals -- cf. 3.1.2.6.2.2., below.
22 For presence of -na (< -ná), cf. section 3.1.2.5.1., above.
simultaneously to illustrate the negative imperative of singular, dual and plural of most verbs, and only a few additional comments are necessary.

Rule vii. The negative imperative marker -mā? is added finally to the imperative of all verbs except khā and (ii)jā, to which -ma?u is added, except in the dual after -mūši/-mūpi, when -mā? is added. See examples in a) and c), above.

Rule viii. When khā and (ii)jā form part of a complex verb group, the negative imperative may be marked as indicated in rule vii, or by adding -mā? to the basic or other filler of the peripheral slot. See examples in b), above.

Rule ix. The negative imperative marker precedes the reflexive suffix. The form used is -mā. See examples in b), above.

3.1.2.6.2. Directional Imperative.

As with other verbal directional markers in Resigaro, direction to or from may be indicated in the directional imperative, i.e., "go and ..." or "come and ..."

3.1.2.6.2.1. Affirmative.

Person and number are marked as indicated for "Basic Imperative", in 3.1.2.6.1. In addition, the following rules apply:

Rule x. The directional imperative may not be applied to directional verbs or other verbs with non-imperative verbal directional suffixes.23

23cf. 3.1.2.4., rule iv, above.
Rule xi. Any verb stem final vowel other than i becomes e. i does not change.  

Rule xii. Verb stem final vowel is lengthened.

Rule xiii. -?kû "come and ..." or -nì "go and ..." is added to the resultant form of the verb stem in singular and plural.

Rule xiv. -nì is omitted when its occurrence after the verb stem would make it non-final (i.e., in the dual or when the verb bears the reflexive suffix).

Rule xv. -?kû may be omitted in the dual only, when ambiguity with "go and ..." will not result, except with khû and (ii)?k, when it is always included.

e.g. "Come and ..."

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;... sing!&quot;</td>
<td>phadâpec?kû</td>
<td>hadâpec(?kû)musi</td>
<td>hadâpec?kû</td>
</tr>
<tr>
<td>&quot;... eat meat!&quot;</td>
<td>pišee?kû</td>
<td>išee(?kû)musi</td>
<td>išee?kû</td>
</tr>
</tbody>
</table>

24 cf. verb word suffix Order 3, "Directional", in 3.1.2.4., rule i, above, and verb piece, section 5.1.2.2.1.(i), below. The omission of -nì, and occasionally of -?kû, in the dual, while the verb stem final vowel remains long, accounts for the establishment of rule xii instead of interpreting the imperative directionals as being *-nì and *-?kû.

25 The omission of -nì, and occasionally of -?kû, in the dual, while the verb stem final vowel remains long, accounts for the establishment of rule xii instead of interpreting the imperative directionals as being *-nì and *-?kû.

26 Tonal change is due to tonal morphophonemesis. cf. comment in Introduction, section 0.5., on scope.

27 The stem glottal of hadâpGU moves right one syllable before suffixation and is assimilated to the glottal of -?kû, when this occurs. Two glottals are not pronounced in the dual when -?kû is included; the repetition of the glottal in the transcription of the example merely shows that when the whole of -?kû is deleted, a glottal remains, namely that of the stem.
"... jump!" tua pi'zee?ká tua i'zee?kámusi tua i'zee?ká
"... work!" podee?káphaavá odee?(ká)phaavámusi odee?káphaavá

e.g. "Go and ..."

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;... eat!&quot;</td>
<td>pa?miteeni</td>
<td>a?miteemusi</td>
<td>c?miteeni</td>
</tr>
<tr>
<td>&quot;... sing!&quot;</td>
<td>phadápee?ni</td>
<td>hadápee?musi</td>
<td>hadápee?ni</td>
</tr>
<tr>
<td>&quot;... eat meat!&quot;</td>
<td>pi'zeeeni</td>
<td>i'zeeemusi</td>
<td>i'zeeeni</td>
</tr>
<tr>
<td>&quot;... play!&quot;</td>
<td>pi?mesiini</td>
<td>i?mesiimusi</td>
<td>i?mesiini</td>
</tr>
<tr>
<td>&quot;... sweep!&quot;</td>
<td>boto? pikheeni</td>
<td>boto? ikheemusi</td>
<td>boto? ikheeni</td>
</tr>
<tr>
<td>&quot;... jump!&quot;</td>
<td>tua pi'zeeeni</td>
<td>tua i'zeeemusi</td>
<td>tua i'zeeeni</td>
</tr>
<tr>
<td>&quot;... work!&quot;</td>
<td>podee?phaavá</td>
<td>odee?phaavámusi</td>
<td>odee?phaavá</td>
</tr>
</tbody>
</table>

3.1.2.6.2.2. Negative.

The negative directional imperative may be derived from the affirmative directional imperative, above, by addition of the negative imperative clitic \{-ma?u\}, as in 3.1.2.6.1.2., above. However, the distribution of allomorphs of this clitic is slightly different from that indicated there, and conforms to the following rules:

a) \{-ma?u\}

This occurs finally on all verbs containing an imperative

---

28 The sequence ii becomes i before the ee in the following syllable.
29 Vowel change and suffixation affect stem only, as indicated in rules xii and xiii.
30 Footnote 27, above, applies equally here.
31 Glottal belongs to stem. cf. footnote 27, above.
32 cf. rule xiv, above, on omission of -ni.
directional.

a.g. "Don't come and ..."

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
</table>

"Don't go and ..."


b) -má

This occurs elsewhere, in the alternative forms of some verbs that are possible in some cases, as in the following examples:

"Don't come and ..."


33 cf. rule xiv, above, on omission of -ni when it would occur non-finally.
"Don't go and ..."

"... sweep!" bota?má pikheení bota?má ikheemusi

bota?má ikheení

"... work!" podees?máphaavú --- ---

The paradigm is incomplete, since not all possibilities are realized. Instead of dual and plural of negative directional imperatives, it is preferred to use the complex verb piece, with the negative imperative on the auxiliary verb, as in 3.1.2.6.1.2.2., above.

e.g. odé?máphaavú i?pinamusímá? "Don't you (dl) go and work!"

Tua jëme itsána?má? "Don't you (pl) come and jump!"

As an alternative to indicating the negative imperative on the auxiliary verb, it may be added to the verb in the Head slot of the complex verb piece:-

odé?máphaavú i?pi "Don't you (pl) go and work!"

bota? kháemá itsána?músí "Don't you (dl) come and sweep!"

For further details of the verb piece, cf. 5.1.2.2.1., below.

3.1.3, Distribution.

The members of the class of verb words are distributed in the nucleus slot of the verb group. Sub-classes of verbs are set up on the basis of this distribution.

Sub-class 1.

This sub-class has nine members, which occur in verb group types i and ii:

khú "to do, to make"
(ii) ja "to be"  pi?ko "to throw away"
	t6?(v6) "to obtain"  a?pithootu "to cause to bathe"
	i?t69a "to be standing up"  i?votu "to cause to dry"
	aa?ni "to give"  h6notu "to cause to be the same"

Sub-class 2.
This sub-class consists of all other verbs. These occur in verb group type i only.
e.g.  a?mitu "to eat"
i?p6 "to go"

3.2. Noun Word.
3.2.1. Contrast.
Noun words (Nn) have the following contrastive-identificational features:

i) Their Base slot is filled by a noun stem.
ii) They typically co-occur with classifier, augmentative/diminutive, number and restrictive nominal suffixes.

3.2.2. Variation.
Nouns are grouped into two types, according to whether or not they may bear Order 1 (classifier) and Order 3 (number) suffixes.

3.2.2.1. Noun Type i; "Simple".
Nn1 = +B:NnSt1 +sx 2:aug/dim +sx 4: rest
i.e., classifiers and number suffixes do not occur.
Two sub-types are distinguished:

3.2.2.1.1. Sub-type i, "Plural".
This consists of noun stems which in their basic form are plural (sub-class 1.1).

* e.g. apáná "leaves"
  
a?i1 "worms"
  
atsíá "men"

Number suffixes may be added to these nouns if they are first singularized by addition of the appropriate classifier suffix. But then the resultant forms are considered to be different words, belonging to the appropriate sub-type of type ii nouns. (There appears to be a semantic difference between basically-plural nouns, and those forms which result from the addition of a classifier and then the plural number suffix, in that the former is a generic term, while the latter tends to be used with more specific numbers. 34

3.2.2.1.2. Sub-type ii, "Uncountables".
This consists of noun stems that refer to uncountables (noun stem sub-class 1.2).

* e.g. peégí "starch"
  
hooní "water"

Occurrence with Order 2 and Order 4 suffixes:

* e.g. apáná-kobu
  
leaves aug "big leaves"

34 Levinsohn informs me that this is also the case in Huitoto Mánáca, on which Minor has gathered data.
3.2.2.2. Noun Type ii, "Complex".

Four sub-types of noun type ii are established on the basis of co-occurrence with different allomorphs of the number suffixes. Since suffixes of Orders 1, 2 and 4 may occur with all these sub-types, they are described without reference to the sub-types, which are described in the presentation of the Order 3 suffix (number).

3.2.2.2.1. Suffix Order 1: Classifier.

Classifiers indicate the shape or other inherent characteristics of anything that may be referred to by a noun in Resi-garo. Most classifiers may be added to a wide range of noun stems, modifying the meaning accordingly. Some classifiers, however, have a very narrow distribution, only being attested with one or two noun stems, which may not themselves occur with other classifiers. When the complete list of noun stems which may bear a given classifier is presented, this is indicated by the abbreviation (C.L.) -- "Complete list". The complete list does not include all adjectives, numerals and demonstratives which may also bear the classifiers when in concord with a noun. Nor does it necessarily include nouns such as pa "all", si "other", which may bear all classifiers. It
is also possible that further data might reveal that some
lists indicated as complete were not, although probably
nearly so.

When the use of a classifier is widespread, the letters
"(C.L.)" are absent, and further examples will be discovered
in the lexicon, and throughout the thesis.

Sometimes a classifier may be optionally omitted from
a stem, in which case the abbreviation (M.O.C.) -- "May Omit
Classifier" -- appears after the example in question. This
applies only to the singular form, since the classifier must
appear in the dual and plural (except in the case of "arm",
cf. -?napi, below).

As indicated above, classifiers also have the effect of
singularizing any noun stem which in its basic form is plural.
They may be followed by dual and plural number suffixes, as
indicated in 3.2.2.2.3., below.

Where possible, the form of the noun with the classifier
is contrasted with the form without it (if the classifier may
be omitted), or with a form with another classifier. In a
few cases where the noun may not occur without the classifier,
and this only occurs on the one noun, the morpheme-break be-
tween the stem and the suffix is determined by reference to
a numeral or other word bearing the same classifier suffix.
-bābā "that which belongs to something"[superscript 35] (C.L.)

-hii?pā "foot" : hii?pābābā "sock, stocking"

-hīveg "head" : hīvebābā "pillow"

-bahū "uninhabited part of the jungle" (C.L.)

tēbahū "uninhabited part of the jungle"

hibahū "this uninhabited part of the jungle"

-ōō i) "made of liana cord"

e.g. hamākabā "hammock" (M.O.C.)

kamo?bā "basket made from liana cord" (M.O.C.)

ii) "a felled tree"

e.g. haōja?ō "trunk of the huccropona (= yaripa) tree, standing"

: haōjābā "(ditto), cut down"

ta?akā?ō "trunk of the Annona muricata tree, standing"

: ta?akābā "fruit of the same tree, cut down"

-dō "female"[superscript 36] (C.L.)

nāndī "brother (of br.)" : nāndō "sister (of sis.)"

-ga?ōā "raft, floating thing"

e.g. avāana?ō "tree trunk" : avāanaagan?ōō "raft"

-gahū "above" (C.L.)

išiū "eye" : išigahū "eyebrow"

tōgahū "hill"

[superscript 35] From informant's gloss, pertenece a tal coca.

[superscript 36] This is only attested with the one word given, in contrast to -niā, below, which has a wide distribution. cf. form of pronoun for 3rd person singular, feminine.
-gí "human, male, and all non-human animates"
  e.g. atsígi "man" : atsígi "man"
        phniíjí "old woman" : phniíjí "old man"
        amoógi "tapir"

-gá "long and flat"
  e.g. -ká "hand" : -ká "finger"
        -hii?pá "foot" : -hii?págí "toe"
        boe?khoštígi "paddle, oar" (H.O.C.)
        va?agí "machete"

-hí "round and flat"
  e.g. kopáagí "paper money" (usually una libra, i.e.
        10 soles)
        : kopáagí "a coin" (usually 1 sol)
  haááá "land turtles": haááá "land turtle"
  bo?otá "a plate"
  hipóti "land, earth" 37

-hú 1) "long and flat -- horizontal"
  e.g. kmá "to sleep" : moótsíhí "bed"
        pagíhí "to spread out a blanket"
        : pagímoótsíhí "a blanket"
        penítíhí "a house" (H.O.C.)
  jíjáagí "big" (of people): jíjáaghí "width"

37 This gives an interesting insight into Resigaro beliefs concerning the shape of the earth. Note also the insight into their cosmology given by application of the animate classifier to the word for "star": hivíígi.
ii) "speech"

e.g. -nō "mouth" : nōhū "language, word"
hađa’hōtsī "song" : hađa’hōtsihū "song"
šōndnē jā "to deceive": šōndnū "a lie"
čōniigī "a fire" : čōniigihū "rifle" ("a voice of fire, or a fire that speaks")

-hugī "path" (C.L.)
ajāphugī "a path" (M.O.C.)
sāhugī "one (path)"

-ī "stick-like"

e.g. avāna?ī "tree trunk": avānaī "a stick"
nā?ī "worms" : nā?īi "a worm"
tho? khā "to grind" : tho?khoṭsiī "a pestle"
-kaavī "shin"

-ī?ō "long and oval-shaped" (C.L.)
-henōkō "ear" : -henōkōtō "horn"

-īi?ē "dust"

e.g. čōniigī "a fire" : čōniigīhū "ash"
hipohī "earth" : hipo’hū "dust"
ifshimū "sugar cane": ifshimihū "granulated sugar"

-īi?ō "stringy"

e.g. hīve?āsī "crown of the head": hīve?jīi?ō "long hair"
ponāma?ē "trunk of the hungurahui palm tree"
: ponāmājīi?ō "tocuma" (the
157

heart of the trunk, which is eaten — Sp. *chonta*.

-kaa?dô "watering-place" (C.L.)

i?dô "to drink" : i?dákaa?dô "watering-place"

(where wild animals drink)

-kô "a thick stick" (C.L.)

itshiijihû "granulated sugar" : itshikô "wild sugar cane"

-koomî "village" (C.L.)

paniitsi "house" : paniitsimâkoomî "a village, a hamlet"

sâkoomî "one (village)"

-koo?û "broom" (C.L.)

boto? khû "to sweep" : boto?khoôtsikooû "a broom"

panoôtsikooû "a broom"

-kuba "leg" (C.L.)

-îphi "thigh" : -îphikuba "leg"

-hii?pû "foot" : -hii?pâkuba "leg"

-mi "canoe" (C.L.)

hiitâmi "a canoe" (M.O.C.)

sâmi "one (canoe)"

-mii?ô "skin (-like)"

e.g. -henâkô "ear" : sâmii?ô "one (ear)"

-êsmû "skin, hide" : êsmâmii?ô "skin, hide" (M.O.C.)
-mokî "dead"
  e.g. atsâagi "man" : atsâmokî "dead man"

-mu "tube-like"
  e.g. ifitsijihû "granulated sugar" : ifitsîhmû "sugar cane"
  vaïnâmâ "bamboo"
  samâ "one (drum, etc.)"

-pachî "hollow"
  e.g. hive?âsi "crown of the head" : hive?pachî "skull"

-paî "field" (C.L.)
  jakîdépaîjî "field" (M.O.C.)
  sâmâjî "one (field)"

-pâkî "honey" (C.L.)
  fimu?ô "beehive, honeycomb" : fimu?opâkî "honey"

-pâsî "ring"
  e.g. -henâkî "ear" : henâkopâsî "earring"
  -kê "hand" : képâsî "ring (on hand)"
  -fiî "eye" : fiîpâsî "spectacles"

-pêkî "day"
  e.g. pâpekî "every day, always"
  hîpekî "last night"
  sîpekî "the day after tomorrow" (Lit., "the other day")

-pî "liquid" (countable)
  e.g. šakoo?gî?ô "a banana": šakoo?gîî "a drink made from bananas"
i?da "to drink" : i?d?tsi?i "a drink" (M.O.C.)
i?i?i "eye" : i?i?i "a tear" ([tʰa])

-pi?i "human female"

e.g. phai?i "old man" : phai?i?i "old woman"

heev?i khâ "to study" : heev?i?h?tsop?i "a female student"

-tu?i "foot" (C.L.)

-hii?pâtu?i "foot" (M.O.C.)
situ?i "the other (foot)"
sâtu?i "one (foot)"

-ts?i?aa?id?i "shoe" (C.L.)


-ã "spherical"

e.g. i?hi?pâsi "spectacles" : i?i?i "eye"

-vâfâ "interior, stomach" : vâfâi "heart"

ofi?i?i "yams" : ofi?i?i "yan"

Any stem-final glottal is deleted before addition of this classifier.

e.g. -hives?i?i?i?i "skull" : hives?i "head"

-uu?i "a part of" (C.L.)

maa?nâ "cassava" : maâ?mâuu?i "a piece of cassava"

-uu?i "rope-like"

e.g. e-ts?i?i "liana" : epi?i?i?i?i "liana cord"

komâkâuu?i "vein"
-vudä "log"

e.g. avćana?ê "tree trunk" : avćanavudä "a log"

ököiigî "fire" : ököiniigivudä "a burning piece of wood"

-?aanî "leaf-like"

e.g. apåñî "leaves" : apåñî?aanî "a leaf"

kopåagîhî "a coin" (usually 1 sol) : kopåagî?aanî "paper money" (usu. un libra)

tö?aanî "book, notebook"

-?aañî "liquid" (uncountable)

e.g. -i?nîmî "nipple" : i?nî?aañî "milk"

nanåanîñè "pineapple" : nanåanî?aanî "pineapple juice"

-?aanî "arm" (C.L.)

This suffix is not added to the noun for arm (-a?inanî),
probably to avoid the repetition of syllables that would
result, but to certain numbers, demonstratives, etc., referring
to the arm, and to nouns referring to things that are
arm-like in shape.

e.g. sî?aanî "one (arm, etc.)"

-vañî "back" : -vañî?aanî "backbone, spinal column"

-?aanî "side of"

e.g. teôifî "a river" : teôifî?aanî "river bank"

-nô "mouth" : -nô?aanî "lip"

-îmiô "eye" : -îmiô?aanî "eyelashes"
-?aba auxiliary "shoulder" (C.L.)

-va?ak6aba auxiliary "shoulder" (M.O.C.)
sa?aba auxiliary "one shoulder"

-?apo auxiliary "short cut" (C.L.)
te?i "river" : te?i?apo auxiliary "short cut overland avoiding a bend in the river"

-?as auxiliary "central place"
e.g. hive?jiia "long hair" : hive?as auxiliary "the crown of the head" (The initial glottal of the classifier fuses with the final glottal of the stem)

am6g1 auxiliary "tapir" : am6g1?as auxiliary "central place in the jungle where the tapirs gather"

-?e auxiliary "trunk of a tree"
e.g. av6ana7 auxiliary "stick" : av6ana?e auxiliary "tree trunk"
pipig1 auxiliary "fruit of the Guilema" : pipig1?e auxiliary "trunk of the Guilema palm"

-?eh auxiliary "hole in the ground"
e.g. hooni auxiliary "water" : hooni?eh auxiliary "a well"
te?eh auxiliary "a pot-hole"

-?et auxiliary "flower"
e.g. tshoma6tsh?et auxiliary "cotton (on the plant)" (N.O.C.)
giiv?et auxiliary "flower" (M.O.C.)

-?i auxiliary "bunch"
e.g. šakoo?gi?i auxiliary "a banana" : šakoo?gi?i auxiliary "a bunch of bananas"
pipìgìfì "fruit of the": pipìgìfì "a bunch of Guilelma palm": Guilelma fruit"

-?ìikó "a new shoot"

  e.g. nanànà?ò "a pineapple": nanànà?ìikó "a new shoot on a pineapple plant"

  sà?ìikó "one (new shoot)"

-?ìì6 "earthenware container for liquid"

  e.g. itsaa?ni?ìj6 "earthenware pitcher, pot"

  taa?ìjì6 "cup" (from Sp. taza "cup")

  sa?ìjì6 "one (cup, pot)"

-?ìpi "machine" (C.L.)

  konìogì "rubber": konìogì?ìpi "sewing machine"

-?ì6 "longish and oval-shaped"

  e.g. šakoo?gi?ì "a bunch of bananas"

  : šakoo?gi?ò "a banana"

  čhó?ke6 "round-shaped": čhó?ke?ò "oval-shaped maraca" maraca"

  ve6ká?ò "maize, corn"

-?oochú i) "metal or tin container"

  e.g. vatsoótsi?oochú "tin pot or pan"

  sà?oochú "one (tin pot or pan)"

  ii) "a room"

  e.g. vadòva kha "to carry on a business"

  : vadòva?oochú "a shop"

  hipomà "to tie up, to": hipomòotsi?oochú "a prison" take prisoner"
-?ootsi "lungs"

e.g. -vá?é "heart" : -vá?é?ootsi "lungs"

-?kétšápi "throat" : -?kétšápi?ootsi "gills (of a fish)"

-?osi "hand" (C.L.)

-?osi "hand" (N.O.O.C.)

-sá?osi "one (hand)" (= "five")

-?ümí "face" (C.L.)

-má?ini "tar" : má?ini?ümí "a mask"

-sá?ümí "one (face, mask)"

3.2.2.2.2. Suffix Order 2: Augmentative/Diminutive.

-kobu "augmentative"; - Já? "diminutive"

e.g. ja?ánú "child": ja?ánú-kobu "big child"; ja?ánú- Já? "little child"


-íphi-kuba "leg": -íphi-kuba-kobu "big leg"; -íphi-kuba- Já? NnSt clsf NnSt sx 1 sx 2 NnSt sx 1 sx 2

"little leg"

va?a-gú "machete": va?a - gá - kobu "big machete";
NnSt clsf NnSt sx 1 sx 2

va?a - gá - Já? "knife"
NnSt sx 1 sx 2

3.2.2.2.3. Suffix Order 3: Number.

Co-occurrence with different allomorphs of the number suffixes requires the establishment of four sub-types of noun type ii, as indicated in the following table:
The names assigned to the sub-types of noun words are merely convenient notional titles corresponding to the major number of members of each sub-type. They do not determine the membership of each sub-type, which is dependent on structural grounds (cf. Lyons, 1968:318).

Sub-type iv ("Classifier nouns") consists of all nouns (except atsagi "man", nāagi "brother (of brother)" and nāadō "sister (of sister)"") bearing a classifier, and therefore includes some nouns referring to people, to non-human animates, and to body parts. If the classifier may be omitted without affecting the meaning, these nouns may form the dual and plural

The dual forms -musi and -mupi may be analyzable into -mu- "non-singular" (identifiable with plural -mu) and -si "masculine dual", -pi "feminine dual", and this -pi may be identifiable with -pijë "feminine classifier", though the relation between -si and -pi "masculine human and non-human animate classifier" is not clear. Since such an analysis is not particularly revealing (and also implies analysis of -pijë as -pi- "feminine" + -jë "??"), it is not adopted here. However, such postulated forms may correspond to clearly identifiable morphemes in related languages. I believe Thiesen does identify similar morphemes in Bora (in his MS on Bora Morphology).
with the appropriate number suffixes corresponding to sub-types i, ii and iii. Thus, phai-pi'le "old woman" may omit the classifier and form the dual with -mupi: phaimupi, or may retain the classifier and form the dual with (kə): phai-pi'leekə. It has only one plural form -- phai-pi'lehi --, since phainë would be homophonous with the masculine plural without the classifier (from phaigə "old man").

3.2.2.2.3.1. Noun Type ii, Sub-type i, "Human".

The Base slot is filled by a noun stem of sub-class 2.1. Suffixation is in accordance with the following rules:

1) Dual: add -musi (masc) / -mupi (fem)
2) Plural: Stem ...VVC(V) > ...VSV(V) + -në

e.g.   Singular   Dual   Plural
"brother" nágí   nágímusi   nágínë
"chieftain" ke?viikágí ke?viikámusi ke?viikanë

If the stem is a vocative, the changes of tone and vowel length indicated in rule 2), above, do not occur.

e.g.   Singular   Dual   Plural
"father" (of son or daughter) 41 að?psí   að?pemusi   að?penë
"brother" (of brother) 42 mubë   mubémsi   mubénsë

39 In these rules, the sign + is used to mean merely "add".
40 Exceptionally, the classifier -gí is retained with this word, as indicated above. The following word shows it deleted.
41 Or "son" (of father or mother). Terms of address between parent and offspring of the same sex are used reciprocally. (Wesley Thiesen informs me of a similar usage among the Boras.)
42 Stem-final tone lowered in accordance with general tonal morphophonemics.
3.2.2.2.3.2. Noun Type ii, Sub-type ii, "Non-human animate".

The Base slot is filled by a noun stem of sub-class 2.2.

Suffixation is in accordance with the following rules:-

1) Dual: Stem \( \ldots CV(V)?CV > \ldots CV(V)CV? + -musi \)
2) Plural: Stem \( \ldots CV(V)(?)CV > \ldots CV(?CV + -mu \)

\[ \text{e.g.} \quad \begin{array}{ccc}
\text{Singular} & \text{Dual} & \text{Plural} \\
\text{"hummingbird"} & pi?mí & pi?mimusí & pi?mímu \\
\text{"tapir"} & maongí & maongímusí & maongímu \\
\text{"iguana"} & maana?ò & maana?onúsí & maana?6mu
\end{array} \]

3.2.2.2.3.3. Noun Type ii, Sub-type iii, "Body Parts".

The Base slot is filled by a noun stem of sub-class 2.3.

Only those nouns referring to body parts and not bearing a classifier form the dual and plural with the allomorphs described here.

Suffixation is in accordance with the following rules:-

1) Dual: Stem \( + ?kó - ?kó \)
2) Plural: Stem \( + ?nè - ?nè \)

\( ?kó / ?kó \) and \( ?nè / ?nè \) vary morphophonemically, choice of allomorph being dependent on the preceding noun stem. Dual and

\[ \text{In these and the following rules, the absence of a tone mark} \]
\[ \text{on the symbol} \ V \text{indicates that the tone may be high or low,} \]
\[ \text{on the symbol} \ ^\wedge \text{indicates that the tone must be high, and} \]
\[ \text{on the symbol} \ V \text{indicates that the tone must be low.} \]

Likewise, C has its normal meaning ("any consonant"), except that if \( ? \) closes the penultimate syllable of the stem, the C that occurs initially in the final syllable can only be one of those consonants attested after ? (cf. Part I, section 2.3.2., above). If ? does not occur here, the C in the final syllable may be any consonant, including ?.
plural forms of nouns are therefore indicated where possible in the lexicon (Appendix I).

e.g.  | Singular | Dual | Plural
"face" | -ni'ig | -ni'igiku | -ni'iginé
"nose" | -hitákó | -hitákookú | -hitákooné

3.2.2.2.3.4. Noun Type ii, Sub-type iv, "Classifier Nouns".

The Base is filled by any noun stem to which a classifier has been added (with the exceptions indicated above) (i.e., stem sub-class 2.4). This includes nouns referring to animates, both human and non-human, and to body parts, as well as all other nouns that can be dualized and pluralized. It is therefore the largest sub-type of nouns, including more than half of the nouns in the language.

Suffixation is in accordance with the following rules:
1) Dual: Stem ...CV? > ...CV + ʔká > ʔká
2) Plural: Stem ...CV? > ...CV + ʔhí > ʔhí

ʔká/ʔká and ʔhí/ʔhí vary morphophonemically, choice of allomorph being dependent on the preceding noun stem. Dual and plural forms of nouns are therefore indicated where possible in the lexicon (Appendix I).

e.g.  | Singular | Dual | Plural
"chieftain"44 | ke?viikági | ke?viikágikú | ke?viikágihi
"bee"45 | ma?pagí | ma?pagiikú | ma?pagiikhí

44 Human animate with classifier. cf. examples for type i, above.
45 Non-human animate with classifier.
### 3.2.2.2.4. Suffix Order 4: Restrictive.

- má - má "restrictive"

The two forms vary freely.

e.g. i) ḫuːná - j a a k u - má  
\[ \text{NnSt 2.1 } sx 2-sx 3 \text{ } sx 4 \]  "only two little children"

ii) keʔeːs - musi - má  
\[ \text{NnSt 2.2 } sx 3 \text{ } sx 4 \]  "only two cows"

iii) -hiiʔpa - má  
\[ \text{NnSt 2.3 } sx 4 \]  "only a foot"

iv) vaʔa - gá - j a a k u - má  
\[ \text{NnSt 2.4 } sx 1 \text{ } sx 2-sx 3 \text{ } sx 4 \]  "only two knives"

### 3.2.3. Distribution.

The members of the class of noun words are distributed in the Head slot of Noun Phrases, and in the Vocative tagmeme slot at Clause level. Sub-classes are set up on the basis of this distribution.

#### 3.2.3.1. Sub-class 1, "Temporal".

This consists of all nouns referring to time, which are dist-

---

46 Body part with classifier.

47 This illustrates presence of suffix orders one (classifier), two (diminutive) and three (number).

48 The tone of the antepenultimate syllable here becomes low, since sequences of three high tones do not occur (except in very rare cases).
ributed in NP type ii.

e.g. nokōtsā nōokō tefif-kōo no?pi

NP_{ii} "Yesterday afternoon I went to the river"

NP_{ii} -- cf. 6.1.2.2.2., below)

3.2.3.2. Sub-class 2, "Vocative".

This consists of all nouns of address, which level-skip and are distributed in the Vocative slot at Clause level.

e.g. čhōmi, vēe pītsā?

genre, here you-come

V:Nn2 "Sister, come here"

(Vocative tagmeme -- cf. 7.1.2.12., below)

3.2.3.3. Sub-class 3.

This consists of all nouns not accounted for above, i.e., the vast majority of nouns in the language. These are distributed in the Head slot in NP type i. Different lexical categories of sub-class 3 nouns are established, according to whether or not these nouns may co-occur with the Limiter tagmeme in NP_{i}, and, if so, whether that occurrence is optional or obligatory.

3.2.3.3.1. Category 1, "+ Limiter".

This category consists of four groups of nouns: kinship terms, body parts, nouns referring to things conceptualized as parts of a whole, and nouns that undergo certain changes (apart from those caused by assimilation) when possessed.
3.2.3.3.1.1. Kinship terms.

All kinship terms of reference (i.e., not vocatives) are included in this category.

e.g. Hoaa nágį "John's brother"

phanįgi "your father" (ŋ pha haniği\textsuperscript{49})

3.2.3.3.1.2. Body Parts.

All nouns referring to body parts are included in this category. Here, the term is used to determine the membership of the set, and not as in section 3.2.2.2.3., above. Thus, uncountables such as -iidį "blood" and nouns formed by derivation with classifiers, but which nevertheless refer to body parts (or components), such as-hii?pągį "toe", are included here.

e.g. giidį "his blood" (ŋ tsą iiidį)

moo?pągį "my toe" (ŋ moo hii?pągį)

3.2.3.3.1.3. "Parts of Wholes".

It is difficult to find an appropriate cover term for this group of nouns obligatorily possessed (or marked for deixis). These nouns refer to objects conceptualized as parts of a whole. The following examples clarify the meaning of this term.

e.g. daąpą "residue, crumbs" (ŋ tsą daàpą, Lit. "its residue")

čiivą "centre" (ŋ tsą hiiivą, Lit. "its centre")

čimfą "seed" (ŋ tsą himfą, Lit. "its seed")

gipągią "nest" (ŋ tsą págią, Lit. "its nest, cover")

\textsuperscript{49}For assimilation of pronouns, cf. 3.3.2., below.
3.2.3.3.1.4. Radical-changing Nouns.

This group consists of the "possessed" allomorph of those nouns that change either

i) a derivational suffix

or, ii) the stem itself

or that ii) add a morpheme

when possessed, but not when marked by deixis.

3.2.3.3.1.4.i. Change of Derivational Suffix.

The nouns in this section are those that include in their derivation a complex noun stem, sub-type i ("Concrete Nominalization"), consisting of a nominalized verb group, as described at stem level in II.2.2.2.1., above.

When these nouns are possessed, nominalizer -fts1 > -fnd

(in which the u becomes a before further suffixes).

e.g. a?mitho6tsi "food, a meal" ; do?mitho6ná "her food, meal"

boe?kho6tsigá "paddle" ; piboe?kho6nágá "your paddle"

There are a very few exceptions:

a) tho?kho6tsigá "mortar, bowl in which yucca is ground"

This remains unchanged when possessed.

b) tho?kho6nágá "pestle for grinding yucca"

ka?foonagá "small wooden board used when making cassava bread"

These remain unchanged, regardless whether or not possessed (perhaps in the first case to avoid homophony, and in the second by analogy to it).

c) -fts1 > -fku
This change has only been observed for the following two nouns:

i?kamanitsi "vomit"   >  gi?kamaniku "his vomit"
konétsi "merchandise" >  gikonešku "his merchandise"

3.2.3.3.1.4.ii. Stem Change.

Two types of stem change are distinguished:

3.2.3.3.1.4.ii.i. Vowel length movement.

In the case of a few nouns with initial h and a long vowel in the first syllable, the length moves to the second syllable when the noun is possessed.

E.g. hiibíté "coca"  >  čiibíté "his coca"
hiíté "canoe"  >  čitán "his canoe"

But not all h-initial nouns with a long vowel in the first syllable change:

E.g. hiivá "centre"  >  čivivá "(its) centre"

Thus, conditioning here appears to be lexical.

3.2.3.3.1.4.ii.ii. A special case.

The possessed form of paniítsi "house" is -pašá. It is conceivable that this represents no more than a special case of change of derivational suffix, -itsi  >  -ní, with the Base of the noun stem involved being *pa-, a verb in a verb group, as described in 2.2.2.2.1., above, the only irregularity being the addition of the syllable *-ni- in the non-possessed form.

However, no verb group *pa has been attested, nor has

---

50 Note irregular derivation from i?kamad "to vomit", with -ni- (< -*ni-). Cf. 3.2.3.3.1.4.ii.ii, below.
a morpheme *-ni- been observed in type ii sub-type i noun stems, with the exception of the irregular iʔkanitfis, "vomit", where the morpheme is retained in the possessed form (and where -ítsi > -íku -- cf. above).

In the light of this, it seems best to consider that {paniftsi} is an irregular word in which the allomorph -paŋːá must co-occur with the Liniter tagname in the NP.

3.2.3.3.1.4.iii. Addition of a morpheme.

The small number of nouns that comprise this section add the morpheme {_-?:də} when possessed. The form with this additional morpheme must co-occur with the Liniter tagname in the NP. The following rules and examples clarify the variant manifestations of this morpheme.

1. If the stem has no long vowel, the suffix lengthens the vowel before it:

   vaʔagaʔá? "knife" > givaʔandaŋaʔá? "his knife"
   keneʔ "bracelet" > dokoneʔdenə "her bracelets"

2. If the stem has a long vowel, there is no addition of vowel length, but the existing vowel length moves right one syllable (except as indicated subsequently):

   iteeviʔá "aguaje" > giʔteviʔá "his aguaje"
   avánana "stick" > daʔvánanaʔteʔ "his stick"
   hooʔña "a type of cassava" > moʔñaadə "my cassava"

Written thus since nowhere are all elements of the posited morpheme seen together. The numerous allomorphs are best seen in the examples that follow.
This rule does not apply in the following two cases:

i) if the long vowel is in the last syllable of the stem:
   amoøgi "a fish"  >  no?noodé "my fish"
   pooøgi "frying-pan"  >  dopooødé "her frying-pan"

ii) if the long vowel is followed by a glottal in the stem:
   ee?phiøgi "fishing hook"  >  døe?phiødegø "his fishing hook"

3. If the stem has a glottal, this causes the deletion of the suffix glottal:
   ee?phiøgi "fishing hook"  >  døe?phiødegø "his fishing hook"
   pooøgi "frying-pan"  >  dopooødé "her frying-pan"
   va?agaøia? "knife"  >  giva?aadøgaøia? "his knife"

But if the stem does not have a glottal, one is added to the end of the first syllable of the stem:

amoøgi "a fish"  >  no?noodé "my fish"
iteeviøøi "aguoje"  >  no?teviidøøi "my aguoje"

(In iteeviøøi, the glottal is in the classifier suffix, not the stem.)

evviøøaøi "a stick" is slightly different, with a second glottal immediately before the added morpheme, in which the ø is devoiced;  de?vviøøaøtei "his stick"

ôköniiøi "fire" also has an extra glottal, but the rest of the added morpheme is not present, and the long vowel in the stem is shortened;  dø?kön?i? "his/her fire"

4. Classifiers and other word level nominal suffixes go after the additional morpheme, and are often deleted;
i) Noninal suffixes included:

- ce?phigú "fishing hook"  > dece?phídegú "his fishing hook"
- iteevi?o "aguaje"  > gi?teviidá?i "his aguaje"
- avánaná "stick"  > dárvánanatéi "his stick"
- va?a-ga-ý? "knife"  > giva?andé-ga-ý? "his knife"
  (shows sx orders 1 and 2)
- kono? "bracelet"  > dokono?doné "her bracelets"
  (shows sx order 3)

ii) Noninal suffixes deleted:

- moogí "fish"  > do?moodé "his fish"
- po?gí "frying-pan"  > dopco?dé "her frying-pan"
- ókóniigí "fire"  > dó?kóni? "his/her fire"

3.2.3.3.2. Category 2, "- Liniter".

This category consists of the basic, non-possessed allomorphs of all "radical-changing" nouns (those with a special form when possessed -- cf. Category 1, above, fourth group (3.2.-3.3.1.4.)).

- e.g. a?mithoötsí "food, a meal"
  - konoötsí "merchandise"
  - hifí "canoe"
  - paniifsí "house"
  - va?agaýí? "knife"

3.2.3.3.3. Category 3, "± Liniter".

This consists of all sub-class 3 nouns not accounted for in Categories 1 and 2 above, i.e., most sub-class 3 nouns.

- e.g. phaigí "old man"
3.3 Pronoun Word.

3.3.1 Contrast.

Pronoun words (Pn) have the following contrastive-identifi-
cational features:

i) Their Base is filled by a pronoun stem.

ii) They are typically assimilated to a following noun,
verb, or relator, in accordance with a series of morpho-
phonemic processes.

3.3.2 Variation.

Pronouns are grouped into types, according to whether or
not they are affected by assimilation at word level.\(^2\)

3.3.2.1 Type I.

This consists of sub-class 1 pronoun stems, viz:

<table>
<thead>
<tr>
<th>Stem</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>a6</td>
</tr>
<tr>
<td>2nd</td>
<td>ph6</td>
</tr>
<tr>
<td>3rd</td>
<td>tsâ</td>
</tr>
<tr>
<td></td>
<td>tsâm</td>
</tr>
</tbody>
</table>

\(^2\) This qualification is included, since those very pronouns
which are not affected by assimilation at word level are the
ones which consist of a pronoun root + derivator at stem lev-
el, where the root has been subject to the same assimilatory
processes in the context of the following derivator as those
which are described here as occurring at word level in the
context of a noun, verb, or relator.
1st person non-singular, inclusive

i 2nd "  " imperative

3rd "  "

With the exception of i, these are optionally assimilated to a following noun, verb, or relator (or, at stem level, (in all cases except the first two and the imperative pronoun) to a pronoun stem derivator). 53

i "2nd person non-singular, imperative" is obligatorily assimilated to a following verb. 54 This assimilation is different from that of all the other pronouns, since this pronoun consists only of a vowel, without a preceding consonant, and since this pronoun also only occurs with a verb, and then only in the imperative. The assimilation is simply as follows:

i > ə before h- or v-initial verbs;

i does not change elsewhere.

e.g. ša "to eat meat" : iša "eat meat!" (pl)

ee?phi khā "to fish": ee?phi ikhā "fish!" (pl)

53 1st person non-singular exclusive, muu- and 2nd person non-singular hu- are also assimilated to a pronoun stem derivator at stem level, but not to following nouns, verbs, or relators at word level. Apart from the usual change of u to a in the case of hu-, their assimilated form is the same as their non-assimilated form, since in assimilated voiceless consonants become voiced, and m is already voiced, while there is no voiced counterpart to h in Resigaro. (cf. 2.3.2.2., above)

54 The verbal piece auxiliary indicator mā- "Privative" is also obligatorily assimilated to a following verb, but in accordance with the processes described for pronouns other than i. Examples are given below, in footnotes.
Pronouns that are assimilated are normally functioning as Subject at clause level.

e.g. no?mitá

\[
\begin{array}{c}
\text{J-eat} \\
\text{S:NP-P:VP}
\end{array}
\]

"I eat"

However, there are at least two cases where assimilation may occur between a pronoun functioning as Object at clause level, and the following filler of the periphery slot in the verb group:

i) no-maná gi-tē?

\[
\begin{array}{c}
\text{me know he-get} \\
\text{O:NP} \quad \text{S:NP-P:VP}
\end{array}
\]

"He knows me"

ii) no6tē gi-khá

\[
\begin{array}{c}
\text{me-help he-do} \\
\text{O:NP} \quad \text{S:NP-P:VP}
\end{array}
\]

"He helps me"

(cf. Verb Group, 4.1.2.2.1., and Clause, 7.2.1.2.3.1.1., below.)

3.3.2.1.1. Major Changes.

For all pronouns except \textbf{i}, assimilation affects the vowel and consonant of the pronoun, and the first syllable of the following word or relator. It may best be described by dividing both pronouns and following words/relators into three phonological groups. These groups are not structural types in the usual sense, as a type of a given class at a given
level, since they cut across classes and levels, but are merely convenient groupings of pronouns and following words/relators, based on phonological characteristics and morphophonemic considerations.

The form of vowel assimilation is dependent on the pronoun group involved (with some limitations in the case of Consonant-initial following words/relators). The form of consonant assimilation is dependent on the group of the following word/relator.

**Pronoun Groups.**
The three pronoun groups are:-

Pron. Group I : "Ko" = a6, ts6
" " II : "ka" = phâ, tsâ
" " III : "ka" = fâ, a55

**Following Word/relator Groups.**
The three groups of following word/relator are:-

<table>
<thead>
<tr>
<th>Noun</th>
<th>Verb</th>
<th>Relator</th>
</tr>
</thead>
</table>

Following word/rel Group I:

- h-initial e.g. -henâk6 ha?pâ -hip60
  "ear" "to cross" "under"

Following word/rel Group II:

- V-initial e.g. -ii?â@ a?nita -a?na
  "belly" "to eat" "beside"

55 Verbal Piece auxiliary indicator ma- may also be considered to belong to this group.
Following word/rel Group III:

\[ C\text{-initial}\] e.g. -v.ai -tohni -k6o

"back" "to see" "to(wards)"

The intersections of the three pronoun groups with the three word/relator groups yield nine types of assimilation, which are summarized in the following matrix, and explained in the subsequent paragraphs.

<table>
<thead>
<tr>
<th>Word/rel Groups</th>
<th>I: h-initial</th>
<th>II: V-initial</th>
<th>III: C-initial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pron. Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I: Ko</td>
<td>Ko</td>
<td>Ko</td>
<td>Ko</td>
</tr>
<tr>
<td>(n6, ts6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II: Ka</td>
<td>KV</td>
<td>KV</td>
<td>Ki</td>
</tr>
<tr>
<td>(phu, ts6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III: Ka</td>
<td>KV (ox i)</td>
<td>KV (ox i)</td>
<td>Ka</td>
</tr>
<tr>
<td>(f6, n6)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.2. Matrix showing realizations of co-occurrence between pronouns and following words/relators.

Notes:
1. If the following word/relator is from Groups I or II, the pronoun is fused with the first syllable of that word/relator, and the first two columns of the matrix indicate the form of the resulting syllable.

56 In this context, this is to be understood as meaning "consonant-other-than-h initial". The abbreviation will be used for convenience throughout this section.
2. If the following word/relator is from Group III, the assimilated form of the pronoun proceeds the unmodified first syllable of that word/relator. The third column of the matrix indicates the form of the pronoun when assimilated.

3. \( K = (\text{ph}) \) and TS = /\text{s}/ before /i/ and /u/ and /ts/ elsewhere

4. \( K = (\text{p}) \) and D = /\text{s}/ before /i/ and /u/ and /d/ elsewhere

5. /o/, /i/ and /a/ have their usual values.

6. V = any vowel, the vowel chosen in any given case being that of the first syllable of the following word or relator.

The normal effect on the consonant of the pronoun assimilated to a word or relator is to voice the voiceless consonant of that pronoun (except when the word/rel begins with an h). But there is one exception to this: aspirated /ph/ loses its aspiration. For this reason, the symbols \( K \) and \( K \) have been used, instead of \( G \) and \( C \).

The apparently asymmetric behaviour of /ph/, the only aspirated consonant in this set, is of particular interest. It initially appears to be the one exception to all the rules proposed, but further investigation reveals that this is not

57. \( m \), from VbPce aux ind \( m - \), also belongs to this set.
58. \( m \), from VbPce aux ind \( m - \), also belongs to this set.
the case. On the contrary, its behaviour demonstrates the operation of completely systematic rules and confirms the value of the concept of Voice-Onset Timing, as developed by Lisker & Abramson (1964), as a phonological parameter operating in a language.

In their study of initial stops in several languages, Lisker & Abramson demonstrated that the production of voiced, voiceless, and voiceless aspirated stops can be described by reference to the relation between the time of release of the stop and the voice onset time (VOT). For voiced stops in the languages they studied, they found that voice onset may precede release ("voicing lead") by from approximately 140 milliseconds to approximately 30 milliseconds, depending on the language and certain other factors. For voiceless stops, voice onset may follow release ("voicing lag") by from 4 to 34 milliseconds, depending on the same factors. Likewise, for voiceless aspirated stops, there may be a voicing lag of from 59 to 98 milliseconds. Thus, aspiration and voice are seen as not different types of phonetic features, but varying degrees of the same feature (VOT).^59

^59 Kim has claimed (1970) that, for Korean, at least, the presence or absence of aspiration is in fact due to the degree of opening of the glottis at the time of release, and the resultant differences of "time it takes for the open glottis to close for the vibration of the following vowel" (p. 109):
"What is controlled by the laryngeal muscles in the case of aspiration is not the timing of the glottal
In an article in 1972, Roberts extends the concept of Voice Onset Timing to the parameter of nasality, introducing the concept of Nasal Onset Timing (NOT), with implications with regard to other features. Roberts emphasizes that the value of the concept of Feature Onset Timing is in a large measure dependent on its usability in field situations for perceptual, as opposed to purely instrumental, studies, and the Resigaro data under discussion illustrates this point.

When a pronoun is assimilated to a following word or relator (except one beginning with /h/), a voiceless consonant in the pronoun becomes voiced, and voiceless aspirated /ph/ loses its aspiration. Both these processes represent the operation of the same phonetic change: a decrease in voicing lag.

It is significant that not only does the present data provide morphophonemic substantiation for Lisker & Abramson's contention with regard to initial stops, but extends the val-

"closing (Lisker & Abramson's view) but the size of the glottal opening (my view)." (p. 112)

However, this point is of relatively minor importance to the understanding of the relationship between voice and aspiration, as Lisker and Abramson point out (1971:776): aspiration is in either case dependent on VOT, regardless of the physiological manner of controlling this -- either by delaying the command to vibrate the vocal cords, or by not delaying this command, but by widening the glottal opening to cause a delay in accomplishing it.
idity of VOT with reference to all consonant types within the Resigaro system -- stop (ph), affricate (ts), fricative (f), and nasal (m) -- both in initial and non-initial position.

The decrease in voicing lag would be expected to change /ts/ to /dz/, however, this is slightly modified, being realized as /d/. This may be attributable to the extremely infrequent occurrence of the phoneme /dz/.

/ts/ and /d/ are further affected before a close vowel (/i/ or /u/), as indicated above, becoming /s/ and /g/, respectively.

Full details of assimilation are now given, with examples.

3.3.2.1.1. Pronoun Group I (m6, ts6).

1. With Word/relator Group I (/h/-initial).

Ko + hV(V) ... > Ko(o)...

2. With Word/relator Group II (V-initial).

Ko + V(V) ... > Ko(o)...

And /m/ in the VbPce aux ind.

60 And /m/ in the VbPce aux ind.

61 cf. also examples of movement of VOT in the opposite direction -- increasing lag -- in noun derivation at stem level (section 2.2.2.2.1., above). Likewise, /n/ in the final syllable of i?pi(m6) is devoiced before addition of the causative.

E.g. tsami girp?ot? he-go-cstv
him-rec post "He made him go" (cf. causative, 2.1.2.2.1., above.)
3.3.2.1.1.2. Pronoun Group II (ph~6, ts~6).

1. With Word/relator Group I (/h/-initial).

\[ \delta_{a1} + hV(V) \ldots > \delta V(V) \ldots \]

2. With Word/relator Group II (V-initial).

\[ \delta_{a1} + V(V) \ldots > K V(V) \ldots \]

3. With Word/relator Group III (C-initial).

\[ \delta_{a1} + C V(V) \ldots > K i C V(V) \ldots \]
**Examples.**

<table>
<thead>
<tr>
<th>Word/relator Group:</th>
<th>I: hV(V)...</th>
<th>II: V(V)...</th>
<th>III: CV(V)...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Noun:</strong></td>
<td>-hendo₂kó</td>
<td>-ii?náá</td>
<td>-vámi</td>
</tr>
<tr>
<td>phu (2nd p.sg.)</td>
<td>&quot;your ear&quot;</td>
<td>&quot;belly&quot;</td>
<td>&quot;back&quot;</td>
</tr>
<tr>
<td>tušu (3rd p.sg.,m.)</td>
<td>&quot;his ear&quot;</td>
<td>&quot;his belly&quot;</td>
<td>&quot;his back&quot;</td>
</tr>
<tr>
<td><strong>Verb:</strong></td>
<td>ha?pá</td>
<td>a?náá</td>
<td>tshéní</td>
</tr>
<tr>
<td>phá (2nd p.sg.)</td>
<td>&quot;to cross&quot;</td>
<td>&quot;to eat&quot;</td>
<td>&quot;to see&quot;</td>
</tr>
<tr>
<td>tušu (3rd p.sg.,m.)</td>
<td>&quot;you cross&quot;</td>
<td>&quot;you eat&quot;</td>
<td>&quot;you see&quot;</td>
</tr>
<tr>
<td><strong>Relator:</strong></td>
<td>-hipóo</td>
<td>-a?ná</td>
<td>-kóo</td>
</tr>
<tr>
<td>phá (2nd p.sg.)</td>
<td>&quot;under&quot;</td>
<td>&quot;beside&quot;</td>
<td>&quot;to(wards)&quot;</td>
</tr>
<tr>
<td>tušu (3rd p.sg.,m.)</td>
<td>&quot;under you&quot;</td>
<td>&quot;beside you&quot;</td>
<td>&quot;to you&quot;</td>
</tr>
<tr>
<td><strong>Further examples</strong></td>
<td><strong>show (TS) realized as /č/ and (D) as /g/ before /u/:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- tsu + hutooba?šó? "Banisterium" > čutooba?šó? "his Banisterium"
- tsu + úní "saliva" > gúní "his saliva"

**3.3.2.1.1.3. Pronoun Group III (f6, a6).**

**.1. With Word/relator Group I (/h/-initial).**

\[ v_2 + hv_1(v_1) \cdots \rightarrow gv_2(v_2) \cdots \]

where \( V_2 = V_1 \), except when \( V_1 \) is /i/, when \( V_2 \) is /e/.

---

62 Verb piece aux ind ma- is subject to the same changes as the members of this group, except when otherwise indicated below.
2. With Word/relator Group II (V-initial).

\[ K_a_2 + V_1(V_1) \cdots > K_V_2(V_2) \cdots \]

where \( V_2 = V_1 \), except when \( V_1 \) is /i/, when \( V_2 \) is /o/. 63

3. With Word/relator Group III (C-initial).

\[ K_a_2 + CV(V) \cdots > K_aCV(V) \cdots \]

Examples:

Word/rel Group:

Group:

I: hV(V)...

II: V(V)...

III: CV(V)...

Noun: 64

- henakó

"ear"

- ii?šédá

"belly"

- nání

"back"

fá (1st p. non-sg.incl) "our ears"

vee?šáuñi

"our bellies"

vayšásiné

"our backs"

má (3rd p. non-sg.) "their ears"

nee?šáuñi

"their bellies"

navíšasíné

"their backs"

Verb: 65

- ha?pa

"to cross"

- a?mitá

"to eat"

- tshéní

"to see"

fá (1st p. non-sg.incl) "we cross"

va?mitá

"we eat"

vatshéní

"we see"

má (3rd p. non-sg.) "they cross"

na?mitá

"they eat"

natshéní

"they see"

Relator:

- hipéo

"under"

- a?ná

"beside"

- kóo

"to(wrds)"

fá (1st p. non-sg.incl.) "under us"

va?ná

"beside us"

vatóo

"to us"

má (3rd p. non-sg.) "under them"

na?ná

"beside them"

nakóo

"to them"

63 When preceding a Group II (i.e., V-initial) verb beginning with an /i/, ma- becomes ma- (unlike fa and má, which become ve- and ne-, respectively). However, when preceding a Group I (h-initial) verb with an /i/ in the first syllable, ma- follows the same rule as fa and má, and becomes me-.

64 Since the nouns in these examples are body parts, when the pronoun is plural, the nouns, too, must normally be plural.

65 Here are some examples of the Verb Piece auxiliary indicator...
Here are further examples, showing fulfil and ankle when assimilated to Group I words in which the vowel of the first syllable is /i/, and as ve- and nse- when assimilated to Group II words in which the initial vowel is /i/:  

**Group I Verb:** 66 hipu "to wash"

ful (1st p. non-sg. incl.) fepu "we wash"

nul (3rd p. non-sg.) nepu "they wash"

**Group II Verb:** 67 fumu "to sleep"

ful (1st p. non-sg. incl.) vepu "we sleep"

nul (3rd p. non-sg.) nepu "they sleep"

### 3.3.2.1.2. Additional Changes.

In addition to the above changes when pronouns are assimilated, three further changes occurring when there is assimilation may be specified. They are dependent on certain features of the following word. 68

#### 3.3.2.1.2.1. Following Words with /n/.

If a Group II (i.e., Vowel-initial) noun 69 has both an initial /i/ and a palatal, /n/, at the beginning of the next syllable prefixed to the same verbs:

ma?packa ma?mitakka matshënikka

"without eating" "without seeing ..." "crossing ..." ing...

66 With VbPce aux ind : ma?pakka... "without washing ..."

67 With VbPce aux ind : ma?pakka... "without sleeping ..."

68 i.e., the following noun or verb. No cases of following relators having the structures that undergo these changes have been attested.

69 No verbs with /n/ in the relevant syllable have been attested.
able, this has the effect of palatalizing the /n/ (but no other consonant) in the pronoun. It is significant that the regressive assimilation effect of /n/ is the only case where reference to a word syllable other than the first is relevant.

e.g. | Unassimilated form | Assimilated form |
--- | --- | ---
1) -iinočhi "neck"
   m6  m6 iinočhi  ĭiinočhi  "my neck"
   m6  m6 iinočhinė  ĭiinočhinė  "their necks"
2) ii?ii6 "thing"
   m6  m6 ii?ii6  ĭiioo?ii6  "my thing, mine"
   m6  m6 ii?ii6  ĭee?ii6  "their thing, theirs"

Groups I and III nouns with a palatal /n/ in the first or second syllable do not have this effect on the pronoun:

Group I:  hee?ii6 "(a type of cassava)"
   m6  m6 hee?ii6  mii?niiade ?0  "my cassava"
   m6  m6 hee?ii6  mii?niiade  "their cassava"

Group III:
1) ūii?ę∂i6 "nightingale"
   m6  m6 ūii?ę∂i6  noūii?ę∂i6  "my nightingale"
   m6  m6 ūii?ę∂i6  noūii?ę∂i6  "their nightingale"

2) tiñeeneb6 "(a type of trap used for catching animals)"

70This also demonstrates the addition of {-:d6} to the noun, with movement of vowel length to the next syllable (and omission of the suffix glottal in the context of the stem glottal), cf. 3.2.3.3.1.4.iii, above.
When pronouns are assimilated to words with an initial /j/, the following additional change occurs:—

/j/ > /z/ if the /j/ is followed by /a/ or /u/

E.g. (i) /ja.../

Já?nú "to wait" ná já?nú nož?nú "I wait"

Jañú "child" tsó jañú dožánú "her child"

(ii) /ju.../

Má aá jú aá nažú "they are surprised"

Mítshá jú "to get up"

Iá mitshá jú mitshá važú "we get up"

Contrast:

(i) /ji.../

Jiiji "husband" tsó jiiji dojiiji "her husband"

(ii) /je.../

Jëevi "wolf" phá jëevi piiëevi "your wolf"

(iii) /jo.../

Jó?nó "giant armadillo"

tsa jó?nó gíjó?nó "his giant armadillo"

3.3.2.1.2.3. /j/-initial Words.

3.3.2.1.2.3. /j/-Addition.

If a two-syllable Group III (Consonant-initial) verb of the structure CV.CV does not have a /j/ as one of its consonants, a /j/ is added initially when a pronoun is assimilated to the
verb.
e.g.
(i) pétò "to swallow"  tsò pétò  do?pétò "she swallows"
(ii) mòmi "to play"  má mòmi  na?mòmi "they play"

Fourteen verbs (and their derivatives) have been attested to fulfill all these requirements in Resigaro (but no nouns have). They are listed in the lexicon in the normal way, but a /?/ in parenthesis is placed initially to indicate this change. The /?/ is ignored for filing purposes.

There are three exceptions to this rule:-

i) tshëni "to see"
e.g. fà tshëni  vatshëni "we see"
Contrast tsòaò "to bump into something"
e.g. fà tsòaò  va?tsòaò "we bump into something"

ii) kànì "to cry"
e.g. má kànì  nokànì "I cry"

iii) mòkhò "to cut wood"
This is the most significant, as it forms a minimal pair with (2)mòkhò "to smell (intrans)"
e.g. tsò mòkhò  gìmòkhò "he cuts wood"
Contrast tsò mòkhò?71  gìmòkhò "he smells" (intrans)

Nevertheless, the definition ÇÇÇY is retained, since in all other cases it includes all verbs that add /?/ and excludes

??This and the form above it are homophonous.
all those that do not.

3.3.2.2. Type ii.
This consists of sub-class 2 pronoun stems, which are not assimilated to following words or relators, not modified in any way.
e.g. gi?i "this one (m)"
    hamupi "you two (f)"

3.3.3. Distribution.
The members of the class of pronoun words are distributed in the Head slot in NP type iii.
e.g. má a?mitú
    they, eat
          H:Fn
          S:NP iii P:VP
       "They eat"

This NP type is part of NP distributional sub-class 2, the distribution of which is indicated in 6.1.2.3.2., below. Members of this NP sub-class may occur in clause-level slots, as in the above example, or recursively in the Limiter slot in NP type i.
e.g. má hanigi
    their father
          H:Nn
          Lim:NP iii H:Nn
          NP i
       "their father"
       (cf. 6.1.2.2.1.2., below)

If assimilation occurs, the two tagmemes involved (S and P, or Lim and H, in the above examples) are still considered
to be present, although in their phonemic realization they are fused, and sometimes it may not be possible to indicate the boundary:

\[ \text{ma?mitf} \]
\[ S:\text{NP-P};\text{VP} \]
"they eat"

\[ \text{ma?i?gi} \]
\[ \text{Lim;NP-H;Nn} \]
"their father"

3.4. Adjective Word.

3.4.1. Contrast.

Adjectives (Aj) have the following contrastive-identificational features:

i) Their Base is filled by an adjective stem.

ii) They co-occur with nominal and verbal word-level suffixes.

3.4.2. Variation.

Three types of adjective are set up on the basis of internal structure:

\[ \text{Aj}_1 = +B:\text{AjSt}_1 +\text{Nn} \text{ sx 1:clsfr} +\text{Nn} \text{ sx 2:aug/dim} +\text{Nn} \text{ sx 3:nmb} +\text{Nn} \text{ sx 4:rest} \]
"Attributive"

\[ \text{Aj}_2 = +B:\text{AjSt}_2 \]
"Predicative i"

72Types are set up on the basis of structural differences, as indicated in the formulae, but since these types are co-extensive with the sub-classes of the adjective word set up on the basis of distribution, it is convenient to refer to these types by the titles chosen to describe the distribution. This partial co-extensiveness of structural types and distributional sub-classes is a consequence of the fact that the structural variations signal semantic differences, which inevitably affect distribution. (This was also noted at stem level for the adjective.)
3.4.2.1. Adjective Type i, "Attributive".

Nominal suffixes 1-4 may be added to the filler of the Base slot in adjective type i, as indicated in the above formula.

An Order 1 classifier suffix must occur. Choice of suffixes is dependent on the noun in the Head slot of the NP in which the type i adjective occurs.

e.g. i) \( \text{jiJaa-g1 jaan1} \)
big sx1 child "the big child"
\( \text{jiJaa-d v11s1o-a} \) "the big rock"
\( \text{jiJaa - ga - j aah1 va?a - ga - j aah1} \)
big sx1 sx2-sx3 machete sx1 sx2-sx3
"the big knives"

ii) \( \text{ho?ha-a aami apahaa-a aami} \)
soft sx1 leaf sx1 "the soft leaf"
\( \text{ho?ha-a himi - a} \)
soft sx1 seed sx1 "the soft seed"

(For further details, cf. description of NP, section 6.1.2-2.1.4., below.)

3.4.2.2. Adjective Type ii, "Predicative i".

The filler of the Base slot in adjective type ii may not be suffixed.

e.g. \( \text{ami? ts6} \)
healthy she "she is healthy"
\( \text{gi?i ho?hnu?} \)
this soft "this one is soft"

3.4.2.3. Adjective Type iii, "Predicative ii".

The verb word order 2 suffix "inchoative" may be added to
the filler of the Base slot in adjective type iii, to emphasize the gradual or progressive nature of the process in question.  

*e.g.* ami - kaã tɔd
healthy incho he "he is getting well"

gi?i ño?ba - kaã
this soft - incho "this one is (gradually) becoming soft"

3.4.3. Distribution.
The members of the class of adjective words are distributed in Noun Phrase type i, in Predicate type i (sub-type i), in the Axis slot of Concomitant Phrase type i, and in the Modifier slot in the Verb Phrase. Sub-classes are set up on the basis of this distribution.

3.4.3.1. Sub-class 1, "Attributive".
This consists of type i adjectives, which occur in the Attributive slot in NP type i and in the Axis slot in Concomitant Phrase type i.

*e.g.* i) In the Attributive slot in NP type i:-

```
  oo?ag? amo?gi small, tapir "the small tapir"
Att: Aj   H: Nn
NP↓i   (For further details, cf. 6.1.2.2.1., below.)
```

ii) In the Axis slot in CP type i:-

```
kai - nše death with
  Axis: Aj  relr "dead"
CP↓i   (cf. 6.2.5.2.1., below.)
```

73 cf. 2.1.2.2.2. (VbSt) and 3.1.2.3.2. (Verb word), above.
3.4.3.2. Sub-class 2, "Predicative".

This consists of types ii and iii adjectives, which occur in Predicate type i, sub-type i.

E.g. i) ṭo?huu? tsǔ́ soft, it "It is soft"

\[ P_{i.1}:A_j^2 \text{ (type ii)} \]

ii) ṭo?hakaǎ tsǔ́ soft-incho it "It is getting soft"

\[ P_{i.1}:A_j^2 \text{ (type iii)} \]

(For Predicate type i, sub-type i, cf. 7.1.1.1.1.1., below.)

3.4.3.3. Sub-class 3, "Modificatory".

This sub-class has so far been observed to have only one member. This is the type i adjective ọọja- "small", which, in addition to its distribution in sub-class 1, as indicated above, also occurs in the Modifier slot in the Verb Phrase.

E.g. ọọjá? do?vápa-mí ọọ little he-swim rec int

\[ M:A_j^3 \]

H:VbPce Int

"He certainly swam little"

\[ VP \]

(cf. 6.1.1.2., below.)

3.5. Adverb Word.

3.5.1. Contrast.

Adverbs (Adv) have the following contrastive-identificational features:

i) Their Base is filled by a level-skipping adverb root, or by an adjective stem, sub-class 2.

ii) They co-occur with the adverbial suffix \(-\text{kuu}\).
3.5.2. Variation.

\( \text{Adv} = +\text{B:AdvRt/Ajst}_2 +\text{Emph: \{-kuu?\}} \)

The structure of the Adverb word is not sufficiently varied to merit the establishment of different types (for comment on Pike's criteria for establishing different types, cf. footnote 15 to II.2.4.2.3., above). Examples below indicate whether the filler of the Base slot is an adverb root or an adjective stem.\(^74\)

The form and distribution of the allomorphs of the filler of the Adverbial Emphatic slot are as follows:

\( \{-\text{kuu}\} \) "Adverbial Emphatic"

\(-\text{kuu} - \text{-ka}\)

The glottal is deleted when the emphatic is affixed to a filler of the Base slot containing a glottal.

The second vowel is deleted when the emphatic is affixed to a filler of the Base slot containing a geminate vowel sequence.

The resultant form \(^*\text{-ku}\) is subject to the general morphophonemic rule which changes \(u\) to \(\alpha\), since the adverb does.

\(^74\) The Concomitant Phrase may have an adverbial function when its axis slot is filled by a Nominalized Clause. e.g. gi-naa?ka-ne\(\theta\) - mi gi-vits\(\theta\)ku

he angry with rec he shout

Axis:NomCl relr past

\(\text{CP}_p\)  

"He shouted angrily"

(For CP, cf. 6.2.5.2.1., below.)
not occur utterance-finally.

e.g. With Base filled by Adverb Root:-

i) kapí dë?jo
capikuu? dë?jo
fast he-runs "he runs fast"
fast-emph he-runs "he runs very fast"

ii) kenee?já da?mitá
kenee?jaka da?mitá
slowly he-eats "he eats slowly"
slowly-emph he-eats "he eats very slowly"

With Base filled by Adjective Stem:-

i) aaeepuu? dë?jo
aaepuu?ka dë?jo
a_lot he-runs "He runs a lot" (i.e., often)
a_lot-emph he-runs "He runs very much" (i.e., very often)

ii) kašoc? dodo?phaavá
good he-works "He works well"
kašoc?ka dodo?phaavá
good-emph he-works "He works very well"

3.5.3. Distribution.

The members of the class of Adverb words are distributed in
the Modifier slot in the Verb Phrase.

e.g. aaeepuu? gimá
aaepuu?ka dë?jo
a_lot he-sleeps "He sleeps a lot"
(S;NP-)P:VP (For further details, cf. 6.1.2., below.)

3.6. Demonstrative Word.


Demonstrative words (Dem) have the following contrastive-identifi-
cational features:-
i) Their Base is filled by a level-skipping demonstrative root.

ii) They co-occur with nominal word-level suffixes.

3.6.2. Variation.

Demonstratives must bear the classifier suffix corresponding to the noun to which they refer. They also bear any other nominal suffixes found on the noun.

e.g.  

\[ \text{hi } - \text{gá va?a - gá} \]  
\[ \text{this) sx1 machete sx1 "this/that machete"} \]

\[ \text{hi } - \text{ga - jå? va?a - ga - jå?} \]  
\[ \text{this) sx1 sx2 machete sx1 sx2 (dim) "this/that knife"} \]

\[ \text{hi } - \text{gå - jaa kà va?a - gå - jaa kà} \]  
\[ \text{this) sx1 sx2-sx3 machete sx1 sx2-sx3 "these/those two knives"} \]

\[ \text{hi } - \text{gå - jaa ku - mà va?a - gå - jaa ku - må} \]  
\[ \text{this) sx1 sx2-sx3 sx4 machete sx1 sx2-sx3 sx4 "only these/those two knives"} \]

\[ \text{hi - gi pi?mi} \]  
\[ \text{this sx1 hummingbird "this hummingbird"} \]

\[ \text{hè?e - gi - mu - må ao - gi - mu - må} \]  
\[ \text{that sx1 sx3 sx4 tapir sx1 sx3 sx4 "only those tapirs"} \]
3.6.3. Distribution.

The members of the class of demonstrative words are distributed in NP type i, where they occur in the Limiter slot.

\[ \text{e.g. } h\varepsilon \text{?em1 hi1t}^\varepsilon \quad \text{that, canoe} \]

\[ \text{Limiter: Dem} \quad \text{H: Nn} \]

\[ \text{NP}_i \]

"that canoe"

(On NP_i, cf. 6.2.1., below.)

3.7. Numeral Word.

3.7.1. Contrast.

Numerals (Num) have the following contrastive-identificational features:

i) Their Base is filled by a level-skipping numeral root, or by a noun stem, sub-class 3.

ii) They co-occur with nominal suffixes.

3.7.2. Variation.

Composite formula:

\[ \text{Num} = +B: \text{Num}Nt/NnSt_3 +s\text{x}_1: \text{clsfr} +s\text{x}_2: \text{aug/dim} +s\text{x}_3: \text{nmb} +s\text{x}_4: \text{rest} \]

With numbers "one" and "two", the choice of classifier to fill suffix order 1 slot is dependent on the noun referred to (cf. 3.2.2.2.1., above). Here, the "finger" classifier is given, as this is used by the Resigaros when counting without reference to a specific object, since counting is derived from an activity carried out on the fingers and toes. There is no choice of classifier with any other numeral, but when
"one" or "two" occurs in a Numeral Phrase, the choice of classifier for these components is still dependent on the noun referred to.

The following examples permit contrast with the forms of the numerals given in the subsequent description:

sá - mi hiitá
one clsfr canoe "one canoe"

sa - ?e75 aváana?ê
one clsfr tree-trunk "one tree trunk"

mi - mi ikâ hiitämiikâ
two clsfr-dl canoe-clsfr-dl "two canoes"

mi - ? e ekâ aváana - ? e ekâ
two clsfr-dl tree - clsfr-dl "two tree trunks"

The Order 2 (augmentative/diminutive) suffixes do not form an inherent part of any numeral, but must be added to "one" and "two", wherever these occur, if the noun referred to bears one of them.

e.g. sá - ?e - jâ? aváana - ?e - jâ?
one clsfr dim tree clsfr dim "one little tree trunk"

mi - mi - kobâakh? sá - mi - kobâ? hiitä - mi - kobaahi
two clsfr aug - dl one clsfr aug canoe clsfr aug-pl "three big canoes"

Two types of numeral word are set up on the basis of internal structure.

75 The basic high tone of sá becomes low before the following high tone.
3.7.2.1. Numeral Type i.

Num\textsubscript{i} = +B:NumRt +sx 1:clsfr -/+sx 3:dl

In this type, the Order 3 dual suffix occurs with the numeral "two" only.

This type consists of the following four numerals:

i) sa - gi
define a "finger"

B:NumRt sx 1:clsfr

Num\textsubscript{i}

"one"

ii) sa - ?osi
define a "hand"

B:NumRt sx 1:clsfr

Num\textsubscript{i}

"five"

iii) sa - gi

define an "animate"

B:NumRt sx 1:clsfr

Num\textsubscript{i}

"twenty" (Lit.: "one (man)", i.e.,
two hands and two feet)

iv) mi - gaakå
define a "finger" plural

B:NumRt sx 1 sx 3

Num\textsubscript{i}

"two"

3.7.2.2. Numeral Type ii.

Num\textsubscript{ii} = +B:NnSt \textsubscript{3} +sx 1:clsfr +sx 3:nmb -/+sx 4:rest

In this type, the Order 4 suffix occurs with the numeral "ten" only.

This type consists of the following two numerals:

i) po?taavå - g a a h i
define a "finger" plural

B: NnSt \textsubscript{3} sx 1 sx 3

Num\textsubscript{ii}

"four" (Lit.: "centre finger", i.e., forefinger\textsuperscript{76})

\textsuperscript{76} In Resigaro, "one" is the little finger of the left hand,
ii) pâ - ?osî - ku - mâ
all "hand" dual rest "ten" (Lit. "all two hands", i.e., both hands)

3.7.3. Distribution.
The members of the class of numeral words are distributed
in the Numeral Phrase. Sub-classes are set up on the basis
of this distribution.

3.7.3.1. Sub-class 1.
This consists of all the above numerals, which are distrib-
uted in Numeral Phrase type i.

3.7.3.2. Sub-class 2.
This consists of the numerals sagà, "one", and migaaqâ, "two",
which are also distributed in Numeral Phrase type ii.

(For further details, cf. 6.1.3.2., below.)

"two" is the ring finger, "three" is the index finger, and
"four" is the forefinger. "Five" is the hand. "Six" is the
little finger of the other hand, etc. -- cf. 6.1.3.2., below.
Chapter 4
GROUP LEVEL

The Group is set up as a level of construction above the Word and below the Piece, for describing certain structures in the Verb hierarchy. Strictly speaking, it may be termed a sub-level, since it is not relevant to the other classes.

Types are set up within the Group on the basis of internal structure, and sub-classes are set up on the basis of distribution in the Verb Piece and in other structures.

4.1. Verb Group.

4.1.1. Contrast.
The Verb Group (VG) has the following contrastive-identificational features:

i) Its Head is filled by a verb word.

ii) In its complex form, the periphery is filled by a Basic filler (cf. below), an adjective stem, a Noun Phrase, a Concomitant Phrase, an Instrument Phrase, or a relator.

4.1.2. Variation.
Two types of Verb Group are set up on the basis of internal structure.
$VG_{i} = +H:V_{b}/2$

$VG_{ii} = +Perip:Basic/AjSt/\text{NP}/CP_{2}/IP/relr +H:V_{b}$

When the filler of the Peripheral slot is an NP, this does not have a greater expansion than $+\text{Lim}:Pn +H:Nn$, and if the Limiter tagmeme occurs, assimilation between the two is obligatory. The pronoun does not necessarily refer to the same extra-linguistic entity as the Clause-level Subject of the verb in the Predicate.

In a dictionary check that produced 392 different verb groups, the numbers corresponding to each type and sub-type were as follows:

- **Type i:** 239
- **Type ii:** 153
- **being, Sub-type i:** 148
  - with $\text{kh}^{\delta}$: 101
  - with $\text{ja}^{\delta}$: 45
  - with $\text{ta}^{\delta}$: 2
- **Sub-type ii:** 5

### 4.1.2.1. Verb Group Type i, "Simple".

All verbs occur in Verb Group type i.

e.g. $\text{kh}^{\delta}$ "to make, to do"

$\text{ja}^{\delta}$ "to be"

$\text{a\text{-}mit}^{\delta}$ "to eat"

\[\text{In the imperative, } \text{ja} \text{ becomes } \text{ji}^{\delta}. \text{ cf. 3.1.2.6.1.1.(i), above.}\]
4.1.2.2. Verb Group Type ii, "Complex".

Two sub-types are set up on the basis of structural differences of a finer degree of delicacy than those separating types i and ii.

4.1.2.2.1. Sub-type i.

This has the form indicated in the formula above, with the following two restrictions:

i. In the Peripheral slot, the Instrument Phrase does not occur.

ii. In the Head slot, only the following sub-class 1 verbs occur: khăng "to make, to do"
    ṭêm "to be"
    ṭ6?(vũ) "to obtain"

Verb Groups formed with khăng, "to make, to do", refer to transitive actions, whereas those formed with ṭên, "to be", refer to intransitive actions, or to some states. However, this is not a structural or distributional difference at this level, and so separate types or sub-classes are not established.

Examples.

[See next page]
<table>
<thead>
<tr>
<th>Periph.</th>
<th>khå</th>
<th>já</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>föo khå &quot;to blow&quot;</td>
<td>föo já &quot;to swell up&quot;</td>
</tr>
<tr>
<td>NP2</td>
<td>gi-veni khå its-pay make &quot;to recompense&quot;</td>
<td>gi-nikå já its-fruit be &quot;to grow (of fruit)&quot;</td>
</tr>
<tr>
<td></td>
<td>nàñhigå khå shelter do &quot;to shelter (s.o.)&quot;</td>
<td>nàñhigå já shelter be &quot;to take shelter&quot;</td>
</tr>
<tr>
<td>AjSt4</td>
<td>ami khå &quot;to heal (s.o.)&quot;</td>
<td>ami já &quot;to heal oneself, to get better&quot;</td>
</tr>
<tr>
<td></td>
<td>ooja khå small make &quot;to make smaller, to shrink (tr)&quot;</td>
<td>ooja já small be &quot;to become smaller, to shrink (intr)&quot;</td>
</tr>
<tr>
<td>CP2</td>
<td>kainée khå dead make &quot;to kill&quot;</td>
<td>kainée já dead be &quot;to die&quot;</td>
</tr>
<tr>
<td>relr</td>
<td>hivé? khå in front make &quot;to go in front of, to guide&quot;</td>
<td>---</td>
</tr>
</tbody>
</table>

Table 4.1.: Verb Group ii,i. (khå/jå).

tö?(vå) appears to be no longer productive, being attested in only two Verb Groups:

manåa tö?² "to know"

kavåi tö? "to hunt, to pursue, to pay attention to"

manåa and kavåi are both Basic fillers.

² The -vå is always omitted unless the verb is suffixed. cf. 3.1.2.2.
\textit{manda tó?} is one of only two Verb Groups (the other being \textit{iikē khē}, "to help") which always require an Object, even when the reciprocal suffix is added to the verb (this causes deletion of the Object with all other verbs -- cf. 3.1.2.2., above). Furthermore, the Object is in the majority of cases a pronoun, which must be assimilated to the filler of the Periphery slot (cf. assimilation, 3.3.2.1., above, and examples of an assimilated dummy Object with extraposition in 7.2.1.2.3.1.1., below).

e.g. \textit{na-manda na-tóva?-kakāvā}  
them know they get \textit{recip} "They know each other"

\textbf{4.1.2.2.2. Sub-type ii.}

This has the form indicated in the formula at the beginning of the section, with the following two restrictions:

i. In the Peripheral slot, only the NP and the IP have been observed to occur.

ii. Only a few verbs (those indicated in examples below) may fill the Head slot, and then only in conjunction with the specified fillers of the Peripheral slot.

In some cases, the pronoun in the NP must refer to the Subject of the clause; in other cases, it may not. The restriction would appear to be semantic. Note the two possibilities:

1. Cross-reference between Subject of Clause and pronoun in NP in Peripheral slot of VG required:

(i) \textit{-vāfō hōnotō} "to think, to meditate"
e.g. no-vāfē mānotā "I think"
(←vāfē, "interior, inside"; hānotā "to make the same")

(ii) -ho?donaği i?tōstā "to kneel"

e.g. no?donaġi - gi no?tōstā
my-knee with I-stand

Axis: NP relr
Periph: IP H:Vb
VG ii:ii "I kneel"

2. Cross-reference between Subject of Clause and pronoun in NP in Peripheral slot of VG not possible:

(i) -hivenē a?pithootā "to baptize"

e.g. čiveň no?pithootā
his-head I-bathe-cstv "I baptize him"

(ii) -veni aa?ni "to buy, to pay"

Note that in this case the only pronoun observed in the NP is that for the third person singular masculine.3

e.g. gi-veni noo?ni
its-pay I-give "I buy it"4

The Verb Group -hivenē pi?ko "to cut hair" has only been attested with different referents,

e.g. čiveň do-pi?ko
his-head she-throws_away "She cuts his hair"

though presumably in the case of a person cutting his own hair, the pronouns would be co-referential (and the reflex-

3 If the occasion were to arise in which one would wish to say "I bought you, her, etc.", one may assume that other person markers could occur.

4 NB parallel between this and the sub-type i VG giveni khī, "to recompense". The meaning of giveni aa?ni is more specific, referring to giving of money or other goods to purchase something.
ive suffix would be added to the verb).

NP without pronoun:-
hooni i?vot ū "to freeze"
e.g. hooni fu?vot ū
water us-dry-cstv "It freezes"

On use of first person plural, inclusive in meteorological expressions, cf. footnote 17 to section 7.2.1.2.1., below.

No other cases of Verb Groups of type ii, sub-type ii have been attested, and this is a very little used structure.

4.1.2.3 Repetition of the Verb Group.
Repetition may be used to emphasize the gradual or progressive nature of an action. In the case of the Simple Verb Group, the entire Group may be repeated. In the case of the Complex Verb Group, only the filler of the Peripheral slot is repeated.

i) The Simple Verb Group.
e.g. dotsínu dotsínu "She continues coming"
gii?šū gii?šū "He gradually went up"
gi?pī gi?pī "He returned" (Lit.: "He went, he went")

ii) The Complex Verb Group.
e.g. ūe? ūe? nakhū "They pressed"
phā tuu tuu nokhatsī... "(I) cutting you in pieces..."
nagi nagi gižā "He becomes angry"
tsaa tsaa nežā "They shouted out"
4.1.3. **Distribution.**

The members of the class of Verb Groups are distributed in the Verb Piece and in Noun Stem type ii. Sub-classes of Verb Groups are set up on the basis of this distribution.

4.1.3.1. **Sub-class 1.**

This sub-class has three members, which may occur in the Head and Auxiliary slots of either type of Verb Piece.

- i?pī "to go"
- tsā?nu "to come"
- khā "to do"

4.1.3.2. **Sub-class 2.**

This sub-class consists of all other Verb Groups, which may occur in all the contexts indicated for sub-class 1 except the Auxiliary slot in Verb Piece type ii, sub-type i.

E.g. a?mitā "to eat"

- go? khā "to make a hole"
- kainē jā "to die"

4.1.3.3. **Sub-class 3.**

This sub-class consists of those Verb Groups which, in addition to the above distribution, are also distributed in the Base slot of Noun Stem type ii.

E.g. a?mitā "to eat"  theī khā "to grind"

- (?)tāmō "to cover"  hoonī i?votā "to freeze"
- i?karā "to vomit"

(On Noun Stem type ii, cf. 2.2.2.2., above,)
Chapter 5

PIECE LEVEL

The Piece is set up as a level of construction above the Group and below the Phrase, for describing certain structures in the Verb hierarchy. Strictly speaking, it may be termed a sub-level (like the Group), since it is not relevant to other classes.

Types are set up within the Piece on the basis of internal structure. It is not necessary to set up sub-classes at Piece level.

5.1. Verb Piece.

5.1.1. Contrast.
The Verb Piece (VbPce) has the following contrastive-identificational features:

i) It consists of a Head and (in type ii) an Auxiliary, both of which are filled by Verb Groups.

ii) When the Auxiliary occurs, the filler of the Head slot is marked with an auxiliary indicator.

5.1.2. Variation.
The Verb Piece may be simple or complex, and different types are established accordingly.
VbPce\_i = H:VG
VbPce\_i \text{ (Composite formula)}
\quad = +\text{aux ind} +H:VG +\text{aux ind} +\text{Aux:VG}

5.1.2.1. Verb Piece Type i, "Simple".
This consists of a sub-class 1 or 2 Verb Group only.
\text{e.g.} a\text{-mitê }"\text{to eat}"
\text{khê }"\text{to do}"
jê "to be"
kainêe khê "to kill"
kainêe jê "to die"

5.1.2.2. Verb Piece Type ii, "Complex".
Two sub-types of complex Verb Piece are established.

5.1.2.2.1. Sub-type i, "Positive Action".
VbPce\_ii.i = +H:VG \_1/2 +\text{aux ind}:\alpha\{-\text{ê}\} +\text{Aux:VG}\_i

\text{where } \alpha \text{ reads: } -\text{ê} \text{ occurs with i?pî and tsâ?(nu)}
\quad -?\text{ê} " " khê

\text{The Verb Group filling the Head slot is modified in}
\text{accordance with the following rules:—}
\text{i) Any final vowel except } /i/ \text{ becomes } /e/. /i/ \text{ remains unchanged.}^1

\text{1cf. 3.1.2.4.(i) and 3.1.2.6.2.l.(xi), above.}
\text{The only exception to this rule is the verb group te?khê }
"\text{to fetch}", \text{ where final } /i/ \text{ becomes } /e/:
\text{te?khêe no?pî }"\text{I go to fetch}"
\text{te?khêekê nokhê }"\text{I used to fetch}"

\text{\quad}
ii) -me "directional", or -?kê "habitual" is added to the subsequent form.

The appropriate verb is selected to fill the Auxiliary slot. This verb is marked for person in the normal way -- either with a separate Clause level Subject tagmememe, or an assimilated pronoun. In the examples that follow, to keep the structures as simple as possible, an assimilated pronoun is shown, and to facilitate comparisons, all examples are given in the first person singular. However, these constructions may of course occur with any person.

e.g. Hoa a?mitê me i?pi
     John eat - dir goes "John goes to eat"
     
     novigipê me do-tsâ?
     to_talk - dir she - comes "She comes to speak"

(a?mitâ "to eat")
     a?mitê me no?pi "I go to eat"
     " notsâ? "I come " ""
     a?mitêskê nokhâ "I used " ""

(novigipi "to speak")
     novigipi me no?pi "I go to speak"
     " notsâ? "I come " ""
     novigipîkê nokhâ "I used " ""

((?)mêmi "to play")
     mê?mîme no?pi "I go to play"
     " notsâ? "I come " ""
     mê?mîkê nokhâ "I used " ""
(kainēe khā "to kill")

kainēe khāme no?pi "I go to kill"
   " " notsā? "I come " " "
   " khēekē nokhā "I used " " "
(nūhigā jū "to take shelter")

nūhigā jēme no?pi "I go to take shelter"
   " " notsā? "I come " " "
   " jēekē nokhā "I used " " "

In the case of Verb Groups containing a verb to which the reflexive suffix has been added, this usually follows the directional marker, but precedes the habitual marker, with a concomitant shortening of /aa/ to /a/ in the latter case.

e.g. (hipāphaavū "to wash oneself"

odo?phaavū "to work")

hipāmēphaavū } \{ no?pi \{ "I go \{ \{ to wash myself"
odo?mēphaavū } \{ notsā? \{ "I come \{ \{ to work"

hipāphavēekē } \{ nokhā \{ "I used to \{ \{ wash myself"
odo?phavēekē } \{ work""}

5.1.2.2.2. Sub-type ii, "Negative Action"

VbPce_{ii,ii} = \{ aux \{ } \{ ind: \{ ma- \} \} H:VG_{1/2} +Aux:VG_{1/2} \}

The Head slot in this sub-type of Verb Piece is filled by a Verb Group whose Head is filled by a verb to which the inchoative suffix has been added, in accordance with the description in 3.1.2.3., above.
The auxiliary indicator in this case precedes the verb. It is the privative \{ma\-\}, which is obligatorily assimilated to the verb in accordance with the rules stated in 3.3.2.1. for pronouns.\(^2\)

The Auxiliary slot may be filled by any Verb Group (subject to normal semantic limitations).

**Examples.**

\[\text{ma?mitáka\- no?pi } "\text{Without eating I go}\] "Without eating I go"

\[\text{manovi\-gipiká\- no?tsá? } "\text{Without speaking I come}\] "Without speaking I come"

\[\text{kainée makháka\- no-mimápávi } "\text{Without killing I hunt}\] "Without killing I hunt"

\[\text{núhigá mežáka\- nómá } "\text{Without taking shelter I sleep}\] "Without taking shelter I sleep"

This construction may also be used to convey negative temporal sequence. Thus, \[\text{ma?mitáka\- no?pitá } \] may mean "Without eating I have a bath", or "Before eating, I have a bath". Similar glosses could be given for the examples above.

This is particularly clear when the clitic \{-khó\}, "Incompletive" is added to the verb after the inchoative.

\(^2\)Since assimilation is obligatory, the choice of base form is dependent on purely theoretical considerations. That form is chosen which permits the privative to be viewed as subject to the same rules as those governing pronoun assimilation, since the various forms parallel those attested for pronouns in the same environments.

\(^3\)\(\text{ma-}\) occurs here where \(\text{ma-}\) would be expected, due to the underlying initial \(\text{ii-}\) occurring with \(\text{ma-}\), but deleted in all but a few cases, as indicated elsewhere. Here /ii/ becomes /i/ in the proximity of /aa/, and this /i/ is assimilated to \{\text{ma-}\} in accordance with the normal rules.
e.g. amepuu? ee?phi ma - khá-kaā-khét? - mī nīi kašoc? much fish priv do incho-incomp rec not well past no?mitā
I-eat

"Before catching a lot of fish, I did not eat well"

This example also illustrates the Auxiliary verb in the negative.4

5.1.3. Distribution.

The members of the class of Verb Pieces are distributed in the Verb Phrase. Since all Verb Pieces equally share the same distributional possibilities, it is not necessary to establish sub-classes.

---

4 For another way of expressing negative temporal sequences (i.e., "before"), cf. Dative Object Phrase, section 6.2.1.2., footnote 9, below. For positive temporal sequences ("after"), cf. 6.2.8.2. (Adjunct Phrase) and 6.2.9.2.1. (Directional Phrase), below.
Chapter 6
PHRASE LEVEL

The Phrase is set up as a level of construction above the Word\(^1\) and below the Clause. "Phrase" is defined as a sequence or potential sequence of words which functions as a unit, as in Pickett:

"By 'potential sequences' I mean a sequence of words or a single word which is potentially expandable to a unit of two or more words by addition of optional modifiers. Traditionally, phrases have been assumed to be composed of more than one word. [Here she refers to Bloomfield, 1933:178.] In descriptions with the tagmemic model, however, conciseness and simplicity of statement are gained by considering phrase to include those single words which are potentially expandable to full phrases... In addition to providing conciseness, such a description also more accurately reveals the structural relationships, since when the single noun which is potentially head of a phrase occurs in the Subject slot, it is not a different kind of unit but a representative of the phrase unit." (1960:33)

Phrases are divided into classes on the basis of their distribution in Clause-level slots. Some classes of phrase are endocentric (consisting of a Head plus or minus various modifiers), while others are exocentric (consisting of an Axis and a relator). The endocentric phrases are described first, and then the Axis-Relator phrases.

Types are set up within most classes on the basis of

\(^1\)The Verb Phrase is a special case, coming as it does above the sub-level Piece in the verb hierarchy.
internal structure. Sub-classes of some phrase classes are set up on the basis of distribution in Clause level slots and in other structures.

6.1. Endocentric Phrases.


The Verb Phrase (VP) has the following contrastive-identificational features:

i) Its Head is filled by a Verb Piece.

ii) Its Modifier slot is filled by an Adverb or an Adjective.

6.1.1.2. Variation.

\[ \text{VP} = \text{Int:oo} +\text{M:Adv/Adj} +\text{H:VbPce} +\text{Int:oo} \]

It is not necessary to set up different types of VP, since the only variation at Phrase level is the presence or absence of the Modifier and Intensifier tagmemes, which are in consequence regarded as optional.

Modifier.

The following examples show the Modifier present, since ample examples of the unmodified Head tagmem are to be found in section 5.1.2., on the Verb Piece, and the Modifier could in any case be omitted in any of the examples given here. Examples show the Modifier slot filled by and Adverb and by an Adjective.
With Modifier slot filled by an Adverb:-

i) Isabel\textsuperscript{2} kenee? ja \& jo
Isabel \underline{slowly}, runs,
M:Adv H:VbPce
VP\quad "Isabel runs slowly"

ii) Pedro kenee? jaka odo?phaav\&
Pedro \underline{slowly-emph} works
M:Adv H:VbPce
VP\quad "Peter works very slowly"

With Modifier slot filled by an Adjective:-

When the Modifier slot is filled by a sub-class 3 Adjective, this may have the usual adjective suffixes (i.e., the nominal suffixes, which are also added to attributive adjectives to indicate concord between the adjective and the noun it qualifies). However, the Order 1 suffix -- the classifier -- is obligatorily absent, since the choice of classifier is dependent on the noun which the adjective qualifies when occurring in the NP, and in the VP there is no noun present. The Order 3 suffix -- number -- is similarly absent.

Only \textsuperscript{3}ooja? "small, little" has been observed in this slot, with the nominal Order 2 suffix \textsuperscript{4}ja? (diminutive).

e.g. H\textsuperscript{2}naa ooja? ja? \& jo
Juan \textsuperscript{2}little, runs,
M:Aj H:VbPce
VP\quad "John runs little" (i.e., infrequently)

\textsuperscript{2}Spanish names do not necessarily conform to the phonology of the language.
For emphasis, the nominal Order 4 suffix ~má (restrictive) is used.

*e.g.* Hoaa oo jajá?~má e?jo
Juan little ~rest runs
MiAj H:VbPce
VP "John runs very little" (i.e., very infrequently)

**Intensifier.**

The Intensifier tagmeme may occur initially or finally, or both initially and finally. It usually only occurs when the VP refers to an action in the past.

*e.g.* Hoaa-mí oo i?pí (oo)
John rec int go, int past int H:VbPce Int
VP "John has already gone"

### 6.1.1.3. Distribution.

The Verb Phrase functions as Predicate within the Clause. Different sub-classes of VP are set up on the basis of their function in different types of Predicate.

#### 6.1.1.3.1. Sub-class I, "Intransitive".

The members of this sub-class occur in type ii Predicate, "Intransitive".

*e.g.* Peedró ímá
Pedro sleeps "Peter sleeps"
Pi:VP1

na?á odo?phaavá
they work "they work"
Pi:VP1
For further details, cf. 7.2.1.2.2., below.

These VP's may also occur in type iii Predicate, "Transitive", if the verb in the VP has the causative suffix. cf. 7.2.1.2.3., below.

6.1.1.3.2. Sub-class 2, "Transitive".

The members of this sub-class occur in type iii Predicate, "Transitive".

\[\text{e.g. ts\-m\-i amog\-i kain\-se kh\-u}\]
\[\text{he rec tapir kill past}\]
\[\text{P}_{\text{iii}}:\text{VP}_2\]

\[\text{ts\-o maa\-m\-a em\-i}\]
\[\text{she cassava bites}\]
\[\text{P}_{\text{iii}}:\text{VP}_2\]

"He killed the tapir"

"She bites the cassava"

For further details, cf. 7.2.1.2.3., below.

These VP's may also occur in type iv Predicate, "Ditransitive", if the verb in the VP has the causative suffix. cf. 7.2.1.2.4., below.

6.1.1.3.3. Sub-class 3, "Ditransitive".

This sub-class has one member, which occurs in type iv Predicate, "Ditransitive".

\[\text{e.g. no-m\-i \-k\-n\-i gik\-k\-o a\-n\-i}\]
\[\text{I rec rifle him Dat give past}\]
\[\text{P}_{\text{iv}}:\text{VP}_3\]

\[\text{"I gave the rifle to him"}\]

For further details, cf. 7.2.1.2.4., below.

\[\text{a\-n\-i}\]
may also occur in type v Predicate, "Tritransitive", when it has the causative suffix. cf. 7.2.1.2.5., below.

6.1.2.1. Contrast.

The Noun Phrase (NP) has the following contrastive-identificational features:

i) Its Head tagmeme slot is filled by a noun, a pronoun, a name, or a relative clause.

ii) Other tagmemes which may occur are: Limiter, Quantifier, Attributive and Modifier.

iii) The order of its constituent tagmemes is relatively fixed, except for the few possible permutations detailed in section 6.1.2.2.1.5., below.

iv) There is concord in NP type i between the Head tagmeme and other constituent tagmemes, and details of this are given below.

6.1.2.2. Variation.

Four types of NP are set up on the basis of internal structure:

\[ NP_i = +/-\alpha Lim:NP_2 / Dem \#Q:NumP/IG \#Att:Aj_1 +H:Nn_3 \#M:RelCl \]

where \( \alpha \) reads: when filler of H slot is from Category 1, Limiter is obligatory; when filler of H slot is from Category 2, or when filler of Q slot is an Interrogative, Limiter is obligatorily absent; when filler of H slot is from Category 3, Limiter is optional.

The tie bar indicates concord.

\[ NP_{ii} = +Lim:Nn_1 \#Q:NumP +H:Nn_1 \]

\[ NP_{iii} = +H:RelCl/Pn \]

\[ NP_{iv} = +H:name +M:RelCl \]
6.1.2.2.1. Noun Phrase Type i.

The structure of this Noun Phrase type is as indicated in the formula in the preceding paragraph. There is concord with regard to all nominal suffixes (classifier, augmentative/diminutive, number and restrictive) within the NP between the Head and the Limiter (when filled by a Demonstrative), the Quantifier (when filled by a Numeral Phrase), and the Attributive.

In describing the variant manifestations of this Noun Phrase type, each constituent tagmeme is described in turn, in order to clarify which fillers may occur in each slot.

6.1.2.2.1.1. Head Tagmeme.

The occurrence of this tagmeme represents the minimal expansion of NP type i.

E.g. amoọgi "tapir"

phaipigje "old woman"

6.1.2.2.1.2. Limiter Tagmeme.

1) Occurrence of the Limiter tagmeme.

The Limiter tagmeme occurs either optionally or obligatorily, or is obligatorily absent, depending on the filler of the Head tagmeme slot:

\[
\begin{align*}
H:Nn_{3,1} & : + \text{Lim} \\
H:Nn_{3,2} & : - \text{Lim} \\
H:Nn_{3,3} & : \pm \text{Lim}
\end{align*}
\]
e.g. i) + Lim
fa?mithoŋə "our food"
phaigī hitāa "the old man's canoe" old-man canoe
\[\text{Lim} \quad H\]
giagī "his face"
čiiva "its centre"

ii) - Lim
a?mithoŋtsi "food"
\[\text{hitā} \quad "canoe"\]

iii) + Lim
va?agā "machete"
amoogī "tapir"
naikoogigī "shaman"

ii) Fillers of Limiter tagmeme slot.
The Limiter tagmeme may be manifested by an embedded Noun Phrase sub-class 2, or by a demonstrative. The NP indicates possession; demonstratives normally indicate deixis (cf. below).

a) Noun Phrase, sub-class 2.
All types and sub-types of NP occurring in distributional sub-class 2 of the NP may occur.

i) Type iii.i: Relative Clause.
e.g. ee?phikhovigī pańṇā "The one who fishes' house"
\[\text{fish - Srel} \quad \text{house} \quad H:RelCl \quad \text{Lim:NP}\quad \text{iii.i} \quad H:Nn\]

3Changes in the form of the noun filling the Head slot when possessed are indicated in 3.2.3., above.
ii) Type iii.ii: Pronoun.

e.g. őpaŋđ ḳiŋŋ  

\[\text{my house} \]

"my house" ⁴

Lim:NP  ḳiŋŋ H:Nn

ő hanįgi ḳiŋŋ  

my father "my father"

In cases such as these, if no other tagmemes occur between the Limiter tagmeme and the Head tagmeme, assimilation usually occurs between the fillers of the two slots, as described in section 3.3.2.1., above.

e.g. nopaŋđ ḳiŋŋ  "my house"

ńonįgi ḳiŋŋ  "my father"

In this construction, the type ii pronoun giʔi/giʔiṭe could function as a demonstrative, in addition to its normal use as a deictic possessive adjective. (This is talking in terms of traditional grammar; structurally, and tagmemic ally, it is always a pronoun. cf. footnote 4 hereunder.) Thus, for example, giʔi ḳaʔdahi ḳiŋŋ  may mean "this one's land turtle" (i.e., "his land turtle"), or "this land turtle".

Such ambiguity does not occur when the Head tagmeme slot in the NP is filled by a noun having a different form when possessed, as in the following examples:

giʔi paniitsi ḳiŋŋ  "this house"

giʔi paŋđ ḳiŋŋ  "this one's house"

giʔiṭe boeʔkoćtsiŋđi ḳiŋŋ  "that paddle"

giʔiṭe boeʔkoćnangđi ḳiŋŋ  "that one's paddle"

⁴Thus, in traditional terms, the pronoun here functions as a possessive adjective, and not just a personal pronoun, as elsewhere.
iii) Type iv: name.

This is of minimal expansion, and the Modifier tagmememe does not occur.

e.g. José paanu

José house

"José's house"

iv) Type i.

The form of the NP occurring in the Limiter slot is normally quite restricted, usually consisting of a Head only, or of a Head and a Limiter.

a) Head only.

e.g. phaigl paanu

old-man house

"The old man's house"

b) Limiter and Head.

e.g. bigi phaigl paanu

this old-man house

"this old man's house"

If the embedded Limiter slot contains an NP consisting of a pronoun, this is assimilated to the noun in the Head slot of the same NP.

e.g. aonigl paanu

my - father house

"my father's house"
Multiple embedding (e.g., "my father's house's roof's thatch") has not been observed in normal speech nor texts.

b) Demonstratives.

The occurrence of a demonstrative filler of the Limiter tagmeme slot indicates deixis.

e.g. himi hita
   this canoe
   "this canoe"
Lim:Dem H:Nn

   he?e?am1 t6?am1
   that book
   "that book"
Lim:Dem H:Nn

iii) Concord in the Limiter tagmeme.

There is concord of all nominal suffixes between the filler of the Head tagmeme slot and demonstratives.

e.g. hi-m i i h i hita-m i i h i
   this sx 1-sx 3 canoe sx 1-sx 3 "these canoes"

   he?e-ga - ja ak a - na
   that sx 1 sx 2-sx 3 sx 4 machete sx 1 sx 2-sx 3 sx 4
   "only those two knives"

6.1.2.2.1.3. Quantifier Tagmeme.

The Quantifier tagmeme slot is filled by a Numeral Phrase or by an Interrogative. There is concord of all numeral suffixes between the filler of the H tagmeme slot and the filler of the Numeral Phrase, affecting those numbers which may be modified (i.e., "one" and "two", and all Numeral Phrases of which these are components, viz., those that form 3, 6, 7, 8, 11, 13, 16, 17 and 18).
e.g. i) With Numeral Phrase filler of Q slot.

\[
\begin{align*}
\text{sá} & \text{ - ga - } \text{ já?} \\
\text{one} & \text{ sx1} \text{ sx2} \\
\text{machete} & \text{ sx1} \text{ sx2}
\end{align*}
\]

"one knife"

\[
\begin{align*}
\text{Q:NumP} \\
\text{H:Nn}
\end{align*}
\]

\[
\begin{align*}
\text{sá?osí} & \text{ hiitá - m i i h} \\
\text{five} & \text{ canoe } \text{ sx1} \text{ sx3}
\end{align*}
\]

"five canoes"

ii) With Interrogative filler of the Q slot.

Either of the Group 6 Interrogatives hí?e amepuu? or hidé? amepuu? may occur (cf. 7.2.2.1.2.2., below, on Interrogative).

e.g. hidé? amepuu? va?agajaahí

\[
\begin{align*}
\text{how - many} & \text{ knives} \\
\text{Q:1g} & \text{ H:Nn}
\end{align*}
\]

"How many knives?"

6.1.2.2.1.4. Attributive Tagmeme.

The Attributive tagmeme slot is filled by a sub-class 1 Adjective. There is concord of all nominal suffixes between the filler of the Head tagmeme slot and the filler of the Attributive tagmeme slot.

e.g. \[
\begin{align*}
\text{ji\=ja\=gá - } \text{ jaaku - má} \\
\text{big} & \text{ sx1} \text{ sx2} \text{ sx3} \text{ sx4} \\
\text{machete} & \text{ sx1} \text{ sx2} \text{ sx3} \text{ sx4}
\end{align*}
\]

\[
\begin{align*}
\text{Att:Adj} \\
\text{H:Nn}
\end{align*}
\]

"only two big knives"

(For the Adjective, cf. 3.4.2., above.)

6.1.2.2.1.5. Modifier Tagmeme.

The Modifier tagmeme slot is filled by a relativized clause.

e.g. atságí - mi gifotáa - nígi - mi oo i?pi

\[
\begin{align*}
\text{man} & \text{ rec he-frighten-Orel rec int go} \\
\text{past} & \text{ past}
\end{align*}
\]

\[
\begin{align*}
\text{H:Nn} \\
\text{M:RelCl}
\end{align*}
\]

"The man he had frightened went away"
The Modifier tagmeme usually occurs after the Head tagmeme in the NP, although it may be permuted to the initial position in the NP, if ambiguity might otherwise result.

For instance,

\[
\text{gi?ithé } \text{jaáñá-} \text{mi } \text{gi?1 } \text{ji}jáagí \text{atsáagí } \text{ifotáanígi-} \text{mi } \text{co } \text{i?pi} \\
\text{that child-dim rec this big } \text{man } \text{frighten-Orel } \text{int go} \\
\text{past} \text{ rec past}
\]

could be understood as "That little child that this big man frightened went away" or as "This big man that that little child frightened went away" -- not as improbable an interpretation as may be imagined, since Pablo pointed out this ambiguity, unprompted. In Resigaro -- though not in English -- the whole of the underlined section in each case is a relativized clause. The meaning depends on the structures of the matrix and embedded clauses: (NB, here \( L = \text{Lim} \))

\[
\text{gi?ithé } \text{jaáñá-} \text{mi } \text{gi?1 } \text{ji}jáagí \text{atsáagí } \text{ifotáanígi-} \text{mi } \text{co } \text{i?pi} \\
\text{that child-dim rec this big } \text{man } \text{frighten rec int go} \\
\text{past L:NP \text{Att:Aj} H:Nn} \\
\text{S:NP_i} \text{ P:VP Orel} \\
\text{Lim:NP \text{H:Nn}} \\
\text{S:NP_i} \text{ M:RelCl} \\
\text{P:VP}
\]

"That little child that this big man frightened went away"

\[
\text{gi?ithé } \text{jaáñá-} \text{mi } \text{gi?1 } \text{ji}jáagí \text{atsáagí } \text{ifotáanígi-} \text{mi } \text{co } \text{i?pi} \\
\text{that child-dim rec this big, man, frightened rec int go} \\
\text{past L:NP H:Nn L:NP \text{Att:Aj} H:Nn} \\
\text{S:NP_i} \text{ P:VP Orel} \\
\text{S:NP_i} \text{ O:NP_i} \text{ H:RelCl} \\
\text{P:VP}
\]

"(That little child frightened this big man) [-rel] went away"

i.e., "This big man that that little child frightened went away"
If the second meaning is that desired, the structure and form indicated are appropriate (though this may be simplified, at Clause level, by extraposition). If the first meaning is that desired, ambiguity may be avoided by permutating the entire Modifier tagmeme to initial position:

\[
\text{gi'?1 jij'ag1 ats'ag1 ifot'an'ig1-mi gi?ith6 jaj'aj1'aj-mi oo i?pi,}
\]

\[M: \text{RelCl} \quad \text{Lim: NP} \quad H: \text{Nn} \quad S: \text{NP} \quad P: \text{VP}\]

The above description and examples refer to relativized clauses having a restrictive (i.e., identificational) function. In Resigaro, relativized clauses may also have a non-restrictive (i.e., merely informative) function. In these cases, the following changes occur in the NP:

i) The relativized clause in question is preceded and followed by a pause.

ii) The entire structure has a distinctive intonation. 5

The contour rises immediately preceding each pause.

\[\text{ats'a'gi-mi} -- \text{gifot'an'ig1-mi} -- oo i?pi\]

\[\text{man rec he-frighten-l rec past int go past Orel}\]

"The man, whom he had frightened, went away"

6.1.2.2.1.6. Co-occurrence of Tagmames in NP Type i.

\[+\text{Lim} +H\] is probably the most frequent sequence of tagmames

5Though a description of the intonation is beyond the scope of the present thesis, rudimentary details are given in this case, since in this structure intonation is one of the prominent distinguishing features.
in NP type i, followed in frequency by +Att +H and +Lim +Att +H. Q tagmeme occurs very infrequently, no doubt because most counting in Resigaro is in terms of "one", "two", or "several". This can be handled at word level by suffixes. M may occur in all the above sequences, though maximal expansion is quite rare.

Though the number system extends to twenty.

6.1.2.2. Noun Phrase Type ii, "Temporal".

\[ NP_{ii} = +\text{Lim:}Nn_{1} +\text{NumP} +\text{H:}Nn_{1} \]

E.g.

\[ \text{aapamá jakáde-kóo no?pi} \]
\[ \text{tomorrow field - to I-go} \]
\[ H:NN_{1} \]
\[ NP_{ii} \]
\[ \text{"Tomorrow I am going to the field"} \]

\[ \text{nokótsá naapí?é? si-koomí - kóo gi?pi} \]
\[ \text{yesterday morning other village to he-go} \]
\[ \text{Lim:}NN_{1} \]
\[ H:NN_{1} \]
\[ NP_{ii} \]
\[ \text{"Yesterday morning he went to the other village"} \]

\[ \text{po?tsáávägaahi he?kóka no-náagi mímápavi} \]
\[ \text{four days my-brother hunt} \]
\[ \text{Q:NumP} \]
\[ H:NN_{1} \]
\[ NP_{ii} \]
\[ \text{"My brother has been hunting for four days"} \]

6.1.2.2.3. Noun Phrase Type iii.

\[ NP_{iii} = +\text{H:RelCl/Pn} \]

i) Relativized Clause.

The relativized clause occurring in this NP type always has a restrictive (i.e., identificatory) function.

E.g.

\[ \text{gifotáani} gi . mi oo i?pi} \]
\[ \text{he-frightened-Orel-rec int go} \]
\[ H:RelCl \]
\[ NP_{iii} \]
\[ \text{past} \]
\[ \text{"The one he frightened went away"} \]
ii) Pronoun.

\[ \text{e.g. } a\, \text{mit}^{\text{th}} \]
\[ \text{I eat} \]
\[ H: \text{Ph} \]
\[ \text{NP}_{\text{iii}} \]

This pronoun may assimilate with a following verb, as indicated in 3.3.2., above.

\[ \text{e.g. } \text{no}mit^{\text{th}} \text{ "I eat"} \]

But, grammatically, a separate NP is still considered to be present, even though on the phonological plane it is partly fused with the filler of the following tagmemic slot.

6.1.2.2. Noun Phrase Type iv.

\[ \text{NP}_{\text{iv}} = +H: \text{name} +M: \text{RelCl} \]

\[ \text{e.g. } \text{Hoaa - } m\, \text{oo } i?\text{pi} \]
\[ \text{Juan, rec int go } \text{"John went away"} \]
\[ H: \text{name} \]
\[ \text{past} \]
\[ \text{NP}_{\text{iv}} \]

The relativized clause occurring in the M slot in this NP type always has a non-restrictive (i.e., merely informative) function (with attendant pauses and intonation contour).

\[ \text{e.g. } \text{Hoaa-mi -- Manuel } \text{ifot\&anigi -- } m\, \text{oo } i?\text{pi} \]
\[ \text{Juan, rec } \text{Manuel frighten, rec int go } \]
\[ \text{past } \]
\[ H: \text{name} \]
\[ \text{past} \]
\[ S: \text{NP}_{\text{iv}} \]
\[ P: \text{VP Orel} \]
\[ \text{H: name \ H: RelCl} \]
\[ \text{NP}_{\text{iv}} \]

"John, whom Manuel frightened, went away"

6.1.2.3. Distribution.

The members of the class of Noun Phrases are distributed in Clause and Phrase level slots. Two sub-classes of NP's are
set up on the basis of this distribution.

6.1.2.3.1. Sub-class 1, "Temporal".
This consists of all type ii Noun Phrases, which are distributed in the Temporal slot in the Clause, and in the axis slot in IP type ii, sub-type v.
e.g. aapamá sì - koomi - kōo ne?pi
tomorrow other-village-to they-go
T:NP1 "Tomorrow they go to the other village"
(cf. 6.2.10.; below, on LP.)

6.1.2.3.2. Sub-class 2.
All other NP types can be grouped in one sub-class. These Noun Phrases have quite a wide distribution, but since they all equally share the same distributional possibilities, it is not necessary to establish further sub-classes.

They may occur back-looped in the Peripheral slot in Verb Group type ii, sub-type i. (cf. 4.1.2.2.1., above.)
e.g. nūghigá khū
shelter do
H:Nn
Periph:NP2 H:Vb
VG ii,i
"to give shelter to s.o."

They may occur recursively in the Limiter slot of NP type i (cf. 6.1.2.2.1.2., above), and in the Axis slot of Axis-Relator phrases.
e.g. Hoaa-mí gi?ithé jaánajá - ne? a?mitá
Juan rec that child-dim with eat
past Lim:NP H:Nn
Axis:NP2 relr
CPi
"John ate with that little child"
(For further examples, cf. section 6.2., below.)

They may also occur in the following Clause-level tagmemes: Subject, Object, Causative Object, and Predicate.

e.g. Hooa Manoel tshøñf
      Juan, Manuel see "John sees Manuel"
      S:NPiv O:NPiv

Further examples are to be found in the preceding description of the NP, and in the description of the Clause, below.

6.1.3. Numeral Phrase.

6.1.3.1. Contrast.

The Numeral Phrase (NumP) has the following contrastive-identificational features:

i) It may have a single Head tagmeme, or two Head tagmemes.

ii) These Head tagmemes are filled by numerals or by back-looped Numeral or Directional Phrases.

6.1.3.2. Variation.

Numeral Phrases are either simple or complex, and separate types are established on the basis of this difference.

6.1.3.2.1. Numeral Phrase Type i, "Simple".

NumP_i = +H:Num_i

This consists of all sub-class 1 numeral words.

e.g. sagì "one"
    po?tsàlavàgaañì "four"
6.1.3.2.2. Numeral Phrase Type ii, "Complex".

Composite formula:-

\[ \text{NumP}_{ii} = +H: \text{Num} \frac{2}{DP_{1}} +H: \text{Num} \frac{2}{\text{NumP}_{ii,i}} \]

Three sub-types are set up on the basis of structural differences of a finer degree of delicacy than those separating types i and ii.

6.1.3.2.2.1. Sub-type i.

\[ \text{NumP}_{ii,i} = +H: \text{Num} ("two") +/?/ +H: \text{Num} ("one") +/?/ \]

This sub-type has only one member:-

\[
\text{migaakaâ? sagâ?}
\]

\[
\begin{array}{c}
\text{two} \\
\text{H:Num} \\
/?/ \text{H:Num} /?/
\end{array}
\]

"three"

6.1.3.2.2.2. Sub-type ii.

\[ \text{NumP}_{ii,ii} = +H: DP_{1} +H: \text{Num} \]

Three variants of \( DP_{1} \) occur. Each is combined with the numerals for "one", "two" and "four", to create other numbers, and \text{fee?par-}khâ, "from our foot", is in addition combined with the numeral for "five", as indicated below.

a) \( si-?osi-\) khâ sagâ

\[
\begin{array}{c}
\text{other hand} \\
\text{H:DP}_{1} \\
\text{H:Num} \\
\text{NumP}_{ii,ii}
\end{array}
\]

"six" (Lit., "from the other hand one"?)

\[
\text{si-?osi-\) khâ migaakaâ}
\]

\[
\begin{array}{c}
\text{other hand from two} \\
\text{H:DP}_{1} \\
\text{H:Num} \\
\text{NumP}_{ii,ii}
\end{array}
\]

"seven" (Lit., "from the other hand two")

7Numbers 6-9 are counted on the right hand, starting with the little finger.
s₁-ʔos₁-khō poʔtsāvāgaahi  "nine" (Lit., "from the other-hand from four other hand, four")

b) feeʔpā-khō sagā
c)_our-foot from one
   H:DP₁ H:Num NumPii.ii
feeʔpā-khō migaaʔā "eleven" (Lit., "from our foot, one")
feeʔpā-khō poʔtsāvāgaahi "fourteen" (Lit., "from our foot, four")
feeʔpā-khō s₁-ʔos₁ our-foot from five "fifteen" (Lit., "from our foot, five")

c) s₁-tuʔā-khō sagā
   other-foot from one
   H:DP₁ H:Num NumPii.ii
s₁-tuʔā-khō migaaʔā "sixteen" (Lit., "from the other foot, one")
s₁-tuʔā-khō poʔtsāvāgaahi "nineteen" (Lit., "from the other foot, four")

6.1.3.2.2.3. Sub-type iii.
NumPii.iii = +H:DP₁ +H:NumPii.ii
As in sub-type ii, the three variants of DP₁ occur. Each is combined with migaaʔā? sagā?, "three", to form the numbers for "eight", "thirteen" and "eighteen", respectively.

Numbers 11-15 are counted on the left foot, starting with the little toe.
6.1.3.3. Distribution.

The Numeral Phrase is distributed back-looped in the Quantifier slot in NP types i. and ii.

e.g. gi?1 migaakôte sagú? va?agaahi

\[
\begin{array}{c}
\text{Lim: NP } Q: \text{NumP} \\
\text{H:Nn} \\
\text{NP}_i
\end{array}
\]

"These three machetes"

(cf. NP, 6.1.2.2., above.)


6.2.1. Dative Object Phrase.

6.2.1.1. Contrast.

The Dative Object Phrase (DOP) has the following contrastive-identificational features:

i) Its axis tagmeme slot is filled by a recursive \( \text{NP}_2 \), by a back-looped clause, which has been nominalized (cf. 7.2.–2.3.), or by an interrogative.

ii) Its relator tagmeme slot is filled by -kát, "dative marker"

iii) The relator is phonologically bound to the last con-
6.2.1.2. Variation.

DOP = +Axis:NP2/ig/NomCl +relr: -kê "dative marker"

With NP filler of Axis slot:

   that big child dat rec cassava she-give
   Axis:NP2 relr past
   DOP "She gave cassava to that big child"

    Isabel rec Juan brother dat aguaje give
    Axis:NP2 relr
    DOP "Isabel gave an aguaje fruit to John's brother"

With Interrogative filler of Axis slot:

   kôeni - kê - vâ hamâkê doo?nî
   whom dat fut hammock she-give
   Axis:ig relr
   DOP "To whom will she give the hammock?"

With Nominalized Clause filler of Axis slot:

i) asepuñ? noda?phaavâ - kê, nîi maa?tsâ mô
   much I-work dat not tired I
   Axis:NomCl relr
   DOP "Although I work a lot, I am not tired"

ii) pîmâa - kê noda?phaavâ
    you-sleep dat I-work
    Axis:NomCl relr
    DOP "While you sleep, I work"

From the above examples, it would appear that -kê is used with substantial differences of meaning when the axis slot of the Dative Object Phrase is filled with a nominalized
clause from when it is filled with an NP or an interrogative, and, moreover, there is a possible difference of semantic relation between the clause-level tagmemes which the DOP manifests in each of the NomCl examples given, and the Predicate of the relevant clause. This difference of semantic relation may be indicated by the terms Concessive and Concurrent, respectively, and it gives rise to the possibility of viewing the relator in each case as representing two or even three homophonous but different morphemes: ́-kä, "Dative"; ́-ké, "Concessive"; and ́-kó, "Concurrent".

However, this suggestion is rejected for the following reasons:

i) The clause occurring in the axis slot is clearly nominalized in accordance with the pattern evidenced in other, non-ambiguous, contexts in the language, and thus has a relationship to the relator parallel to that of the NP's and interrogatives occurring in this slot.

ii) Almost all other axis-relator phrases in the language are unequivocally attested with NP and nominalized clause fillers of the axis slot, and this lends weight to the interpretation of doubtful cases in accordance with the established pattern. The existence of one or two cases which are of doubtful or ambiguous interpretation is not considered sufficient reason for establishing a separate pattern type --
one in which some A-R phrases only have an NP filler, while some others only have a nominalized clause filler -- especially when the relators are the same in each case.

iii) Though meaning is not rejected as a criterion in tagmemics (contrast Harris, 1951, for example), and is in fact always tacitly present in the recognition of differences, from morpheme level on up, it is not considered adequate for the establishment of different grammatical categories or types unless it co-occurs with at least one (Pike, 1967:471) or two (Longacre 1964a:18) formal differences.

iv) It may be that the apparently different meanings of _k6 are no more than a consequence of our interpreting Resígaro in the light of English and Spanish structures, or, if such differences are taken to represent semantic differences in Resígaro, they may best be viewed as a consequence of the different contexts in which the DOP occurs, at clause level. It is to be expected that the relation of the Dative or Dative Object tagmeme to the Predicate tagmeme will vary with different fillers of the Predicate slot, and according to other similarities and differences between the nominalized and the matrix clause, such as when one is affirmative and the other negative, as in the first NomCl example, above. 9 Whether a relationship is inter-

If the NomCl is negative, the DOP can be used to convey a negative temporal sequence. e.g. [Continued next page]
preted as concessive or not is in any case dependent on the expectations of the hearer, and though these may be reflected in different glosses, they are, in the final analysis, beyond the realm of the linguistic description.

All this is, in any case, a clause level variation, thus not affecting the establishment of types at phrase level. For this reason, it is also considered as not relevant to this level that when the Axis slot is filled by an NP or an interrogative, the filler of the Predicate slot at Clause level must be na?nfi, whereas when the filler of the axis slot is a NomCl, there is no such restriction.

6.2.1.3. Distribution.

The Dative Object Phrase is distributed in the clause, where it fills the Dative Object and Dative slots. Two sub-classes of DOP are established on the basis of this distribution:

6.2.1.3.1. Sub-class 1.

This consists of all Dative Object Phrases with an NP or an interrogative in the axis slot. The members of this sub-class are distributed in the Dative Object slot at clause level.

\[ \text{Axis: NomCl} \]
\[ \text{DOP} \]

\[ \text{We- eat} \]

\[ \text{past} \]

\[ \text{past} \]

\[ \text{we- eat} \]

\[ \text{DOP} \]

"As yet my father didn't fish, we didn't eat well"

i.e., "Before my father fished, we didn't eat well"

Verb Piece ii, ii may also be used to convey "before", cf.

5.1.2.2.2., above. (cf. 6.2.8.2. and 6.2.9.2.1. for "after" temporal sequences.)
level (cf. 7.1.1.6., below).

\[ \begin{align*}
&\text{e.g. i) } \text{gī-kē-mī } \overset{\text{past}}{\text{ūkō?gī?6 noo?ni}} \\
&\quad \overset{\text{ axis: } \text{NP}_{\text{relr}}} {\text{ him dat rec banana }} \overset{\text{DO: } \text{DOP}_1}{\text{ I-give}} \\
&\quad \text{ "I gave the banana to him"}
\end{align*} \]

\[ \begin{align*}
&\text{ii) } \overset{\text{past}}{\text{kēni-kē-mī } \overset{\text{whom dat rec}} {\text{ūkō}niighū } \overset{\text{ DO: } \text{DOP}_1}{\text{ dāa?ni }}} \\
&\quad \overset{\text{axis: } \text{ig relr}} {\text{ whom he-give }} \\
&\quad \text{ "To whom did he give the shotgun?"}
\end{align*} \]

6.2.1.3.2. Sub-class 2.

This consists of all Dative Object Phrases with a Nominalized Clause in the axis slot. The members of this sub-class are distributed in the Dative slot at clause level (cf. 7.1.2.1., below).

\[ \begin{align*}
&\text{e.g. } \overset{\text{past}}{\text{dōmaa - kē-mī itēevi?6 gī-khū}} \\
&\quad \overset{\text{axis: NomCl relr}} {\text{ she-sleep dat rec aguaje he-eat}} \\
&\quad \overset{\text{Dat:DOP}_2}{\text{ "While she slept, he ate aguaje fruit"}}
\end{align*} \]

6.2.2. Purposive Phrase.

6.2.2.1. Contrast.

The Purposive Phrase (PP) has the following contrastive-identificational features:

i) Its axis tagmeme slot is filled by a recursive NP₂ by a back-looped clause which has been nominalized, or by an interrogative.

ii) Its relator tagmeme slot is filled by \{ -nē \}, "purposive marker".

iii) The relator is phonologically bound to the last con-
stitute of the axis.

6.2.2.2. Variation.

\[ PP = +\text{Axis:} \text{NP} / \text{ig/} \text{NomCl} + \text{relr:} \{-\text{a6}\} \] "purposive marker"

- \text{a6} \rightarrow -h6

- h6 occurs with pronouns

- \text{a6} occurs elsewhere

With \text{NP} filler of \text{Axis} slot:

i) gi?ith6 ji?aagi jaana - a6 - mi doma "v6e pi-tsa?"

\text{Axis:} \text{NP2} \text{ relr past}

PP "She said to that big child, 'Come here'."

ii) gi - h6\textsuperscript{10} - mi doma "v6e pi-tsa?"

\text{Axis:} \text{NP2} \text{ relr past}

PP "She said to him, 'Come here'."

With Interrogative filler of \text{Axis} slot:

- k6hee - a6 - mi pim6 kanovii? a6

\text{Axis:} \text{ig relr past}

PP "To whom did you say I was drunk?"

With Nominalized Clause filler of \text{Axis} slot:

i) ve?e gi-tsa? in6ad6 gi-misa? - a6

\text{Axis:} \text{NomCl relr to seek a wife}

10The pronoun is assimilated to the relator, which in this case exceptionally has the same effect as a C-(other-than-h-)initial word or relator. cf. 3.3.2.1., above.
ii) kaajoja?i gi-khâ do?mitâ - nô
want he-do she-eat ppsv "He wants her to
Axis:NomCl relr eat"

It may be argued that the above examples allow for
different interpretations of the relation indicated by
{-mô} when the axis slot is filled by a Nominalized Clause,
from when it is filled by an NP or an interrogative. 11
However, these apparent differences of meaning may merely
result from our giving too much weight to the structure
of the English (and Spanish) glosses, when viewing Resí-
garo. It is certainly possible to gloss the first two
examples above acceptably as "She said for that big child
[to hear] ..." and "She said for him [to hear] ...", res-
pectively, and this obviously corresponds more closely
to the Resigaro view of the relationships involved.

A second and apparently correlated difference may
be noted: when the axis slot is filled by an NP or an
interrogative, the resultant PP occurs in a clause in which
the Predicate may only be filled by kond, "to say"; when
the axis slot is filled by a Nominalized Clause, no such
restriction is present. From this it may be argued whether
it would not be preferable to establish two different types

---

11 There is a further difference of meaning -- whatever the
filler of the axis slot -- when the PP fills the Predicate
slot. cf. 6.2.2.3., and 7.1.1.1., below.
of PP -- or even two totally different phrases, each with different (but homophonous) relators - \{a\}. 

However, this suggestion is rejected for the reasons given in 6.2.1.2., above, when discussing a similar situation with regard to the Dative Object Phrase.

As regards the apparent distributional difference, while it is recognized that distributional differences often correlate with structural differences, it has been clearly established that in this description distributional differences are nowhere allowed to dictate typological divisions, which must be solidly based on structural differences relevant at the level in question (cf. 0.4.3.). Thus it is considered that insufficient evidence exists here for establishing different phrases, or even two types of PP.

6.2.2.3. Distribution.
The Purposive Phrase is distributed in the Clause, where it fills the Purposive slot\(^\text{12}\) or the Predicate slot. Two subclasses are established on the basis of this distribution:

6.2.2.3.1. Sub-class 1.
This consists of all Purposive Phrases with an NP or inter-

\(^\text{12}\)The clause level tagmem Purposive may occur more than once in a clause, with the same or different types of filler of the axis slot in the PP in each case -- cf. 7.2.1.2.3., section 2, Peripheral Tagmemes, below.
rogative in the axis slot. The members of this sub-class are distributed in Purposive tagmeme type i (which only occurs when the Predicate slot in the clause is filled by a VP containing kemä "to say, to tell"), and in the Predicate slot in non-transitive clauses.

e.g. In type i Purposive tagmeme:

\[
\begin{align*}
\text{Axis: } & \text{NP} \\
\text{Ppsv: } & \text{PP} \\
\text{relr: } & \text{past} \\
\text{He said to my mother, 'I want to drink'.'}
\end{align*}
\]

(For type i Purposive, cf. 7.1.2.2.1., below.)

In the Predicate:

i) kēhe - mō hīiltā

\[
\begin{align*}
\text{Axis: } & \text{ig} \\
\text{P: } & \text{PP} \\
\text{S: } & \text{NP}
\end{align*}
\]

"Who (has) a canoe?"

ii) hīiltā gi - hō
canoe him

\[
\begin{align*}
\text{Axis: } & \text{NP} \\
\text{P: } & \text{PP} \\
\text{S: } & \text{NP}
\end{align*}
\]

"He (has) a canoe"

(For non-transitive Predicates, cf. section 7.1.1.1.1., below, especially sub-type iii.)

6.2.2.3.2. Sub-class 2.

This consists of all Purposive Phrases with a Nominalized Clause in the axis slot. The members of this sub-class are distributed in Purposive tagmeme type ii (which has no occurrence restriction such as that for type i).

e.g. no?mitaā - mō no?pi

I-eat ppsv I-go

"I am going in order to eat"

\[
\begin{align*}
\text{Axis: } & \text{NomCl} \\
\text{Ppsv: } & \text{PP}_2
\end{align*}
\]
6.2.3. Benefactive Phrase.

6.2.3.1. Contrast.

The Benefactive Phrase (BP) has the following contrastive-identificational features:

i) Its axis tagmeme slot is filled by a recursive NP, a back-looped clause, which has been nominalized, or an interrogative.

ii) Its relator tagmeme slot is filled by -pokā?, "benefactive marker".

iii) The relator is phonologically bound to the last constituent of the axis.

6.2.3.2. Variation.

BP = +Axis:NP/ig/NomCl +relr: -pokā? "benefactive marker"

With NP filler of Axis slot:

   that big child ben rec meal she-make
   Axis: NP2 relr past BP "She made a meal for (because of) that big child"

ii) do-tsābatē -pokā? tsodā?pā
    her-brother ben she-sings
    Axis: NP2 relr BP "She sings for (because of) her brother"

With Interrogative filler of Axis slot:

kēhee-pokā?-mī a?mithoštśi do-khū
   whom ben rec meal she-make
   Axis:ig relr past BP "For whom did she make the meal?"
With Nominalized Clause filler of Axis slot:

i) ve?e gi-tsá? insadó gimíaî - poká?
here he-come wife he-seek ben
Axis: NomCl relr
BP
"He comes here because he seeks a wife"

my-father much fish do ben well we-eat
Axis: NomCl relr
BP
"Because my father catches a lot of fish, we eat well"

As the above examples show, when the axis slot of the
BP is filled by a NomCl, the meaning conveyed by this and
the Predicate in the Matrix clause is one of Cause-Effect.
Any apparent difference in meaning when the axis is filled
by an NP or an interrogative is not doubt at least partly
due to the forms of the English glosses, and in any case
there is not sufficient structural difference between the
forms with different fillers of the axis slot to justify
the establishment of different phrases, and it is clear that
in the language no emic contrast is felt.

6.2.3.3. Distribution.
The Benefactive Phrase is distributed in the Clause, where
it fills the Benefactive slot.

e.g. no-novigipii - poká? gimú
I - speak ben he-sleep
Axis: NomCl relr
Ben:BP
"Because I speak, he sleeps"
6.2.4. Instrument Phrase.

6.2.4.1. Contrast.

The Instrument Phrase (IP) has the following contrastive-identificational features:

i) Its axis tagmeme slot is filled by a recursive NP, by a back-looped clause which has been nominalized, or by an interrogative.

ii) Its relator tagmeme slot is filled by -gi, "instrument marker".

iii) The relator is phonologically bound to the last constituent of the axis.

6.2.4.2. Variation.

IP = +Axis:NP2/ig/NomCl +relr: -gi "instrument marker"

With NP filler of axis slot:

i) gi?ithé jiyíagá va?aga - gi - mí oná?ko kaincé gi-khá that big machete instr rec snake dead he-make

Axis:NP2 relr past

IP

"He killed the snake with that big machete"

ii) Isabeel-mí Hosaa hitáa - gi i?pi Isabel rec Juan canoe instr go

past

Axis:NP2 relr

IP

(i.e., by means of) John's canoe

With Interrogative filler of Axis slot:

kóhee - gi - mí aváanaavuudá gínókhó what instr rec log he-cut

Axis:ig relr past

IP

"With what did he cut the log?"
With Nominalized Clause filler of Axis slot:

IP's with nominalized clauses in the axis slot are quite infrequent, though the following has been attested:

gižašů do?mōtshoši - gi - mi ke?vigi naginagi do-khotā
his-child she-hit instr rec chief angry she-do-cstv

Axis: NomCl relr past "By hitting his child
IP she made the chief angry"

6.2.4.3. Distribution.

The Instrument Phrase is distributed in the Clause, where it fills the Instrument slot.

e.g. maa?mā kio? do-khā va?agaša - gi
    cassava cut she-do knife instr

Axis: NP2 relr
    I:IP "She cuts the cassava
    with a knife"

For further details, cf. Clause level, esp. 7.1.2.4.

The Instrument Phrase is also distributed in Verb Group type ii, sub-type ii. (cf. 4.1.2.2.2.)

6.2.5. Concomitant Phrase.

6.2.5.1. Contrast.

The Concomitant Phrase (CP) has the following contrastive-identificational features:

i) Its axis tagmeme slot is filled by a recursive N2, by a backlooped clause which has been nominalized, by an adjective, or by an interrogative.

ii) Its relator tagmeme slot is filled by {-neʔ}, "with", {-maʔ}, "without", or -kăpoʔ, "alone".
iii) The relator is phonologically bound to the last constituent of the axis.

6.2.5.2. Variation.

Three types of Concomitant Phrase are set up on the basis of internal structure:

\[
\begin{align*}
\text{CP}_i & = +\text{Axis: NE}/\text{NomCl}/\text{Adj}/-\text{ig} +\text{relr: }\{-\text{ne}\}, \text{"with"} \\
\text{CP}_{ii} & = +\text{Axis: NE}/\text{NomCl} +\text{relr: }\{-\text{ma}\}, \text{"without"} \\
\text{CP}_{iii} & = +\text{Axis: NP}_2 +\text{relr: }\{-\text{po}\}, \text{"alone"}
\end{align*}
\]

6.2.5.2.1. Concomitant Phrase Type i: \{-\text{ne}\}.

The structure of this phrase type is as indicated in the formula in the preceding paragraph.

\[
\{\text{-ne}\} : \quad \text{-ne} - \text{-n}
\]

\text{-n} occurs after nouns and interrogatives ending in ...VV.

\text{-ne} occurs elsewhere.

With NP filler of Axis slot:

1) \text{gi?ith} \text{ ne\text{a} - ne\text{a} - mi do-\text{ts}e?} (that \text{big child} with \text{rec she-} \text{come} \text{Axis: NP}_2 \text{relr past} \text{CP}_i \text{"She came with that big child"}

\[\text{The only difference between these three types -- that of filler of the relator slot, and consequent change of meaning and use -- is considered adequate for the establishment of three separate types within the Class of Concomitant Phrases (though not adequate for the establishment of different phrase classes, for which at least two structural differences would be required), since it leads to greater clarity in the description.}\]
ii) ats'ag'i-?pe aac'og'i - ne' pata? - kakâvâ
man rem tapir with look - recip
past
Axis: NP2 relr "The man and the tapir
looked at each other"

iii) In the example that follows, the NP in the axis slot
of the CP contains a subject-relativized clause as one of
its constituents (cf. 6.1.2.2.1.5., above, on the Modifier
tagmeme, and 7.2.2.4., below, on relativization).

Ja'na-mi gi-kêi tê6'jovî - ne' ve?e tsâ?nu
child rec his-fore- wounded-Srel with here come
past arm
Lim:NP H:Nn M:RelCl
Axis:NP1 relr

"The child with the arm which is wounded came here"

iv) At the other extreme, the NP may be of minimal expansion:

3ô6 - nô
falsehood with
Axis:NP2 relr "lying"

With Nominalized Clause filler of Axis slot:

loudly he-sing with rec he-work
Axis:NomCl relr past

"Singing loudly he worked"

ii) gi-vitsâ'â - kâ15 - ne? - mî kîo? na-khû
he-shout incho with rec cut they-do
Axis:NomCl relr past

"He beginning to shout,
they cut (him)"

14 -pâ > -pá before -neô, to avoid two contiguous syllables
with sequences of two vowels.
15 Previous footnote also applies here.
With Adjective filler of Axis slot:

Of all the Axis-Relator phrases, adjectives are only attested in the Axis slot of CP.

\[ \text{e.g. kai ne}^{16} \text{ death with} \]
\[ \text{Axis: Aj, relr} \]
\[ \text{CP}_1 \]

"dead"

With Interrogative filler of Axis slot:

\[ \text{kheee - n} - \text{ mi da?mita} \]
\[ \text{whom with rec he-eat} \]
\[ \text{Axis: ig relr past} \]
\[ \text{CP}_1 \]

"With whom did he eat?"

6.2.5.2.2. Concomitant Phrase Type ii: \{-ma\}\n
The structure of this phrase type is as indicated in the formula in 6.2.5.2., above.

\{ -ma? \} : -ma? - -ma

- -ma? occurs finally in the phrase
- -ma occurs elsewhere.

With NP filler of Axis slot:

i) \[ \text{jaan} - \text{ ma? - mi do - ts} \text{?} \]
\[ \text{child without rec she-come} \]
\[ \text{Axis: NP relr past} \]
\[ \text{CP}_1 \]

"She came without the child"

\[ ^{16} \text{In this case the rising tone of -ne} \text{ becomes a falling tone.} \]
\[ ^{17} \text{Compare with Negative Imperative \{-ma?u\} in 3.1.2.6.1.2.1., above, and desiderative clitic \{-ma?u\} in 7.2.1.2.6.3.1., below. Note also the privative \{ma\} in 5.1.2.2.2., above.} \]
ii) gi-náagí - ma? - mí dodo?phaevá
   his-brother-without rec he-work
   Axis:NP2 relr past "He worked without his
   brother"

With Nominalized Clause filler of Axis slot:

i) nóffá no?mitaă - ma?
   I-fear I-eat
   Axis:NomCl relr
   "I am afraid to eat"

ii) do?vápaă - ma? dóffá
   she-swim she-fear
   Axis:NomCl relr
   "She is afraid to swim"

Once again, there is an apparent difference in the
meaning of the relator, depending on whether the filler
of the axis slot is an NP or a NomCl, and earlier comments
are relevant (cf. 6.2.1.2., 6.2.2.2.). The difference is
not as great as at first appears, the meaning being in
both cases basically "negative".

6.2.5.2.3. Concomitant Phrase Type iii: -kápo?.

The structure of this phrase type is as indicated in the
formula in 6.2.5.2., above. To date, no cases of a nominal-
ized clause filling the axis slot have been attested.

i) gi-kápo? gi-paănă-kío gi?pí
   he-alone his-house-to he-go
   Axis:NP2 relr
   "Alone he goes to his house"
6.2.5.3. Distribution.

The Concomitant Phrase is distributed in the Clause, where it fills the Concomitant or the Predicate slot, and in Verb Group type ii. Two sub-classes are set up on the basis of this distribution.

6.2.5.3.1. Sub-class 1.

This consists of all type ii CP's with a nominalized clause in the axis slot. The members of this sub-class are distributed in Concomitant tagmeme type i (which only occurs when the Predicate slot in the clause is filled by a VP containing "to fear").

*e.g.*

\[ \text{ Axis:NomCl relr} \]

\[ \text{Conc:CP1} \]

"She is afraid to go with him"

6.2.5.3.2. Sub-class 2.

This consists of all other CP's, which are distributed in Concomitant tagmeme type ii (which has no co-occurrence restriction such as that applying in the case of type i), in the Predicate, and in VG\textsubscript{ii,i}.\]
In the Concomitant slot (type ii):

e.g. Ṛekaŋekąągi-musi o?domęse i?p1 giin6 - ne6
    Ṛekaŋekąągi-dual to-fish go his-wife with
    Axis:NP2  relr
    Concii:CP2

"Ṛekaŋekąągi went fishing with his wife"

(For further details, cf. 7.2.1.2.2.2. and 7.2.1.2.3.2., below.)

In the Predicate slot (type i):

e.g. do-nad6 - ne6 ts6
    her-sister with she
    Axis: NP2  relr "She (is) with her sister"
    P1:CP2

(For further details, cf. 7.1.1.1.1.3.(i), below.)

In the Periphery slot in Verb Group ii.i:

Only type i CP has been observed in this construction.

e.g. taa - ne6 j6
    calm with be
    Axis: Aj  relr
    Periph: CP2  H:Vbl
    VGii,i "to faint"

(For further details, cf. 4.1.2.2.1., above.)

6.2.6. Comparative Phrase.

6.2.6.1. Contrast.

The Comparative Phrase (CtvP) has the following contrastive-
identificational features:-

i) Its axis tagmeme slot is filled by a recursive NP2 or
   by a back-looped clause which has been nominalized.

ii) Its relator tagmeme slot is filled by -ve?mi, "more
than", or -pee? "like, same as".

iii) The relator is phonologically bound to the last constituent of the axis.

6.2.6.2. Variation.

Two types\(^{18}\) of Comparative Phrase are set up on the basis of internal structure:

\[
\text{CtvP}_i = +\text{Axis} : \text{NP}_2 \text{NomCl} + \text{relr} : \text{-ve?Mfi} "more than"
\]

\[
\text{CtvP}_{ii} = +\text{Axis} : \text{NP}_2 \text{NomCl} + \text{relr} : \text{-pee?} "same as, like"
\]

6.2.6.2.1. Comparative Phrase Type \(i\): -ve?Mfi.

The structure of this phrase type is as indicated in the formula in the preceding paragraph.

With NP filler of the Axis slot:

1) gi?ith6 jij6ag6 ja6n6 - ve?Mfi d6?j6o that big child more-than he-runs

\[\text{Axis: NP}_2 \text{ relr} \]

\[\text{CtvP}_i \]

"He runs more than that big child"

ii) pi - ve?Mfi tsein66? t6f you more-than tall he

\[\text{Axis:NP}_2 \text{ relr} \]

\[\text{CtvP}_{i} \]

"He (is) taller than you"

With Nominalized Clause filler of Axis slot:

1) do?mit66 - ve?Mfi da?mit6 she-eat more-than he-eat

\[\text{Axis:NomCl relr} \]

\[\text{CtvP}_i \]

"He eats more (i.e., more often) than she eats"

\(^{18}\) cf. footnote 13 to section 6.2.5.2., above, on establishment of separate types.
ii) kupi či?vu dójoo? - ve?apii
quickly he-walk she-run more-than
Axis:NomCl reJr  "He walks more
CtvP₁ quickly than she runs"

6.2.6.2. Comparative Phrase Type ii:19-pee? 20
The structure of this phrase type is as indicated in
6.2.6.2., above.

With NP filler of Axis slot:

i) maevid6 - pee? na-ke?jö
wild-boars like they-become
Axis:NP₂ reJr  "They become like wild boars"
CtvP₁i

ii) iteesvi?6 - pee? gi-ke?jo
aguaie-tree like he-become
Axis:NP₂ reJr  "He becomes like an aguaie tree"
CtvP₁i

With Nominalized Clause filler of Axis slot:

i) do?mitaá-pee? da?mita
she-eat like he-eat
Axis:NomCl reJr  "He eats like she eats"
CtvP₁i

---

19. This type of Comparative Phrase is to be distinguished from the comparative clause (not a separate type) occurring when the Predicate is filled by hiivå? (a predicative adjective).

  e.g. kedá Vìi? atyáda?amí hiivå?-mi tsa
    red tree-leaves like rec he past
  "He was like the red leaves of the atyáda tree" (cf. Lexicon)

20. -pee? has also been observed, with apparently the same meaning as -pee?.

  e.g. hámaaia?-pee?
    hammock like "like a hammock"

However, this is of very rare occurrence.
ii) kapanda vitaena pee phadipaa
choro cry-out like you-sing
Axis:NomCl relr
CtvPii "You sing like the choro monkey calls"

6.2.6.3. Distribution.
The Comparative Phrase is distributed in the Clause, where it fills the Comparative slot.

e.g. no-jigi ve?mai dodo?phaaavd
my-husband more-than he-work
Axis:NP relr "He works more than my husband"

6.2.7. Conditional Phrase.

6.2.7.1. Contrast.
The Conditional Phrase (CondP) has the following contrastive-identificational features:

i) Its axis tagmeme slot is filled by a recursive NP or by a back-looped clause which has been nominalized.

ii) Its relator tagmeme slot is filled by -tshì, "conditional marker".

iii) The relator is phonologically bound to the last constituent of the axis.

6.2.7.2. Variation.
CondP = +Axis:NP/NomCl +relr: -tshì "conditional marker"
With NP filler of Axis slot:
This is attested far less frequently than NomCl fillers of the axis slot in Conditional Phrases. The following ex-
ample has been noted:

**xuukhoótsi - tshí - vá nii nödo?phaavá**

**Sunday**

if fut not they work

Axis: **Np** relr

"If it is Sunday they won't work"

CondP

With Noninalized Clause filler of Axis slot:


much father fish do if fut well we eat

Axis: **NomCl** relr

"If my father catches a lot of fish, we shall eat well"

CondP

ii) **nii fa?va-tshí - vá no?pi**

not rain if fut I-go

Axis: **NomCl** relr

"If it does not rain, I will go"

CondP

It will be recognized that the above are examples of "simple" conditionals. Contrary-to-fact conditionals also occur, though these do not form a separate type of conditional phrase, as the differences are to be found at clause level -- though they are for convenience listed hereunder, with examples.

i) "Simple" Conditional Phrases may be and frequently are followed by the clitic **-vá**, "future".

ii) Contrary-to-fact conditionals, however, have to be followed by the clitic **{-ma?}"unrealized"**, which becomes **-ma** before the following clitic. **-ma** in turn may be followed by one of the clitics **-mf "recent past" or -?pe**

---

21 cf. 6.2.5.2.2., above, where it is generally glossed as "without". (Type ii Concomitant Phrase)
"remote past". The clitic -va "future" may not occur here (a logical, rather than a purely linguistic, restriction).

Examples of contrary-to-fact conditionals:

i) With NP filler of Axis slot:

\[ xuukho6tst-tshi - ma - mi ni1 nodo?phaav\]

Sunday, if unreal-rec not they-work

Axis:NP re1r

CondP igned past

"If it had been Sunday, they would not have worked"

ii) With Nominalized Clause filler of Axis slot:

\[ amepuu? ad?pe ec?phi kha-tshi - ma - mi ka3o? va?mit\]

much father fish do, if unreal-rec well we-eat

Axis:NomCl re1r igned past

CondP

"If my father had caught a lot of fish, we would have eaten well"

6.2.7.3. Distribution.

The Conditional Phrase is distributed in the Clause, where it fills the Conditional slot.

E.g. \[ c\'ane tuo?v\'emu k\'avo? - tshi-va va?mit\]

mother fari\'a toast if fut we-eat

Axis:NomCl re1r

Cond:CondP

"If mother toasts the fari\'a (grated manioc), we will eat"

6.2.8. Adjunct Phrase.


The Adjunct Phrase (AP) has the following contrastive-identificational features:

i) Its axis name slot is filled by a back-looped clause
which has been nominalized.

ii) The verb in the Predicate slot in the nominalized clause typically bears the inchoative suffix (cf. 3.1.2.3.2., above).

iii) The relator tagmeme slot is typically filled by -tsɨ, "Adjunct Phrase marker".22

iv) The relator is phonologically bound to the last constituent of the axis.

6.2.8.2. Variation.

\[ \text{AP} = +\text{Axis:NomCLR} +\text{relr: -tsɨ "Adjunct Phrase marker"} \]

The restriction on the nominalized clause is that the verb manifesting its Predicate obligatorily bears the inchoative marker when the relator is omitted, and typically bears it when the relator is present.

The relator or the inchoative is on occasion omitted, but at least one of these must occur, and in the vast majority of cases, both do.

\[ \text{e.g. i) } \text{papia}\text{-ntsɨ } \text{ foo pi-κha} \]

\[ \text{waking-up adct fire you-make} \]

\[ \text{Axis: NomCl relr} \]

\[ \text{AP} \]

\[ \text{"Waking up, make a fire!"}  \]

\[ \text{ii) } \text{do-ntsɨ?-kak}^24 \text{ } \emptyset \text{ do?pi} \]

\[ \text{she-carry-incho } \text{she-go} \]

\[ \text{"Beginning to carry (it),} \]

\[ \text{she went} \]

\[ \text{Axis: NomCl relr} \]

\[ \text{AP} \]

22 Lack of aspiration here distinguishes this relator from the Conditional marker, 6.2.7.1., above.

23 This gloss is parallel to some that may be obtained for Resígaro clauses containing a Concomitant Phrase whose axis
iii) no?mitêkâ - tsâ no?pf
   I-eat-incho, act I-go
   "Eating, I go"
   Axis:NomCl relr OR "After eating, I go"

A more specific way of expressing the temporal relation implied in the second gloss, above, is to be found in the Directional Phrase construction, in 6.2.9.2.1., below.

iv) no?mitêkâ - ã no-tsâ?
   I-eat-incho I-come
   "Eating, I come"
   Axis:NomCl relr OR "After eating, I come"
   OR "I come from eating"

No difference is found between the use of this construction with the verb tsâ?(nu) in the Predicate slot of the matrix clause and the use of the verbal suffix -kï (cf. 3.1.2.4.2.).

6.2.8.3. Distribution.

The Adjunct Phrase is distributed in the Clause, where it fills the Adjunct slot.

e.g. phaa? - mi oo hâmo? gi-khâf-tsâ gi-khâ
   inter- rec int heat he-do act he-eat
   Axis:NomCl relr

slot is filled by a NomCl and with -mô as relator. However, the Resâgaro structure is clearly distinct, as indicated throughout this section and in section 6.2.5.2.1., above.

Since nominalization reduplicates the final vowel of the verbs, but the addition of a suffix with a reduplicated vowel (Inchoative) causes deletion of a geminate vowel in one of the two syllables involved (generally the first), the nominalized and non-nominalized forms become homophonous. However, unambiguous forms occur when the Inchoative is omitted, and this permits interpretation of homophonous forms.
"Then heating (it), he ate (it)"

On inter-sentential relator phaa? (here glossed "then"),
cf. 7.2.1.2.6.1., below.

The Adjunct Phrase is also distributed recursively in
the axis slot of the Directional Phrase. For further
details, cf. 6.2.9.2.1., below.

6.2.9. Directional Phrase.

6.2.9.1. Contrast.

The Directional Phrase (DP) has the following contrastive-
identificational features:-

i) Its axis tagname slot is filled by a recursive N\textsubscript{2},
by a recursive Adjunct Phrase in which the axis slot is
filled by a nominalized clause, by a back-looped clause
which has been nominalized, or by an interrogative.

ii) Its relator tagname slot is filled by -kh\textsubscript{o} "from",
-k6o "to" or -gikh\textsubscript{o} "out of".

iii) The relator is phonologically bound to the last con-
stituent of the axis.

6.2.9.2. Variation.

Three types\textsuperscript{25} of Directional Phrase are set up on the basis
of internal structure:--

\[ \text{DP}_1 = \text{+Axis:NE}_2/\text{AP/NomCl/ig +relr: -kh}\text{o} "from" \textsuperscript{26} \]

\textsuperscript{25} cf. footnote 13 to section 6.2.5.2., above on justification
for establishment of types.

\textsuperscript{26} These phrase-level directional relators must be distinguished
DP_{ii} = +Axis:NP/ig +relr: -k6o "to"
DP_{iii} = +Axis:NP/ig +relr: -gik7e "out of"

6.2.9.2.1. Directional Phrase Type i: -kh6.

The structure of this phrase type is as indicated in the
formula in the preceding paragraph.

With NP filler of Axis slot:

i) gi?ith6 jijdag  ja9na -kh6 -mi do?pi
   that big child from rec she-go
   Axis: NP relr past

   "She went from that big child"
   DP_{i}

ii) jak9de -kh6 no-ts?6?
    field from I-come
    Axis: NP relr
    "I come from the field"
    DP_{i}

With AP filler of Axis slot:

i) no?mitah -tsi -ni -kh6 aopit6
   I-eat act rec from I-go-to-bed
   Axis: NonCl relr past
   "After eating, I go to bed"27
   DP_{i}

ii) mitsh6 gi?ah -tsi -ni -kh6 da?pit6
    get-up he-be act rec from he-bathe
    Axis: NonCl relr past
    "After getting up, he has
     a bath"
    DP_{i}

From the word-level directional verbal suffixes (Order 3),
-ke6 "to go to" and -ki "to come from", cf. 3.1.2.4., above.

27When an AP or a NonCl fills the axis slot in DP type i,
the resultant form carries a temporal, rather than a dir-
extional, meaning. However, the same cover term is re-
tained, for structural reasons.
With Nominalized Clause filler of Axis slot:

e.g. gi-pedo-aa28 khé ẹke? tsa
he-lick rest, from get-better he
Axis: NomCl rlr "From (after) licking (it), he got better"

With Interrogative filler of Axis slot:

e.g. hemë -khó gi-tsé?
where from he-come
Axis: ig rlr "Where does he come from?"

6.2.9.2.2. Directional Phrase Type ii: -kóo.
The structure of this phrase type is as indicated in
6.2.9.2., above.

With NP filler of Axis slot:

i) gi?ithé ji’aaqí jaarna-kóo - mi do?pi
that big child to rec she-go
Axis: NP rlr past
"She went to that big child"

ii) jahâde-kóo no-tsá?
field to I-come
Axis: NP rlr "I come to the field"

The lack of a nominalized clause filler of the axis
slot for type ii Directional Phrases may be attributable
to the availability of the complex Verb Piece (sub-type i)
construction to convey relations of the type exemplified by
"I go to eat" (cf. 5.1.2.2.1.), and the availability of the

28 -aa2 < -ǎ "restrictive" (cf. 3.2.2.2.4.) The occurrence of
this nominal suffix here confirms that the embedded
clause is considered as truly nominalized.
Purposive Phrase for "I go in order to eat" (cf. 6.2.2.), or more fundamentally -- it may be because -k60 (unlike -kh6) is not used in a temporal sense.

A relativized clause may occur in the NP in the axis slot of the DP.

e.g. gi?p1 te?i?i?aavi-nä jo-vi-koomi-k6o
he-go river-bank on is-Srel village-to

A relativized clause may occur in the NP in the axis slot of the DP.

e.g. gi?p1 te?i?i?aavi-nä jo-vi-koomi-k6o
he-go river-bank on is-Srel village-to

"He goes to the village which is on the river bank"

With Interrogative filler of Axis slot:

e.g. he?i]?-k60-më ja?në tsonápi
where to rec child she-take

"Where did she take the child to?"

6.2.9.2.3. Directional Phrase Type iii: -gikhé.

The structure of this phrase type is as indicated in 6.2.9.2., above.

With NP filler of Axis slot:

river out of withdraw I-be

"I come out of the river"

ii) ha?á vâfoomë gikhé ha?á matchivaa?náhaahi mamëmi i-khú
your inside out of your sins abandon you-do

"Out of your hearts abandon your sins!"
With Interrogative filler of Axis slot:

e.g. hë?ee - gikhë - mì covë ha?vand
where(near) out of rec howler fall
Axial: ig relr past monkey
DP III                       "Where did the howler monkey
                             fall out of?"

6.2.9.3. Distribution.

The Directional Phrase is distributed in the Clas and
in the Numeral Phrase. Sub-classes of DP are set up on
the basis of this distribution.

6.2.9.3.1. Sub-class 1.

This consists of three DP's:

\[ si^{29} - ocf - khë \]
other hand from
\[ B:NnSt Sx1:clf ]
axial:NP relr
\[ DP \]

\[ si - tu?ë - khë \]
other foot from
\[ B:NnSt Sx l:clf ]
axial:NP relr
\[ DP \]

\[ 29si - is clearly a noun stem in Resigaro, even though the
English gloss "other" is not. It also occurs elsewhere,
with the appropriate classifier in each case.\]

\[ e.g. si - koomì \]
other village "the other village"
\[ B:NnSt Sx l:clf ]

\[ si - pekë \]
other day "the other day" (i.e., "the day after
tomorrow")
\[ B:NnSt Sx l:clf ]
These are distributed in Numeral Phrase type ii, sub-types ii and iii (cf. 6.1.3.2.2., above).

6.2.9.3.2. Sub-class 2.
This consists of all other Directional Phrases, which are distributed in the Clause, where they fill the Directional slot. Two sub-groups are established on the basis of this distribution.

6.2.9.3.2.1. Sub-class 2.1.
This consists of all sub-class 2 Directional Phrases with an NP or an interrogative in the axis slot. The members of this sub-class group are distributed in Directional tagmeme type i (which only occurs when the Predicate slot in the clause is filled by a verb of motion).

\[ \text{e.g.} \quad \text{tali-kâô do-tsâ?} \]
\[ \text{river to she come} \]
\[ \text{Axis: NP}_2 \text{ relr} \]
\[ \text{"She comes to the river"} \]

6.2.9.3.2.2. Sub-class 2.2.
This consists of all sub-class 2 Directional Phrases with a NomCl or AP in the axis slot. The members of this sub-class group are distributed in Directional tagmeme type ii (which has no co-occurrence restriction such as that in the case of type i).
6.2.10. Locative Phrase.

6.2.10.1. Contrast.

The Locative Phrase (LP) has the following contrastive-identificational features:

i) It may consist of an Axis-Relator phrase, or of a locative word or an interrogative, alone. When consisting of the former, it has the following additional features:

ii) Its axis tagmeme slot is filled by a recursive NP or by a back-looped clause which has been nominalized.

iii) Its relator tagmeme slot is filled by one of the following clitics:

   i) -hi1(്പ6) "on, above"  
   v) -gi "in"

   ii) -nāpī "under"  
   vi) -nā "in"  

   iii) -a?nā "beside"  
   vii) -gikō "inside"

iv) The relator is phonologically bound to the last constituent of the axis.

30 -hivō also occurs on a few occasions, with the meaning "in front of". (cf. Verb Group ii.1 -- 4.1.2.2.1.

31 For the difference between this and the preceding relator, see examples below. It may be that -gi is basically used in clauses indicating motion, whereas -nā is basically used in clauses indicating states. -nā may thus be better rendered as "at".
6.2.10.2. Variation.

Two types of LP are set up on the basis of internal structure:

\[ \text{LP}_i = +\text{H:loc word/interrogative} \]

\[ \text{LP}_{ii} = +\text{Axis:NM/NomCl} +\text{relr: set of Loc-relators} \]

\( \alpha \) reads: the choice of NP or NomCl is dependent on the choice of locative relator. cf. 6.2.10.2.2., below.

6.2.10.2.1. Locative Phrase Type i.

The structure of this phrase type is as indicated in the formula in the preceding paragraph.

i) Locative filler.

e.g. ve?e gi-tsâ?  
here he-come  "He comes here"

\[ \text{H: loc} \]

\[ \text{LP}_i \]

nee tsa

there, he  "He (is) there"

\[ \text{H: loc} \]

\[ \text{LP}_i \]

ii) Interrogative filler.

e.g. hene tsa

where, he  "Where (is) he?"

\[ \text{H: is} \]

\[ \text{LP}_i \]

6.2.10.2.2. Locative Phrase Type ii.

The structure of this phrase type is as indicated in the formula in 6.2.10.2.1, above. Cases of nominalized clauses filling the axis slot have only been observed to co-occur
with the relator -gik6. (cf. section (vii), below.) Thus, all other relators are illustrated only with NP fillers of the axis slot.

Following the convention established in 6.2.5.2., above, seven sub-types of LPii are set up, each sub-type corresponding to a different filler of the relator slot. It is considered unnecessary to give two examples in every case, if the meaning and form is sufficiently clear with one.

1) Sub-type i: -hi1(p6), "on, above".

i) gi?ithé ji?ãahé pagia6tsihá - hi1 ts6
that big blanket on she
Axis: NP2 relr
LPii,i "She (is) on that big blanket"

ii) k6?piidá paniitsi - hi1(p6)
bird house above
Axis: NP2 relr "The bird (is) above the house"
LPii,i

ii) Sub-type ii: -nâapí, "under".

pagia6tsihá - nâapí ts6
blanket under she "She (is) under the blanket"
Axis: NP2 relr
LPii,ii

iii) Sub-type iii: -a?nã, "beside". 32

32 There are two other forms which are occasionally glossed as "behind". However, structural analysis indicates that these are in fact examples of sub-types v and vi of Loc-
iv) Sub-type iv: -ine, "in front of". 33

panitsi - ipe tsô
house  in front of she "She (is) in front of the house"  
Axis: Np2 relr  
LP ii.iv

v) Sub-type v: -g1, 34 "in".

tsä-mi têbahâ - g1 kanâmâ
he rec jungle in get-lost "He got lost in the
Axis: Np2 relr  
LP ii.v

"Beside"

As indicated in sub-type iii, above, this relator may follow a noun bearing the classifier -?aadv, "side, edge", when the resultant meaning is "beside".

e.g. teë?i -?aadv - g1 mô?vyu
river-side in I-walk "I walk beside the river"  
Axis: Np2 relr  
LP ii.v  OR: "I walk on the riverside"

"Temporal" use

-g1 may combine with an NP consisting of temporal nouns, with a temporal meaning.

ative Phrase type ii, and relevant examples are to be found in the appropriate sections.

33 There is no separate relator for "behind". This is indicated in a structure using -nd, cf. sub-type vi, below.

34 This relator is homophonous with the Instrument marker -- cf. 6.2.4., above.
"My mother died in the other year" (i.e., "last year")

vi) Sub-type vi: -nâ, "in, at".

This relator has a more widespread meaning and use than the preceding relator, as the following examples make clear.

\[
\begin{array}{c}
pokoconoonâ-nâ tsâ \\
\text{doorway, in she} \\
\text{Axis: NP, relr} \\
\text{LP ii. vi} \\
\end{array}
\]

"She (is) in the doorway"

As indicated in (iii) and (iv), above, this relator may indicate other locative relations, when co-occurring with certain items in the NP in the axis slot.

"Beside"

\[
\begin{array}{c}
totl-aavi-nâ tsâ \\
\text{river-side, in that-village} \\
\text{Axis: NP, relr} \\
\text{LP ii. vi} \\
\end{array}
\]

"Beside the river (on the river-bank) (is) that village"

In this case there is no obvious difference between the use of -nâ and the use of -gâ, illustrated in the previous subtype.

"Behind"

\[
\begin{array}{c}
panitsi-vâmi-nâ tsâ \\
\text{house, back in she} \\
\text{Axis: NP, relr} \\
\text{LP ii. vi} \\
\end{array}
\]

"She (is) behind (in back of) the house"

35 It is not -nâ that means "beside" or "behind", but the combination of -nâ with other elements that gives these meanings.
As well as its use in obviously locative phrases (as in the above examples), this locative marker is also used in phrases which are not glossed as locatives in Spanish or English, though they refer to situations which are conceptualized as containing a locative relation in Resigaro.

e.g. vakhájakátsatá  gi - ná
sickness  in  him
Axis;NP  relr  in him  (i.e., "He is sick")

vii) Sub-type vii: -gikó, "inside".36

Though "in" is occasionally the best English gloss, the difference between this relator and the preceding two, and the appropriateness of the gloss "inside", is clearly seen in the examples which follow. With this relator, both the NP and the Nominalized Clause may occur in the axis slot of the Locative Phrase.

With NP filler of Axis slot:

i) te6?1 -gikó  ts6
river  in  she  "She (is) in the river"  (i.e., in the water, not on it)
In all the above cases, -gikó is clearly a Locative relator. The following example raises the question whether it also occurs (or a homophonous relator occurs) in a Directional phrase.

**e.g.** teé?i-gikó móka?phaavó
    **river, in** I-enter    "I enter (go into) the water"
    Axis: NP₂ reI même iavnó

However, this appears to be no more than a consequence of the English gloss "I go into the water", overcome in the alternative gloss, "I enter the water". This is closer to the informant's Spanish gloss, "Entro en el agua". In both cases (and in the Resigaro) the phrase indicates the location in which the speaker entered. The different English gloss in this case is merely a consequence of the presence of a motion verb in the Predicate of the clause in which this LP occurs.
With Nominalized Clause filler of Axis slot:

e.g. Isabeel-mi Maanoel tshëni maa?má da?mitåa-gikë
Isabel rec Manuel see cassava he-eat in past
Axis:NomCl relr
LP:i.ii.vii

"Isabel saw Manuel when he ate (the whole time he was eating) cassava"

This construction is used to refer to two co-extensive, as opposed to concurrent, events. This latter is conveyed (as was indicated in 6.2.1.2., above) by the Dative Object Phrase:

Isabeel-mi Maanoel tshëni maa?má da?mitåa-kë
Isabel rec Manuel see cassava he-eat dat past
Axis: NomCl relr
DOP

"Isabel saw Manuel while he was eating cassava"

The difference between the two is that in the first case (co-extensive -- LP), Isabel saw the whole process from the beginning, whereas in the second, the DOP fills a function similar to the Imperfect tense of verbs in several languages of Latin origin -- setting the scene, against which an action occurs -- i.e., in the latter case, Isabel did not necessarily see the whole process. (cf. other examples in 6.2.1.2., above.

At this point it is also appropriate to indicate the difference between the above two constructions and the nominalized clause functioning as Object:
Isabeel reo Manuel see cassava he-eat
S:NP2 DummyO:NP2 P:VP Extrapol:NomCl

"Isabel saw Manuel eat cassava"

Here, no temporal relation is specified at all. (For extraposition, cf. 7.2.1.2.3., below.)

6.2.10.3. Distribution.
The Locative Phrase is distributed in the Clause, where it may fill the Predicate slot in non-transitive clauses, or the Locative slot in other clause types. Since all LP's (of both structural types) may occur in either clause-level tagmemes (subject to possible semantic restrictions), distribution subclasses are not established.

In Locative slot.

e.g. Peedr̃ Imá hamak̃a-gik̃ Peter sleeps hammock in

Axis:NP2 reir
L:LP

"Peter sleeps in the hammock"

In Predicate slot.

e.g. Peedr̃ hamak̃a-gik̃ Peter hammock in

Axis:NP2 reir P:LP

"Peter (is) in the hammock"