A Grammar of Resígaro

by

Trevor R. Allin

Bound in three volumes

Volume I

Summer Institute of Linguistics
A GRAMMAR OF RESIGARO

by

Trevor Reginald Allin

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1976
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.

Supervisor
ACKNOWLEDGEMENTS

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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).

<table>
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<tr>
<th>Abbreviation</th>
<th>Meaning</th>
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<td>Adjunct tagmeme</td>
</tr>
<tr>
<td>A-P</td>
<td>Axis-relator phrase</td>
</tr>
<tr>
<td>adst</td>
<td>Adjunct Phrase marker</td>
</tr>
<tr>
<td>Adv</td>
<td>Adverb</td>
</tr>
<tr>
<td>AdvE</td>
<td>Adverbal Emphatic tagmeme</td>
</tr>
<tr>
<td>adv</td>
<td>adverbial emphatic</td>
</tr>
<tr>
<td>Aj</td>
<td>Adjective</td>
</tr>
<tr>
<td>AP</td>
<td>Adjunct Phrase</td>
</tr>
<tr>
<td>Att</td>
<td>Attributive tagmeme</td>
</tr>
<tr>
<td>aug</td>
<td>augmentative suffix</td>
</tr>
<tr>
<td>Aux</td>
<td>Auxiliary</td>
</tr>
<tr>
<td>aux</td>
<td>auxiliary indicator</td>
</tr>
<tr>
<td>B</td>
<td>Base</td>
</tr>
<tr>
<td>bas</td>
<td>basic filler of periphrastic slot in Vg.</td>
</tr>
<tr>
<td>Ben</td>
<td>Benefactive tagmeme</td>
</tr>
<tr>
<td>ben</td>
<td>benefactive marker</td>
</tr>
<tr>
<td>BP</td>
<td>Benefactive Phrase</td>
</tr>
<tr>
<td>C</td>
<td>any consonant</td>
</tr>
<tr>
<td>C.L.</td>
<td>complete list</td>
</tr>
<tr>
<td>Cl</td>
<td>Clause</td>
</tr>
<tr>
<td>cl</td>
<td>class</td>
</tr>
<tr>
<td>clsfr</td>
<td>classifier suffix</td>
</tr>
<tr>
<td>CO</td>
<td>Causative Object tagmeme</td>
</tr>
<tr>
<td>Conc</td>
<td>Concomitant tagmeme</td>
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<td>Conditional Phrase</td>
</tr>
<tr>
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<td>connector</td>
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<tr>
<td>CP</td>
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<tr>
<td>cstev</td>
<td>causative</td>
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<tr>
<td>Ctv</td>
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</tr>
<tr>
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</tr>
<tr>
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<tr>
<td>dat</td>
<td>dative marker</td>
</tr>
<tr>
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</tr>
<tr>
<td>Dem</td>
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</tr>
<tr>
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<td>derivator</td>
</tr>
<tr>
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<td>desiderative clitic</td>
</tr>
<tr>
<td>din</td>
<td>diminutive suffix</td>
</tr>
<tr>
<td>dir</td>
<td>directional marker</td>
</tr>
<tr>
<td>ditr</td>
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<tr>
<td>dl</td>
<td>dual</td>
</tr>
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<td>DOP</td>
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<tr>
<td>DP</td>
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</tr>
<tr>
<td>dub</td>
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<tr>
<td>emph</td>
<td>emphatic morpheme</td>
</tr>
<tr>
<td>excl</td>
<td>exclusive</td>
</tr>
<tr>
<td>extrap</td>
<td>moved by extraposition</td>
</tr>
<tr>
<td>f</td>
<td>feminine</td>
</tr>
<tr>
<td>frus</td>
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<tr>
<td>fut</td>
<td>future clitic</td>
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<tr>
<td>H</td>
<td>Head tagmeme</td>
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<tr>
<td>I</td>
<td>Instrument tagmeme</td>
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<tr>
<td>Ig</td>
<td>Interrogative tagmeme</td>
</tr>
<tr>
<td>ig</td>
<td>interrogative morpheme</td>
</tr>
<tr>
<td>IgCl</td>
<td>Interrogative Clause</td>
</tr>
<tr>
<td>ImpCl</td>
<td>Imperative Clause</td>
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<td>impTV</td>
<td>Imperative</td>
</tr>
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<td>inclusive</td>
</tr>
<tr>
<td>incomp</td>
<td>incompletative clitic</td>
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<tr>
<td>instr</td>
<td>instrument marker</td>
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<td>Intensifier tagmeme</td>
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<tr>
<td>int</td>
<td>intensifier morpheme</td>
</tr>
<tr>
<td>intent</td>
<td>stated intension clitic</td>
</tr>
<tr>
<td>Inton</td>
<td>Intonation Contour</td>
</tr>
<tr>
<td>intr</td>
<td>intransitive</td>
</tr>
<tr>
<td>IP</td>
<td>Instrument Phrase</td>
</tr>
<tr>
<td>L</td>
<td>Locative tagmeme</td>
</tr>
<tr>
<td>Lim</td>
<td>Limiter tagmeme</td>
</tr>
<tr>
<td>LP</td>
<td>Locative Phrase</td>
</tr>
<tr>
<td>M</td>
<td>Modifier tagmeme</td>
</tr>
<tr>
<td>m</td>
<td>masculine</td>
</tr>
<tr>
<td>N.O.C.</td>
<td>may omit classifier</td>
</tr>
</tbody>
</table>

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Neg  Negative tagmeme
nlzr nominalizer
nmb number suffix
Nn Noun
Nom nominalized
NonCl Nominalized Clause
NP Noun Phrase
Nuc syllable nucleus
Num Numeral
NumF Numeral Phrase
O Object tagmeme
Orel Object relativization
P Predicate tagmeme
Periph Periphery
Phon Phoneme
pl plural
Pn Pronoun
PP Purposive Phrase
Ppsv Purposive tagmene
ppsv purposive marker
priv privative
prog progressive clitic
PROP proposition
px prefix
Q Quantifier tagmeme
QQ Quotative Object tagmene
R restricted
r preceding tagmeme(s)
may be repeated
rec recent past
past
recip reciprocal
reflex reflexive
RelCl Relativized Clause
relr relator
ren remote past
past
rep reportative clitic
rest restrictive suffix
Rt Root
S Subject tagmeme
S.o. someone
sg singular
Snt Sentence
Sp. Spanish
Srel Subject relativization
St Stem
sthg something
sub-cl sub-class
sx suffix
Syll Syllable
T Temporal tagmeme
tns trans
tns tritransitive
tritr tritransitive
V any vowel
Vb Verb
VBPce Verb Piece
vd. voiced
VG Verb Group
vl. voiceless
vlasp voiceless aspirated
Voc Vocative tagmeme
voc vocative morpheme
VP Verb Phrase
1st p. first person
2nd p. second person
3rd p. third person

2. Symbols

[ ] phonetic brackets
// phonemic brackets
( ) brackets in tagmemic formule
{ } morphemic brackets
\h high tone (its absence indicates low tone)
\n nasalization
\r varies with (allophones of a morpheme)
x \rightarrow y x becomes y
x \rightarrow y x is derived from y
x\rightarrow y syllable boundary between x and y
x:y x is a slot; y is a class filling it
: is filled by

= consists of
+ obligatory
± obligatory or optional (depending on factors indicated)
±\pm obligatory or optional
\pm either x or y must occur, but not both
\pm z\pm x:y z is a syntagmeme consisting of tagmeme x:y, which occurs optionally
\pm indicates a relation between two or more parts of a formula, specified under formula
\pm x structural type 1
\pm x_1 distributional sub-class 1

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SOME RESIGAROS

From left to right: Adelina, Rosa, and Pablo Andrade Ocagane, and Alicia Ocagane (their mother), with two of Adelina Andrade's children.
0. INTRODUCTION

0.1. 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 Erillo Nuevo, respectively, on the banks of the Yaguaayacu river, a tributary of the Ampiyacu, which flows into the Amazon at Pobas. The location of these villages in 1972¹ is indicated in sketch map II.

In 1915, Whiffen estimated that there were about 1,000 Resigaros between the Muenane, the Nonuya and the Bora (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 Ocacane 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 Resigaros, but

¹A letter dated 9th August 1974 from my main informant, Pablo Andrade Ocacane, 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 Resigaros from Puerto Isango. There were also several other Bora speakers (e.g. Jihkyepa?) who said that they were Resigaros, 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-
ative purposes.

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 "Ricigaros", 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 Huinanes 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 1836" (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 Haynanes, Aifugas, ... the Xabuyanos, etc.") of the Huitoto tribe.

"Each of these sub-tribes has its own chief, called a capitán or tuchaus, 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 naiveté 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.

C.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 Geographic 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 *Fojetik tiker* in August 1888. 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 Resigaro, these comments are reproduced here in detail, since they help us to evaluate more accurately the data for Resigaro 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 "Resigaro", 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 "Rochegoro" under "Some Vitoto Tribes of the Issa-Japora Watershed" (p. 207), though he elsewhere states that

"The 'Maymanos,' 'Rocageros,' and 'Yabuyanos' mentioned by Hardenburg as Vitoto 'sub-tribes or naciones,' are not Vitoto 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 gutteral, is the tongue spoken by the Resigaro group of tribes" (p. 48).

Whiffen contests the claim that the Vitotos 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>Muenane 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 internarry -- 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
Resigaro -- men, women, and children -- killed by this group (pp. 63-64).

0.2.3. Tessmann.

In his book published in 1930, Tessmann states,

"Über die Resigaro 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 Ohaina, Bora, Monuya und Muiname" (p. 583).

Tessmann's map (facing p. 816) shows the Resigaro further south than in Whiffen, just reaching down as far as the banks of the Putumayo, apparently along the banks of the Igará-paramá.

0.2.4. Rivet and Wavrin.

The only published article containing original data on the Resigaro 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 Resigaro, though frequent references are made to

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

² e.g. Moeurs et coutumes des indiens sauvages de l'Amérique du Sud, Payot, Paris, 1937;
À travers les forêts de l'Amazonie du Pacifique à l'Atlantique, Payot, Paris (et Mayenne), 1943;
Les indiens sauvages de l'Amérique du Sud; vie sociale, Payot, Paris (et Poitiers), 1946;
ot 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 savent ..." (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 ap-
 purtenance 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 39 Arawakan languages. The map at the end is a simplification of that found in Whiffen (facing p. 58), thus showing the Resigaros in a location earlier than that indicated in Tessmann (1930), and far from that obtaining immediately prior to 1954 (data on files of Summer 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.

vocabulary item 217: "petit, matao(o)tsà" for matshòì? tsà³
short he
"he is short"

vocabulary item 67: "court, tjàpì-kà" for tuutuu pi-khà
Cut you-do
"you cut"

vocabulary item 238: "il prend, okepi-kà" for oke? pi-khà
Grasp you-do
"you grasp"

³Details 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 prédéfixe 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,

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

A final "-k, -ke, -keh, -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 "-tzani" is also identified as augmentative. Both of these are errors.

"-tzani" is not a separate morpheme in the word in question, since the morpheme breaks and gloss are not as indicated:
Rivet and Wavrin have
"koto-tzani, avarə" for gi-notshai
he-be-stingy "he is stingy"

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

e.g. tsa-no-kəhə-ka "il toussé" for tsa-ni ehe? kə
he rec cough do
past "he coughed"

tətəpi-ka "court" ("short") is an error for

\[tuutuu\ pə-kə\]
cut you-do
"you cut"\(^4\)

This may also be the case with "-kə", though the only example given is confused, since no part corresponds to the second person singular glossed (though "\(nö(he)\)-" may be an allomorph of the third person plural ma-). 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.

\[hanakaka(ə)\niö(he)-kə\] "tu blesse\(s)"

for no̞kiri kainé[?] i - kə\(^5\)
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 -- tə(w)ə(w)pə-kə -- 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 fenigi "our father", though this particular possibility is less probable than that given above.

Another possible source of the phrase given is

khákakávátsí na-khú
fight-recip they-do "They do battle, they fight"

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

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

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

no-mote-k "il mange" for no?mitoki
     L-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. adiviwi(he)-k(i) "il vole" for adovigi "bird, he who flies"

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

0.2.4.2.  Resígaro Vocabulary.
The vocabulary contains 301 entries, listed according to the alphabetical 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 "home-made" variety, as recommended in Whiffen. The inconsistencies 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:

    hō̂etzê "bois" for itsitsê "firewood"

  ii) "dz", "mr̄n", "τ" and "r" for d

    "dz": w(h)ionzî "nombriel" for vo?phōdê "our novel"

    "mr̄n": udhr̄zê"shūki "fourui curuisine" for hudzêgi "curuisine

    "τ": hor̄œ̂nōe "genou" for ho?donān "knee"

    "r": hicreat̄zojí "rouge" for kedāvili?jovî "that

        which is red"

  iii) VhV, VhV, 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-to "fille" for noctê "my daughter"

---

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 Rosigaro 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 Rosigaro and that Wavrin's informants 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: r̄m̄(h)panihîn for daţam̄zi. Further, my informants were aware that the Spanish name for them is "Rosigaro".
"VhV": ew(h)éheki "étoile" for hiviigi "star"
"WVH": tomahatsi "coton" for tsomoatsi "cotton"
"WV": no(h)ō-dž(h)ah  "filé" for no?žaâni "my son"
"W": hēdrâ "sang" for iîdē "blood"
"W": kōwe "fleur" for gliyi "flower"
"WV": tōtsâ "nuage" for itshâ "cloud"

b) The same symbols are used to indicate different sounds.
   e.g. i) "h" for h, ë and vowel length (cf. above) — even in the same word:
      hahâ:ù "ciel" for há?ihî "sky"
      ii) "ë" for ts and t
      For ts: homâ(h)ãi "herbe" for hiniitsi "grass"
      For t: hēhëé "mouche" for hēttê "fly"
      iii) "dz" (or "dž") for d, ë, and ë
      For d: w(h)ē-podzi "nombril" for ve?phôdô "our navel"
      For ë: tadži(h)iî "manioc" for ka?iîgi "yucca"
      For ë: dzâhodze "cinq" for sé?osî "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) inâ(a)r"ô "femelle", inahâr"ô "femme"
      for inâadô "woman, wife"
      ii) homâ(h)iîi "herbe", hiniitsi "riz"
      for hiniitsi "grass"

7cf. Bora [tsa?ohtsi?], "five"
iii) ᕑ etiquette "nuage", ᕑ(e)tsa "pluie"  
for ᕑitskā "cloud"  
iv) kihēkī, kihē(he)ki "lune"  
for kōtskī "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-Wavrin vocabulary.

In spite of these problems of form and meaning, a thor-  
ough check of this vocabulary has been made in comparison with  
the lexicon I have compiled (cf. Appendix I, below) and the gram-  
natical 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) fōghīka "vent" for fōo gi-khā "he (it) blows"  
ii) matsā(a)kā "haricot" for matsikākī "peanut"  
iii) ketsedžohīki "feu" for ketshejōvīgi "that which burns"  
  etc.

Of the remaining 100 items, in 72 cases the Rosigaro 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. Resigaro-Arawakan Comparative Vocabulary.

This is detailed and thorough, clearly placing Resigaro 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 Resigaro data taken from Rivet and Mawrin as part of his evidence concerning "Proto-Arawakan and its Descendants". He shows a score of cognates, and concludes that Resigaro is "Proto-Northern" (cf. his diagram on p. 108). No original data on Resigaro 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 Resigaro (cf. 3:750, 5:385, 404, 6:247). According to the Handbook (6:247), Ortiz (1942 — not seen) refers to the "Resigaro" and doubts their relationship to the Huitotes.

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 Andoko, Bora (Miranya), Coeruna, Mucanu, Honoya, Ocaina, Orejon, Resigaro and Witoto (Witoto) tribes, whose languages are tentatively assigned to a single linguistic stock, the Witotoan."

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

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

de Castellvi and Espinosa Perez (1958) classify "Rosiggaro" as Macro-Arawak, subclassification: Central, and refer to correspondence with Rivet, who informed them that
"El Marqués de Wavrin 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 (1961:164) says that Igualada and de Castellvi (1940 — not seen) calculated about ten speakers of "Resigaro" or "Rejigaro" 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 Ocaino, 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 Ocaaina, 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 Ocaaina, 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. Corps.

0.3.2.1. Legends.

In Puerto Isango, Adelina Andrade Ocaaina told me twenty trad-
ditional 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 396 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.

0.2.2.2. 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 differ-
ent style) of the language, which Pablo could not always fully

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Adelina has a slight speech defect which results in almost con-
stant nasalization. S.I.L. member Miss Illo Leach, who has work-
ed in Adelina's village for many years, analyzing the Ocaina lan-
guage, has noticed this in Adelina's speaking of Ocaina (in which 
nasalization is onic) (Personal communication). However, I do 
not suspect anything as serious as a cleft palate, since Ade-
linha'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 
velum. None of the other informants had any such problems.
Rosa Andrade Ocayana 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 Lorch 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 Ruciaro 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 tagmemics.

0.4.1. The Three Hierarchies.

Tagmemics 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 tagme, which is distributed in a higher-level unit called a syntagme (Longacre 1964a:15n10).

A tagme 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 tagme at one level may be a syntagme at a lower level. Thus, the concept of levels is fundamental to tagmatics.

The lexical hierarchy has as its minimal unit the "lexeme" (Longacre 1964b), which is distributed in higher-level lexical units, called "L-syntagmes" by Longacre (1964b:20). The lexical hierarchy has not been developed in detail by tagmatics, 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 lan-
guage 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). 9

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 contractive-
identificational phonetic features.
From the point of view of the Variation node, the variant mani-
festations, or allophones, of each phoneme are described.
From the point of view of the Distribution node, the distrib-
ution 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 Distrib-
ution nodes be distinguished, a point which most tagemanticists
seen to have failed to realize, if one is to judge from published

9 These 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 syn-
tagnatic.
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) hyper-groupings not part of the primary division." (p. 16)

"TYPES AND CLASSES. Use has already been made of the terms 'types' and 'classes' in reference to structures at each level. Types are enically 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, "contrastive 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) mode. 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.  

Nevertheless, other tagmemicists have continued to fail to

10 I view contrast mode as not being on a par with variation and distribution modes, since aspects of variation and distribution are in themselves contrastive and identificational.

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

It may be argued that this mode 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 Lamani, where he ostensibly presents his material in terms of the three nodes throughout, Trail first includes distribution under the contrast mode, then subclassifies 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") mode of the noun word he says:-

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

Thus, on p. 139, Trail's description of the distribution mode 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 Bendor-Samuel, though incorporated by him into a different theoretical framework (1963:61).

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 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 Trail (and others), we have the possibility of nine "sub-classes" of

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11 Bredt has made use of this terminology within the context of tagmatics (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.

12 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 Pride (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 tagmene at different levels, and the adoption of Longacre's "syntagmen" to replace "hymptagmen", 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 Rosigaro,
on the contrary only serving to confuse the picture.

0.4.3. Levels.
Fundamental to the distinction between Structure and Distrib-
ution is the concept of levels, since structures typically con-
sist 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 Rosigaro: at word level, two
types and six sub-types of Noun word are set up on the basis
of internal (structural) differences. Traditional tagmemic
practice would have us trace back these 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 conse-
quence 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 re-
dundancy throughout the description, by repeating the same in-
formation many times.

In terms of the Rosigaro example given above, sub-classifi-
cation 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 80-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'ejja 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

13 There 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] l1a = + Nuc:Vb nuc l1a ....
Vb [i.e., VP] l3 = + Nuc:Vb nuc l3 ...."

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

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

"Vb nuc l1a = + H:vb l1 ....
Vb nuc l3 = + H:vb l3 ...."

etc. (pp. 237-8)

At word level, the formulae are repeated:

"vb l1 = + Base: vb stem l1 ....
vb l3 = + Base: vb stem l1 [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 l1 = + 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 statable 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 those 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 formulae at any given level -- significant details are easily overlooked by the reader, and generalisations 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-tags") -- 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 sub-classes 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
         ↑              (sub-classes
 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

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15 A practice long accepted by tagmemicists 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 Resigaro.)

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.\textsuperscript{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 reflects 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 distribution 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

\textsuperscript{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 distribu-
tional 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 tagnemic des-
cription 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 tagnemic 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 tagnemics 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 tagnemics 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 Resigaro 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.
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 node [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 Loco (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.

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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
O. 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 tagmemicists 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, Borman (pp. 45-59)).
In the present description, it has been thought preferable to reduce this further to the original format of the three modes (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
PHONEME 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 phoneme are set up on a structural basis — i.e., according to certain phonetic characteristics. Classes of phoneme are set up on the basis of distribution in the syllable.

1.1. Contrast.
The contrastive-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 phoneme 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 1.1. Contoid Matrix.

Outside the system: /r/, /x/ (cf. 1.2, 1.5, below).

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Indicated in 0.4.2. and 0.4.3., above. The fact that in Rosi-garo 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 to phonemics, with the phonetician starting at phonemics." (pp. 77-78) cf. also K.L. Pike, 1947:13bn-14an.

Contoide 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.

\[ /p^h/, /t^h/, \text{ etc. are for convenience subsequently written ph, th, etc.} \]
Front  Central  Back
High (spread)  i  u
Mid (spread/round)  e  o
Low (neutral)  a

Table 1.2. Vowoid Matrix.

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

1.2. Variation.

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

\[ \text{Phon}_1 = \text{All Contoids} \]
\[ \text{Phon}_{ii} = \text{All Vocoids} \]
\[ \text{Phon}_{iii} = \text{Suprasegmentals} \]

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: Contoids.

In Resigaro there are 30 contoid 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:

\[
\text{Phon}_{i,i} = \text{Plosive} \\
\text{Phon}_{i,ii} = \text{Affricate} \\
\text{Phon}_{i,iii} = \text{Fricative} \\
\text{Phon}_{i,iv} = \text{Nasal}
\]

In addition to these 30 contoid 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

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\(^5\)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{w}/ 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.

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

/ph/-/p/ phi’gif "amatto tree" / pi’gif "anteater"
/ph/-/b/ pho’kho’tsi ‘fan’ / bo’ot’hi ‘plate’
/ph/-/f/ pho’gikhu ‘he agitates’ / fo’gikhu ‘he blows’
/ph/-/th/ hada’pho’tsi’hi ‘song’ / a’miho’tsi’hi ‘kitchen’
/ph/-/kh/ hada’pho’tsi’gi ‘a singer (m)’ / tho’kho’tsi’i ‘pestele’
/ph/-/m/ nophu ‘I tread’ / nomu ‘I bite’

1.2.1.1.2. /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’ot’hi ‘plate’
/p/-/f/ phi’ni ‘your saliva’ / f’ine’ ‘our lake’
 /ph'-tsi’gi ‘frog’ / fo’gikhu ‘he blows’
/p/-/t/ po’vu ‘you are getting yourself wet’ / pito’vu ‘you take (sthg) out’
/p/-/k/ gipa’na ‘his house’ / gika’na ‘his bitter yucca’

whereas /t/, /th/, etc. are palatals. 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)
pa?tâ "to look" / ka?ta\l\kô "(a species of bird)" (*Sp.: chachalaca

/p/-/m/ pa?to\nâqî "a watchman" / ma?pa\na no?pî "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 [\[b\]]. 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?ê "new" / ve?î "here"
/b/-/k/ boe?gikhî "he paddles" / noi?gikhî "he mixes (sthg)"
/b/-/a/ bo?otâhî "plate" / do?othê "that one (f)"
/b/-/g/ bo?tôdokhî "she sweeps" / go?dokhî "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?kho\nôtsîf "pestle" / todôkâshâ "toad"
/th/-/d/ tho?khâmâ "Kuinani Ruitotos" / do?kômô "she is dripping wet"
/th/-/y/ thâ?gîzê "he sinks (in a canoe)" / tyâ?dîfo

"grandfather"
/th/-/kh/ thiithî?ô "(a species of monkey)" (*Sp.: sumileon-
cito) / khîgistî "maternal uncle"
/th/-/tsh/  gi?nēthō  "he breaks (the shell of peanuts)"
         / gi?nēthō  "he kills, hits (s.o.)"
/th/-/čh/  thöogikhā "he shakes (sthg)" / čhōogikhā "he spits"
/th/-/w/  gi?i thā?jā "this one (m) sinks (in a canoe)"
         / ma?pā "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:

/th/-/d/  tēnoōdā "the sea" / deōdā "tree bark"
/th/-/ty/  taajē "grandmother" / tyajē"grandfather"
/th/-/k/  gifotāpa "he is frightening (s.o.)" / gifokāpa "he is frightened [progressive]"
/th/-/ts/  gi?tā "he fasts" / gi?tsu "he scorns"
/th/-/ç/  toogikhā "he breaks (sthg)" / čoo?gikhā "he kisses"
/th/-/s/  to?vā "to get, to obtain" / mañūvu "I walk"

1.2.1.1.6. /d/ is a voiced alveolar plosive with optional onset of voice before release, particularly in initial position or for emphasis. When realized, this results in the sound [nd]. The contrastive nature of this phoneme may be derived from the oppositions /b/-/d/, /th/-/d/ and /t/-/d/ (above), and from the following minimal and near-minimal pairs:

/d/-/dy/  doovā "(a type of almond)" / dyoonā/ō? "proud"
         huduñgi "curuhaunse ant" / dyuñgi "(a man's name)"
do?ká "he falls a tree" / go?khá "to put a stick in the ground"

duugižá "he stays" / dzu?gižá "it shrinks"

dá?ná "it (a tree) falls" / já?ná "to keep vigil, to wait"

do?nità "she eats" / no?nità "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/ tyugi?š "parakeet" / dyu?išgá "wooden battens for flooring and walls"

tya?dío "grandfather" / gadya?nožá "I get angry"

tya?dío "grandfather" / čašči "charcoal"

tyo?tyš? "pretty" / čoo?khá "to kiss"

tyo?tyšá "butterfly" / taš?vš "(an animal something like a dog)" (Sp.: comadreja)

tya?dío "grandfather" / tsa?š "armadillo"

/ty/-/š/ tya?dío "grandfather" / maššášá "silence"

tyo?šdó "small woodpecker" / šeško? tsó "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 [ŋ] 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?ty?- "pretty" or tyugi?o "parakeet" (part (a)), nor does it account for cases such as ne?y?o "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 /ŋ/ 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 /ŋ/) 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

\[
\begin{array}{c}
/TY/ \\
/dy/ \\
/\mathring{E}/
\end{array}
\]

where the distinctive feature between \(/dy/\) and \(/\mathring{E}/\) is nasality, while that between those 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 phonemes \(/dy/\) and \(/\mathring{E}/\):

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

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

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

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 another 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 Resigaro\(^7\), in which /b/, /d/, /dy/ and /g/ are thus marked, and /p/, /t/ and /k/ are attested\(^8\), the presence of marked /dy/ implies an unmarked /ty/.

The argument for the nasal /ɛ/ 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, /aw/ and /a/ are thus marked, and unmarked /æ/ and /n/ (implied by the presence of the marked nasals) are indeed attested. Unmarked /ɛ/ is also attested, though from this alone the presence of marked /ɛ/ cannot be inferred. However, since marked nasals do occur at other points of articulation,

\(^6\)cf. 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.

\(^7\)cf. Chomsky and Halle, 1968:413.

\(^8\)We here ignore, as irrelevant to the present argument, the series /ph/, /th/, /kh/, which would have [+ Aspir.].
this would strengthen the argument for the presence of a marked palatal nasal /\̃/.

4. Finally, though the only difference between /ty/ and /\̃/ is one of the position of the velum, the oral/nasal distinction 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 contrary is the case concerning the structure of the phonemic system in Rosigaro, 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 nondistinctive features (those which do not function as cues)."

(1963:569)

1.2.1.8. /dy/ is a voiced palatalized alveolar plosive in which the initial position of the tongue may be slightly retracted from the position for /d/. No early onset of voice such as would produce [\̃dy] has been observed (possibly because of the infrequency of occurrence of this phoneme). 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/-/\̃y/ dyoomaf?e? "proud" / jooa\̃a "parrot"
gadya?gižá "he gets angry" / jakdí "field"
/dy/-/dz/ dyyufikë "(a species of palm tree)" (Sp.: huacai)
   / dzu?gikhá "he shrinks (it)"
   gadya?gižá "he gets angry" / dzaangikhá "he throws water on the fire"
/dy/-/ɾ/ dyyoomáʔi? "proud" / ɾoʔhuuʔ tsá "it is smooth"
   gadya?gižá "he gets angry" / ŋaaʔi? "their thing"

1.2.1.9. /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/ nokhá "I make, I do" / nokhá "I cook"
   /kh/-/g/ khipí "maternal uncle" / giivi "flower"
   /kh/-/ʔ/ kheʔakhéʔ "later" / čheʔkeʔi "baraca"
      khipí "maternal uncle" / čhipí "its outside"

1.2.1.10. /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/-/ɡ/ kaŋiŋí "yucca" / gaŋugíi "(a man’s name)"
      kuuhuí "walking stick" / guupižá "you meet"
   /k/-/ʔ/ kooʔpáʔi "to abhor" / ŋooʔkhoʔtsi "a kiss"
      kaŋiŋí "yucca" / čačhikaʔ "to become charcoal"

1.2.1.11. /ɡ/ 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 [$\theta$]. The contrastive nature of this phoneme may be derived from the oppositions /b/-/g/, /d/-/g/, /kh/-/g/ and /k/-/g/ (above), and from the following near-minimal pair: -
/g/-/j/ godcõhí "Boras" / jodocõfigá "waterfall"

1.2.1.1.2. /?/ 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: -
/?/-/p/ gi$i"this one (n)" / gi$pí$i"his anteater"
/?/-/t/ do$othé "that one (f)" / dotõkhó "her (species of fruit)" (Sp.: shapaja)
/?/-/k/ do$ó "this one (f)" / dokó "towards her"
/?/-/h/ do$hó "this one (f)" / dochó "for her" (benefactive)
/?/-/ɡ/ tsoná "he requests" / tsoná "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. /tʃ/ is an aspirated voiceless alveolar affricate. Its contrastive nature may be derived from the opposition /th/- /tʃ/ (above), and from the following minimal and near-minimal pairs: -
/tʃ/-/ts/ iftʃhá "smoke" / iftʃhá "to let go, to release"
/tsh/-/dz/ tshēdekhā "she scoops out" / dzoodōňi "she takes a quick dip (in the water)" (i.e., "she goes into the water, and comes out again quickly")
/tsh/-/zh/ tshiiṃi "tail" / zhiiṃi "its outside"
 tshomaatshā "cotton" / ŋhāni "sister" (vocative)
/tsh/-/s/ tshā?thoomi "glue" / sāi?ooň "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/ tsaagiḫā "he shouts for joy" / dzaagikhā "he throws water on the fire"
/ts/-/zh/ tsō?vigikhā "he sharpens (sthg)" / ŋoo?vāgikhā "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 [dz] 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/ dzaakhotā "to cause to throw water on the fire"
 / jaaqovāgi "life"
 dzeejië "to get out" / jevyi "wolf"

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

/čh/-/ʒ/  čhōgikhō "he spits" / čoo?gikhō "he kisses"
/čh/-/ʒ̥/  čhakō?kха "to chew" / ʒakādē "field"
  ʒōnōʒhī "my neck" / nonōʒhī "my beard"
/čh/-/ʒ̥̃/  čhōgikhō "he spits" / šōogikhō "he pours water"

1.2.1.2.5. /ʒ/ is an unaspirated voiceless palatal affricate. Its contrastive nature may be derived from the oppositions /t/-/ʒ/, /ty/-/ʒ̥/, /k/-/ʒ/ and /čh/-/ʒ̥/ (above), and from the following minimal and near-minimal pairs:

/ʒ/-/ʒ̥/  čaŋ̥hī "charcoal" / ʒakādē "field"
  čoo?dokhō "she kisses" / ʒodoo?figh "waterfall"
/ʒ̥/-/ʒ̥̃/  čoo?gikhō "he kisses" / šōogikhō "he pours water"
  čaŋ̥hī "charcoal" / ʒnaj̥ "to disperse"

1.2.1.2.6. /ʒ̥/ 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 /ʒ/-/ʒ̥/, /dy/-/ʒ̥/, /g/-/ʒ̥̃/, /čh/-/ʒ̥/ and /č/-/ʒ̥/ (above), and from the following near-minimal pairs:

/ʒ̥/-/ʒ̥̃/  nō?jo "I escape" / ʍō?zo "I dig"
  gi?jogikхо?nаhī "his spade" / ıʔo "ghost, spirit"

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 /pf/-/f/ and /p/-/f/ (above), and from the following near-minimal pairs:

/f/-/v/ fio?gikʰá "he whistles" / viogikʰá "he mixes (sthg)"

fiinokʰá "I push" / viiʔiʔoʔá "rapida"

/f/-/m/ f(latitude)poʔi "our land" / apeʔoʔá "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/-/m/ vatsʰogí "turkey buzzard" / natshaʔákʰá "peanut"

It has two allophones:

- [ɓ], occurring before /i/ and /e/
- [w], occurring elsewhere

e.g. i) [ɓ]:

Before /i/: nonoʔaaví [nonoʔaví] "my lip"

" /e/: vedgeaví [vedgeaví] "clothing"

ii) [w]:

Before /a/: vatsʰogí [vatsʰogí] "turkey buzzard"

" /o/: vononó [vononó] "our teeth"

" /u/: nodaʔphaavá [nodaʔphaavá] "I work"

/v/ cannot be viewed as a vocoid merely functioning as a con-
sonant, because of its major contoidal 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/  sco?gikhĩ "he sucks" / ʃoogikhĩ "he pours water"

sabo?gikhĩ "he sinks (sthg)" / ʃakoo?gifĩ "banana"

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

/ʃ/-/ʃ/  giʃakoo?gifĩ "his banana" / giʃaʃkovoʃgi "his life"

tsə giʃɔtĩ "he makes him eat neat" / iʃo "ghost, spirit"

/ʃ/ 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 /i/ and /u/, in that order. Weak palatalization of /ʃ/ is occasionally heard before /e/, but palatalization is rarely heard before /i/, with the exception of [ʃiʔtʃu] (/ʃiʔtyu/) "gorilla", where the strong palatalization is probably due to the influence of the palatal plosive in the next syllable. Examples of palatal-

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\(^9\) 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 asonic 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 /z/ follow, the presentation commencing with the cases of strongest palatalization and progressing through to the cases of weakest palatalization:-

Before /a/: /šakooʔgiʔi/ [ʃaːkoːʔgiʔi] "a bunch of bananas"
" /o/: /šiʔhῶ/ [ʃiːʔhǒ] "turkey"
" /u/: /šuukhoʔtsihô/ [ʃuːkʰoʔtsiːhô] "advice"
( " /e/: /šiʔedô/ [ʃiːʔeːdô] "mother-in-law"
( " /i/: /šiʔiniʔe/ [ʃiːʔiʔeː] "dawn"

But, with /ty/ in the next syllable:
/shiʔtyu/ [ʃiʔtyʊ] "gorilla"

1.2.1.3.5. /ẑ/ 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].\(^{10}\) 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/-/ẑ/ and /ʒ/-/ʒ/ (above).

\(^{10}\) cf. Walton and Walton, "Phonemes of [Bora] Muinane" (1967: 41). The variation that they cite for [ẑ] and [ʃ] is from one dialect to another. Leach (1969:164) indicates that in Ochina the phoneme /y/ has allophones ranging from [ẑ] to [ʃ].
/ə/ 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 \(^{11}\) 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: -

/ʔ/-/h/ haagišá "it sinks" / aagišá "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. /n/ is a voiceless bilabial nasal with slight final onset of voice. Its contrastive nature may be derived from the oppositions /ph/-/n/, /p/-/n/ and /f/-/n/ (above), and from the following minimal and near-minimal pairs: -

/n/-/n/ nomá "I bite" / nom̄ "I sleep"
/n/-/m/ mòta "to try (taste) (sthg)" / mopá "I answer"

/m/-/n/ m̄?konfá "dull" / m̄?kotá "to cause to press"

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

\(^{11}\)cf. footnote 9 to 1.2.1.3.3. above.
minimal pairs:
/m/-/n/ maap⁵⁷ "bee" / naap⁵⁷ "spotted cavy"
/n/-/ǹ/ maaʔmá "cassava bread" / ǹaaʔǹé "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/ m大卫 "I walk" / noʔvu "I am wet"
/n/-/ǹ/ m大卫 kǹé "they run" / ǹeʔkhá "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/-/ǹ/ niiʔé "married woman" / ǹiiʔǹógá "nightingale"
nonoʔjíhi "my beard" / ǹoʔnóčhi "my neck"

1.2.1.4.5. /ǹ/ is a voiceless palatal nasal with slight final onset of voice. Its contrastive nature may be derived from the oppositions /ty/-/ǹ/ (cf. discussion under 1.2.1.1.7., above), /m/-/ǹ/ and /m/-/ǹ/ (above), and from the following near-minimal pair:
/ǹ/-/ǹ/ maap⁵⁷ma "silence" / maap⁵⁷o "iguana"

1.2.1.4.5. /ǹ/ is a voiced palatal nasal. Its contrastive nature may be derived from the oppositions /dy/-/ǹ/, /m/-/ǹ/, /n/-/ǹ/ and /ǹ/-/ǹ/ (above).
1.2.1.5. Outside the System.\textsuperscript{12}

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

i) a person's name: /miithubi/

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

iii) the modification of a Spanish word not yet fully incorporated into the language: /bibriaa/ from the Spanish \textit{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 /xuukhosi/ "Sunday" and the verb /xuuju/ "to rest" -- both of these words apparently coined recently to handle terms introduced by missionaries.\textsuperscript{13}

1.2.2. Phoneme type ii: Vocoids.

There are five vocoid phonemes in Resigaro, distinguished by

\textsuperscript{12} 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.

\textsuperscript{13} 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 jay66vuxja and jayovvu, 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/ pifi¹⁴ "anteater" / pɛfi "yucca flour"
/i/-/u/ nái-pi "underneath" / ná-pi "spotted cavy"
/i/ has two allophones: [i], a slightly lowered and retracted close front spread vocoid similar to Cardinal Vowel 1;

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

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

e.g. /pi?mi/ [pɪ?mi] "hummingbird"
/adəvimi/ [adəvɪmɪ] "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/ meagé "cascava" / maagé "(a species of fruit)"
/e/-/o/ noné "my tooth" / noné "my mouth"
/e/ has two major allophones: [e], a slightly lowered half-
close front spread vocoid similar to Cardinal Vowel 2;

[ɛ], which is lower (close to Cardinal Vowel 3).
[e] occurs word-finally, and [ɛ] occurs elsewhere.
e.g. /hefiʔ/ [hefiʔ] "white"
/vonɛnɛ/ [vonɛnɛ] "our teeth"

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

1.2.2.4. /o/ is a mid back vocoid pronounced with rounded
lips. Its contrastive nature may be derived from the oppos-
itons /a/-/o/ and /a/-/o/ (above), and from the following
minimal pair:-
/o/-/u/ niikš "no" / niikš "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.

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

e.g. /ɔná?kɔ/ [ɔná?kɔ] "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:

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

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

[ɑ] occurs when the preceding syllable contains an /i/. [u] occurs elsewhere.

e.g. /siiʔa/ [sːiʔa] "others"

/socʔkhɔ/ [sːɔʔkhɔ] "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. I.2.2., below, and Bearth 1971:45), and the same term proves useful in the description of tone (cf. I.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. /təmʊd/ [təmʊd̪] or [təmʊd̪] "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 contoids 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 Resigaro, 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"
non6 "my mouth" / non6 "I spear (a fish)"

Glides only occur on sequences of two vocoids, 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 tonique implique qu'un morème à deux voyelles comporte deux points de substitutions tonales."

Thieson and Thieson (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 contoids),
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. fa "wo" (1st p. pl. (incl))
   kē "hand"
   gi:fi19 "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.poc.kā "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. a:dā "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-nora syllable (i.e., on one (short) vowel), and hence are interpreted as high + low or low + high (cf. 1.2.3., above).

The following examples illustrate some possible tone sequences:

foogikhɑ̂ "he makes a fire" / fɑogikhɑ̂ "he blows"
peēgi "sparrow-hawk" / pɛ̂gɪ "starch"
naāgi "friend (m)" / nɑ̂gɪ "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.
Syll = + Onset: C₁₁ + Nuc: (V₁V₂) + Coda: C₁₂

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. Syll₁ = + Onset: C₁₁ + Nuc: V₁ + Coda: C₁₂

Syll₁₁ = + Onset: C₁₁ + Nuc: V₁V₂ + Coda: C₁₂

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

75
2.2.1. Syllable type i: \( ^{\text{Onset}}C_{1,1}^{\text{Nuc}:V}^{\text{Coda}}C_{1,2} \)

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

\[
\text{Syll}_{i,i} = + \text{Nuc: V} \\
\text{Syll}_{i,ii} = + \text{Onset: C} + \text{Nuc: V} \\
\text{Syll}_{i,iii} = + \text{Nuc: V} + \text{Coda: C} \\
\text{Syll}_{i,iv} = + \text{Onset: C} + \text{Nuc: V} + \text{Coda: C}
\]

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 /ʔ/ and /ʒ/ may not occur when the syllable is word-initial.

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

All vowels except /u/ are attested in this sub-type. Only /ʔ/ 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 /ʔ/ 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>&quot;wife&quot;</td>
<td>&quot;meat&quot;</td>
<td>&quot;to go&quot;</td>
<td>&quot;you go&quot;</td>
</tr>
<tr>
<td>e</td>
<td>&quot;rainbow&quot;</td>
<td>&quot;hand&quot;</td>
<td>&quot;to flee&quot;</td>
<td>&quot;your navel&quot;</td>
</tr>
<tr>
<td>a</td>
<td>&quot;to be awake&quot;</td>
<td>&quot;hen&quot;</td>
<td>&quot;to eat&quot;</td>
<td>&quot;beside him&quot;</td>
</tr>
<tr>
<td>o</td>
<td>&quot;(a species of plant)&quot;</td>
<td>&quot;my mouth&quot;</td>
<td>&quot;to fish with poison&quot;</td>
<td>&quot;to put a stick in the ground&quot;</td>
</tr>
<tr>
<td>u</td>
<td>&quot;saliva&quot;</td>
<td>&quot;your saliva&quot;</td>
<td></td>
<td>&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>i e a o u</th>
<th>i e a o u</th>
</tr>
</thead>
<tbody>
<tr>
<td>ph + + + +</td>
<td>ŝh + + + -</td>
</tr>
<tr>
<td>p + + + -</td>
<td>ĉ - - + + -</td>
</tr>
<tr>
<td>b - + + +</td>
<td>ť + + + +</td>
</tr>
<tr>
<td>th + - + + -</td>
<td>f + + + + +</td>
</tr>
<tr>
<td>t + + + +</td>
<td>v + + + + -</td>
</tr>
<tr>
<td>d - + + +</td>
<td>s + - + + +</td>
</tr>
<tr>
<td>ty - - + + +</td>
<td>ĉ ĝ + + + + +</td>
</tr>
<tr>
<td>dy - - + + +</td>
<td>ŝ ĉ - - + + +</td>
</tr>
<tr>
<td>kh + + + +</td>
<td>h + + + + +</td>
</tr>
<tr>
<td>k + + + +</td>
<td>m - + + + -</td>
</tr>
<tr>
<td>g + - + + +</td>
<td>n + + + + +</td>
</tr>
<tr>
<td>? + + + +</td>
<td>m + + + + +</td>
</tr>
<tr>
<td>tsh + + + +</td>
<td>n + + + + +</td>
</tr>
<tr>
<td>ts + + + +</td>
<td>ŏ - + + -</td>
</tr>
<tr>
<td>dz - + + +</td>
<td>œ + + + + +</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.

/нный/ 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 /нный/ before /i/ would appear to undermine such a suggestion.

/ty/, /dy/, /ъ/ and /ъ/ do not occur before /i/ or /e/, and this would appear to be the only potentially-significant co-occurrence restriction in CV sequences in Resigaro. It should be noted, however, that palatal /ч/, /ъ/ and /ъ/ all occur before /i/ and /e/ (as does /нный/, while /ъ/ is only attested before /e/, to date). Thus undermines the possibility that the non-occurrence of sequences with /ъ/ and /ъ/ 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-
pirated member. They are, furthermore, of very infrequent
occurrence.

2.2.2. Syllable type ii: +Onset:C_1,1 +Nuc:V_1V_2 +Coda:C_1,2

There are four sub-types of syllable type ii:

Syll_{ii,i} = + Nuc: V_1V_2
Syll_{ii,ii} = + Onset: C + Nuc: V_1V_2
Syll_{ii,iii} = + Nuc: V_1V_2 + Coda: C
Syll_{ii,iv} = + Onset: C + Nuc: V_1V_2 + 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
coccur within one syllable in Resigaro:

1. For any vowel in V_1 position, the same vowel may occur in
V_2 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 V_1 position, the follow-
ing vowels are attested in $V_2$ position (in addition to sequences of the same vowel, already referred to above):-

/ɪ/ + /o/, /u/; /e/ + /i/, /u/; /u/ + /i/, /e/, /u/; /ɔ/ + /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 (/ɪ/ + /o/ and /ɔ/ + /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 Resígaro, 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></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>
</tr>
<tr>
<td>e</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>
</tr>
<tr>
<td>o</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>
</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/, /β/ and /ð/ (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

---

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

- high + high: ii, iu, 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 voiceless 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 /aa/ occur in this sub-type. Only /?/ occurs syllable-finally in Resigaro, as stated above.

b) When $V_1$ is not the same as $V_2$: no diphthongs are attested in this sub-type in Resigaro. This demonstrates the relative infrequency of occurrence of this syllable-type, and the relative 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/, /?/, /th/, /dz/, /ṭh/, /γ/, /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 consonant of very infrequent occurrence.

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

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 /m/ have been observed in this position before diphthongs. As always, only /?/ can occur in the Coda position.

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

<table>
<thead>
<tr>
<th>Sub-types Nucleus</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>ii</td>
<td>\textit{\textit{fi}}.\textit{ni} &quot;dog&quot;</td>
<td>\textit{\textit{fi}}.\textit{gi} &quot;husband&quot;</td>
<td>\textit{\textit{ii}}.\textit{zi} &quot;possession&quot;</td>
<td>\textit{\textit{ni}}.\textit{zi}.\textit{ki} &quot;your intestines&quot;</td>
</tr>
<tr>
<td>ee</td>
<td>\textit{\textit{eg}}.\textit{ni} &quot;thunder&quot;</td>
<td>\textit{\textit{je}}.\textit{vi} &quot;wolf&quot;</td>
<td>\textit{\textit{ee}}.\textit{si}.\textit{ki} &quot;to fish with hook &amp; line&quot;</td>
<td>\textit{\textit{pe}}.\textit{si}.\textit{gi} &quot;your fishing hook&quot;</td>
</tr>
<tr>
<td>aa</td>
<td>\textit{\textit{ge}}.\textit{me} &quot;mother&quot;</td>
<td>\textit{\textit{ke}}.\textit{de} &quot;roof&quot;</td>
<td>\textit{\textit{a}}.\textit{de}.\textit{pe} &quot;father&quot;</td>
<td>\textit{\textit{ha}}.\textit{me}.\textit{ni} &quot;to bury&quot;</td>
</tr>
<tr>
<td>oo</td>
<td>\textit{\textit{ge}}.\textit{me} &quot;already&quot;</td>
<td>\textit{\textit{pe}}.\textit{si}.\textit{gi} &quot;frog&quot;</td>
<td>-----</td>
<td>\textit{\textit{ha}}.\textit{me}.\textit{ni} &quot;to be hot&quot;</td>
</tr>
<tr>
<td>uu</td>
<td>\textit{\textit{ge}}.\textit{me}.\textit{si}.\textit{gi} &quot;one (rope)&quot;</td>
<td>\textit{\textit{ge}}.\textit{me}.\textit{ki} &quot;to prevent&quot;</td>
<td>-----</td>
<td>\textit{\textit{a}}.\textit{re}.\textit{ni} &quot;many&quot;</td>
</tr>
</tbody>
</table>

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

[See page 85 for syllables containing diphthongs.]

\textsuperscript{4} 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: /VVC/</th>
<th>iv: /CVVC/</th>
</tr>
</thead>
<tbody>
<tr>
<td>i + o</td>
<td>vioc.khá</td>
<td>&quot;to mix (e.g. food)&quot;</td>
<td>----</td>
<td>fic.khá</td>
</tr>
<tr>
<td>+ u</td>
<td>aat.sháu</td>
<td>&quot;chili&quot;</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>e + i</td>
<td>tse.i.nó</td>
<td>&quot;long&quot;</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>+ u</td>
<td>kba.dóu.ma</td>
<td>&quot;to froth (a river)&quot;</td>
<td>----</td>
<td>seu.khá</td>
</tr>
<tr>
<td>a + i</td>
<td>ai.já.nó</td>
<td>&quot;near&quot;²</td>
<td>nai.ko.gi.gi</td>
<td>&quot;herbal healer&quot;</td>
</tr>
<tr>
<td>+ e</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>kcó.nae?</td>
</tr>
<tr>
<td>+ u</td>
<td>boó.já</td>
<td>&quot;anklebone&quot;</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>o + i</td>
<td>hió.khá</td>
<td>&quot;to rub, polish&quot;</td>
<td>----</td>
<td>mei.khá</td>
</tr>
<tr>
<td>+ e</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>soo.khá</td>
</tr>
<tr>
<td>u + i</td>
<td>hóo.ku.dá</td>
<td>&quot;(a species of bird)&quot;³</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>+ a</td>
<td>tua.já</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.tsa.bói, an introducer for reported speech.

3. Sp.: montete
2.2.3. Rules of Syllable Division.

The example sa. uu. tu "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 /i/ can close a syllable, but it can also occur syllable-initially. Thus, given a sequence

CV?V

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

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.
i.e. \( \text{(+C+V+V+?)} + \text{(+V+V+C)} \Rightarrow \text{(+C+V+V+, +?+V+V+C)} \)

The placing of a syllable boundary in a sequence \( +C+V+V+V+C \) 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.

- e.g. \( \text{nãa.pi} \) "night"
- \( \text{nãa.pi} \) "underneath"
- \( \text{nãã.pã} \) "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 etic (and emic) syllable.

- e.g. \( \text{ũoi.kh̥} \) "to rub, polish"
- \( \text{ũo̱.ũ̱} \) "anklebone"
- \( \text{a.a-tsh̥fu} \) "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 emic) syllables.

\textit{e.g.} \texttt{tɛ.tye.1} "island"
\texttt{paa.ga.6} "spider"
\texttt{vɛ.mi.5} "our eye"\textsuperscript{5}

Note also the sequences /i/ + /o/ and /o/ + /u/, which have only been attested as members of two contiguous syllables:

\texttt{he.ʔo.pi.6?} "before, previous"
\texttt{no.və.fo.6} "my heart"

It is important to note that rule 3 is based on an observation of the etic syllables in the language, and does not result in the establishment of an artificial emic syllable of different extension than the observed etic syllable. (i.e., the "rules" are descriptive of what does happen, not prescriptive (with a view to establishing a certain interpretation)).\textsuperscript{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

\textsuperscript{5}Note Wavrin's transcription of "lake" (p. 215) and "our eye" (p. 217): "lake" (hɛ.ne.6) : (h)θ(ü)neh\textsuperscript{3}
"our eye" (vɛ.mi.5) : wa-tni\textsuperscript{2}.ə (sic - t is error by Wavrin) Both cases clearly indicate that he perceived three syllables in each word.

\textsuperscript{6}This effect of a high tone on syllable boundaries may be explicable 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:1 "yes"
   hi.po.м:у.ъ6 "rope, string"

2.2.3.5. Rule 5.

This rule handles an exception to Rule 4, namely

h'iif:о "this (horn)"

This Rule has two parts:

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

5б. 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:

---

7 Two 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 *hihunu* "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 Resigaro⁹, which accounts for empty cells 37, 39, 45 and 47 ((C)VV + VV(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-

---

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

Table 2.6. Attested Sequences of Syllable Types

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

Numbers refer to examples below.

1. ãpay "that one"  
2. ãni "saliva"  
3. --  
4. ãno? tá "to cause a tree to fall"  
5. --  
6. ãváana "stick"
7. --
8. a.asii? "to be healthy"
9. t6.t6.o "island"
10. no.né "my tooth"
11. he.qo.pi.o "before"
12. i.po.qi? "green"
13. e.pi.pi.uu.o "liana cord"
14. ka.nif.de.o "sweet potato"
15. --
16. a.ne.pha? "many"
17. x
18. a?ná.pá "to warm oneself"
19. x
20. --
21. x
22. a?ná.pi "arm"
23. x
24. --
25. x
26. i.66.vi "thus"
27. x
28. i.né.ko? "lazy"
29. x
30. tho.kha6.tsii "postle"
31. x
32. ha.moo? "to be hot"
33. aa.í "yes"
34. a6.me "mother"
35. --
36. (tsé) i.l.t6.po.gi.khá "he helped (him)"
37. --
38. i.i.vi "horn"
39. --
40. --
41. ty6.d6.o "grandfather"
42. a.ní6.d6 "macaw"
43. --
44. tsei.nó? "long"
45. --
46. hea.ní6.gi "paternal uncle"
47. --
48. i.ní6.vi.?ná.pæ6? "to get better, to recover"
49. x
50. a?6.pe "father"
51. x
52. ee.phi2.po.gi.khá "he fished"
53. x
54. i.i?6.6ú "belly"
55. x
56. --
57. x
58. kio2.kha.tho6 "limit"
59. x
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 Resigaro. 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/, /ç/ and /ɣ/. 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 Resigaro. 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).

e.g. tsodâ?pa gi-neq
    she-sings hin-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 inter-
posed. 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_.

e.g. /a6 a?it6/ is [a6 + ? + a?it6] "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 i, 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?mitα "to eat"
    khα "to do"
iffa "to fear"
niitsu "to boil" (intransitive)

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?mita "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"
iffa "to fear"
ima "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?votá "to make safe a firearm"
hetsamu- " " hetsamotá "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.

*Ex. -kψ "hand"

vaʔa "machete" (root)

maʔpa "bees"

ataʔa "men"

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-identificational features:

i) They have no internal structure.

ii) They fill the Base slot in pronoun stems.

---

1 A hyphen precedes -kψ, "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 Basigaro, 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:

mā First person singular
phā Second " "
tsā Third " " -- masculine
tsē " " " -- feminine
fā First person non-singular -- inclusive
mua- " " " -- exclusive
hā) Second " "
i-) Third " "

For the second person non-singular, i- is used in the imperative, and hā 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:

mā 1st p. sg.  fā 1st p. non-sg.; incl.
phā 2nd p. sg.  i- 2nd p. non-sg.; imptv.
tsā 3rd p. sg.; m.  mā 3rd p. non-sg.
tsē 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:

- tṣ̣̣ 3rd p. sg., m.
- muu- 1st p. non-sg., excl.
- tṣ̣̣ 3rd p. sg., f.
- hą 2nd p. non-sg.
- ʃ̣ 1st p. non-sg., incl.
- ʃ̣ 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:

- ʃ̣ 1st p. non-sg., incl.
- ʃ̣ 3rd p. non-sg.
- hą 2nd p. non-sg.

1.4. Adjective Root.
1.4.1. Contrast.
Adjective roots ( AJ̣ Rt) have the following contrastive-identificational 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.

---

3The 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: ʃ̣, pha, i- in PnSt i
Sub-cl 2: muu- in PnSt ii
Sub-cl 3: tṣ̣̣, tṣ̣̣ in PnSt i and ii
Sub-cl 4: hą in PnSt ii and iii
Sub-cl 5: ʃ̣, ʃ̣ in PnSt i, ii and iii
This procedure is not adopted here, since it adds to complexity without revealing anything of structural importance.
e.g. amii- "healthy"
ho?hu- "soft"
ojo- "small"

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"
kenee?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 (DemRt) 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"

h6?e- "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

⁴In 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:

- `ṣa-` "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 comparative 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 (along with all other numerals) listed in alphabetical order for Rosigaro and Spanish in Appendix 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".

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

e.g. a?mitá "to eat"

105
ifā  "to fear"
ima  "to sleep"

2.1.2.2. Verb Stem Type ii, "Complex". ¹

VbStii = + B: VbRt2/3 + derivator: ostv/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:-

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

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. ifā "to fear" > ifotā "to frighten"
apā "to be awake" > aphotā "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 6f)

ha?pu "to cross (a river)" > hapotā "to save (from danger)"
i?tu "to fast" > i?totā "to wean (s.o.)"
mi?tsu "to boil (intrans)" > mi?tsotā "to boil (sthg)"
a?mu "to burn oneself (accidentally)" > a?motū "to burn (sthg)"

¹The 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.

²Here, absence of a tone mark indicates that tone may be high or low, "indicates 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:­

\[ \ldots \text{CV(})V \ldots \text{CV(})V \] + -kaā

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

* e.g. ifā "to fear" \rightarrow ifakaā "to become frightened, to repent"
  apā "to be awake" \rightarrow apokaā "to wake up (intrans)"
  imā "to sleep" \rightarrow inakaā "to go to sleep"

In a few cases, -kaā varies freely with -kaā on a verb root.
 * e.g. inakaā \rightarrow imakaā "to go to sleep"

2.1.2.2.3. Sub-type iii. Restrictive.

This derivator is added in accordance with the following rule:­

\[ \ldots \text{CV(})V \ldots \text{CV(})V \] + -nh

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

* e.g. a?vēmā "to burn a field" \rightarrow a?vēnōmā "to burn superficially"

(?)vamo "to enter (a house)" \rightarrow (?)vamōmā "to visit"

In both these cases, the root m 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 -tā, -kaā or -nh 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:

tsootá "to annoy"

Possibly containing restrictive derivator:

a?næñí "to squeeze out"
i?kaná "to vomit"
i?towú "to be standing up"
hokoná "to harvest yucca"
kapamá "to throw, to cast"
o?doná "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. dë?edë?ë "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

\[3\] In 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 gradu-
ual nature of an action, but this is in the first case at an-
other 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-identificational 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: NnRt

e.g. -henåkå "ear"

amo6gì "tapir"

offindì "yans"

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.1} = + B: VG + NlZr\textsubscript{i}: -itsì

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:

i) A final-syllable voiceless stop becomes aspirated, and a voiced nasal becomes voiceless. 4

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

iii) -ftsì is added to the resultant form.

c. g.

1) Illustrating i) and iii), above:

hipá "to wash" \rightarrow hipoftsìgá "soap"
tsà?tä "to carry a weight" \rightarrow tsà?thoftsì "a weight"
pì?ko "to throw away" \rightarrow pì?khoftsìgí "one who throws away"
va?nà "to command" \rightarrow va?nòftsìhá "law"

2) Illustrating ii) and iii), above:

(?)?mèf "to play" \rightarrow me?mîftsì "a toy"
kone "to sell" \rightarrow kóntsì "merchandise"
ínà "to harpoon, spear" \rightarrow nòftsìgí 6 "a lance, an arrow"
à?nítìf "to eat" \rightarrow à?nùhtóftsìf "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

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4This 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.

5There is no final a, except where this is derived morphophonemically from u.

6The initial i is deleted here, and also in
ínà "to sleep" \rightarrow nòftsìhá "a bed",
but is retained in the following two cases (apparently because of the following glottal):
i?dà "to drink" \rightarrow i?doftsìpí "a drink"
i?tshā(hà) "to sit down" \rightarrow i?tshoftsìgá "a seat, a bench"
ii (sub-types i and ii) Verb Groups in the Base slot:

\[ \text{VG}_{ii,i} : \]
\[ \text{tho? khâ "to grind" } \rightarrow \text{tho? khoOTTsi "a pestle" } \]

\[ \text{VG}_{ii,ii} : \]
\[ \text{hoonî i?votê "to freeze" } \rightarrow \text{hoonî i?vothoOTTsi7 "ice" } \]

When a type ii sub-type i noun is possessed (cf. 6.1.2.2., below), \(-\text{tsî} \rightarrow -\text{mî}\).

e.g. \text{fic? khoOTTsi "a whistle" } \rightarrow \text{nocio? khoOTTnî "my whistle" (referring in both cases to the concrete object (Sp. silbato))}.

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

\[ \text{HNSt}_{ii,ii} = +B:VG_{i/i,i} /AJRt \rightarrow +Mlzer_{ii} (\exists?kâ -\text{tsî} -) (\text{tsî} -) \]

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

The derivatory rules are the following:-

i) \( B:VG_{i} /AJRt : Nlzer_{ii} : \exists?kâ -\text{tsî} \)

ii) \( B:VG_{ii,i} : Nlzer_{ii} : -kâ -\text{tsî} /mî \)

\(-\text{tsî} /mî\) indicates that the two forms vary freely here.

e.g. 1) With Base filled by \( \text{VG}_{i} \):

\[ \text{imî "to sleep" } \rightarrow \text{imaakOTTSi "sleepiness" } \]

\[ \text{omî "to bite" } \rightarrow \text{eamaakTSi "a bite" } \]

\( \Rightarrow \) 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" > ka?maaκatsı "something fermented"
ke?pı- "satisfied" > ke?piikatsı "satisfaction"

3) With Base filled by VG_{ii.i}

fio? khá "to whistle" > fio?khákatsı) "a whistle" (the
fio?khákšami ) noise -- Sp. sil-
bido)

šońné já "to tell lies" > šońnéšyákatsı) "a lie" (the act-
šońnéšyákšami ) tion of telling a
lie)

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

NnSt_{ii.iii} = +B:Ajr/+bas/+relR + Nlz_{iii}: -minšagī
"bas" is the basic filler of the peripheral slot in VG_{ii.i}.
"relR" is the relator in the Axis-Relator Locative Phrase,
sub-type iii: -a?né, "beside" (cf. 6.2.10.2.2.iii, below).

This type of nominalization forms nouns that express a character-
istic attribute of a person.

e.g. 1) With Base filled by Adjective Root.

iné "lazy" > inéminšagī9 "a lazy person"

2) With Base filled by basic filler of VG periphery.

hańmékhá "to steal" > hańmáminšagī "a thief"

3) With Base filled by relator.

-a?né "beside" > a?néminšagī "servant"

---

8 Contrast with the noun šońnéa "a lie" (the false word itself --
cf. -há 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.
2.2.2.4. 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:

- té?etékí "mushroom"
- todéōdé "(a type of dance)"
- thiithi̱tő "(a species of monkey)" (Sp.: sumileoncito)
- ty̱s̱oty̱bé̱ "butterfly"
- tshōtshōpi̱ "(a species of bird)"
- tshii̱tshii̱tő "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. hadəph(lo)sta "songs"

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

  e.g. hooni "water"
  pə "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:kάgi "chieftain"
  phaiɡi "old man"

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

  e.g. naná?)o "iguana"
  hiviɡi "star" (sic)
  oná?kọ "snake"

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

  e.g. -hitákọ "nose"
  -nigi "forehead"

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

  e.g. va?aná- "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'tsátává "centre"

pá⁰ "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. oniitsí "bot-fly larva"

2.3. Pronoun Stems.

2.3.1. Comparison.

Pronoun stems (PnSt) have the following contrastive-identificational features:

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

ii) Complex pronoun stems are formed by pronominal derivators.

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10. pá is clearly a noun stem in Rosigaró, even though the English gloss "all" is not. It may occur with various classifiers, e.g. pá-koomí

    all village "all the villages"

    pá-pékó

    all day "all the days"

    pá-?osi-ku-ú

    all hand ñl rest "all two hands" (i.e., "both hands"

    -- used to signify the number "ten")
2.3.2. Variation.

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

\[ \text{PnPnSt}_1 = +B: \text{PnRt}_1 \]
\[ \text{PnPnSt}_{ii} = +B: \text{PnRt}_2 + \text{Der: } - ?? + \text{Specifier: } - \text{thè} \]
\[ \text{PnPnSt}_{iii} = +B: \text{PnRt}_3 + \text{Der: } - \text{masi/-mapi} \]

2.3.2.1. Pronoun Stem Type i, "Basic".

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

\( \text{mè} \) First person singular
\( \text{phè} \) Second " "
\( \text{tsè} \) Third " " -- masculine
\( \text{tsè} \) " " -- feminine
\( \text{fè} \) First person non-singular, inclusive
\( \text{i} \) Second " " imperative
\( \text{mè} \) Third " "

In all pronoun stems ending in \( \text{u} \), this becomes \( \text{a} \) 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., m. tsɔ > gi-
3rd p. sg., f. tsɔ > do-
3rd p. non-sg. m̥ > na-

1st p. non-sg., excl. mm̥- ) do not change, in accordance with
2nd p. non-sg. h̥- ) except that the u of hu becomes a

1st p. non-sg., incl. f̥ exceptionally does not change before
the derivator, except 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., m. giʔa "this one" (m)
3rd p. sg., f. doʔa "this one" (f)
1st p. non-sg., incl. faʔa "we" (inclusive)
1st p. non-sg., excl. mmuʔa "we" (exclusive)
2nd p. non-sg. haʔa "you"
3rd p. non-sg. naʔa "they"

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

---

111 The base form of this is presumably *mmuʔa, but since a
final u always becomes a before another word (but not norm-
ally before a suffix), and since this pronoun is nowhere at-
tested finally, the only form observed is mmuʔa.
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" -mupi "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\textsuperscript{12} types of adjective stem are set up on the basis of internal structure.

\[
\begin{align*}
\text{AjSt}_1 & = + B: AjRt & \text{"Basic"} \\
\text{AjSt}_{ii} & = + B: AjRt + \text{der}_i & \text{"Derived i"} \\
\text{AjSt}_{iii} & = + B: AjRt/NnSt + \text{der}_{ii} & \text{"Derived ii"}
\end{align*}
\]

where \text{der}_i and \text{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.

\textit{e.g. amii} - "healthy"

\textit{ha?mo?} - "hot"

\textit{kaaso} - "good"

\textsuperscript{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 \textit{ponu?} "to be embarrassed, shy" (glossed in Spanish by informant as \textit{dar verg\DJ enza}) and verb \textit{poni} "to be ashamed, embarrassed" (glossed in Spanish as \textit{avergonzar}).
The resultant form attributes a quality to a noun.\textsuperscript{13}

e.g. amii\(i\) ats\(\ddot{a}\)gi ... "The healthy man ..."

healthy man

kaa\(\ddot{	ext{n}}\)gi ja\(\ddot{a}\)n\(\ddot{a}\) ... "The good child ..."

good child

oo\(\ddot{j}\)agi am\(\ddot{o}\)\(\ddot{g}\)i ... "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.)

\textbf{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?mo?- "hot" \(\rightarrow\) ha?moo? "(to be) hot"

ka?mu- "fermented" \(\rightarrow\) ka?mua? "(to be) fermented"

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

e.g. kaa\(\ddot{s}\)o- "good" \(\rightarrow\) kaa\(\ddot{s}\)oo? "(to be) good"

oo\(\ddot{j}\)a- "small" \(\rightarrow\) o\(\ddot{j}\)aa? "(to be) small"

ii) A glottal stop is added finally, if one is not already present.

e.g. amii- "healthy" \(\rightarrow\) amii? "(to be) healthy"

\(\ddot{	ext{\~n}}\)o?hu- "soft" \(\rightarrow\) \(\ddot{	ext{\~n}}\)o?huu? "(to be) soft"

\textsuperscript{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.

\textsuperscript{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. amai? tsê "He is healthy"
kaŋoo? tsê "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\(^\text{15}\) modified in accordance with the following morphophonemic rules\(^\text{16}\):

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

e.g. amai- "healthy"  \(\rightarrow\) ari "(to become) healthy"
ooja- "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"  \(\rightarrow\) hamo? "(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.

\(\rightarrow\) phe?dê? "(to become) fat"
\(\rightarrow\) ñe?ki? "(to become) strong"
e.g. ka?mu "fermented" : ka?mu "(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 tsá "He gets (becomes) healthy"
healthy he

enitsí tsé "She gets worms" (i.e., "becomes infected with intestinal worms")
gets-worms she

ka?ma tsá "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. kaasó "good"

aijamá? "near"

2.4.3.2. Sub-class 2.

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

Types and sub-classes of adjective stem 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.
e.g. ka?ru? "(to be) fermented"
   aijà uu? "(to be) near"
   aşepuu? "(to be) a lot"
   kaşi? "(to be) good"

2.4.3. Sub-class 3.
This consists of type iii adjective stems, which occur in
adj ective word type iii, "Predicative ii".
  e.g. kaşi? "(to become) good"
       aijà uu? "to draw near"

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 per-
iphery slot in verb group type ii, sub-type i.
  e.g. ooja "small"
       ami "(to become) healthy"
(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:

\[ Vb = \_px:pN/priv +B:VbSt\alpha sx 1\alpha: reflex/recip +sx 2: estv/\]
\[ \quad \text{incho} +sx 3: dir +sx 4: prog \]

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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 $\text{iʔkam}^1$ "to vomit", $\text{hēʔn̥a}^2$ "to roast", and very improbable with such verbs as $\text{aʔmit}^3$ "to eat".) Likewise, there are some intransitive verbs to which they are applied. (For instance, oʔdo "to work", $\text{meʔmitotu}-$ stem of "to suffer".)

Thus, the restriction of application of order 1 suffixes appears to be more a lexical (and in consequence, semantic) one than a 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).

Imperative is not indicated in the above formula, since it consists of both segmental and suprasegmental elements. The formula thus indicates the 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. 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, these are morphophonological, and not grammatical, types, and therefore are not relevant here.

e.g. Stem: hē?mā "to roast"

mē?mā "I roast"

phē?mā "you roast" (singular)

mā?nākaā \( ^3 \) "without roasting ..."

Stem: a?mitā "to eat"

no?mitā "I eat"

pa?mitā "you eat"

ma?mitākaā ... "without eating ..."

Stem: mamā "to call"

nomamā "I call"

pinamā "you call"

mamamākaā ... "without calling ..."

Special Case.

The verb kemā "to say" loses its initial syllable when assimilated to a pronoun or privative prefix:

Hoama kemā ... "John says ..."

gimā ... "he says ..."

\( ^3 \) The 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 "denoted" 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.
-phaa và and -kaka và are probably both analyzable into two morphemes -- -phaa- và and -kaka- và -- since -và is occasionally omitted in -phaa và. However, the function of the postulated morpheme -và is not clear. 4

3.1.3.3.1. Reflexive: -phaa và.

e.g. haa?phaa và "to comb oneself" < haa? "to comb (s.o.)"
    hipá phaa và "to wash oneself" < hipá "to wash (s.o., sth.)"

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

e.g. hoka?phaa và "to get dressed, to get into (a canoe, etc.)"
    < ho?ku "to bite" (of insects)

In spite of this, -phaa và 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. me paa ká phaa và nò?mí "Without washing myself I go"

---

4cf. omission of the final syllable of tò?và, "to obtain", in 4.1.2.2.
"Dressing myself, I go"

3.1.2.2. Reciprocal: -kakává.5

*e.g.* maa?kakává "they comb each other's hair"

< han? "to comb"

(cf. maa?phaavá "they comb their (own) hair")

nepákakává "they wash one another" < hipá "to wash"

(cf. nepáphaavá "they wash themselves")

nanovigipíkakává "they speak to each other"

< novigipí "to speak"

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

*e.g.* (i) naogí kainše na-khá tapir die they-do "They kill the tapir"

But kainše necžá - kakává die they-be recip "They kill one another"

Contrast kainše necžá die they-be "They die"

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

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

As the above examples demonstrate, a restriction consequent 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 distributed 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. miʔtsotā "to boil (sthg)"

i) + causative verb word suffix:

tshonāva tsō hooni miʔtsototā
her-mother her water boil-cs-cs

6This 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, Landerman & 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:-

<table>
<thead>
<tr>
<th>tsa-mi</th>
<th>ma</th>
<th>ifotā</th>
<th>-</th>
<th>kakāvotā</th>
</tr>
</thead>
<tbody>
<tr>
<td>he-rec</td>
<td>them</td>
<td>fear-cs</td>
<td>recip-cs</td>
<td></td>
</tr>
<tr>
<td>past</td>
<td>rt</td>
<td>deriv</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VbSt: frighten</td>
<td>Sx 1</td>
<td>Sx 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"He made them frighten one another"

Here the causative suffix has functioned as a derivator at stem level, boosting an intransitive verb root (ifō, "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 demotes 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:

ṣaḥ hooni miʔtsotākā
she water boil-CS-incho "She begins to boil the water"

With inchoative derivator at stem level.

e.g. ʃfakā "to become frightened, to repent"

i) + causative verb word suffix:

ṣaḥ tsō ʃfakootā
he her become-CS "He makes her become frightened"

ii) + inchoative verb word suffix:

ɡfakākā - mī
he-repent-incho-rec "He began to repent" (Lit.: "He past
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: -tā.

e.g. tshonāva dottsātē nūḥigā do-khotā
her-mother her-brother shelter she-do-CS

"Her mother makes her shelter her brother"

When the causative is added to the verb (ii) ṭā "to be", this
is obligatorily replaced by kḥā, "to do". 7

e.g. mitshā-mī gi-ṭā
get-up rec he-be "He got up"
past

Becomes

ṣaḥ-mī mitshā gi-khotā
him-rec get-up he-do-CS "He made him get up"
past

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

e.g. vakhā gižā-kaā
     ill he-be-incho "He becomes ill"

(cf. vakhā gižā "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. giṭōnākaānā "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. mopākaā-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 verbal directional suffixes:

-keē "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) -keē or {-ki} is added to the resultant form.

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

9cf. Directional Imperative, 3.1.2.6.2.1., rule (xi), below,
and verb group type ii, sub-type i, 5.1.2.2.1.
Directionals are not added to directional verbs or to verbal constructions indicating direction (e.g., Verb Piece type ii., verbs with imperative directional suffixes – cf. 3.1.2.6.2., rule (x), below).

3.1.2.4.1. -ke6 "to go to"
e.g. no?miteke6 "I go to eat" < a?mitu
    nokhonike6 "I go to laugh" < khoni
    bote? dokheke6 "She goes to sweep" < bote? khá
    tua gižke6 "He goes to jump" < tua já
    gi-manfa vate?ke6 "We go to know (meet) him" < manfa tó?
    noke?ke6 "I go to open"

Additional changes with -phaavá.
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?phaavé-ke6 } "I go to work" < odo?phaavá
      nodo?pheeve6-ke6

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.

\textit{e.g.} \text{nopápheevékeš} \text{nopékešphaavá} \quad "I go to wash myself" \quad < \text{hipáphaavá}

(In this particular case the change of all vowels in \text{-phaavá} when preceding the directional would appear to be obligatory.)\textsuperscript{10}

In some cases, \text{-phaavá} cannot follow the directional, and the vowels of the first syllable do not change.

\textit{e.g.} \text{noo?phaavékeš} "I go to comb my hair" \quad < \text{haa?phaavá}
\text{hoka?phaavékeš} "I go to enter (a house, a canoe); I go to dress" \quad < \text{hoka?phaavá}

The use of this directional suffix results in a meaning which parallels that obtained by verbal piece type \text{ii:i} with the verb \text{i?ni} "to go".

\textit{e.g.} \text{a?miténe no?ni} "I go to eat"
\textit{cf.} section 5.1.2.2.1., below.

\text{3.1.2.4.2.} \{\text{-kfi}\} "to come from".

\textit{e.g.} \text{no?miteki} "I come from eating"
\text{nokhoniké} "I come from laughing"

\textsuperscript{10}A clarification of the possible differences of meaning here must await further research. My informant \textbf{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"
vatapônîkhé "We come from dreaming" < tapônî "to dream"
boko? dokheki "She comes from sweeping"
no-nìagî-nekó jì? gîzeki "He comes from meeting with my brother"
< jì? jà "to meet"

No additional rules appear to apply in the case of -phaavé, before this directional marker (yet it is attested in less cases than -keë, and it is thus possible that further data might reveal similar changes).

E.g. nodo?phaaveki "I come from working"
noke?phaaveki "I come from dressing, from entering"

But after tó?, -kî is aspirated:

E.g. gi-manâna no-te?khî "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 a?ko, "to open":

noke?kî "I come from opening".

The following example illustrates the use of a directional after the Order 2 causative suffix:

nošóteki "I go to cause to eat meat" (i.e., "I go to feed (the children, etc.) with meat")
< sóta "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 tsā?(nu) "to come".

e.g. no?mitāka? natsā? "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. 11

2.1.2.5. 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. gīnāpa "He is sleeping" (cf. gīnā "He sleeps"

kainē gīnāpa "He is dying" (cf. kainēmē ko gīnā "He has already died")

3.1.2.5.1. -nā.

The progressive is optionally followed by -nā, the meaning of which is not clear, though it is probably to be identified with the -nā occurring after inchoative in final position, as indicated in 3.1.2.3.2., above.

e.g. gīnāpanā "He is sleeping"

If the inchoative is non-final, -nā does not occur, unless -pa is final:—

11 Though -kaš parallels verb piece ii,i with i?pi in meaning, and ({-ki}) closely approximates to Adjunct Phrase with tsā?(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-mi "He sat down"

gi?tsakaf-mi-pa-mu "He was in the process of sitting down"

(Here the temporal clitic -mi precedes the progressive suffix.)

This -mu may be related to the syllable occurring at the end of the verbs i?pi "to go" and tsõ? "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 tsõ?.

e.g. (i) a?mite no?pi
    eat aux I-go "I go to eat"
    ind
    VbPce ii i

Contrast:

kaaŋoja?i gi-kha a?mite no?pi - na - mo
want he-do eat aux I-go ppsv
    ind
    P:VP:VbPce ii i
    Axis:Nom:Cl relr
    Purposive Phrase

"He wants me to go to eat"

(ii) no?mitkaŋ no?tsõ
I-eat - incho I-come "I come from eating"
Adjunct Phrase

Contrast:

12 In this connection, it may be questioned whether the generally-omitted -ni of aŋnoni "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 tags (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:

"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 *phá* precedes 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. *piʔmitā* "drink! (sg.13)" (cf. *paʔmitā* "you drink")

*piʔpi* "go!" (cf. *piʔpi* "you go")

If the verb stem consists of a single syllable, the imperative is homophonous with the assimilated form of the declarative.

e.g. *bōʔtōʔ pikhā* "sweep!" (cf. *bōʔtōʔ pikhā* "you sweep")

*eeʔphi pikhā* "fish!" (cf. *eeʔphi pikhā* "you fish")

*piʔšā* "eat meat!" (cf. *phiʔšā* "you eat meat")

13Not 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 *ii* of the copulative verb, which is deleted (with very rare exceptions) in the declarative, is retained in the imperative.

*e.g.* tua *piizá* "jump!" (cf. phá *tua *já* "you jump")

Rule iv. In *hipá* "to wash" and *mitá* "to smoke (food -- as a preservative process)”, *i* > *ii* :-

*hipá* "washi!" (cf. phá *hipá* "you wash")

*phipáphaavá* "wash yourself!" (cf. phá *hipáphaavá* "you wash yourself")

*pimítá* "smoke (it)!" (cf. phá *mitá* "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.

*e.g.* *a?mitá musi* "eat! (dl)" (cf. hamusi *a?mitá* "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.
1?pi'usisi "go!"  (cf. hamusi i?pi' "you go")
hadà?pusisi "sing!"  (cf. " hadà?pá "you sing")
išámusi "eat meat!"  (cf. " šá "you eat meat")
boto? ikhámusi "sweep!"  (cf. " boto? khá "you sweep")
ee?phi ikhámusi "fish!"  (cf. " ee?phi khá "you fish")

Rules iii and iv, above, apply also in the dual.

e.g. (Rule iii)
tua išámusi "jump!"  (cf. hamusi tua šá "you jump")

(Rule iv)
hi?pi'usisi "wash!"  (cf. " hi?pi' "you wash")

It is noted that -músí/-mupí cannot precede the reflexive:

hi?pi'phaavámusi "wash yourselves!"  (cf. hamusi hi?pi'phañavá
"you wash yourselves")

(iii) Plural.

Rules ii–v, above, apply. No suffix is added. Thus, when i
> φ, the plural imperative may be homophonous with the unaffixed
form of the verb, or differentiated from it only by tone.

e.g. a?mitú "eat! (pl.15)"  (cf. a?mitú "to eat",
ha? a?mitú "you (pl) eat")

i?pi' "go!"  (cf. i?pi' "to go", ha? a?pi' "you go")

hadà?pá "sing!"  (cf. hadà?pá "to sing", ha? a hadà?pá
"you sing")

---

15 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.
ižō "eat meat!" (cf. ha?ā ŋā "you eat meat")
boto? ikhā "sweep!" (cf. " boto? khā "you sweep")
ee?phi ikhā "fish!" (cf. " ee?phi khā "you fish")
tua iižā "jump!" (cf. " tua jā "you jump")
hiipā "wash!" (cf. " hiipā "you wash")
hiipāphaa vào "wash yourselves!" (cf. ha?ā hiipāphaa vào "you wash yourselves.")

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 {-ma?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. Allomorphs of the Negative Imperative Clitic.
{-ma?u}₁⁶: -ma?u - -mā - -mā?
a) -ma?u
This occurs immediately following khā or (ii)mā.₁⁷ Thus, it does not occur in the dual, since the verb is then suffixed.

e.g.                  Singular                  Plural
"Don't sweep!"  boto? pikhāma?u  boto? ikhāma?u
"Don't jump!"    tua piizāma?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) -má

This occurs non-finally on the verb, or on the basic or other
filler of the peripheral slot in the complex verb group. 18

<table>
<thead>
<tr>
<th></th>
<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?máphaavámusi</td>
<td>odo?máphaavá</td>
</tr>
<tr>
<td>&quot;Don't sweep!&quot;</td>
<td>boto?má pikhá</td>
<td>boto?má ikhámusí</td>
<td>boto?má ikhá</td>
</tr>
<tr>
<td>&quot;Don't jump!&quot;</td>
<td>tuamá pižá</td>
<td>tuamá iižámusí</td>
<td>tuamá iižá</td>
</tr>
</tbody>
</table>

c) -má?

This occurs elsewhere i.e., finally on all verbs 21 except
khá and (ii) 1 á, and after -musi/-mupí on these verbs.

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Don't go!&quot;</td>
<td>pi?pinámá?</td>
<td>i?pinamusimá?</td>
<td>i?pinámá?</td>
</tr>
<tr>
<td>&quot;Don't sweep!&quot;</td>
<td>---</td>
<td>boto? ikhámusimá?</td>
<td>---</td>
</tr>
<tr>
<td>&quot;Don't jump!&quot;</td>
<td>---</td>
<td>tua iižámusimá?</td>
<td>---</td>
</tr>
</tbody>
</table>

In the last two examples, the dual forms are variants of
those exemplified under -má.

3.1.2.6.1.2.2. Application of {-máu} to verbs.

The above remarks concerning the allomorphs of {-máu} serve

18 Or on the head verb of a complex verb piece, when an imper-
  active directional is present -- cf. 3.1.2.6.2.2., below.
19 The singular and plural forms here are variants of those ex-
 emplified under -máu.
20 Footnote 19 applies.
21 Except when these contain imperative directionals -- cf.
  3.1.2.6.2.2., below.
22 For presence of -ma (< -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 -mâ is added finally to the imperative of all verbs except khâ and (ii) jâ, to which -ma?u is added, except in the dual after -muni/-muni, when -mâ is added. See examples in a) and c), above.

Rule viii. When khâ and (ii) jâ form part of a complex verb group, the negative imperative may be marked as indicated in rule vii, or by adding -mâ 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 -mâ. 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.\(^{23}\)

\(^{23}\)cf. 3.1.2.4., rule iv, above.
Rule xi. Any verb stem final vowel other than \( i \) becomes \( e \). \( i \) does not change. 24

Rule xii. Verb stem final vowel is lengthened.

Rule xiii. \( -?k\ddot{a} \) "come and ..." or \( -ni \) "go and ..." is added to the resultant form of the verb stem in singular and plural.

Rule xiv. \( -ni \) 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. \( -?k\ddot{a} \) may be omitted in the dual only, when ambiguity with "go and ..." will not result; 25 except with \( kh\ddot{a} \) and (ii) \( \ddot{a} \), when it is always included.

e.g. "Come and ...

<table>
<thead>
<tr>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;... eat!&quot;</td>
<td>p(a)m(a)t(e)e(\ddot{a})k(\ddot{a})</td>
<td>a(\ddot{m})t(e)e(\ddot{a})(?k(\ddot{a}))(m)usi</td>
</tr>
<tr>
<td>&quot;... sing!&quot;</td>
<td>p(h)d(\ddot{a})p(\ddot{a})e(\ddot{a})k(\ddot{a})</td>
<td>h(d)d(\ddot{a})p(\ddot{e})(?k(\ddot{a}))(m)usi</td>
</tr>
<tr>
<td>&quot;... eat meat!&quot;</td>
<td>p(i)(\ddot{e})(e)k(\ddot{a})</td>
<td>i(\ddot{e})(e)(?k(\ddot{a}))(m)usi</td>
</tr>
<tr>
<td>&quot;... play!&quot; ((\zeta) (?)(m(e)(m)i, &quot;to play&quot;)</td>
<td>p(i)(m)e(m)i(i)(?k(\ddot{a}))</td>
<td>i(m)e(m)i(i)(?k(\ddot{a}))(m)usi</td>
</tr>
<tr>
<td>&quot;... sweep!&quot;</td>
<td>b(o)t(o)</td>
<td>p(i)k(h)ee(\ddot{a})k(\ddot{a}) b(o)t(o)</td>
</tr>
</tbody>
</table>

24 cf. verb word suffix Order 3, "Directional", in 3.1.2.4., rule 1, above, and verb piece, section 5.1.2.2.1.(i), below.

25 The omission of \( -ni \), and occasionally of \( -?k\ddot{a} \), 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 \( *-ni \) and \( *-i?k\ddot{a} \).

26 Tonal change is due to tonal morphophonemics. cf. comment in Introduction, section 0.5., on scope.

27 The stem glottal of \( h\(d\)d\(\ddot{a}\)p\(\ddot{a}\) \) moves right one syllable before suffixation and is assimilated to the glottal of \( -?k\ddot{a} \), when this occurs. Two glottals are not pronounced in the dual when \( -?k\ddot{a} \) is included; the repetition of the glottal in the transcription of the example merely shows that when the whole of \( -?k\ddot{a} \) is deleted, a glottal remains, namely that of the stem.
"... jump!" tua pižee?kā tua ižee?kāmusi tua ižee?kā
"... work!" podee?kāphaavā odee?(?kā)phaavāmusi odee?kāphaavā

e.g. "Go and ..."

<table>
<thead>
<tr>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;... eat!&quot;</td>
<td>pa?miteenī</td>
<td>a?miteemusi a?miteenī</td>
</tr>
<tr>
<td>&quot;... sing!&quot;</td>
<td>phadápee?ni</td>
<td>hadápee?musi hadápee?ni</td>
</tr>
<tr>
<td>&quot;... eat meat!&quot;</td>
<td>pišeeenī</td>
<td>išeeemusi išeeenī</td>
</tr>
<tr>
<td>&quot;... play!&quot;</td>
<td>pi?memiinnī</td>
<td>i?memiimus i?memiinnī</td>
</tr>
<tr>
<td>&quot;... sweep!&quot;</td>
<td>boto? pikheenī</td>
<td>boto? ikheemusi boto? ikheenī</td>
</tr>
<tr>
<td>&quot;... jump!&quot;</td>
<td>tua pišeeenī</td>
<td>tua išeeemusi tua išeeenī</td>
</tr>
<tr>
<td>&quot;... work!&quot;</td>
<td>podee?phaavā</td>
<td>odee?phaavāmusi odee?phaavā</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.

E.g. "Don't come and ..."

<table>
<thead>
<tr>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>a?mitee?káma?u</td>
</tr>
<tr>
<td></td>
<td></td>
<td>boto? ikhee?kámusima?u</td>
</tr>
<tr>
<td>&quot;... jump!&quot;</td>
<td>tua pišee?káma?u</td>
<td>tua išeo?káma?u</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tua išeo?kámusima?u</td>
</tr>
<tr>
<td>&quot;... work!&quot;</td>
<td>podee?káphaaváma?u</td>
<td>odee?káphaaváma?u</td>
</tr>
<tr>
<td></td>
<td></td>
<td>odee(?ká)phaavámusima?u</td>
</tr>
</tbody>
</table>

"Don't go and ..."

<table>
<thead>
<tr>
<th></th>
<th>pa?miteena?u</th>
<th>a?miteemusima?u</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;... eat!&quot;</td>
<td></td>
<td>a?miteena?u</td>
</tr>
<tr>
<td>&quot;... eat meat!&quot;</td>
<td>pišeeena?u</td>
<td>išeeemusima?u</td>
</tr>
<tr>
<td></td>
<td></td>
<td>boto? ikheema?u</td>
</tr>
<tr>
<td>&quot;... jump!&quot;</td>
<td>tua pišeeema?u</td>
<td>tua išeeemusima?u</td>
</tr>
<tr>
<td>&quot;... work!&quot;</td>
<td>podee?phaaváma?u</td>
<td>odee?phaaváma?u</td>
</tr>
<tr>
<td></td>
<td></td>
<td>odee?phaavámusima?u</td>
</tr>
</tbody>
</table>

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 ..."

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>boto?má ikhee?ká</td>
</tr>
</tbody>
</table>

33 cf. rule xiv, above, on omission of -nì when it would occur non-finally.
"Don't go and ..."

"... sweep!"  boto?má pikheeni  boto?má ikheemusi

"... work!"  podee?maphaavá

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?mephaavá i?pinamusimá? "Don't you (dl) go and work!"

tuan jéme itsánnamá? "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?mephaavamá i?pl "Don't you (pl) go and work!"

boto? khéemá itsánnamusi "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:

khá  "to do, to make"
(ii) já "to be"  pí?ko "to throw away"
tò?vò "to obtain"  a?píthóota "to cause to bathe"
i?todá "to be standing up"  i?votá "to cause to dry"
a?ni "to give"  hënotá "to cause to be the same"

Sub-class 2.
This sub-class consists of all other verbs. Those occur in verb group type i only.
e.g. a?míta "to eat"
i?pí "to go"

3.2. Noun Word.
3.2.1. Contrast.
Noun words (Nn) have the following contrastive-identification 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".

\[ Nn_1 = +B;NnSt_1 +sx 2;aug/dim +sx 4; rest \]
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. apánú "leaves"
  naʃ1 "worms"
  atsâa "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. peʃ1 "starch"
  hooni "water"

Occurrence with Order 2 and Order 4 suffixes:

  e.g. apánú-kobu
  leaves mug "big leaves"

---

34Levinsohn informs me that this is also the case in Huitoto Mánica, on which Minor has gathered data.
na+i-ja?
worms dim "little worms"

ma6pa-ja?-mu
bees dim rest "only little bees"

3.2.2.2. Noun Type ii: "Complex".

\[ N_{n_{i_{i}} = +B: N_{n_{s_{2}} + s_{1}; clsfr + s_{2}; aug/dim + s_{3}; nmb + s_{4}; rest} \]

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 Resigaro. 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 ma "all", se "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. 꽤aapi, 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 between the stem and the suffix is determined by reference to a numeral or other word bearing the same classifier suffix.
-bába "that which belongs to something" (C.L.)
-hii?pú "foot" : hii?pábabá "sock, stocking"
-ñiveñ "head" : ñiveñabá "pillow"

-bahá "uninhabited part of the jungle" (C.L.)
tébahá "uninhabited part of the jungle"
híbahá "this uninhabited part of the jungle"

-ba
i) "made of liana cord"
  e.g. hamáakabá "hammock" (M.O.C.)
     kamo?bú "basket made from liana cord" (M.O.C.)
ii) "a felled tree"
  e.g. haája?é "trunk of the huncorōna (= varipo) tree, standing"
       : haája?á "(ditto), cut down"
  ta?aká?é "trunk of the Annona muricata tree, standing"
       : ta?akábá "fruit of the same tree, cut down"

dé "female" (C.L.)
nágí "brother (of br.)" : náadó "sister (of sis.)"

-gaa?zé "raft, floating thing"
  e.g. avánana?é "tree trunk" : avánanaga?zé "raft"

gahá "above" (C.L.)
imíñ "eye" : imigahá "eyebrow"
téghá "hill"

35. From informant's gloss, pertenece a tal comp. 36. This is only attested with the one word given, in contrast to -píñe, below, which has a wide distribution. cf. form of pronoun for 3rd person singular, feminine.
"human, male, and all non-human animates"

Example:
-ats'ía "men" : ats'ágí "man"
-phaįįjé "old woman" : phaįįɡí "old man"
-moóɡí "tapir"

"long and flat"

Example:
-ki "hand" : -kédí "finger"
-hii?pi "foot" : -hii?pádi "toe"
-bœ?khoótsiɡí "paddle, oar" (M.O.C.)
-va?ádi "machete"

"round and flat"

Example:
-kopági?aami "paper money" (usually una libra, i.e.
10 soles)
-kopágihi "a coin" (usually 1 sol)
-háddí "land turtles" : háddahí "land turtle"
-bo?otáhi "a plate"
-hípohi "land, earth"

"long and flat -- horizontal"

Example:
-imú "to sleep" : moótsiɡí "bed"
-pagíiša "to spread out a blanket"
-pagíióótsiɡí "a blanket"
-pañíitsihi "a house" (M.O.C.)

"big" (of people) : ḥį́jaaahí "width"

---

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": híviigí.
ii) "speech"

e.g. -nó "mouth" : nóhú "language, word"
       nóstsihú "word"

hada?phośtsí "songs" : hada?phoståhú "song"

šochné šú "to deceive" : šochná "a lie"

škòniigi "a fire" : škòniigihú "rifle" ("a voice of fire, or a fire that speaks")

-hugfí "path" (C.L.)

ajáphugfí "a path" (M.O.C.)

sahugfí "one (path)"

-ì "stick-like"

e.g. aవάana?é "tree trunk": aవάanaí "a stick"

na?i "worms" : na?ii "a worm"

tho? khú "to grind" : tho?khoståif "a pestle"

-kaaçaf "shin"

-ìì?ó "long and oval-shaped" (C.L.)

-henàkó "ear" : -henàkòifó "horn"

-ììhú "dust"

e.g. škòniigi "a fire" : škòniigijìhú "ash"

hipohí "earth" : hipojàhú "dust"

iitshìhmá "sugar cane": iitshìjìhú "granulated sugar"

-ìììì?ó "stringy"

e.g. híve?áší "crown of the head": híve?jìììì?ó "long hair"

pona?ámá "trunk of the hungurahui palm tree"

: pona?ámájìììì?ó "tocuma" (the
heart of the trunk, which is
eaten -- Sp. chonta)

-kac?d? "watering-place" (C.I.)
(where wild animals drink)

-kó "a thick stick" (C.I.)
iítsíjiíhú "granulated sugar"; íítsíkó "wild sugar cane"

-koomé "village" (C.I.)
panitsíi "house" : panítsímúkoomé "a village, a hamlet"
 sákoomé "one (village)"

-koo?è "broom" (C.I.)
boto? kíú "to sweep" : boto?khoótsiíkoo?è "a broom"
 panítsímúkoo?è "a broom"

-kubá "leg" (C.I.)
-íphi "thigh" : -íphíkubá "leg"
-ñií?pá "foot" : -ñíí?pákubá "leg"

-mi "canoe" (C.I.)
híftámi "a canoe" (M.O.C.)
sámi "one (canoe)"

-mii?o "skin (-like)"

-o.g. -henákó "ear" : samí?o "one (ear)"
 eémá "skin, hide" : eémamí?o "skin, hide" (M.O.C.)
-mokí "dead"
e.g. atságí "man" : atsámokí "dead man"

-má "tube-like"
e.g. iitsihjáhí "granulated sugar" : iitsihmá "sugar cane"
važamá "bamboo"
samá "one (drum, etc.)"

-paahi "hollow"
e.g. hive?áfi "crown of the head" : hive?paahi "skull"

-pají "field" (C.L.)
jackádepají "field" (M.O.C.)
sápañí "one (field)"

-pókó "honey" (C.L.)
firmu?ó "beehive, honeycomb" : firmu?ó pókó "honey"

-páñí "ring"
e.g. -hénókó "ear" : hénókapáñí "earring"
-kó "hand" : képáñí "ring (on hand)"
-láñí "eye" : lípáñí "spectacles"

-pékó "day"
e.g. pàpeko "every day, always"
hípeko "last night"
sípeko "the day after tomorrow" (Lit., "the other day")

-pì "liquid" (countable)
e.g. šákoo?gí?ó "a banana": šákoo?gípì "a drink made from bananas"
i?dů "to drink" : i?doōtsipī "a drink" (M.O.C.)
fiifī "eye" : fiipī "a tear" ([tʰə])
-piipjē "human female"
 e.g. phaipī "old man" : phaipipjē "old woman"
heevō?i khū "to study" : heevō?ikhōtsopipjē "a female student"

-tuʔa "foot" (C.L.)
 -hiiʔpātuʔa "foot" (M.O.C.)
situʔa "the other (foot)"
sātuʔa "one (foot)"
-tsiaʔnʔdō "shoe" (C.L.)
 -hiiʔpa "foot" : hiiʔpātsiʔaaʔdō "shoe"

-u "spherical"
 e.g. ıhipąsī "spectacles" : -ıhipū "eye"
-vafō "interior, stomach" : vafōʔa "heart"
ofiiʔa "yams" : ofιinəʔ "yam"

Any stem-final glottal is deleted before addition of this classifier.
 e.g. -hıveʔpaaʔi "skull" : hıveʔa "head"

-uuʔa "a part of" (C.L.)
 maaʔnų "cassava" : maaʔnnauʔa "a piece of cassava"

-uuʔa "rope-like"
 e.g. e-ipi "liana" : epiiʔipuʔa "liana cord"
                 komaʔkauʔa "vein"
-vuudé "log"
  e.g. avánana?é "tree trunk" : avánanavuudé "a log"
  škoniigi "fire" : škoniigivuudé "a burning piece of wood"

-ʔaamí "leaf-like"
  e.g. apáná "leaves" : apánáʔaamí "a leaf"
  kopáagíí "a coin" (usually 1 sol) : kopáagíʔaamí "paper money" (usu. una libra)
  tóʔaamí "book, notebook"

-ʔaamí "liquid" (uncountable)
  e.g. -iʔnìma "nipple" : iʔniʔaamí "milk"
  nanánáʔá "pineapple" : nanánáʔaamí "pineapple juice"

-ʔaapi "arm" (C.L.)
  This suffix is not added to the noun for arm (-aʔnìapi), 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. sáʔaapi "one (arm, etc.)"

-vaamí "back" : -vaamíʔaapi "backbone, spinal column"

-ʔaavi "side of"
  e.g. tečíí "a river" : tečíʔaaví "river bank"
  -nó "mouth" : -nóʔaavi "lip"
  -iśiíí "eye" : -iśiʔaavi "eyelashes"
-ʔabaŋ "shoulder" (C.L.)
-ʔakaŋʔabaŋ "shoulder" (M.O.C.)
sáʔabaŋ "one shoulder"

-ʔāpo "short cut" (C.L.)
teéʔi "river" : teéʔiʔāpo "short cut overland avoiding a bend in the river"

-ʔásí "central place"
e.g. hiveʔi:jiiʔé "long hair" : hiveʔásí "the crown of the head" (The initial glottal of the classifier fuses with the final glottal of the stem)
amoogí "tapir" : amoogíʔásí "central place in the jungle where the tapirs gather"

-ʔé "trunk of a tree"
e.g. avánaí "stick" : avánaʔé "tree trunk"
pipígičík "fruit of the Guilelma" : pipígičík "trunk of the Guilelma palm"

-ʔeха "hole in the ground"
e.g. hooní "water" : hooníʔeха "a well"
téʔeха "a pot-hole"

-ʔetē "flower"
e.g. tshoamá:tshíʔetē "cotton (on the plant)" (M.O.C.)
ghi:víʔetē "flower" (M.O.C.)

-ʔi "bunch"
e.g. šakooʔgiʔé "a banana" : šakooʔgiʔi "a bunch of bananas"
pipi'gi' "fruit of the: pipi'gi'i "a bunch of
Guilelma palm" Guilelma fruit"

-?iikó "a new shoot"

  e.g. nanáaná?iô "a pineapple": nanáaná?iikó "a new shoot
  on a pineapple plant"
  sá?iikó "one (new shoot)"

-?ijió "earthenware container for liquid"

  e.g. itsaàni?ijió "earthenware pitcher, pot"
  tenaàni?ijió "cup" (from Sp. tasa "cup")
  sa?ijió "one (cup, pot)"

-?ipi "machine" (C.L.)

  konógi "rubber": konógi?ipi "sewing machine"

-?iô "longish and oval-shaped"

  e.g. šakoo?gi'i "a bunch of bananas"

    : šakoo?giô "a banana"

  čhoe?keô "round-shaped: čhoe?keôô "oval-shaped maraca"
  maraca"

  veškaôô "maize, corn"

-?oohô i) "metal or tin container"

  e.g. vatscôôtsfôohô "tin pot or pan"

  sá?oohô "one (tin pot or pan)"

ii) "a room"

  e.g. vadôva khô "to carry on a business"

    : vadôva?oohô "a shop"

  hipôô "to tie up, to: hipôôscôôtsfôohô "a prison"
  take prisoner"
-?ootsi "lungs"

e.g. -vafẹ "heart" : -vafẹ?ootsi "lungs"
-δ?kọtọpụ "throat" : -δ?kọtọpụ?ootsi "gills (of a fish)"

-?osị "hand" (C.L.)
-kaa?osị "hand" (M.O.C.)
sa?osị "one (hand)" (= "five")

-?amị "face" (C.L.)
maa?amị "tar" : maanị?amị "a mask"
sa?amị "one (face, mask)"

3.2.2.2. Suffix Order 2: Augmentative/Diminutive.
-kobu "augmentative"; -já? "diminutive"

e.g. jaaná "child": jaaná-kobu "big child"; jaana-já? "little child"
keee?ẹ "cow": keee?ẹ-kobu "big cow"; keee?ẹ-já? "little cow"

-ɪphi-kuba "leg": -ɪphi-kuba-kobu "big leg"; -ɪphi-kuba-já? Nnst clsfr Nnst sx 1 sx 2 "little leg"

va?a-ga "machete": va?a-ga-kobu "big machete";
Nnst clsfr Nnst sx 1 sx 2 va?a-ga-já? "knife"

3.2.2.3. 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:
<table>
<thead>
<tr>
<th>Noun sub-type</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii.i &quot;Human&quot;</td>
<td>-musi</td>
<td>-nē</td>
</tr>
<tr>
<td></td>
<td>-mupi</td>
<td></td>
</tr>
<tr>
<td>ii.ii &quot;Non-human animate&quot;</td>
<td>-musi</td>
<td>-mu</td>
</tr>
<tr>
<td>ii.iii &quot;Body parts&quot;</td>
<td>{-kə}</td>
<td>{-nē}</td>
</tr>
<tr>
<td>ii.iv. &quot;Classifier nouns&quot;</td>
<td>{-kə}</td>
<td>{-hi}</td>
</tr>
</tbody>
</table>

Table 3.1. Co-occurrence of allomorphs of Number Suffixes with Noun sub-types.

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 atsagai "man", nāfagī "brother (of brother)" and nāfagō "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

38 The dual forms -musi and -mupi may be analyzable into -musi- "non-singular" (identifiable with plural -mu) and -si- "masculine dual", -pi- "feminine dual", and this -pi- may be identifiable with -pi- "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 -pi- as -pi- "feminine" + -mē- "??"), 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- pi7e "old woman" may omit the classifier and form the dual with -mupi: phaimupi, or may retain the classifier and form the dual with -ke: phaipi3eke7i. It has only one plural form -- phaipi3eke7i --, since phain6 would be homophonous with the masculine plural without the classifier (from phaig7 "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 ...VVCV(V) > ...VCV(V) + -n6

E.g.: Singular Dual Plural
"brother (of brother)" n6agi n6agimusi40 n6agin6
"chieftain" ke?vi7ikagi ke?vi7ikamusi ke?vi7ikan6

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 a?ipe a?ipemusi a?ipe6n6
"brother" (of brother) m6ub6e m6ubomusi m6ubon642

39 In these rules, the sign + is used to mean merely "add".
40 Exceptionally, the classifier -g7i 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 Thiessen informs me of a similar usage among the Boras.)
42 Stem-final tone lowered in accordance with general tonal morphophonemics.
3.2.2.3.2. Noun Type ii, Sub-type ii. "Non-human animato".

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 ...CV(V)?CV > ...CV(V)CV? + -musi
2) Plural: Stem ...CV(V)(?)CV$^3$ > ...CV(?)CV + -mu

e.g. | Singular | Dual | Plural |
---|---------|------|-------|
"hummingbird" | pi?mi | pi?mimus | pi?mimu |
"tapir" | amo6g1 | amo6gimus | amo6gimu |
"iguana" | maa6h?o | maa6h?omusi | maa6ha?6mu |

3.2.2.3.3. 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 + 2k6 - 2?k6
2) Plural: Stem + 2n6 - 2?n6

2k6/2?k6 and 2n6/2?n6 vary morphophonemically; choice of allomorph being dependent on the preceding noun stem. Dual and

$^3$ In these and the following rules, the absence of a tone mark on the symbol V indicates that the tone may be high or low, ♦ indicates that the tone must be high, and ♦ 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).

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;face&quot;</td>
<td>-migi</td>
<td>-migikú</td>
<td>-migíné</td>
</tr>
<tr>
<td>&quot;nose&quot;</td>
<td>-hitákó</td>
<td>-hitákockú</td>
<td>-hitákooné</td>
</tr>
</tbody>
</table>

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 + ʔkú - ʔkú
2) Plural: Stem ...CV? > ...CV + ʔhi - ʔhi

ʔkú/ʔkú and ʔhi/ʔhi 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).

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;chieftain&quot;</td>
<td>keʔviikági</td>
<td>keʔviikágiikú</td>
<td>keʔviikágiíhi</td>
</tr>
<tr>
<td>&quot;bee&quot;</td>
<td>maʔpagí</td>
<td>maʔpagíikú</td>
<td>maʔpagííhi</td>
</tr>
</tbody>
</table>

44 Human animate with classifier. cf. examples for type i, above.
45 Non-human animate with classifier.
<table>
<thead>
<tr>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;toe&quot;46</td>
<td>-hii?pàgà</td>
<td>-hii?pàgnakì</td>
</tr>
<tr>
<td>&quot;knife&quot;</td>
<td>va?agaìjà?</td>
<td>va?agaòaàìì47</td>
</tr>
<tr>
<td>&quot;cup&quot;</td>
<td>taasa?iìjò</td>
<td>taasa?iìjòhì</td>
</tr>
</tbody>
</table>

3.2.2.2.4. Suffix Order 4: Restrictive.

- mã - mã "restrictive"

The two forms vary freely.

e.g. i) jàànà - jà a kù - mã
     NnSt 2.1 sx 2-sx 3 sx 4 "only two little children"

ii) keògà - musì - mã
    NnSt 2.2 sx 3 sx 4 "only two cows"

iii) -hii?pa - mã
     NnSt 2.3 sx 4 "only a foot"

iv) va?a - gà - jà a kù - mã
    NnSt 2.4sx 1 sx 2-sx 3 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 nōkō tešʔ1-kō noʔpi
   yesterday afternoon river-to 1-go
   NP_{ii}  "Yesterday afternoon I went to the river"

(NP_{ii} -- cf. 6.1.2.2., 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, yēa pitsā?
    sister, here you-come
    V;Nn_{2}  "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 those 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. Hoa nāagi "John's brother"

  pha nāagi "your father" (* pha hanīgi*)

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 -īidd "blood" and nouns formed by derivation with classifiers, but which nevertheless refer to body parts (or components), such as hii?pāgā "toe", are included here.

* e.g. giidd "his blood" (* tsā iiidd)

  moo?pāgā "my toe" (* mō hii?pāgā)

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. daafā "residue, crumbs" (* tsā afā, Lit. "its residue")

  sīiivā "centre" (* tsā hiivā, Lit. "its centre")

  sīimfā "seed" (* tsā himīfā, Lit. "its seed")

  gipāgād "nest" (* tsā pāgād, Lit. "its nest, cover")

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 iii) add a morpheme

when possessed, but not when marked by deixis.

3.2.3.3.1.4.1. 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.2.2.2.2.1., above.

When these nouns are possessed, nominalizer -ftsí > -fŋá (in which the ŋ becomes a before further suffixes).

e.g. a?mitho6tsí "food, a meal" ; do?mitho6ŋá "her food, meal"

boe?kho6tsígá "paddle" ; piboe?kho6nágá "your paddle"

There are a very few exceptions:

a) tho?kho6tsígá "mortar, bowl in which yucca is ground"

This remains unchanged when possessed.

b) tho?kho6nágá "pestle for grinding yucca"

ka?foonágá "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) -ftsí > -fku
This change has only been observed for the following two nouns:

\[ \text{i?kamanitsi "vomit"} \quad \rightarrow \quad \text{gi?kamaniku "his vomit"} \]
\[ \text{koneetsi "merchandise"} \quad \rightarrow \quad \text{gikonešku "his merchandise"} \]

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 \( \mathbf{h} \) and a long vowel in the first syllable, the length moves to the second syllable when the noun is possessed.

\[ \text{e.g. } \text{hiibiši "cocoa"} \quad \rightarrow \quad \text{čibiši "his cocoa"} \]
\[ \text{hiitá "canoe"} \quad \rightarrow \quad \text{čjetán "his canoe"} \]

But not all \( \mathbf{h} \)-initial nouns with a long vowel in the first syllable change:

\[ \text{e.g. } \text{hiivá "centre"} \quad \rightarrow \quad \text{čjivá "(its) centre"} \]

Thus, conditioning here appears to be lexical.

3.2.3.3.1.4.ii.ii. A special case.

The possessed form of panitsi "house" is -paṇ̃á. It is conceivable that this represents no more than a special case of change of derivational suffix, -itsi - iná, 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

\[ \text{Note irregular derivation from i?kamá "to vomit", with -ni-} \]
\[ \text{(< *-ni-). cf. 3.2.3.3.1.4.ii.ii, below.} \]
a morpheme *-ni- been observed in type ii sub-type i noun stems, with the exception of the irregular iʔkaʔaniftsi, "vomit", where the morpheme is retained in the possessed form (and where -ftsdi > -ftku -- cf. above).

In the light of this, it seems best to consider that \{paniftsi\} is an irregular word in which the allomorph -paʔna must co-occur with the Limiter 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 \{-:ʔdě\} when possessed. The form with this additional morpheme must co-occur with the Limiter 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:

   vaʔagaʔa? "knife"  >  givąʔaadę́gaʔaʔ? "his knife"
   koneʔ "bracelet"  >  dokoneʔdənę "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):

   iteeviʔę "aguaje"  >  giʔteviʔidę́ʔę "his aguaje"
   avąʔnaʔ "stick"  >  daʔvąʔnaʔteʔi "his stick"
   heʔnaʔ "a type of cassava"  >  meʔʔaʔadę́ "my cassava"

\[51\]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:
   amoogí "a fish"  >  no?noodé "my fish"
   poogí "frying-pan"  >  dopoo?dé "her frying-pan"

ii) if the long vowel is followed by a glottal in the stem:
   ee?phígà "fishing hook"  >  deo?phídegà "his fishing hook"

3. If the stem has a glottal, this causes the deletion of the suffix glottal:
   ee?phígà "fishing hook"  >  deo?phídegà "his fishing hook"
   poogí "frying-pan"  >  dopoo?dé "her frying-pan"
   va?agujä? "knife"  >  giva?andégajä? "his knife"

But if the stem does not have a glottal, one is added to the end of the first syllable of the stem:
   amoogí "a fish"  >  no?noodé "my fish"
   iteeviö "aguaje"  >  no?teeviideö "my aguaje"

(In iteeviö, the glottal is in the classifier suffix, not the stem.)

avánaní "a stick" is slightly different, with a second glottal immediately before the added morpheme, in which the è is devoiced:
   de?vána?toi "his stick"

ékóniigí "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:
   dö?kóni? "his/her fire"

4. Classifiers and other word level nominal suffixes go after the additional morpheme, and are often deleted:
i) Nominal suffixes included:

ce?phigu "fishing hook" → doe?phidegú "his fishing hook"

iteevi?o "aguanje" → gi?teviidú?i "his aguanje"

av?anai "stick" → da?vamac?toi "his stick"

va?n-ga-já? "knife" → giva?andé-ga-já? "his knife"
(shows sx orders 1 and 2)

konc? "bracelet" → dokonc?dené "her bracelets"
(shows sx order 3)

ii) Nominal suffixes deleted:

anogí "fish" → da?noodó "his fish"

po?gi "frying-pan" → dopoo?da "her frying-pan"

élkiniigí "fire" → dő?kóní? "his/her fire"

3.2.3.3.2. Category 2, "- Limiter".

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?mithotsi "food, a meal"

konétsi "merchandise"

hiitá "canoe"

panitsi "house"

va?agaýá? "knife"

3.2.3.3.3. Category 3, "± Limiter".

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"
onâ?kô “snake”

jodo?figô “waterfall”

(For NP type i, cf. 6.1.2.2.1., below.)

3.3. Pronoun Word.
3.3.1. Contrast.

Pronoun words (Pn) have the following contrastive-identificational 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 morphophonemic processes.

3.3.2. Variation.

Pronouns are grouped into types, according to whether or not they are affected by assimilation at word level.\(^{52}\)

3.3.2.1. Type i.

This consists of sub-class 1 pronoun stems, viz:

nô 1st person singular
phô 2nd " "
tsô 3rd " " - masculine
tsô  " " - feminine

\(^{52}\)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 level, 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.
ff 1st person non-singular, inclusive
i 2nd " " imperative
a 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 > Ø before h- or V-initial verbs;
i does not change elsewhere.

e.g. šā "to eat meat" : išā "eat meat!" (pl)
  ee?phi ēkā "to fish": ee?phi ēkā "fish!" (pl)

53 1st person non-singular exclusive, muk- 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 me- "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.
hadá?pú "to sing" : hadá?pú "sing!" (pl)
i?pí "to go" : fí?pí "go!" (pl)
(cf. 3.1.2.6.1.1.(ii),(iii), above.)

Pronouns that are assimilated are normally functioning as Subject at clause level.

e.g. no?mitú

\[ S:\text{NP-P;VP} \]

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-manía gi-tó?

\[ O:\text{NP} \quad S:\text{NP-P;VP} \]

"He knows me"

ii) nočtô gi-khá

\[ O:\text{NP} \quad S:\text{NP-P;VP} \]

"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 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" = m̆, ts̆

" " II : "Ka" = phû, tsû

" " III : "K₂" = fû, m̆

**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>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Following word/rel Group I:

h-initial e.g. hesíka ha?pu hîpûo
"ear" "to cross" "under"

Following word/rel Group II:

V-initial e.g. ii?ka a?nita -a?nû
"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-initial 56 o.s. -vami tshëni -këo
"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 (në, tsë)</td>
<td>Ko</td>
<td>Ko</td>
<td>Ko</td>
</tr>
<tr>
<td>II: Ka (phä, tsä)</td>
<td>KV</td>
<td>KV</td>
<td>Ki</td>
</tr>
<tr>
<td>III: Ka (fë, në)</td>
<td>KV (ex i)</td>
<td>KV (ex i)</td>
<td>Ka</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 precedes the unmodified first syllable of that word/relator. The third column of the matrix indicates the form of the pronoun when assimilated.

3. $\kappa = (n)$\textsuperscript{57} \quad and $TS = /\varepsilon/$ before $/i/$ and $/u/$

4. $\kappa = (n)$\textsuperscript{58} \quad and $D = /\varepsilon/$ before $/i/$ and $/u/$

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 $\kappa$ and $K$ have been used, instead of $\gamma$ and $\zeta$.

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

\textsuperscript{57} $\kappa$, from VbPce aux ind $\text{ma-}$, also belongs to this set.

\textsuperscript{58} $\kappa$, from VbPce aux ind $\text{ma-}$, 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 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 emphasises 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 Résigaro 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 (1971:770): 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 Resìgaro system -- stop (ph), affricate (ts), fricative
(f), and nasal (m) 60 -- both in initial and non-initial pos-
ition. 61

The decrease in voicing lag would be expected to change
/tS/ to /âz/, however, this is slightly modified, being real-
ized as /â/. This may be attributable to the extremely in-
frequent occurrence of the phoneme /dz/.

/ts/ and /â/ are further affected before a close vowel
(/i/ or /u/), as indicated above, becoming /z/ and /g/, res-
pectively.

Full details of assimilation are now given, with examples.

3.3.2.1.1.1. 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) ...

60 And /m/ in the VbPoe aux ind.
61 cf. also examples of movement of VOT in the opposite dir-
ection -- increasing lag -- in noun derivation at stem level
(section 2.2.2.2.1., above). Likewise, /n/ in the final syll-
able of i?pi(n6) is devoiced before addition of the causative,
e.g. tsa-mi gi?pimotâ
him-rec he-go-cstv
past "He made him go"
(cf. causative, 2.1.2.2.1., above.)
3. With Word/relator Group III (C-initial).

\[ k_6 + CV(V) \ldots \rightarrow kOCV(V) \ldots \]

**Examples.**

<table>
<thead>
<tr>
<th>Word/rel Group</th>
<th>I: hV(V) ...</th>
<th>II: V(V) ...</th>
<th>III: CV(V) ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun:</td>
<td>-henåkå &quot;ear&quot;</td>
<td>-iiššå &quot;belly&quot;</td>
<td>-våi &quot;back&quot;</td>
</tr>
<tr>
<td>m6 (1st p.sg.)</td>
<td>monåkå &quot;my ear&quot;</td>
<td>nooššå &quot;my belly&quot;</td>
<td>novåi &quot;my back&quot;</td>
</tr>
<tr>
<td>ts6 (3rd p.sg.,f.)</td>
<td>tsoñåkå &quot;her ear&quot;</td>
<td>dooššå &quot;her belly&quot;</td>
<td>doovåi &quot;her back&quot;</td>
</tr>
<tr>
<td>Verb:</td>
<td>ha?på &quot;to cross&quot;</td>
<td>a?mitå &quot;to eat&quot;</td>
<td>tshåni &quot;to see&quot;</td>
</tr>
<tr>
<td>m6 (1st p.sg.)</td>
<td>aòpå &quot;I cross&quot;</td>
<td>no?mitå &quot;I eat&quot;</td>
<td>notshåni &quot;I see&quot;</td>
</tr>
<tr>
<td>ts6 (3rd p.sg.,f.)</td>
<td>tso?på &quot;she crosses&quot;</td>
<td>do?mitå &quot;she eats&quot;</td>
<td>dotshåni &quot;she sees&quot;</td>
</tr>
<tr>
<td>Relator:</td>
<td>-hipå &quot;under&quot;</td>
<td>-a?nå &quot;beside&quot;</td>
<td>-kåo &quot;to(wards)&quot;</td>
</tr>
<tr>
<td>m6 (1st p.sg.)</td>
<td>mòpå &quot;under me&quot;</td>
<td>no?nå &quot;beside me&quot;</td>
<td>nokåo &quot;to me&quot;</td>
</tr>
<tr>
<td>ts6 (3rd p.sg.,f.)</td>
<td>tsopå &quot;under her&quot;</td>
<td>do?nå &quot;beside her&quot;</td>
<td>dokåo &quot;to her&quot;</td>
</tr>
</tbody>
</table>

3.3.2.1.1.2. Pronoun Group II (phå, tså).

1. With Word/relator Group I (/h/-initial).

\[ k_1 + hV(V) \ldots \rightarrow kV(V) \ldots \]

2. With Word/relator Group II (V-initial).

\[ k_1 + V(V) \ldots \rightarrow kV(V) \ldots \]

3. With Word/relator Group III (C-initial).

\[ k_1 + CV(V) \ldots \rightarrow kICV(V) \ldots \]
### Examples

<table>
<thead>
<tr>
<th>Word/rel 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></td>
<td></td>
<td></td>
</tr>
<tr>
<td>phá</td>
<td>-henáko</td>
<td>-ii?šišša</td>
<td>-viŋá</td>
</tr>
<tr>
<td>(2nd p.sg.)</td>
<td>&quot;ear&quot;</td>
<td>&quot;belly&quot;</td>
<td>&quot;back&quot;</td>
</tr>
<tr>
<td>tsá (3rd p.sg., m.)</td>
<td>tsenáko</td>
<td>giš?šáša</td>
<td>giváši</td>
</tr>
<tr>
<td></td>
<td>&quot;your ear&quot;</td>
<td>&quot;your belly&quot;</td>
<td>&quot;your back&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Verb</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>phá</td>
<td>ha?pa</td>
<td>a?mitá</td>
<td>tshéni</td>
</tr>
<tr>
<td>(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>tsá (3rd p.sg., m.)</td>
<td>tsa?pa</td>
<td>da?mitá</td>
<td>gitshéni</td>
</tr>
<tr>
<td></td>
<td>&quot;you cross&quot;</td>
<td>&quot;you eat&quot;</td>
<td>&quot;you see&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relator</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>phá</td>
<td>-hipášó</td>
<td>-a?ná</td>
<td>-kóó</td>
</tr>
<tr>
<td>(2nd p.sg.)</td>
<td>&quot;under&quot;</td>
<td>&quot;beside&quot;</td>
<td>&quot;to(wards)&quot;</td>
</tr>
<tr>
<td>tsá (3rd p.sg., m.)</td>
<td>čipášó</td>
<td>da?ná</td>
<td>gikóó</td>
</tr>
<tr>
<td></td>
<td>&quot;under you&quot;</td>
<td>&quot;beside you&quot;</td>
<td>&quot;to you&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further examples show (TS) realized as /č/ and (D) as /g/ before /u/:

- tsá + hutoobaʔčó? "Banisterium" > čutoobaʔčó? "his Banisterium"
- tsá + áni "saliva" > gání "his saliva"

### 3.3.2.1.3. Pronoun Group III (čó, ná)

1. With Word/relator Group I (/h/-initial).

\[
\begin{align*}
& \text{\textbf{V}_{2}} + \text{hV}_{1}(V_{1}) \ldots \rightarrow \text{hV}_{2}(V_{2}) \ldots \\
\end{align*}
\]

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).

\[ K_2 + V_1(V_1) \rightarrow KV_2(V_2) \]

where \( V_2 = V_1 \), except when \( V_1 \) is /i/, when \( V_2 \) is /e/. 63

3. With Word/relator Group III (C-initial).

\[ K_2 + CV(V) \rightarrow KaCV(V) \]

Examples.

<table>
<thead>
<tr>
<th>Word/rel</th>
<th>Group:</th>
<th>I: hV(V)...</th>
<th>II: V(V)...</th>
<th>III: CV(V)...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun:</td>
<td>64</td>
<td>-hen'ékè</td>
<td>-ii?èkè</td>
<td>-vànè</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;ear&quot;</td>
<td>&quot;belly&quot;</td>
<td>&quot;back&quot;</td>
</tr>
<tr>
<td>fà (1st p. non-sg.incl)</td>
<td>fenétanùne</td>
<td>vee?èkùne</td>
<td>&quot;our ears&quot;</td>
<td>&quot;our bellies&quot;</td>
</tr>
<tr>
<td>mà (3rd p. non-sg.)</td>
<td>menétanùne</td>
<td>nee?èkùne</td>
<td>&quot;their ears&quot;</td>
<td>&quot;their bellies&quot;</td>
</tr>
<tr>
<td>Verb: 65</td>
<td>hànàpà</td>
<td>ñàmità</td>
<td>tshéni</td>
<td>&quot;to cross&quot;</td>
</tr>
<tr>
<td>fà (1st p. non-sg.incl)</td>
<td>fà?pà'</td>
<td>ñàmità</td>
<td>vatshéni</td>
<td>&quot;we cross&quot;</td>
</tr>
<tr>
<td>mà (3rd p. non-sg.)</td>
<td>mè?pà</td>
<td>ñàmità</td>
<td>nàtshéni</td>
<td>&quot;they cross&quot;</td>
</tr>
<tr>
<td>Relator:</td>
<td>-hinèd</td>
<td>-a?nà</td>
<td>-kòe</td>
<td>&quot;under&quot;</td>
</tr>
<tr>
<td>fà (1st p. non-sg.incl.)</td>
<td>fèpèd</td>
<td>va?nà</td>
<td>vëkòe</td>
<td>&quot;under us&quot;</td>
</tr>
<tr>
<td>mà (3rd p. non-sg.)</td>
<td>mèpèd</td>
<td>nà?nà</td>
<td>nàkòe</td>
<td>&quot;under them&quot;</td>
</tr>
</tbody>
</table>

63 When preceding a Group II (i.e., V-initial) verb beginning with an /i/, mà becomes mà- (unlike fà and mà, which become ve- and ne-, respectively). However, when preceding a Group I (h-initial) verb with an /i/ in the first syllable, mà follows the same rule as fà and mà, and becomes mà-.

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 ñu and ñi as fe- and ne- when assimilated to Group I words in which the vowel of the first syllable is /i/, and as ve- and ne- when assimilated to Group II words in which the initial vowel is /i/:

**Group I Verb:** 66  hipă "to wash"

ñu (1st p. non-sg.incl.)  fepă "we wash"

ñi (3rd p. non-sg.)  mepă "they wash"

**Group II Verb:** 67  ñmă "to sleep"

ñu (1st p. non-sg.incl.)  vēmă "we sleep"

ñi (3rd p. non-sg.)  nēmă "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 /ñ/:

If a Group II (i.e., Vowel-initial) noun 69 has both an initial /i/ and a palatal, /ñ/, at the beginning of the next syll-

---

66 With VbPce aux ind ñu- : mepāaka... "without washing ..."

67 With VbPce aux ind ñi- : māmaakā... "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 /ñ/ 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) -iñočí "neck"
   aó   aó iñočí       ñoñočí       "my neck"
   aá   aá iñočíné     ñeñočíné     "their necks"

ii) iiñé "thing"
   aó   aó iiñé         ñoöñé       "my thing, mine"
   aá   aá iiñé         ñeeñé       "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: heeñá "(a type of cassava)"
   aó   aó heeñá       aóñáade70       "my cassava"
   aá   aá heeñá       aánáade       "their cassava"

Group III:

i) iiñógu "nightingale"
   aó   aó iiñógu       noñiiñógu       "my nightingale"
   aá   aá iiñógu       nañiiñógu       "their nightingale"

ii) tiñesnebá "(a type of trap used for catching animals)"

---

70 This also demonstrates the addition of {-öñé} 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.
3.3.2.1.2.2. /j/-initial Words.

When pronouns are assimilated to words with an initial /j/, the following additional change occurs:

\[ /j/ > /u/ \] if the /j/ is followed by /a/ or /u/

e.g. (i) /ja...

Ja?ná "to wait" aá Ja?ná nožáná "I wait"
Jafná "child" tsé Jañá dožáná "her child"

(ii) /ju...

aa Ja "to be surprised"
Ma aá Ja aá nažá "they are surprised"
Mitshe Jâ "to get up"
Fá Mitshe Jâ Mitshe Važá "we get up"

Contrast:

(i) /i...

Jiigí "husband" tsé Jiigí dojiigí "her husband"

(ii) /e...

Ješvi "wolf" phá Ješvi pijesvi "your wolf"

(iii) /o...

Jó?nó "giant armadillo"
Tse Kó?nó gišó?nó "his giant armadillo"

3.3.2.1.2.3. /w/-Addition.

If a two-syllable Group III (Consonant-initial) verb of the structure CVOT does not have a /w/ as one of its consonants, a /w/ is added initially when a pronoun is assimilated to the
Fourteen verbs (and their derivatives) have been attested to fulfil 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) tshōnī "to see"
   e.g. ŋā tshōnī \ vatsa tshōnī "we see"
   Contrast tsēnī "to bump into something"
   e.g. ŋā tsēnī \ va?tsēnī "we bump into something"

ii) kānī "to cry"
   e.g. ō kānī \ nokānī "I cry"

iii) mōkhō "to cut wood"
   This is the most significant, as it forms a minimal pair with (?mōkhō "to smell (intrans)"
   e.g. tsā mōkhō \ gimōkhō "he cuts wood"
   Contrast tsā mōkhō\gi?mōkhō "he smells" (intrans)

Nevertheless, the definition CVVV is retained, since in all other cases it includes all verbs that add */?/ and excludes

\[\text{This and the form above it are homophonous.}\]
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?mitá
      they eat

      H:Pa

      "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

      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:

\[
\begin{align*}
\text{ma?mitj,} & \quad \text{"they eat"} \\
\text{nanji} & \quad \text{"their father"}
\end{align*}
\]

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:

\[
\begin{align*}
\text{Aj}_1 & = +B:AjSt_1 +Nn \text{ sx1:clsfr } +Nn \text{ sx2:aug/dim } +Nn \text{ sx3:nmb} \\
& \quad +Nn \text{ sx4:rest } \quad \text{"Attributive"}^{72} \\
\text{Aj}_{11} & = +B:AjSt_2 \quad \text{"Predicative i"}
\end{align*}
\]

\[^{72}\]Types 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.)
$A_{iii} = +B; A_{I} S_{2} +V b s x 2; incho$

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) jijae-gi jaah1
    big sx1 child "the big child"

   jijae-gi viisii-o-6 "the big rock"

   jijae - ga - jaah1 va?a - ga - jaah1
   big sx1 sx2-sx3 machete sx1 sx2-sx3
   "the big knives"

ii) ho?ha-?aami apahn-?aami
    soft sx1 leaf sx1
    "the soft leaf"

   ho?ha-6 himi - 6
   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 ii".
The filler of the Base slot in adjective type ii may not be suffixed.

E.g. amii? ts6
    healthy she "she is healthy"

   gi?i ho?huu?
   this soft "this one is soft"

3.4.2.3. Adjective Type iii, "Predicative iii".
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.\(^\text{73}\)

e.g. ami - kaá tsá
healthy incho he "he is getting well"

gi?i fo?há - kaá
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 i, "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:-

     cojagí amoögi
     small, tapir, "the small tapir"
     Att:Adj H:Nn
     NP\(_i\) (For further details, cf. 6.1.2.2.1., below.)

   ii) In the Axis slot in CP type i:-

     kai - nöe
dead with
     Axis:Adj relr "dead"
     CP\(_i\) (cf. 6.2.5.2.1., below.)

\(^{73}\)cf. 2.1.2.2. (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) ṭoʔhūuʔ tso\[\textit{soft}, \textit{it}] "It is soft"
\[P_{i1}:A_{i2}\] (type ii)

ii) ṭoʔhakaʔ tso\[\textit{soft-incho}, \textit{it}] "It is getting soft"
\[P_{i1}:A_{i2}\] (type iii)

(For Predicate type i, sub-type i, cf. 7.1.1.1.1., below.)

3.4.3.3. Sub-class 3, "Modifcatory".
This sub-class has so far been observed to have only one member. This is the type i adjective oo\[\textit{ja-}, "small"\], 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.**

oo\[\textit{ja-}, \textit{little}\] doʔ\[\textit{vāpa-}, \textit{he-swim} \textit{rec int}\] past \[M:A_{j3}\] \[\check{H}:VbPce\] \[\textit{Int}\] "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 \{-k\[\textit{uu}\].\}
3.5.2. Variation.

Adv = +B;AdvRt/AjSt₂ +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:

{¬kuu?} "Adverbial Emphatic"

¬kuu? - -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 *¬ku is subject to the general morphophonemic rule which changes u to a, since the adverb does

⁷⁴The Concomitant Phrase may have an adverbial function when its axis slot is filled by a Nominalized Clause, e.g. gi-naa?ka-neť - mî gi-vitæmî
he angry with rec he shout
Axis:NomCl relr past
CP₁ "He shouted angrily"

(For CP, cf. 6.2.5.2.1., below.)
not occur utterance—finally.

\textit{e.g. With Base filled by Adverb Root:—}

\textit{i) kapı dë?jo fast he—runs "he runs fast"}

kapikuu? dë?jo fast—emph he—runs "he runs very fast"

\textit{ii) kenee?já da?mitá slowly he—eats "he eats slowly"}

kenee?jaka da?mitá slowly—emph he—eats "he eats very slowly"

\textit{With Base filled by Adjective Stem:—}

\textit{i) amepuu? dë?jo a_lot he—runs "He runs a lot" (i.e., often)}

amepuu?ka dë?jo a_lot—emph he—runs "He runs very much" (i.e., very often)

\textit{ii) kašoo? dodo?phaavá good he—works "He works well"}

kašoo?ka dodo?phaavá good—emph he—works "He works very well"

\textit{3.5.3. Distribution.}

The members of the class of Adverb words are distributed in the Modifier slot in the Verb Phrase.

\textit{e.g. amepuu? gimá a_lot he—sleeps "He sleeps a lot"}

\textbf{M:Adv} H:VbPce

\textbf{(S:NP—)P:VP} (For further details, cf. 6.1.2., below.)

\textit{3.6. Demonstrative Word.}

\textit{3.6.1. Contrast.}

Demonstrative words (Dem) have the following contrastive-identificational 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.

Dem = +B:DemRt +sx1:clsfr +sx2:aug/dim +sx3:nmb +sx4:rest

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. hi ) - gá va?a - gá
   hē?e) - ga - jā? va?a - ga - jā?
   this) sx1 machete sx1 "this/that machete"
   that) sx1 sx2 machete sx1 sx2 (dim) "this/that knife"

hi ) - gá - jaakā va?a - gá - jaakā
hē?e) - gá - jaakū - nā va?a - gá - jaakū - nā
this) sx1 sx2-sx3 machete sx1 sx2-sx3
   that) sx1 sx2-sx3 sx4 machete sx1 sx2-sx3 sx4
   "these/those two knives"

hi ) - gá - jaaku - nā va?a - gá - jaaku - nā
hē?e) - gá - jaaku - nā va?a - gá - jaaku - nā
this) sx1 sx2-sx3 machete sx1 sx2-sx3 sx4
   that) sx1 sx2-sx3 machete sx1 sx2-sx3 sx4
   "only these/those two knives"

hi - gī pi?mi
this sx1 hummingbird "this hummingbird"

hē?e - gī - mu - nā amo - gī - mu - nā
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.

e.g. hē?em ḫiitā

that, canoe.

\[ \text{Lm:Dm} \quad \text{H:Nn} \]

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:-

\[ \text{Num} = +B: \text{NumRt/NnSt} \_3 +s\_1 : \text{clsfr} +s\_2 : \text{aug/dim} +s\_3 : \text{nmb} +s\_4 : \text{rest} \]

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 Resígaros 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?é
one clsfr tree-trunk "one tree trunk"

mi - miiká hiitámiiká
two clsfr-dl canoe.clsfr-dl "two canoes"

mi - ? e e ká aváana - ? e e ká
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 - Já? aváana - ?e - Já?
one clsfr dim tree clsfr dim "one little tree trunk"

mi - mi - kobaaká sá - mi - kobá? hiitá - 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.

75The basic high tone of sá becomes low before the following high tone.
3.7.2.1. Numeral Type i.

Num₁ = +B:NumRt +sx 1:clsf₁ -/+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 - gd
    one "finger"
    B:NumRt sx₁:clsf₁
    Num₁

ii) sa - pos₁
    one "hand"
    B:NumRt sx₁:clsf₁
    Num₁

iii) sa - gi
    one (animate)
    B:NumRt sx₁:clsf₁
    Num₁

iv) mi - gaak₁
    two "finger"-dl
    B:NumRt sx₁ sx₃
    Num₁

3.7.2.2. Numeral Type ii.

Num₁i = +B:NnSt₃ +sx 1:clsf₁ +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'tsäävā - g a a h i
    centre "finger"-pl
    B: NnSt₃ sx₁ sx₃
    Num₁i

"four" (Lit.: "centre finger", i.e., forefinger₇⁶)

76 In Resigaro, "one" is the little finger of the left hand,
ii) pâ - ?osi - ku - mā
   all "hand" dual rest
   B: NnSt sx 1 sx 3 sx 4
   Num ii
   "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 distributed in Numeral Phrase type i.

3.7.3.2. Sub-class 2.
This consists of the numerals sāqā, "one", and mīqākā, "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. 6.1.3.2.2.2., below.