STUDIES IN
ECUADORIAN INDIAN LANGUAGES: I
STUDIES

IN
ECUADORIAN INDIAN LANGUAGES: I

introduction by Cathrine Peeke
edited by Benjamin Elson

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Norman 1962
The papers in this volume are the result of linguistic field work carried on in Ecuador by members of the Summer Institute of Linguistics. As Miss Peeke points out in her Introduction, there are only nine aboriginal languages spoken in Ecuador today, and articles on the phonemics or grammar of seven of these languages are presented here. The one comparative article lists the phonemes of an eighth language. Only a discussion of Ñivaró is lacking to make the volume touch upon each Indian language of the country.

Most of the articles were developed in linguistic workshops on the field supervised by Kenneth L. Pike. His influence is apparent in most of the articles in the volume, especially in the grammatical ones. Miss Orr's phonemic article was her Master's thesis at Indiana University, and Moore's article was worked on while he was in attendance there.

Miss Catherine Peeke, Chairman of the SIL Ecuadorian linguistic committee, served as assistant editor of the volume. Since she has been intimately associated with the project, I requested that she prepare an Introduction, giving a survey of the linguistic picture in Ecuador and pointing out items of particular interest about the articles, and a Bibliography of Ecuadorian Indian (and related) languages.

It is hoped that this volume will contribute substantially to the scanty information now available on South American Indian languages.
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Indian Languages of Ecuador
Introduction

This first of a series of studies in Ecuadorian Indian languages is a collection of articles concerning eight of the nine Indian languages found in present-day Ecuador (see map). While coverage of the eight languages is not uniform, in that a given language may be represented only by a comparative article or by an article on phonemics or on grammar, yet such articles describe structural types which are fairly representative of phonology and grammar of the nine languages.

Structural similarities and phenomena common to all of the languages do not necessarily indicate observable family relationships among the nine languages; on the contrary, present findings tend to confirm classification of the nine languages as belonging to seven different families or isolated classifications (McQuown, 1955; Mason, 1950).

Relationship of Cayapa and Colorado, of the Barbacoan Chibchan subfamily (Murra, 1948), is demonstrated in Moore's "Correspondences in South Barbacoan Chibcha," found in the present volume.

Siona and Secoya (McQuown's "Secoya-Gal" and "Sionf") are closely related members of the Western Tucanoan family. For phonology of a related dialect, in which tone is phonemic, see Velie and Brend (n.d.).

Our "Quichua" (Ecuadorian pronunciation and spelling) is the "Quechua" which is generally classified as part of the Quechumaran phylum. Lowland dialects of Quichua described in this volume are not specifically indicated in any listing we have seen. Their existence attests to the success of efforts made by the Incas and others to impose the Quichua language upon all subject tribes, whose historical origin and
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aboriginal language have thus been effectively obliterated (Prescott, 1874:81–82).

Two further language families, the Jívaro and the Záparo have representatives in Ecuador. For grammar and phonology of the Macuma dialect of Jívaro, see Turner (1958a, 1958b). Other Jívaroan languages are Huambisa (Beasley and Pike, 1957) and Aguaruna (Larson, 1955, n.d.) in Peru, and Achuara or Achual in Ecuador. The Záparoan language family includes Záparo in Ecuador, and in Peru the three languages: Shimigae (Peeke and Sargent, 1959), Iquito (Eastman and Eastman, n.d.), and Arabela (Rich, n.d.)

Auca and Cofán, listed as "unclassified" by McQuown (1955), remain so in our judgment. While it is true that in a phylum classification, more inclusive groupings may be made (Steward and Faron, 1959:22–23; Swadesh, 1959), yet present findings of our investigators give no indication as to the direction such grouping might take, with respect to the seven language families represented in Ecuador. It is hoped that this volume, as well as dictionaries soon to be published will contribute substantially to materials available for comparative work in this area of South America.

Phonological studies are included in the present volume for six of the nine languages. The phonemes of Colorado may be found in the comparative article in this volume and other publications by Moore. Studies of Záparo phonemes (Sargent, 1959) and the phonology of Jívaro (Turner, 1958) have been published elsewhere.

Auca, Cayapa, Cofán, Secoya, and Siona phonemic studies are presented here in a sufficiently uniform format to demonstrate the similarity of problems encountered in the area. Among these are problems related to phonemic nasalization of vowels in Cofán, Auca, Secoya, and Siona (although nasalization systems identical in Secoya and Siona are interpreted differently in the two descriptions). Common
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to the five languages are questions of phonetic vowel length versus vowel clusters, multiple-stress systems which pattern differently in each language, and general indeterminacy with respect to conditioning of vowel allophones. Designed specifically for pointing up the latter problem, the basic format used allows contrast between phonemes to be established, then describes variants in terms of a norm with a range of allophones subject, in many instances, to quasi-conditioning.

The Quichua phonology statement, on the other hand, is more comprehensive in its treatment of phonemes according to distinctive features, distribution, frequency, and dialect variations, the materials for the latter being excerpted from a fuller treatment by Orr, to appear in Ecuador.

Grammar articles are more varied: Slona morphology presentation relies on text materials and charts, with tagmemic structure implicit in the breakdown of the charting; the Cayapa presents a preliminary tagmemic description of the morphology and syntax from sentence to word, with illustrative text material; the Quichua article outlines broad syntactic relationships perceived through but not described in terminology of the tagmemic model; and finally, the Záparo, written four years earlier than the others, is designed explicitly to illuminate the model as it then stood.

A particular emphasis of that period of tagmemic development, and hence of the article cast in that model, was subordination of included tagmemes to the sentence as a convenient threshold. Multi-dimensional relationship between sentence types was demonstrated by cross-cutting distribution of certain tagmemes in various sentence types. These emphases of early tagmemics overlap somewhat with concepts seen recently in Transformational Grammar, as does also the formulaic device for provision of alternate choices. In retrospect, this particular description is recog-
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nized as being over-labelled and redundant, but it is presented without revision in order to point again to a priority of relevance and an extra dimension possibly obscured by recent widespread acceptance by those who use the tagmemic model of the concept of levels and its consequent simplicity of statement.

Of special theoretical interest, perhaps, is the final section of the article on Auc a phonemics; here is an almost unique statement of, in the author's words, "dialect differences resulting from a case of extreme social isolation."

We offer, then, this contribution to linguistic studies, desiring to share data available peculiarly to us, to submit for consideration certain devices and concepts which have proved helpful to us, and to exhibit types of structure found in Ecuadorian languages.

Catherine Peeke
Bloomington, Indiana
December 20, 1961
PHONEMIC STATEMENTS
0. Introduction. In an earlier paper¹ we presented preliminary data on Auca phonemics, based on the analysis of the speech of one refugee from the tribe. This informant had left the tribe at the age of about fourteen, and had com-

¹See "Notas sobre fonémica huarani (Auca)" by Rachel Saint and Kenneth L. Pike (1959). Since in the last few years the popular name of the tribe—Auca—has become widely known, we have adopted the general term. The name Huarani (/wáadáni/) is a term drawn from the language itself. For an alternate term Sabela, and indication that Auca is as yet unclassified as to language family, see Norman McQuown (1955).
pletely abandoned the use of the language. It was some time before one of the authors—RS—was able to elicit enough material for us to initiate any systematic analysis.

One of our interesting studies, afterwards, was an attempt to see what differences there might be between the speech of that first informant—Dayuma /dá:yómaʔ/—and that of our other informants who were later contacted, and to attempt to assess any changes in the speech of Dayuma herself two years after she had returned to the tribe.

Nasalization, in general, presents one of the most difficult continuing problems in the analysis. Pairs of words differing only by the nasalization of one vowel seem exceptionally hard to perceive distinctly—relative, that is, to nasalization in other languages with which we are acquainted. Our recording of words still contains occasional inconsistencies. Rapid sequences of vowels in contrasting oral-nasal, nasal-oral, oral-oral, and nasal-nasal combinations increase the difficulty substantially.

A characteristic voice qualifier of faucalization adds to the problem. To American ears at least, it seems similar to—and leads to confusion with—the relevant nasal quality.

2 Biographical data concerning Dayuma, as well as that of informants Kémq and his wife Dáwä, with Mítæye and his wife Opöræ are available in The Dayuma Story by Ethel Wallis, New York, Harper and Brothers, 1960.
proper. Since the overlay of faucalization and laryngealization is a signal of displeasure, disgust—or at times of vague joy, sadness, exuberance, and the like—the resulting confusion over long spans can complicate the localization of contrastive nasal vowels within text.

The phoneme inventory is not large, but allophonic changes are sometimes troublesome. Note accompanying chart, with typical allophones indicated.

**CHART OF PHONEME INVENTORY**

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<td>/g, g, n_g, l_g/</td>
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AUCA PHONEMICS

1. Consonant contrasts.

Stops: Voiceless and voiced stops contrast, as shown by illustration here. Since some stops have palatal allophones, palatal contrasts of stops, nasals, and /y/ (which has occlusive allophones) will be demonstrated.

/p/ versus /b/: pékà 'he calls', békà 'he drinks'; kópæ '(a woman’s name)', kóba 'variety of agouti'.

/t/ versus /d/: tädõmi 'you throw out!', dádõmi 'you fish!'; góte 'going, having gone', gódege 'when he went'.

/y/ (often with occlusive allophone) versus (the palatal allophone of) /k/: yaśmogàbo 'I am deaf', kaśmogàbo 'my ear hurts'; yaśwéræ 'foot fungus', kaświjpa 'wild cane'; gòyæ 'inside', gókæ 'going to go'; yaśmae 'a spotted fish', kaśnæ 'manioc'; yöwe 'wild grape', kòwi 'always'.

/k/ versus /g/: kókà 'he pierces', gókà 'he goes'; kigítae '(a woman’s name)', gíkèta '(a man’s name)'.

/t/ versus (palatal allophone of) /k/: òtotaæga '(a certain) stone', òtokænì 'can'.

Palatal voiced stop versus alveolar and velar voiced stops:

/y/ versus /d/: yìkà 'he chops', dìkà 'stone'; yáwe 'toucan', dáwà '(a certain) bird'.

/y/ versus /g/: yòmòŋà 'he plucks out', gòmòŋà 'farther away.' Notice the contrast before /æ/, where /g/
PHONEMIC STATEMENTS

is less palatalized (hence different in action from /k/ or even voiced fricative): /yaýyæ/ [d'ýæd'ýæ, yaýyæ] 'a certain' fish', /nánoŋéŋæ/ [nánoŋéŋæ] 'spouse'.

Voiced stops versus nasals:

/b/ versus /m/: bámo 'whole seed', mámo 'take, bring'; also bɔ, bɔ 'cotton bird', mɔ, mɔ 'leaf'; átabópa 'I saw', átamóba 'we (exclusive) saw'; tášábo 'big snake', tášámo 'seed of snake-vine'; ópa, óba 'he urinates', óma 'feather'.

/d/ versus /n/: dáwa (or sometimes dawa) 'a certain' bird', náwa 'true'; séta, séda 'took', séna 'they both take'; ádodáke 'just two alone', ádonaší 'just one day'; dáímæ 'rainbow', náímæ 'sloth'.

/y/ versus /ŋ/: yaýyæ 'root', ńáŋæ 'grandmother'; píyæné 'good', pĩñæte 'strong'.

/g/ versus /ŋ/: gáimámo 'a certain seed', náímæ, náima 'a woman's name'; óŋikái 'tendon', óŋikái 'chalk'; tóméka, tóméga 'fruit', tóméga 'he, she, it'.

Nasals, contrasting at alveolar, palatal and velar points of articulation:

/ŋ/ versus /n/: méné 'secretly', méne 'jaguar'; méná 'two', mfna 'the same day'; ñénæ 'it is inside', ñíñæ 'he hears, he understands'.

/ã/ versus /ŋ/: ćñóñæ 'it lies flat and stays', ćñóñæ
AUCA PHONEMICS

'it stands there and stays'. Note /ŋàlímaː~náímaː/ '(a
twoman's name)', illustrating that initial /ŋ/ is likely to have
alternants with /n/.

/n/ versus /ŋ/: waŋʊŋiŋ 'to be killed', waŋʊŋiŋ 'God';
ŋába 'she (honorific form) is', ŋába 'he (she) is'.

Bilabial voiced stop versus bilabial semivowel:

/b/ versus /w/: bááka, báóka 'it is inedible meat',
wáóka 'he is an Auca', wáána, wáóna 'day after tomorrow'; óbe 'boa', yówe 'wild grape'.

Extra-systemic sounds:

/ᵅː/: No sibilants or assibilants occur in the regular
consonantal patterning of Auca. There is, however, one
extra-systemic /ᵅː/ which occurs in onomatopoetic descrip-
tive exclamations: wépə́ ᵅ, wépə́ ₀o 'blood spurts'
(wépə́ 'blood', ₀(o) 'squirting sound'), ɗ̄ɗ̄iŋ tókə́,
ɗ̄iɗ̄iɗ̄i tókə́ 'chattering of a monkey' (tokə́ 'he laughs').

It is possible that with increased Spanish contact loans with
ᵅː/ may be brought into the language, giving the sound
systemic status.

/pᵅː/: A bilabial inverse oral click, slightly rounded,
is used as an emphatic negative, in a combined phoneme-
morpheme.

/mᵅː/: Inverse pulmonic nasal is used as an emphatic
affirmative and is also a phoneme-morpheme.
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Note that such exclamations have theoretical interest in that they represent a fusion, at this point, of phonological and lexical hierarchies—or, if one prefers, neutralization, at this point, of the contrast between them.

2. Consonant variants.

Stops: Auca phonetics is characterized by a substantial amount of variability in the phonetic actualization of its stop phonemes. Specifically, the articulatory action is often imprecise. This leads to allophonic types which may be called approximates. Lack of articulatory completion may make velar "stops" on occasion slightly fricative. Approximate timing of velic action with delayed closure of the nasal passage may on the other hand lead to a very slight optional nasal at the beginning of the voiced stops [mᵊb, nᵊd, ñᵊg] when utterance initial. /bɛkɑ/ [bɪkɑ, mɪkɑ] 'he drinks'. This nasal attack, however, becomes stronger, leading to nasal segments of the length of regular segmental phonemes, when the attack occurs between a nasal vowel and a stop; in this environment the nasal attack is obligatory. /wᵊ bɛkɑ/ [wᵊ mbɪkɑ, wᵊ(?) mɪkɑ] 'he does not drink'. Frequently, also, the bilabial stop is slightly rounded, or pouted: /tòbòpa/ [tòbòpa] 'I laugh'.

The voiced stops—especially the bilabial one—occa-
sionally have slight implosive glottal action. This variation, however, is not prominent enough to be disturbing to the person coming early to the language: /béke₂/ [běkə] 'he drinks'; /bábæ/ [bábae, bábae] 'wild'.

/d/ /dádɔŋa₂/ [dáraŋa, náraŋa] 'he fishes'. Note the prenasalized variant of first occurrence of /d/ in this illustration.

The second /d/ in the same word illustrates a further variant, a rapid flapped [ɾ] or quick [d]. When the flap allophone occurs in an enclitic syllable (indicated by hyphen) following a nasal vowel, however, the flap itself is nasalized (i.e. [ŋ], remaining in contrast with nonflapped /n/), or—rarely—a prenasalized stop allophone [ⁿd] occurs: /bfwi₃-dfa/ [bfwi₃-ña, bfwĩⁿ-dfa] 'younger brother (emphatic)'.

It is likely that if Spanish loans were to enter this language in any number, the allophone [ɾ] would soon be split off from the stop allophone. Since, however, this tribal group has been in extreme isolation—so that, so far as can be ascertained, no person living regularly in the tribe knows how to say 'Hello', 'Good-by', or to count

³This, however, does not rule out the possibility of a morphophonemic replacement of /d/ by /n/, as we have elsewhere—see 8. This would be our solution for any variant of the morpheme where [n] of normal, nonflap type is heard.
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'one' and 'two' in Spanish—this problem does not yet arise. The flapped allophone is especially susceptible to such change, presumably, since it occurs most readily in the second half of the phonemic phrase, under special stress conditions—in suffixal spots rather than in roots. The flapped allophone does not occur in initial environments.

Note the free variation in the enclitic of the following illustration: /ódo-dia/ [ó-ro-dia, ó-ro-ťia] 'it is—emphatically—partly full'.

/y/: Initially in utterance one often hears [y]; the occlusive variant, however, seems more frequent in this position: /ywí/ [d́ywí, ywí] 'toucan'; /yıkə/ [d́yıkə, yıkə] 'he chops'; /ywèwódıkə/ [d́ywèwòdıkə, ywèwòdıkə] 'along shore'. Medially within phonological words the continuant is the more frequent: /yèbæ/ [áyèbæ, ád́yèbæ] 'an oriole-like bird'; /yóni/ [óyóni, ó́yóni] 'in a leaf'. After nasal vowel, across morpheme boundaries, the phoneme has a nasal attack: /wí yáwi ǐba/ [wí u̯d́yávi ǐ́mba] 'it is not a toucan'.

/g/: /gıkə/ [gíkə, gíkə, gókə, ŋgıkə] 'he goes'. Note also /kíŋe gıkə/ [kíŋe ńgıkə] 'he goes quickly', but /ągıkə/ [ągıkə] 'he wades' (/ąə/ 'to bathe'). Before /æ/ or /e/ a palatal off-glide is sometimes heard, after occlusive or fricative or prenasalized beginning: /géémo/
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\[g^y\]éém\o\, \, g^y\]éém\o\] 'a man's name'; /p\^o\]g^a\]k\o\]p\o/  
\[p\o\]g\^y\]ek\o\]k\o\]p\o] 'he is going to come'; /\^o\]g\o\]/ \[\^o\]g\o\], \^o\]g\o\]/ 'I'm going to hunt'.

A number of morphemes, by this present analysis, have allomorphs with the \(y\) phoneme freely replaced by \(g\) (\(\approx\)áy\o\]b\o\] \(\approx\)ág\o\]b\o\)] 'an oriole-like bird'. The basic allomorph of the pair has \(y\). Other morphemes having basic \(g\) have no such variation, but \(g\) only. Since, however, the \(g\) is slightly palatalized before \(e\) (see preceding paragraph), and since \(y\) varies to an occlusive \(d\)\(y\), there is occasional difficulty in distinguishing \(g\) \(g^y\) from \(y\) \(d\)\(y\). Further evidence might modify the analysis at this point.

/p, t, k/ Voiceless stops on occasion have a slight aspiration, but in general may be considered unaspirated. Here, again, the variation is not sufficient to cause trouble to persons entering the language: /t\o\h\o\]b\o\]p\o\] /t\o\h\o\]b\o\]p\o\]/ 'I laugh'; /k\o\h\o\]w\o\] /k\o\h\o\]w\o\] /k\o\h\o\]w\o\]/ 'always'. The bilabial is usually slightly rounded: /t\o\h\o\]p\o\]/ /t\o\h\o\]p\o\]/ 'spear', /p\o\h\o\]/ /p\o\h\o\] /p\o\h\o\] /p\o\h\o\] /p\o\h\o\]/ 'a boy's name'.

After a nasal vowel within a word, allomorphs occur with freely variant /p/ to /b/. The /p/ variant, like the one with /b/, has a prenasalized stop in this position: /\o\h\o\]b\o\]p\o\]/ /\o\h\o\]b\o\]p\o\]/ \o\h\o\]b\o\]b\o\]/ /\o\h\o\]b\o\]b\o\]/ /\o\h\o\]b\o\]b\o\]/ 'club'.

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Note also /t/ and /d/: /wēte/ [uŋt̚e] ~ /wēde/ [uŋd̚e] 'being inside'; /stāpa/ [st̚t̚ap̚a] ~ /st̚d̚apa/ [st̚d̚ap̚a] 'it was'.

So /k/ and /g/: /āwika/ [aw̚ika] ~ /āwiga/ [aw̚iga] 'eye'.

The voiceless velar stop, however, has one further allophone which is sufficiently prominent to be a constant problem until it is studied with care. When preceding /æ/, the /k/ is usually fronted with off-glide to a palatal position. On occasion it requires care to distinguish /k/ from /t/: /okskoi/ [oksk̚i] 'pierce with a spear!'.

The fronting is clear, but the palatal off-glide less so, when the following /æ/ has been raised to [æ^] or [e^] before /l/. Note /kœi/ [k̚æi, kœi] 'manioc dough'.

There is also some variation between informants, and within the speech of a single informant. For example, in /ægōdɔ gōkœi/ [æg̚i gõkœi] 'come on, let's go!' the morpheme /kœi/ is phonemically the same for all informants, but for informants M and Da, in one session, the variant [k] was recorded, whereas for informants Ki and O—especially for the former—both [k] and [k̚] were recorded.

Nasals:

/m/: /kápamɔ/ [k̚ápamɔ] 'jscama fruit'. Note the frequent rounding of the bilabials.

/ŋ/: /ŋākɔ/ [ŋ̚æk̚a, ṣ̚ak̚a] 'he is born'. The approximate articulation of the nasal leads to an occasional free
variant of /ũ/ which is nasalized [ụ].

/ũ/: Like /k/, the /ũ/ has a palatalized variant before
/æ/: [k'ũŋũ] [k'ũŋũ] 'a cooking pot'; /kũŋũ/ [kũŋũ] 'quickly'.

Semivowels:

/w/: The semivowel /w/ has labial variants differing
according to the vowel which it precedes. Before /e/ or its
nasalized counterpart, the articulation tends to be labio-
dental, with the upper lip not entering commonly into the
articulation. Preceding /æ/, /i/, /a/, and /o/, however,
both lips, in anticipation of the following vowel, are more
likely to be involved either with rounding or with some clo-
sure at the sides of the mouth to give a slightly rounded
effect. Occasionally there is—before /i/, for example—
free variation from a bilabial rounded fricative articulation
to labiodental friction—the labiodental, in turn, sometimes
has obvious labial rounding but with the lower lip against
the upper teeth. /wënæ/ [vënæ] 'devil'; /ãwã/ [ãwã]
'tree'; /wĩñæ/ [vĩñæ, wĩñæ] 'child'; /wákã/ [wákã,
yákã] 'another'; /ũnowóka/ [ũnowóka] 'soul, spirit'. /w/
has a nasalized allophone following a nasal vowel: /ũnowa/
[ũnowa] 'foot', /kũwã/ [kũwã] 'china potato'. The effect
carries over word boundaries: /tómẽñã wá kã̄sãkã/ [tómẽñã
wá kũsãkã] 'he does well'.

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/y/: The phoneme /y/ in phonetics has an ambivalent position. In reference to the subsystem of voiced stops, the /y/ is a part of that system. It plays its stop role by having the stopped allophone [d\text{y}], /\text{yaśkáro}/ [d\text{yaśkáro}, \text{yaśkáro}] 'prow'; /\text{áyábi}/ [\text{áyábi}, \text{áyábi}] 'worm'. On the other hand, the /y/ plays a phonetic role as a semivowel, in series with /w/, through its [y] allophone. It would appear that in this respect the system is in a state of imbalance, and that the intrusion of a few loan words—-or some other upset to the current system—-could cause a reshuffling of these data.

/m</: Neutralization of contrast in point of articulation occurs with this inverse pulmonic affirmation. The lenis, brief sound may vary from bilabial to velar articulation. Possibly other native variants occur also.

3. Consonant distribution. Any one of the consonants may be found initial in syllables. None occur syllable final.

No clusters of consonant phonemes occur. (But some consonantal segments occur in sequence as unit phonemes; see 2.)

The occurrence of the syllable-initial consonant seems not to be restricted by the vowels which follow. Any of the consonants may, in principle, precede any of the vowels.
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4. Vocalic contrasts. Five contrasting vowel qualities are demonstrable within the oral vowel system: /i/, /e/, /æ/, /a/, /o/. 

/ɪ/ versus /ɛ/: ţpa 'ripens', ţpa 'holds in claw'.
/e/ versus /æ/: péka 'he calls', pæka 'he grows'.
/æ/ versus /a/: ñebâno 'what is it?', ábo 'I see'.
/a/ versus /o/: akâ 'he sees', òkâ 'he beats with nettles'.

/o/ versus /ɛ/: òkâ 'he beats with nettles', ókâ 'he holds in claws'.

Among the nasal vowels, similar contrasts can be identified:

/ɪ/ versus /ʊ/: gíta 'dog', kêta '(a man's name)'.
/ʊ/ versus /æ/: ñámotaške 'rolling thunder', ñámotái 'skin'.

/æ/ versus /ə/: ŋāñə 'grandmother', ŋānə 'dove'.
/ə/ versus /ʊ/: ŋâ 'he says', ŋâ 'he urinates'.
/ʊ/ versus /ə/: mëŋə 'he sleeps', mëŋə 'he searches'.

The short oral vowels are in phonemic contrast with their long counterparts, analyzed here as sequences of like vowels. Note the following samples:

/ɪ/ versus /ii/: ñkâ 'it ripens', ñkâ 'ramos palm fruit'.
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/æ/ versus /ææ/: ta'ækæ 'half, some', ta'aæyæ 'very many'.

/ɑ/ versus /aa/: kąte 'having cooked', kąátę 'being itchy'.

/o/ versus /oo/: óto 'crab', óóto 'basket'.

Note also the contrasts between single nasal vowels and their counterpart doublets:

/ı/ versus /ıı/: mıımo 'heart', mıımo 'chichico monkey'.

/ɛ/ versus /eɛ/: tɛnɛwɛ 'firewood', tɛnɛɓɛ 'ripe'.

/ɔ/ versus /ɔɔ/: pɔńnɛ 'variety of agouti', pɔńnɛ 'plantain'.

/ɑ/ versus /aɑ/: kąta 'club', kąátą 'clay bowl'.

/ɔ/ versus /oɔ/: ɔmɔ 'weeks', ɔmɔ 'blowgun dart poison' or 'curare'.

Sample contrasts within the context of oral phonemes, of single oral vowels with nasal vowels (but note, that following the nasal vowel a nonphonemic nasal attack is induced on a following stop, etc., see 2.):

/ı/ versus /ıı/ tė 'is ripe', tė 'being'; wίgα 'scissors', ăwίgα 'eye'.

/e/ versus /ɛ/: yówɛ '(a variety of) jungle grapes', kówɛ 'always'.

/æ/ versus /ə/: ya'yə 'a (kind of) fish', ya'yə
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'root'; bábaé 'wild', bábaé 'a man's name'; wsábo 'I cry', áwsába 'club'.

/a/ versus /a/: áte 'seeing', áte 'saying'; díka
'stone', yíka 'he chops'.

/o/ versus /o/: góte 'going', góte 'being burned';
ámo 'I say', ámog 'collared peccary'.

Sample contrasts, in oral context, between oral and
nasal doublets:

/aa/ versus /aaː/ táádo 'trail', kááta 'clay bowl'.

/oo/ versus /oː/ dódóas 'very long ago', kóóga
'dart holder'.

Much more interesting—since more difficult for
American ears to perceive—are oral-nasal contrasts of
vowels within the context of adjacent nasal consonants:

/e/ versus /ɛ/: ónóne 'mouth', ónóne 'abdomen'.

/æ/ versus /æː/ káánae '(a woman's name)', káánae
'cooking pot'; káámní 'we do', káámní 'we eat'; ónóæ
'sky', ónóæ 'blowgun poison'.

/a/ versus /aː/: wéma 'oriole', wéma 'dark'.

/o/ versus /oː/: ámò 'tree', ámò 'guaba seed'.

Even more difficult to perceive are contrasts between
mixed sequences of oral-nasal or nasal-oral vowels with
sequences of oral-oral or nasal-nasal vowels. For more
extensive illustration, see 6. on vocalic distribution. Note,
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for the moment, ka'ti 'do!', ka'ti 'eat!'; ñåswóka 'he digs up', ñåswóbo 'I yawn'; åáka 'he bathes' versus ka'áta 'clay bowl'; mëa 'two', mëê 'with'. (The differences are morphophonemically relevant, in that a sequence beginning with nasal vowel but ending in oral vowel elicits a different morphophonemic variant of a following morpheme than does a cluster beginning and ending in nasal vowel. See 8.)

5. Vocalic variants.

/i/, /a/ ü These phonemes have no troublesome qualitative variants. They are represented quite adequately under these circumstances by the norms [i], [a].

/e/ varies from [æ] to [i]; usually it receives the higher variant and can easily be confused with /i/.

/æ/ sometimes has a high variant or off-glide, especially before /k/, which we interpret as allophonic—rather than as a sequence /æi/ with which it can easily be confused: ádonaški [ádonæški] 'just one day'.

/o/ has a wide range of allophones which are troublesome not only because of the extent of the range from [o] to [u] and [i], but also because of the quasi-conditioning involved. In general, we look for [o] or [u] adjacent to labials—under the influence of the mild rounding of /m, b, p, w/ described above—and [i] elsewhere. Yet this must be treated as a probability statement, not as a rigid description
of complementary distribution. Granted the probability of this distribution, there is nevertheless sufficient free variation in all environments to prohibit a statement of mutually exclusive distribution; occasionally the unexpected distribution of the variants does occur: pógódo [púgíʔi] 'he goes', góka [gíka] 'fast', dábómo [dábúmi] '(a certain) fruit', núwo [ núwu] 'now', úo [úl] 'yes'. Occasionally, also, /o/ immediately after an oral vowel is heard as a syllabic voiced velar fricative: /páomao/ [páomæ] 'toquillo palm'.

Oral vowel immediately following nasal vowel of the same voice quality may be heard as brief oral off-glide of the total cluster: ḡëwóka [gëwóka] 'he digs up'.

Initially in words, but more especially in utterances, the vowels may occasionally have variants with attack beginning with [h] or [l] which is not part of the contrastive system either initially or medially in the words or utterances. For this reason we have treated the optional segments as mere free variants of the initiating attack on these vowels. The aspirated variant is more likely to occur under heavy emphasis than in normal utterance: /sënh/ [h sënh, sënh] 'will take'.

"Many of the allophonic problems of the Amazon headwaters must be similarly treated. Quasi-conditioning, rather than rigid conditioning, reflects the probability of occurrence of one of two phones in environments where either may sometimes occur."
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The second of two stressed vowels initial in a phonemic word is slightly the more intense of the two; sometimes it sounds slightly rearticulated—/a/-/a/ [a/-a/] 'fiesta'—but must be kept apart from the phonetic rearticulation perceived in a sequence of three vowels in which first and third are stressed: /wo/-/n/ /a/ /pa/ 'he blew his blowgun'.

Allphonic varieties of the nasal vowels have a range similar to that described for the oral ones. Allphonic varieties of the different oral and nasal qualities in the doublets, furthermore, have similar ranges: /da/-/a/ [d/-a/] 'he fishes', /to/-/o/ [t/-o/] 'he pulls it straight'.

Unstressed nasal vowels at the end of a phonemic phrase often have a "muffled" or "dull" quality which helps in that position to distinguish them from the clearer-quality oral vowels; occasionally the muffled quality is there easier to perceive than the nasalization as such.

Were Spanish loans with /u/ or /o/ to be brought into this system, contrast in the future between [i] and [u] (or [i] and [o]) could easily develop.

Nasal vowels—especially the second of two like-quality vowels before a stop—may occasionally have, as allophones, syllabic nasal contoids homorganic with the following stop:
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tə̄ɑ̞ɡə [tə̄ŋɡa] 'a man's name', kə̄ɡəbə́mo [kə̄ˈŋɪpʰɪmo,
kə̄ˈŋɪmɪmo] 'to kiss, suck'.

Rarely, a syllabic nasal is a portmanteau--simultaneously a nasal vowel plus a nasal consonant: tfkawódŋóte [tfkawódŋóti] 'lighting'.

One does not expect, however, a syllabic nasal contoid to replace the second of two nasal vowels before a nasal consonant: ɔ̃mǽ 'blowgun poison' (not recorded by us as *[ɔ̃ˌmǽ]).

6. Vocalic distribution. Numerous clusters of two vowels are found within words. The most frequent vowel clusters encountered appear to be (1) doublets (sequences of two same phonemes), and mixed doublets (of same articulatory quality but with one of the vowels oral and the other nasal); and (2) clusters ending in /i/ or /ɨ/. Many of the other theoretically-possible combinations occur, especially clusters ending in /o/ or /ʊ/. Those which do occur, however, are more likely to be found only in a few forms.

The accompanying chart shows the observed combinations. Types currently attested are checked (x). A number of others, not shown here, may have to be added after further study of present doubtful forms, or on the basis of a larger corpus.

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**CHART OF TWO-VOWEL CLUSTERS WITHIN WORDS**

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Oral clusters: /ii/ ɡiibae 'very deep'; /ia/ tawadfa 'chicken'; /ee/ géemo 'fin', téenëba 'ripe'; /ea/ wáméa 'far away'; /æi/ æfibæ 'very high'; /ææ/ wéesëte 'in exchange'; /æo/ tásóna 'many days'; /ai/ dáípæ 'clay water'; /aa/ táádo 'trail'; /ao/ áo 'yes'; /oi/ gól 'go!'; /oo/ góóbæ 'very far away', óóto 'basket'.

Nasal clusters: /ii/ ɪsmo 'yesterday'; /iæ/ gánmæ 'wisdom tooth'; /ee/ ée 'verily'; /io/ fotóbi 'you cut'; /æi/ góksæl 'must go'; /ææ/ pæsemæ 'cooking banana'; /ai/ málkó 'dirt'; /aa/ wáána 'true biological mother'; /aʊ/ nóq 'light'; /ʊl/ mólkó 'blanket'; /ʊʊ/ óónæ 'sky', kóóga 'dart holder'.

Oral–nasal clusters: /iæ/ míæ 'together with'; /eʊ/ keebómo 'to kiss, suck'; /eʊ/ wéŋëba 'sniff'; /ææ/ taasæga '(a man's name)', æsemæ 'drinking party', æsemëbo 'I yawn'; /ai/ baága '(a man's name)'; /aʊ/ ttaaskæmo '(a certain) shiny seed'; /aʊ/ áag 'guava seed'; /oi/ ɡiipõ 'yellow'; /oʊ/ kóómæ 'green heron'.

Nasal–oral clusters: /iɪ/ bógiidi (slow form, varying to fast form bógiidi) 'group of bogi monkeys'; /æi/ æi (in Dayuma's speech, varying to /æi/ for some informants) 'high'; /ææ/ ææwóka 'he digs up'; /aɪ/ ñi 'speak'; /aʊ/ ñábo 'I bathe', ñáwæ 'tiger'; /ʊl/ póí 'come!'; /ʊʊ/ óóyæ 'nest'.
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Clusters of three or four vowels may be found across word boundaries as well as within words: ókói ába 'it is hot', ídói íñába 'he is a witch doctor', wí óóto íba 'it is not a basket', íñwo aíkádápa 'now he comes back upriver', íñwo óóga góka 'now he is going to blow gun', dábo óóto íba 'it is Dabo's basket', wóóóba 'he blows it into the air', tóóóba 'he blows straight'.

7. High-level phonology. Since various features of the structure of syllable nuclei, phonemic phrases, juncture, intonation and the like are treated elsewhere, we shall not deal with these matters here. Note from that article, that stress placement is contrastive: yíwámóñába 'he carves, writes' versus dádóñadápa 'he fished'. In addition, note types mòlkó 'blanket' (or gínofo 'yellow') versus dálmé 'rainbow' (békímo 'I will drink', ágíkái 'tendon').

8. Morphophonemics. A few morphophonemic rules affect the occurrence of the segmental phonemes within particular morphemes.

In a certain few suffixal morphemes, a voiceless or voiced stop is obligatorily replaced by its nasal counterpart after a nasal vowel: ábo 'I see' (a 'see', bò~mo 'I'), but ámo 'I say' (a 'say'); táadó gíyanq 'small trail' (táa 'go

5Kenneth L. Pike, "Stress Trains in Auka", unpublished manuscript.

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out', dɔ̃̃nɔ 'trail', giɣa 'small'; ákə 'he sees' (kə̃ŋə 'he'), giŋə 'he says'; bága wάŋə 'it is a good tooth' (bága 'tooth', wa 'good', ɩ ɩ 'is', gãŋə 'tooth').

A stop initial in a certain few enclitics is often replaced by a nasal: gŏ́bæ-póni 'very far' (gŏ́bæ 'far', póni~móni 'intensive') but wάʃmo-móni 'very pretty' (wάšmo 'pretty').

These morphophonemically-derived nasals (and the pre-stop nasals subphonemically developed after nasal vowels) must be distinguished from those few nasal consonants which are morphophonemically underived. Note /m/ in [kəmɔba] 'we (exclusive) do', [bɪdíyówImɔ] '(a certain) fruit'.

The morpheme idi 'group of' appears to have an allo-morph⁶ ni, optionally occurring in fast speech after a nasal vowel: bógiḍi, bógiṇi 'group of bógi monkeys'.

Any suffix beginning with basic voiceless stop may after a nasal vowel have that stop optionally replaced by its voiced counterpart: ʃpa, ʃba 'is'.

The morphophonemics of stress placement are intricate. These rules have been separately described,⁷ and will not

⁶Occasionally, also, it is not yet certain whether a nasalized flap allophone of /d/ [d] has occurred—compare 2., Footnote 3—or whether the regular nasal phoneme /n/ has morphophonemically replaced /d/.

⁷See Footnote 5.
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be illustrated here. In general, however, we may note that (phonemic) stress placement is (grammatically) determined (1) by the number of suffixal syllables (usually with alternate stresses counting backward from final unstressed syllable), and (2) by the number of stem syllables (usually with the first stem syllable stressed, second stem syllable un-
stressed—unless immediately followed by an unstressed suffix—third stem syllable stressed, etc.) Interaction of the rules at stem boundaries, and words without suffixes, set up special rules and phonemic contrast of stress.

9. Dialect differences resulting from a case of extreme social isolation. Dayuma at about fifteen years of age fled from her tribe with an older Auca woman (her cousin) after her father had been speared and buried alive. Her grand-
father was also killed in the same attack, and she herself was in danger. An older Auca woman and a small girl joined them at a ranch outside Auca territory where Quichua was the local Indian language. Yet so insistently were they all forbidden by the oldest woman to talk the language—lest it seem as a weapon in the hands of the outsiders if they were to learn the language—and so deeply did they repress their memories of former language and life, that, after some eight years, the former six or eight-year old could recall, under effort, only a few repetitive songs, a few names for birds
and animals, and a few phrases such as 'let's go' or 'bring water'. The older woman lost her Auca, but never learned Quichua. Essentially she remained a woman without a language—only Dayuma could communicate a bit with her on the lowest levels of information, by techniques not analyzed by us.

Dayuma did a little better. RS made tape recordings of Dayuma's attempts to speak. One recording—made on March 22, 1955, after RS had been trying for a month and a half to tease Dayuma's memory into recalling the language—still shows excessive hesitations, evidence of her being unnaturally at a loss for words, and repetition of phrases, as she struggled to go on.

Within this tape, extensive phonological changes can be noted, in comparison with recordings of the speech of other members of the tribe (and with the speech of Dayuma herself some time after her return to contact with the group).

The intonation was drastically altered—more subtly so than our preliminary study can analyze in detail, but very easily heard as a general impression when both earlier and later recordings are played successively. Her question intonations at this time had rises which normal Auca lacks. Spread of interval was somehow wrong. In addition—and especially noticeable—the characteristic Auca voice quali-
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fiers (principally the use of faucalization, of laryngealization, and of occasional phrases spoken with indrawn breath) which give dramatic effect were lacking.

Specific segmental distortion also occurred. Although native /a/ and /æ/ contrast, and we found initial evidence of this before Dayuma returned to the tribe (see reference in Footnote 1), the phonemic contrast seems, in general, to have been lost—with /a/ usually replacing /æ/ (which is not in the Quichua three-vowel system learned by Dayuma at the ranch).

Phonemic nasalization of the vowels (likewise not found in Quichua) had in general been lost— systemically replaced, however, in the following fashion: the stops after a former nasalized vowel were preceded by a homorganic nasal consonant which was previously a mere transition glide from nasal vowel to the stop; /w/ appeared as nasalized in the environment of former nasalized vowels.

Lexical memory losses were sometimes compensated for, after hesitation, by use of Quichua loan words.

In this tape the morphological system was simplified—the verb suffixal system was impoverished, but supplemented by occasional Quichua affixes. The native pronominal set (apart from the honorific and the first-person exclusive plural forms) seems to have been complete. Most of the
tense or aspect group was found, but only three occurred with normal frequency. The modal system was impoverished. Modal suffixes indicating uncertainty, doubt, probability, intention, negation, and obligation, were used so rarely as to be outside of her effective control. Modal enclitics indicating derision, disgust, satire, extreme emotion, and emphatic negative seem to have been completely missing. Of the imperative system, only one of several suffixal combinations was used.

The intelligibility of the tape is incomplete. When played to members of the tribe they sometimes comment at certain points 'That is another speech'—i.e. 'nonsense'.

However, Dayuma recovered the full contrastive gamut of phonology and grammar very rapidly. Within a matter of days or weeks after she was joined—still outside the tribe—by two of her aunts, the voice qualifiers and intonation were normalizing. Soon morphology also appeared to be normal.

On February 6, 1959, approximately three months after Dayuma regained contact with the tribe, one of RS's recordings shows marked change, toward native norm, in Dayuma's speech. There is no hesitation; speech is fluent. Intonation patterns show a much greater variety of Auca types. Voice qualifiers are being used with rhetorical effect—faucalization in pre-pause positions, with new use
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of interjections, points toward native story-telling style.
It now sounds definitely "Auca" instead of "foreign"---to
Auca style.

Now (May, 1961), two full years later, all phonemic
contrasts and distributions seem to be restored, although a
few traces of her former distortions still remain. The ones
most noticed by KLP involve minor phonetic differences,
making the allophonic range different from that of her
colleagues. Dayuma, for example, has less frequent round-
ing of bilabials /p, b, m/. Her /ɔ/ is more likely to move
to [u] rather than stop at [i] or [u].

Under emphatic stress, Dayuma now tends to use the
nonphonemic aspirated attack on a vowel more frequently
and more fortis than her colleagues.

For her, the phoneme /y/ is seldom heard in the [d ı]
allophone, but almost entirely in the [y] allophone.

A fascinating commentary on the style change is pro-
vided by the reaction of an Auca teenager when we played to
her Dayuma's 1955 tape, without telling her who the speaker
was. Instead of identifying the narrator as Dayuma, the
teenager said it was Umi---one of the two older refugees who
had more completely lost her language, and who now, after
just a few months back in the tribe, sounds more like the
Dayuma of six years ago than Dayuma does herself!
Cayapa Phonemics

by John N. Lindskoog and Ruth M. Brend

0. Introduction.
1. Consonants.
2. Vowels.
3. Stress.
4. High-level phonological units.
5. Sample text.

0. Introduction. The purpose of this paper is to present the phonemes of Cayapa,¹ both segmental and suprasegmental.

¹The Cayapa Indians live mainly on the Cayapas River and its tributaries in northwestern Ecuador, about fifty miles north of the equator.

Data in this paper were principally gathered from Santiago Añapa who lives just below the confluence of the San Miguel and the Cayapas rivers. Most of the data were gathered by Lindskoog on field trips from 1955 to 1961; the presentation is by Brend. We are indebted to earlier unpublished work of Bruce Moore and Catherine Peeke, and to theoretical discussions with Kenneth L. Pike.
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The segmental phonemes may be charted as follows:

Consonants  p  t  ṯ  k  ?
            b  d  ḏ  g
            f  s  š  h
            c  č
            m  n  ŋ
            l  ḻ
            r
            w  y

Vowels  i  u
        e  a

Stress

1. Consonants.

1.1. Consonant contrasts. A series of voiceless stops contrasts with a series of voiced stops at the following points of articulation:

Bilabial /p, b/: pšu 'corn', bšu 'shrimp'; ṭápa 'father', pábába 'black'.

Alveolar /t, d/: táanu 'to bring', dáanu 'to cut'; pátée 'priest', páde 'speak'.

Alveopalatal /ṯ, ḏ/: ṯánu 'to want', ḏánu 'to become quiet'; ṭíču 'needle', mášu 'five-cent coin'; máču 'on behalf of', mášá? 'let's go!'.

Velar /k, g/: kši 'yesterday', gšle 'razor blade'; kška 'skin', kémšu 'friend', kálgára 'scorpion'.

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The voiceless bilabial stop contrasts with the voiceless bilabial fricative:
/p, f/: pìnu 'to lose', fìnu 'to eat'; kúupéru 'beetle', kúfeyu 'porpoise'.

The glottal stop contrasts with the glottal fricative:
/ʔ, h/: ñìnu 'to grind', hìnu 'to go'; má?ìnu 'to grind again', máhìnu 'to go again'; ku? 'gave', yuh 'shame'.

The series of voiceless affricates contrasts with the series of voiceless fricatives at the following points of articulation:

Alveolar /c, s/: cáá 'thus', sá 'bitter'; cáá 'it is so', sáá 'raw'; pácá 'hundred', pásás 'a kind of skin irritation'; máñsu 'tame', máñca 'some'.

Alveopalatal /Č, ʃ/: Čúwa 'string', šúwa 'rain'; káča 'vomit', páša 'to the side'; kíči 'to do', kíši 'yesterday'.

The series of voiced nasal continuants contrasts with the series of voiced stops at the following points of articulation:

Bilabial /m, b/: mìšu 'head', bìšu 'shrimp'; kúmi 'gave', kúbi 'load basket'.

Alveolar /n, d/: nánu 'to the child', dáanu 'to cut off'; pánu 'to speak', pádé 'speak!'.

Alveopalatal /ń, dń/: ńámì 'conga ant', dńámì 'it calmed'; mìšu 'road', mìdńu 'five-cent coin'.

Velar /ŋ, g/: ą́lánjíyáya 'swallow', ą́lágára 'scorpion'. The phoneme /ŋ/ is a recent addition to the phoneme inventory of Cayapa. Previously, [ŋ] was a postvocalic variant of /ń/, since the distribution of /ŋ/, apart from the fast-speech forms discussed below, is in syllable-final position only, while /ń/ occurs only syllable-initial. Now, however, various words which in slow form contain the phonetic
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sequence [ŋg] are in fast form pronounced with [ŋ] alone.²
In fast speech, therefore, [ŋ] is restructured as /ŋ/, since it now is found in contrast with /ñ/ and /n/ intervocalically. No other significant variation has been noted when comparing fast and slow forms of the same utterance. Slow form of /ŋáläŋgiyáya/ is /ŋáläŋgiyáya/. See below for contrasts of /n/, /ñ/, and /ŋ/.

The alveolar lateral and the vibrant contrast with each other and also with the alveolar nasal /n/, /ñ/, /r/: nánu 'to the child', lánu 'to come up', ránu 'on the ten-cent coin'; nána 'balsa wood', hála 'hornet', ?áhára 'angry'; múlu 'beans', húru 'hole'.

The voiced bilabial semivowel contrasts with the voiced bilabial stop /w, b/: wááša 'scratched', bááša 'far away'; wi 'beads', bíšu 'shrimp'; páwánú 'to cause to speak', páhába 'black'.

The palatal semivowel contrasts with the voiced alveopalatal stop, the alveopalatal nasal, and the alveopalatal lateral /y, ñ, ly/: yánu 'him', ya 'he', ñánu 'to become quiet', ñáa 'you', ñápi 'ladder'; káya 'brother', ádyú 'heavy', páña 'grandchild', dyálva 'stretch of river'.

Alveolar consonants contrast with alveopalatal consonants (except before /i/ where the contrast is neutralized) as follows:

Voiceless stops /t, t̪y/: tu 'earth', t̪yú 'chili pepper'; hítu 'having gone', hítyú 'doesn't go'.

Voiced stops /d, d̪y/: dála 'cut off', d̪yála 'they became quiet'; híndú 'going', híndyú 'not going'.

Affricates /c, č/: cúnu 'to lie down', čúnu 'to sit

²This was consistent in the speech of informant S. Añapa. Lindskoog reports, however, that in some idiolects the [ŋg] is retained in fast speech also.
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down', măcũnu 'to lie down again', măčũnu 'to sit down again'.

Fricatives /s/, ʂ/: sā 'sour', ʂə 'deep'; kásnu 'to sleep', kášnu 'to sweep'.

Nasals /n/, ɲ/: ná 'child', ɲāa 'you'; hṁnu 'to go', hṁñu 'having gone'.

Laterals /l/, Ṽ/: lū 'hot', Ṽū 'ripe'; málu 'day', málYu 'grub worm'.

The alveopalatal stops contrast with the velar stops:

Voiceless /tY/, k/: tYānu 'to desire to do (something)', kánu 'to get'; mīTya 'on behalf of', mīka 'enough'.

Voiced /dY/, g/: dYānu 'to become quiet', gánângǐnu 'to earn'; hďYā? 'let's go!', hárágāŋ 'lazy'.

The nasal continuants contrast at each of their four points of articulation /m/, n/, ɲ/, ŋ/: mána 'deer', nána 'balsa wood', ŋāa 'you'; máma 'mother', mána 'deer', páña 'grandchild', mánpáŋka 'one eye'.

1.2. Consonant variants. Relevant variants of consonant phonemes are described in this section, along with distributional restrictions of the variants which are pertinent to the determination of the phonemic status of certain consonants.

Stops: /b/, d/, dY/ The voiced bilabial, alveolar, and alveopalatal stops have rare free variants in utterance initial position with late velic closure; that is, initial variants may optionally have a lenis nasal attack: /bɪʃu/, [bɪʃu, mʊbɪʃu] 'shrimp'; /dáanu/, [dáanu, ndáanu] 'to cut off', /dYälva/, [dYälva, ndYälva] 'stretch of river'.

/k/ The voiceless velar stop is normally unaspirated. Word initially it has a slightly aspirated free variant: /kɪnu/ [kɪnu, kʰɪnu] 'to do', /kása/ [kása, kʰása] 'new'.

/g/ The voiced velar stop has a voiced fricative variant which fluctuates freely with the stop norm word initial and
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intervocalic: /gúra/ [gúra, gúra] 'cap' (Spanish gorra),
/ʔálágára/ [ʔálágára, ʔálágára] 'scorpion' (Spanish alacrán). In Spanish loans monolingual Cayapa speakers
tend to introduce a nasal phoneme preceding a medial voiced
velar stop, or to replace the voiced velar stop with the voice-
less velar stop, as in: /négru~négru~nékru/ 'black'
(Spanish negro).

/ʔ/ The glottal stop tends to be lenis syllable initial
and more fortis syllable final /ʔ/: /ʔfinu/ [ʔfinu] 'to grind',
/yaʔ/ [yaʔ] 'his'.

Fricative: /f/ The voiceless labial fricative is normal-
ly bilabial [p] but has a labiodental allophone which fluctuates
freely with the norm in any position: /fín/ [pín, fin] 'to eat',
/máfăn/ [mápán, máfán] 'to come out again'.

Nasal: /ŋ/ The velar nasal varies freely from short to
half-long before consonants within phonological words; it
varies from half-long to long before secondary (i.e. plus)
 juncture: /négru/ [négru, néŋ- gru] 'black', /máŋ+gíka/
[máŋ-gíka, máŋ-gíka] 'five papers'. (Note: This prejunc-
tural variant is limited to a few morphemes in which the
vowel of a second syllable has been lost and the resulting
proclitic-final nasal is compensatorily lengthened, as a
contrastive feature of the developed juncture phoneme.)

Stem-initial glottal stop may optionally be absent, either
when occurring word initial, or when occurring after a proclitic:
/ʔfinu~finu/ 'to grind', /má+ʔfinu~má+finu/ 'to grind again',
/ʔúni~úni/ 'governor', /ffha+ʔúni~ffha+úni/ 'white governor'.

An alternate analysis would postulate no juncture, but treat
[CVŋ] as /CVVŋ/, with the historical interpretation indicating
methathesis of final vowel of CV(C)CV with the preceding C or CC.
[*CV(C)CV > CVV(C)C]. This was then followed by the mora
length of the second vowel being actualized as phonetic length of
the consonant. Note for dependent [maŋ] 'five' the independent
form /mánda/.

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A further variant of the velar nasal, utterance-final or between second vowel of a cluster and utterance-final glottal stop, actualizes as the nasalization of the preceding vowel or vowels: /ʔapəʔ/ [ʔapəʔ, ʔapəʔ] 'hurry!'.

Semivowel: /w/ The voiced rounded bilabial semivowel has flat fricative variants, bilabial and labiodental, occurring freely before front vowels, with the flat variety occurring more frequently: /wɜnu/ [wɜnu, ɜnu, wɜnu] 'to enter', /sáwe/ [sáwe, sáwe, sáwe] 'it is bitter', (but only /wánu/ [wánu] 'to cut' and /ɜwu/ [ɜwu] 'rain').

1.3. Distribution of consonants. The most frequent types of syllables in this dialect are CVV(C) and CV(C). Occasionally, V syllables, however, occur when the initial glottal stop, which optionally occurs on phonological words beginning (otherwise) with vowels, is not present. Any consonant may fill the first C slot of syllables, while syllables may be closed by /n, ŋ, r, h, s, š/ only. /š/ has not been noted at the end of phonological words.

Within phonological words one phonological limit on consonant clusters is that imposed by the possible combinations of syllable-final consonant, plus syllable-initial consonant. Clusters of two consonants only occur.

One further major restriction on the clustering of consonants occurs across certain grammatical boundaries, mainly across two elements in tightly-bound compound stems (e.g. noun root plus noun root). Across such boundaries, when the second item begins with a voiceless stop, this stop is replaced by its voiced counterpart, and a homorganic nasal is added to the first item. Thus the cluster nasal plus voiceless stop does not occur across such boundaries. (When

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5 For use of grammar in determination of distribution of phonemes see Kenneth L. Pike (1955).
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the second item begins with a voiceless affricate, however, the homorganic nasal occurs, and the affricate remains voiceless; e.g. /kůl/ plus /-ů/ becomes /kůlěnći/ 'by canoe'. Furthermore, the bound form of the numeral 'one' acts similarly to the first element of such a compound: e.g. /ma-/ plus /pšu/ becomes /mámbšu/ 'one corn'; /ma-/ plus /půka/ becomes /mámbůka/ 'one pill'.

2. Vowels.

2.1. Vowel contrasts. The four vowel phonemes contrast as to height and as to front and back positions /i, e, u, a/: pľ 'water', pé 'fecal matter', pů 'thorn', páa 'twenty-cent coin'; půnu 'to lose', pěnu 'to die', půnu 'to put', pάnu 'to speak'.

2.2. Vowel variants:

High back: /u/ The high back vowel has free variants [u] and [o] with the norm being between these two positions: /tu/ [tu, tu', to] 'earth', /méetu/ [méetu, méetu', méeto] 'having heard'.

Low front: /e/ The low front vowel varies in phonetic quality from [e] to [ɛ̂] with the norm being [ɛ̂]: /pěnu/ [pěnu, pěnu] 'to die', /kěnu/ [kěnu, kěnu] 'to do'. The variant [ɛ̂] occurs most frequently before /m/: /pěmbo/ [pěmbo] 'thigh', /běembošu/ [běɛ̂mbošu] 'back'.

2.3. Distribution of vowels. Like clusters of all four vowel phonemes have been found within the syllable. These occur with great frequency. Diverse clusters /ai/ , /ui/ and /ei/ also occur within the syllable. Each of these clusters has stress on the first vowel of the cluster.

On the basis of the above it was at first felt that vowel clusters should be interpreted as one unit. However, very rare instances of other clusters have been found as in běřeũ
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"elf", mfâmi 'I have', ʃ<y>ya 'gnat', and kûfû 'porpoise' (Spanish bufeo). Because of these, and because of the morphological clusters cited below, all vowel clusters, whether like or diverse, are interpreted as VV.

Vowel clusters across morpheme boundaries discussed above in 1.3. occur only when initial glottal stop of the item following the boundary is optionally absent. Here many new diverse clusters are added to the inventory such as /aû/ as in /ʃba+ûn/ 'white governor' (the customary variant being /ʃba+ûn/).

As noted above, clusters within the syllable with /l/ as second member, carry stress on the first vowel only. Across these morpheme boundaries, however, such clusters carry a stress on the second member, since it occurs on the beginning syllable of a stem (see stress rules below, in 3., e.g. /mâ+finu/ 'to regrind').

3. Stress. Stress is phonemically contrastive in Cayapa, as in hîdûa? 'let's go!'; hîde? 'go!'; hîdûl? 'go! (polite)'; kîdûa? 'let's make!'. Stress is so nearly predictable, however, (see following rules) that contrastive pairs are very hard to find and in our corpus pairs of the type just cited are the only ones available.

Within the phonological word the following statements may be made concerning the placement of stress: (1) The first syllable is always stressed, e.g. pâbâba 'black'; (2) All heavy syllables (defined as CVC, CVV(C) -- but not CV?) are stressed, e.g. mîyâpâp 'shotgun'; (3) All nonfinal syllables not included in rules (1) and (2) or in the morphological observations below may be optionally stressed, e.g. kâbûçûwa, kâbuçûwa 'rope'.

Morphologically, some stresses are predictable in that stress always occurs on the first syllable of a stem, as in /mâm+bîpênu/ 'to bathe again' (pîpênu 'to bathe'). Some
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suffixes carry lexical stress, while others do not (e.g. -dýá? 'hortatory', -tu 'having').

4. High-level phonological units. In this section units higher than the syllable are discussed.  

4.1. Phonological words. Within the phonological word there is usually a gradual step-down or gradual gliding fall in pitch, with the step to final syllable being greater than those between preceding syllables. (Often there are minor subrises within phonological words, indicating secondary juncture—for which see 4.1.1 below.) This is the predominant pattern when only the initial syllable is stressed. If the first two syllables are stressed the pitch remains at approximately the same height over both syllables and then gradually lowers. Within the phonological word there is also a gradual decrease in intensity of stressed syllables (except that a stressed syllable following secondary juncture may be slightly more intense than a preceding one). The syllable with highest pitch and/or intensity marks the nucleus of the phonological word. Consonants in nuclear syllables are often lengthened.

Word-final vowels are often lengthened, while vowels before final glottal stop are shortened. Word-final glottal stop is usually short, and of medium intensity, but more fortis than the word-initial variety.

6 All remarks in this section are tentative. Analysis of high-level phonological units is based on limited data and on the speech of one informant. Analysis is not intended to be definitive but rather only to point the direction analysis is expected to go.

7 It is possible that an intermediate unit between the syllable and the phonological word (i.e. a phonological "foot") should be postulated. At the moment, however, data are not sufficient to distinguish these two units from each other.
4.1.1. Secondary or plus juncture. One phenomenon marking secondary juncture has been discussed above in 1.2.—that is, the occurrence of a lengthened allophone of the velar nasal. There is also evidence that all consonants may be somewhat lengthened before plus juncture (e.g. /kas+pele/ [kas·pele] 'before').

Secondary juncture may also be indicated by a slight step-up of pitch and an increase of intensity on the following syllable, if both the preceding and following syllables are stressed.

4.1.2. Primary or space juncture. The boundary between phonological words within a sentence is not always clearly marked. There sometimes occurs, however, an optional but brief pause (which we will call primary juncture) at the end of the phonological word, which will usually be lengthened if the word occurs at the end of a phonological sentence or paragraph (see below).

4.2. Phonological sentences. The phonological sentence is composed of one or more phonological words. When it is complex, the pauses between the included phonological words are considerably shortened or are absent and each word is still accompanied by its own pitch envelope. There is also a superimposed pitch envelope over the entire sentence with the pitch of the first word in the sentence beginning higher than that of any word following it; the pitch then usually falls gradually over the entire sentence. One other pitch pattern within phonological sentences has also been noted—namely a rising or level sustained pitch at the end of the sentence. This occurs rarely in both narration and conversation and apparently is some kind of special emotional intonation pattern.

Generally, though not always, sentences are marked by
intake of breath at the beginning and by exhaled breath at the end. This causes the pauses between sentences to be longer than those between words. Word-final glottal stop, when occurring at the end of phonological sentences, is fortis and lengthened, and the preceding vowel is often laryngealized. Besides a distribution paralleling that of the other consonants, glottal stop has a further distribution at the end of phonological sentences that otherwise would end with a vowel, as an optional determinate border marker.

4.3. Phonological paragraphs. The phonological paragraph consists of one or more phonological sentences and is marked mainly by a prolonged pause at the end, and also by a considerable step-up in pitch and intensity at the beginning of the paragraph. Exhalation and intake of breath also mark the boundary between paragraphs and the pitch envelope drops gradually from very high to very low over the entire paragraph.

5. Sample text. The text sample given below is written with the following phonetic symbols for suprasegmental features: / = phonological word boundary; \( \uparrow \) = intake of breath; \( \downarrow \) = outgoing breath; \( \# \) = long pause; \( \acute{\prime} \) = normal stress; \( \acute{\prime} \) = heavy stress; + = secondary juncture; ?? = laryngealization; \( \underline{\sim} \) = pitch; \( \ddot{\Upsilon} \) = extra-short vowel; \( * \) = length.

\[ \text{kas}^{+} \text{pel} \#???/ \uparrow \text{sán}^{+} \text{husé} \#???/ \text{sán}^{+} \text{husé}^{+} \text{pelé} \text{nu}/ \]

before \hspace{1cm} San José \hspace{1cm} San José downstream
Some time ago, a little way downstream from San José across from Shima apa's house the Americans (built) a camp. (They) having gone about looking for oil; here at the Cayapas...
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River (they) went about much with boat (repeated) before that time with a boat having gone about. But banana canoes couldn't even attempt to go; also they were not good as they tended to turn over a lot. They made the waves come, and tended many times to turn over.
Cofan Phonemes

by M. B. Borman

0. Introduction.
1. Inventory of phonemes.
2. Consonant contrasts.
3. Consonant variants.
4. Vowel contrasts.
5. Vowel variants.
7. Stress and juncture.

0. Introduction. This paper presents the phonemes of the Cofán language, with special attention to the interpretation of a complex vocalic nucleus and to the phonemic features of the stress group.

The Cofán language is spoken by about four hundred people living in eight major locations in the Ecuador-Colombia border area. Cofán has two mutually intelligible dialects, one of which is spoken along the Aguarico River in Ecuador, while the other is spoken on the San Miguel, Guamués, and Putumayo rivers in Colombia. The data for this paper have been gathered in the village of Dureno on the Aguarico River in Ecuador, 1955-1960. Of the village’s approximately seventy-five inhabitants, about ninety percent are monolingual. The main informant was Enrique Criollo, a monolingual Cofán about twenty-five years old.

The author is indebted to his wife, Roberta Borman, for her consultation and encouragement, and to Kenneth L. Pike and Catherine Peeke for their help in organizing this paper.
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1. Inventory of phonemes. Twenty-seven consonant phonemes and ten vowel phonemes constitute the inventory of segmental phonemes. Two stress phonemes and three phonemes of juncture constitute the inventory of suprasegmental phonemes.

1.1. Consonant phonemes may be divided into stops, fricatives, vibrant, and nasals. Stops (including affricates) show contrasts of voiceless aspirated, voiceless unaspirated, and voiced series, in a system such as Hockett calls a '3x5' system of stops. Fricatives show contrast of voiceless and voiced. The semivowel /y/ is included with the fricatives since it has a fricative free variant allophone [z]. There are, in addition, a glottal stop, a flapped vibrant, and a series of nasals. The entire inventory of consonants is as follows: voiceless unaspirated stops, p, t, c, č, k, q; voiceless aspirated stops, ph, th, ch, čh, kh; voiced stops, b, d, z [dz], j, g; voiceless fricatives, f, s, š, h; voiced fricatives, v, y, g; vibrant, r; nasals, m, n, ň.

1.2. There are five oral and five nasal vowels at the following points of articulation: high front unrounded i, ɨ; high back unrounded ɨ, ɩ; high back rounded o, ɔ; low front unrounded e, ɛ; low back unrounded a, ą.

1.3. There are two degrees of phonemic stress: phonological-word stress /ˈ/, and phonological-phrase stress /ˈ/. There are three contrasting juncture phonemes: phonological-word closing juncture symbolized by space, nonfinal phonological-phrase closing juncture /|/, and final phonological-phrase closing juncture /#/.

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2. Consonant contrasts. The pairs chosen for demonstration of contrast here are not exhaustive, but are those commonly considered as "suspect pairs," or those of special theoretical interest or of special relevance to Cofán phonemics.

2.1. Voiceless unaspirated stops versus voiceless aspirated stops:
/p, ph/: pí?piye 'to work with clay', phí?phiye 'to place into'; pl 'together', ph 'sit in'.
/t, ch/: tátýe 'squirrel', tháthyeye 'to fell a tree'; áthá 'to hit a blow', átháyi 'to spit'.
/c, ch/: cáye 'to bite', cháye 'to hit with fist'; secèñe 'to light fire', chechekhóye 'to fight'.
/č, ch/: čóco?he 'nursing', čhécho?he 'rooting'; čcei 'don't touch', čhócheiko?he 'knife'.
/k, kh/: kókie 'rodent', khókhi 'tar'; káni 'yesterday', kháni 'another place'.
/t, ch/: táye 'to gather', cháye 'to hit with fist'; katípa 'having been discarded', chípa 'wet'.
/c, th/: cófá?he 'nose', thófi 'parrot'; éce 'humming bird', thá?tha 'searched'.
/c, ch/: cófá?he 'nose', čhécho?he 'rooting'; kíca 'father', śícha 'removed'.
/č, ch/: čcei 'don't touch', chípa 'wet'; čípa 'plant shoot', čhéchi 'color ran'.

2.2. Voiceless unaspirated stops versus voiced stops:
/p, b/: píse 'wife', bíca?sa? 'angry'; potá?go 'shot-gun', bóta 'to place in mouth'.
/t, d/: tóya 'still', dóya? 'shall split'; táye 'to gather', dáye 'to change'.
/c, z/: of?the 'foot', zs?he 'leaf used for stain'; cófá?he 'nose', zó?zo 'rinsing mouth'.
/č, j/: čóco?he 'nursing', jóye 'to fear'; čá?diq
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'cold', jëfaye 'to dig'.
/k, g/: kïya 'rodent', gïyaol 'clean'; gâka 'to stick to', gâga 'chumming'.

2.3. Voiceless unaspirated stops versus voiceless fricatives:
/p, f/: pëbi 'not dead', fëbi 'eel'; ñøfiye 'to carry', ñøfikìo 'sieve'.
/c, s/: cë?dë 'husband', së?di 'sloth'; ñocëkìo 'to float on a raft', ñosëfìo 'to use up'.
/z, ñ/: ñipìri 'small', ñipïre 'sting ray'; khâçïye 'to wipe', khâşïye 'to survive'.
/h, hë/: váho 'devil', cáho 'house'; nàhe 'leaf', nàhe 'river'.

2.4. Voiceless aspirated stops versus voiceless fricatives:
/ph, f/: phì?phiye 'to place into', ffì?hiye 'to kill'; máphì 'beat', sàfi 'puppy'.
/ch, s/: châchìo 'grating', sàsàhe 'plucking feathers'; chìpìaye 'to get wet', sisìpa 'sand'.
/œh, ñ/: ñhìñìkìo 'knife', ñìsì 'cricket'; ñìcha 'removed', ñìsa 'no!'.
/œh, ñ/: chìpìaye 'to wet', ñipïre 'sting ray'; ñhìhì 'color ran', ñìhì 'rubbed'.

2.5. Voiced stops versus voiced fricatives:
/b, v/: bâkìo 'joint of bamboo', vâcìo 'to clear brush'; bâthì 'break through', vâthì 'here'.
/j, y/: jëye 'to sit', yàya 'daddy'; jìho 'afraid', jìkìo 'stimulant (var.)'.
/g, ñ/: gâga 'chumming', ñakakagina 'burr'.

2.6. Voiced stops versus vibrant:
/d, r/: döna 'splitting', rëdàhe 'waiting'; dëphìa 'hitting', rërikìo 'small'.

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/z, r/: zó?zo 'rinsing mouth', ró?da 'waited'; zírño 'shrunk', rírño 'thrilled'.

2.7. Voiced stops versus nasals:
/b, m/: boñañe 'to stack', monámi 'bluebird'; súba 'dig', cáma 'that'.
/d, n/: dánō 'damaged', nání 'finished'; ráde 'earth', ránā 'slept'.
/j, ŋ/: jónāñe 'to scare', nōñañe 'to make'; r'ofe?jo 'Pleiades', fñoño?he 'shaking head in negation'.
/g, n/: gáñā 'scattered dust', nání 'to the river'; rágá 'brought', ránā 'slept'.

2.8. Voiceless fricatives versus voiced fricatives:
/f, v/: ró?fa 'vime', ró?va 'net bag'; ráfa 'said', rává 'fish'.
/s, y/: sáša 'ornamental seed', yása 'arms' measure'; pše 'wife', phye 'to swell'.
/h, g/: rá?há 'small ant', rá?gá 'plant (spec.)'; fhá 'mantis', hágá 'bamboo'.

2.9. Voiced fricatives versus nasals:
/v, m/: vání 'here', máni 'where?'; ró?va 'net bag', ró?ma 'chonta fruit'.
/y, ŋ/: yañoñáme 'surely', ná 'I, me'; yú?ña 'chattered', ñe 'hurts'.

2.10. Vibrant versus nasal:
/r, n/: ró?da 'waited', nó?ña 'bothered'; saráro 'giant otter', ránába 'having slept'.

2.11. Vibrant versus voiced fricative:
/r, y/: sakfra 'collared peccary', kíya 'rodent (spec.)'; ñro 'thread', ñyo 'snake'.

2.12. Voiceless unaspirated stops, contrasting as to affrication or point of articulation.
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/t, c/: tófa 'lizard', cófathì 'nose'; vápta 'day', vàce 'humming bird'.

/c, č/: cáveyl 'that way', čáva 'bought'; váca 'avocado', vàčákhì 'sallya'.

/č, k/: čà 'mother', kà 'looked'; člci 'clean', kfcì 'stood'.

2.13. Voiceless aspirated stops, contrasting as to affrication or point of articulation:

/th, ch/: thethepêhi 'to become satisfied', cheche-khóye 'to fight'; thîchaye 'to fell a tree', ãchîhìye 'to run (color).

/ch, čh/: vachhâraâkho 'bird (spec.)', čhâraâkho 'light hole in roof'; khîchhâye 'to haul', šîchhâye 'to remove'.

/θh, kh/: ãhochoshe 'rooting', khôkhì 'tar'; ãhîchîkhì -kho 'knife', kîkhì 'to spear'.

2.14. Voiced stops, contrasting as to affrication or point of articulation:

/d, z/: doñâhe 'splitting', zósohe 'rinsing mouth'; ãdîà 'sized', ãzià 'green'.

/z, j/: zósohe 'rinsing mouth', jôñâhe 'scaring'; zalánâhe 'to pour out', jânânah 'to set up'.

/g, j/: jàînâ 'set up', gâînà 'scattered dust'; kîjì 'older brother', kîgohe 'straining'.

2.15. Voiceless fricatives, contrasting as to point of articulation:

/s, s/: sàryâye 'to warm', sàryâye 'to open mouth'; désì 'godson', désì 'child'.

/û, h/: ãsâsa 'ornamental seed', hàha 'go!'; ãsà 'no!', ãha 'bring it!'.

2.16. Nasals, contrasting as to point of articulation:

/n, ŋ/: nánì 'finished', ŋánì 'to me'; ñnâhe 'sleeping', ñnâhì 'to meat'.

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3. Consonant variants.

3.1. Voiced stops have homorganic prenasalized allophones following nasal vowels (with or without intervening glottal stop); i.e. when a voiced stop follows a nasal vowel, a nonphonemic nasal contoid transition occurs:

/b/: /bob̪o/ [bɔ̆·mbo] 'chonta wood'.
/d/: /padi/ [pɔ̆·ndi] 'withered'.
/z/: /tizia/ [tɔ̆·ndziə] 'green'.
/j/: /oʃəjo/ [oʃə·ŋjo] 'Pleiades'.
/g/: /tɔ̆gi/ [tɔ̆·ugə] 'howler monkey'.

3.2. /k/ has a back velar conditioned variant [k] occurring only before /i/: /kiʔhe/ [kɪ̂ʔhe] 'drinking', /akəlege/ [aŋkə·lɛ] 'to fasten'.

3.3. /v/ is normally [b]: /vatóva/ [bɔ̆·bo] 'cayman', /váʔvo/ [bą̆·bo] 'body'; but has a labiodental variant [v] which occurs following low unrounded vowels /e/ and /a/: /koyeve/ [kɔ̆·yeve] 'for bananas', /cáveyi/ [cə̆·veyi] 'that way', /aváhə/ [aŋvə·hə] 'happy'.

3.4. /y/ has a variant [ʔ] occurring freely in all positions: /yfkaʔye/ [ʔɪ̂f·kaʔye] ~ [ʔîf·kaʔye] 'to be willful', /háyi/ [há̆·yi] ~ [hā·ʔi] 'going', /yókho/ [yó̆·kho] ~ [ʔó̆·kho] 'stimulant (var.)'.

3.5. /ʔ/ is fortis [ʔ] when closing a stressed syllable, and lenis [], varying to actualization as laryngealization, when closing an unstressed syllable or when word-initial: /bɔ̆bo/ [bɔ̆·mbo] 'chonta wood', /básəʔmo/ [bá·sə·ʔmo] 'dark, hard wood', /ʔoʔco/ [ʔŏ·ʔco] 'howler monkey'.

3 Ligature is used here to indicate one-mora vowel clusters in the syllable nucleus.
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4. Vowel contrasts.

4.1. Oral vowels versus nasal vowels:
/l, i/: hi 'came', hî 'exist'; sisîpa 'sand', sisî 'headhouse'.
/e, æ/: ɛthîkihâ'co 'end of house', ɛthîkiga 'middle'; koê?he 'hot', koê?he 'raising'.
/a, ɔ/: ɔsa 'removed', ɔsi 'salt'; pã 'dead', pã 'breadfruit'.
/o, ɔ/: ɔki 'burned', ɔki 'daughter'; ɔtî 'nailed', ɔtî 'fly'.
/ã, ɔ/; tãtîye 'squirrel', tãtî 'trumpeter bird'; hãrât?he 'burning', hãde 'immediately'.

4.2. Contrasts as to point of articulation of oral and nasal vowels.

High unrounded front versus low unrounded front:
/i, e/: fîhi 'killing', fâthâhe 'opening'; ðhi 'armadillo', ðhe 'protrude'.
/i, e/: fîna'he 'filling', fêna'he 'laughing'; hî 'exists', hê 'sounded'.

High unrounded front versus high unrounded back:
/i, ɪ/: dfô'sa 'changed', dfô'si 'child'; kôfîkô 'pricked', kôfîkô 'stung'.
/i, ɪ/: fôdi 'sheet', fôdi 'gourd'; tîbaci 'slippery', tîbaci 'sap'.

Low unrounded front versus low unrounded back:
/e, æ/: ɔâfe'he 'giving', ɔâfa'he 'speaking'; ɔêco 'thorn palm', ɔêco 'humming bird'.
/e, æ/: hê'ssî 'one who sounds', kâ'ssî 'one who watches'; ɔâsge'he 'to start', ɔâsge'he 'to weave'.

High unrounded back versus low unrounded back:
/ã, ɔ/: kâta 'fish (spec.)', kátâ 'to throw spear'; ɔfa 'blew', ɔfa 'spoke'.
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/ə, a/ː fądù 'gourd', fándù 'waved'; mážá 'white-lipped peccary', máda 'ordered'.

High back unrounded versus rounded:
/ə, o/ː kóye 'to sunburn', kóye 'plantain'; thópa 'enclosed', thópa 'belly'.
/tə/ː tükù 'trumpeter bird', teto 'snake (spec.)'; tóʔba 'lightning bug', tóʔto 'uncle'.

Low back unrounded versus rounded:
/a, o/ː káʔše 'again', kóš 'night'; dáye 'to change', dōye 'to split'.
/a, o/ː káʔṣe 'one who watches', kóʔsi 'monkey'; kóʔba 'manioc', kóʔba 'full'.

5. Vowel variants.

5.1. /e/ is normally [e], but has a close variant [e] which occurs preceding /i/ or /y/ː /terēśaʔfa/ [terēśaʔfa] 'plaited string', /pisēye/ [pisē-ye] 'to cross over', /béya/[bē-ya] 'licking'.

5.2. /a/ is normally mid, low [a], but has a more fronted variant [a] which occurs preceding /i/ or /y/ː /kayáhi/ [kayá-hi] 'spider', /háyi/ [há-yi] 'to go', /fáʔpa/ [fá-ʔpa] 'having been seated'.

5.3. Back rounded oral vowel /o/ has a variant [u] occurring freely in all positions: /ˈbóʔfe/ [ˈbó-ʔfe] ~ [ˈbù-ʔfe] 'star', /kóša/ [kó-ša] ~ [kür-ša] 'drum', /saráʔro/ [sará-ʔro] ~ [sará-ru] 'giant otter'. Similarly, back rounded nasal vowel /o/ has a variant [u] occurring freely in all positions:
/ˈbóʔbaʔ/ [ˈbó-ʔbaʔ] ~ [ˈbú-ʔbaʔ] 'upriver', /ˈbóʔhibi/ [ˈbó-ʔhibi] ~ [ˈbú-ʔhibi] 'bird (spec.)', /ˈbóʔhə/ [ˈbó-ʔhə] ~ [ˈbú-ʔhə] 'bathed'.

5.4. All vowels have phonetically half-long variants when occurring in stressed syllables: /sáta/ [sá-ta] 'type
of bamboo, /háyi/ [há·yi] 'to go', /risye/ [ris·ye] 'to cross over'.

5.5. Nasalization of nasal vowels is fortis in stressed syllables and lenis in unstressed syllables: /boñáñe/ [bo-ñáñe] 'to stack', /monámi/ [moná·mi] 'bluebird', /cámá/ [cám·a] 'that'.

5.6. All vowels have voiceless variants occurring freely word-finally: /sá?di/ [sá·?di]~[sá·?di] 'sloth', /risye/ [ris·ye]~[ris·ye] 'squirrel', /poñó/ [poñ·ó]~[poñ·ó] 'bathed', /dá?pa/ [dá·?pa]~[dá·?pa] 'child', /poña/ [poña]~[poña] 'slept', etc.


6.1. Distribution of segmental phonemes in the syllable. The phonemic syllable in Cofán is considered to be a single mora in length. It consists of an obligatory vocalic nucleus, an obligatory initial consonant margin and an optional glottal stop closure. This may be expressed by the formula, S=C+N+?.

The vocalic nucleus (N) may consist of a single vowel (V) or a one-mora vowel cluster of two unlike vowels (V1V2). (Note: In the following examples the syllable under observation is outside the parentheses.) ñá(háñco) 'meat', vá-ñá(háñco) 'domestic animal'; kéñ(háñe) 'to lose', kóñ(háñe) 'to raise'.

Clusters are wholly oral or wholly nasal; oral and nasal in combination have not been observed. The following sequences of tongue positions occur (both oral and nasal examples given where found): /ie/ kíete 'sister', géñgle 'aunt'; /ia/ káñhia 'just', káñhia 'heated'; /io/ dió 'blue jay', gióñgéñ 'bird (spec.)'; /ie/ teréísañfa 'plaited string'; /ai/ váñpa 'savage', váñ 'dog'; /ae/ ñaññéma 'hammock'; /ao/ cáñpa 'nest', íññáñ 'skimmer'; /á/
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vátra 'cow'; /oi/ poñiñko 'all', ćoñ 'sparrow'; /oe/ moñña 'hand it!', ćagoñña 'to make a hole'; /oa/ koña 'squash', ŋñoñme 'really'; /oi/ boñko 'run!'; /ai/ khañyo 'catfish', taña 'chambira palm'; /ae/ çañeyi 'to end', ćakañña 'to fasten'; /a/ hoñiñke- 'concerning what?'

Any one-vowel nucleus may occur with or without a stress. When the vocalic nucleus is \( V_1 \) \( V_2 \) an occurring stress falls on the second vowel of the cluster unless /a/ or /e/ is the first vowel of the cluster: koña 'squash', taña 'chambira'. If /a/ or /e/ is the first vowel of the cluster, it receives the peak of stress: căoñpa 'nest', teriñsañfa 'plaited string'. In a stressed cluster of /ae/ there is a hovering stress over the cluster: /ćanñęñma/ [ćanėñma] 'hammock'.

It may be suggested that the /o/, /i/, and /a/ components of these one-mora vowel clusters could alternately have been interpreted as labialization, palatalization, and velarization of the margin consonant when initial in the cluster, and as semivowel offglides when final in the cluster. This has been rejected for the following reasons: (1) Unit labialized, palatalized or velarized phonemes (composed of contoid plus vocoid glide) would increase the inventory of phonemes out of comparison with the fruitfulness of setting up such unit phonemes. (2) Consonant clusters to represent such labialization, palatalization and velarization would require setting up new syllable patterns with consonant clusters in the syllable margin; no nonsuspect consonant clusters have been found occurring in the syllable margin. (3) On the other hand, nonsuspect vowel clusters do occur in the nucleus, e.g. /ae/ in ćanñęñma 'hammock'. (4) The cluster-final /o/, /i/, and /a/ would have to be interpreted as consonants which would require setting up new syllable patterns with consonant-closed syllables. (5) There also seems to be a direct morphophonemic correlation between
some one-mora vowel clusters of $V_1V_2$ and two-syllable
glottal-separated sequences of $V_1^?V_2$ (across syllable
boundaries):  thóve 'day after tomorrow', t̄kə 'tomorrow';
 rápə 'savage', ráfi 'person'; cáoni 'to the house', cáfo
 'house'; siaćórga 'black monkey', sircə 'black'; koá or
kó?ə 'squash' (speaker variation). This suggests that these
suspect vocoid sequences should be interpreted as phonemic
vowel sequences of $V_1V_2$. 4

There are no nonsuspect triple-vowel clusters. This
has entered into establishing /ɨ̞/ as a phoneme (see 2.9.
and 2.16.). The phonetic similarity of [no] and [n̄o] would
allow /n̄oɡə me/ 'really', to be interpreted as [n̄oɡəme], but
lack of nonsuspect triple-vowel clusters does not favor such
interpretation.

The syllable-opening margin may be any consonant phono-
me: pâ 'dead', thc 'broke', dó 'split', hif 'came', vá
'this', mó̞ 'sent', rá 'ate', etc.

Open syllables contrast with syllables closed by a glot-
tal stop /ʔ/: čícə 'god', čícə 'hate'; hóŋə 'caused to
plant', hóŋə? 'shall plant'; khâka 'crayfish', khphə
'stung'.

6.2. Syllable distribution within the stress group. Full
expansion of the syllable formula yields four syllable-pattern
variations: CV", CV?, CV$_1$V$_2$, and CV$_1$V$_2$?. The first three
types occur initially, medially, or finally in the stress group.
The last type has been observed initially and medially, but
not finally in the stress group, although it is considered pos-
sible for it to occur in that distribution also. In the following
examples, the syllable under observation is outside of the
parentheses.

4 For discussion of a similar problem see, Eugene Minor,
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CV syllables: initial, ʁə̆(ŋə) 'to eat', mə̆(ŋi) 'where'; medial, (mə̆)ʔĭ(ʔo) 'nothing', (ʔa)rə̆(pa) 'chicken'; final, (cə̆)ʔo 'house', (nə̆ŋə)kə̆ 'needle'.

CVʔ syllables: initial, ʁə̆ʔ(ʔo) 'howler monkey', kə̆-bə̆(bə̆) 'gazed'; medial, (tə̆)ʔĕʔ(ʔi) 'hard', (ʔi)ʔə̆ʔ(ʔĕ) 'crying'; final, (hə̆)ŋə̆ 'shall plant'.

CV₁V₂ syllables: initial, ʁə̆q(ŋa) 'skimmer', ʁə̆(fa) 'chambira'; medial, (ʁə̆ʔ)ʊə̆(nə̆) 'to bait'; final, (ʁə̆ʔ)fĭ 'fed'.

CV₁V₂ʔ syllables: initial, ʁə̆ʔ(ʔa) 'savage', kə̆ʔ(ŋa) 'served'; medial, (de)hə̆ʔ(ʔĕ) 'hitting'.

7. Stress and juncture.

7.1. Stress contrasts. Two degrees of phonemic stress have been observed: stress 1, found on phonological words, and stress 2, found on phonological phrases. (Syllables having neither of these are considered to be lacking stress.) The basic stress group or phonological word is composed of from one to four syllables with a single peak of heavy stress, /ˈ/, accompanied by a slight dropping (downward slur) of pitch during the final syllable. (This word–juncture is indicated by space.) The stress peak is usually penultimate or earlier in the word. One-syllable: ƣə̆ 'mother', há 'went', ʁə̆ 'ate'. Two-syllable: sə̆tə̆ 'type of bamboo', hı̆nə̆ 'come!', sə̆sə̆ 'toucan'. Three-syllable: və̆tə̆və̆ 'cayman', kə̆hə̆sə̆ 'boa', ʁə̆gə̆ʔo 'measured'. Four-syllable: me̊zə̆-zaʔə̆ 'tongue', thekə̆pə̆ 'balsa', ʁə̆yə̆kə̆ 'angered'.

A string of one or more phonological words constitutes a phonological phrase. Each phonological phrase has a peak of extra heavy stress, /ˈ=/. This stress generally replaces stress 1 of the grammatical head of the phrase. mə̆nə̆ kĭ kə̆hə̆yə̆ 'Where are you going?', ʁə̆ʔkə̆ʔə̆ of 'It's edible'.

Some words have both stress 1 and stress 2; these con-
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In contrast lexically with words which have only stress 1. In these, stress 2 occurs on the ultimate syllable and is accompanied by a sustained or stepping up of pitch rather than the normal dropping pitch. Extra vowel length is also evident. Examples are given here for two and three-syllable words: ठाँत्या 'looked', ठाँत्या 'looking'; कोती 'drank', कोती 'drinking'; रास्तेम् 'thought', रास्तेम् 'thinking'.

When one-syllable words receive stress 2, the same features—sustained or stepping up of pitch (rather than normal dropping pitch), and extra length—are evident, though the placement of stress cannot change: /ज़ै/ [ज़ै] 'sat', /ज़ै/ [ज़ै] 'sitting'.

The three and four-syllable words, of the basic type above, show further contrasts in the placement of stress 1 in terms of two partially phonologically defined classes. Class one has penultimate stress (generally the penultimate stem syllable is open—no glottal closure), and class two has antepenultimate stress (generally the penultimate stem syllable is closed by glottal stop). Three-syllable: देशिको 'fingernail', देशिको 'knife'; चित्तफ़ 'crowned', चित्तफ़ 'nailed'; जाँवहा 'to be happy', जाँवहा 'prayed'. Four-syllable: देवकोपा 'ax', देवःको 'adze'; देवःको 'whirlpool', देवःको 'ripples'.

Grammatically-complex stress groups (stem plus affix) also show contrasts in stress placement: जाड़ी 'go down!', जाड़ी 'earth (as subject)'; जाड़ी 'rat', जाग़ी 'pregnant'.

7.2. Non-phonemic stress variations. Four-syllable words, class one (penultimate stress), have a nonphonemic initial lenis secondary stress [\"\, /फौटिंध:हृ/ [फौटिंध:हृ] 'whirlpool'; /फौटिणसि/ [फौटिणसि] 'rainbow'.

Five-syllable words and longer are the result of compounding and affixation. In them, stress perturbations and variations in placement of stress occur following morphon-
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phonemic patterns which are not described in this paper.

7.3. Juncture contrasts. In addition to the normal word-
juncture phoneme of slight pitch drop at the close of a stress
group, there are two contrasting phonological phrase-junc-
ture phonemes.

The final phrase-juncture phoneme consists of a drop-
ping pitch (greater than that of word-juncture) followed by
a pause. This is indicated by /#/ at the close of the phrase.
The length of the pause varies greatly. /[te.te.te ma ka'áí?fa
táyo pi #/ [te.te.te ma ka'áí?fa tá.yo pi #] 'They met the
savages long ago'.

The nonfinal phrase-juncture phoneme consists of sus-
tained closing pitch followed by a pause. This is indicated
by /|/ at the close of the phrase. /[gá?i piše.ste ma ?dípa| ...
[?á.?i piše.ste ma ?dípa|...] 'Having seized the Cofán
woman,...'.

7.4. Distribution of phonological phrases. Nonfinal
phrases are restricted in their distribution and require a
final phrase to be complete. Any number of nonfinal phrases
may be joined to one final phrase: /óbo?e botópa| há pá| ka'igápa |
ší'íyi ye #/ 'Running after them, he went, he
caught, and he killed them'.

Final phrases are complete in themselves and may stand
alone or be distributed in a higher-level phonological matrix
such as utterance or conversation.
Ecuador Quichua Phonology

by Carolyn Orr

1. Phonemic inventory. The Quichua of Puyo Pongo in eastern Ecuador has twenty-seven phonemes: p, pY, t, tY, c, č, k, kY, b, d, z[dz], j, g, s, š, h, m, n, ň, r, l, lY, w, y, i, a, and u.

1.1. The stops occur in two groups (voiceless and voiced) at five points of articulation: bilabial, voiceless /p/ pani 'boy's sister', ušpa 'grey, ash', pompalYina 'skirt', čuspi 'gnat', tarpuna 'to plant', and voiced /b/ ŋambi 'path', maybi 'where', čibas 'unmarried woman', humbi 'sweat', šimbana 'to braid', and palatal /pY/ rapYan 'nervous', pYula 'mouldy'; alveolar, voiceless /t/ tuta 'night', tYantu 'shadow', šuntina 'to push sticks into a fire', watana 'to tie', gasta 'surname', and voiced /d/ tanda 'bread', yayandi 'with father', sindina 'to burn', pindu 'wild cane', lYanda 'muddy', and palatal /tY/ tYusin 'he pinches', mutYu 'amputate', ipiYara 'cockroach'; alveolar affricated, voiceless /c/ cala 'pale', cuncu 'ragged', pacak 'one hundred'.
mica 'stingy', and voiced /z/ izi 'young child', kazun 'brother-in-law'; alveopalatal affricated, voiceless /č/ čuri 'son', rupačina 'to burn', ančuri 'get out of the way!', šucanči 'we', akša 'hair', and voiced /ʃ/ fili 'a bug', čunžuli 'intestines', punža 'day', sinži 'hard', kanžis 'seven', manžana 'to fear'; velar, voiceless /k/ kimsa 'three', wakana 'to cry', sanka 'hilly', akša 'hair', lYahta 'village', taksana 'to wash clothes', pusak 'eight', and voiced /g/ gasta 'surname', šungu 'heart', čagra 'field', čignina 'to hate', puglyana 'to play', and palatal /kY/ mlyga 'aunt'.

/tʃ/ has two allophones: voiced following nasals and voiceless when occurring intervocalic or word initial.

/k/ has two allophones: released before vowels and unreleased preceding consonants or utterance-final pause.

It will be seen in 4. that /p/ and /t/ are not found in syllable-final position and therefore would not be expected to demonstrate comparable allophones.

1.2. The spirants are /s/, /š/, and /h/, which occur respectively at alveolar, alveopalatal, and glottal points of articulation: alveolar /s/ sisa 'flower', šukas 'I also', asina 'to laugh', anša 'a little', taksana 'to wash clothes'; alveopalatal sibilant /š/ waša 'back', ušuši 'daughter', miški 'sweet', šukšina 'to come out', ušpa 'grey, ash'; glottal /h/ haku 'let's go', uhuna 'to cough', hihi 'grasshopper', punžahlva 'like daylight'.

/h/ occurs in two allophonic forms: velar fricative [x] when preceding /tʃ/ and utterance final, [h] elsewhere. Inasmuch as /h/ may precede only the one consonant, the distribution of the glottal allophone may be defined as preceding vowels.

1.3. The nasals occur at three points of articulation: bilabial /m/ maki 'hand', kimsa 'three', lumu 'manioc',
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urmana 'to fall'; alveolar /n/ yana 'black', kušni 'smoke', kayna 'yesterday', indi 'sun', ūukanōti 'we'; alveopalatal /n/ ēnawī 'eye', wañuna 'to die', mañana 'to beg', ūna 'girl's sister'.

/n/ has two allophones: velar [ν] precedes velar stops /k/ winkas 'part of a fish', and /g/ singa 'nose'; when occurring as the first member in cluster preceding consonants other than stops, /r/ manra 'red dye', /l/ tinlana 'to pull tight', /lγ/ anlYana 'to choose', /s/ ansa 'dark', /w/ kanwa 'with you', and when occurring utterance final, kan 'you'; [n] occurs intervocalic, as the second member of a consonant cluster, and as the first member of a consonant cluster preceding alveolar and alveopalatal stops (illustrated above), as well as initial, nina 'fire'.

1.4. There are three liquids: alveolar flap /r/ kuru 'worm', runa 'people', tarpuna 'to plant', hursan 'strength'; alveolar lateral /l/ lulun 'egg', kila 'a vegetable', saltana 'to jump', ūlīpina 'to split'; and alveopalatal lateral /lγ/ kilīra 'moon', līpina 'to squeeze', pugīYana 'to play', alīp 'ground'.

1.5. The semivowels are /w/ and /y/. Between syllable boundary and vowel, or between vowel and syllable boundary, the unstressed high vowels are less syllabic. These less-syllabic phonemes may be considered variants of the respective high vowels. Where they fit into the normal consonant slot in the established canonical pattern they may also be considered consonants /w/ and /y/.

/w/ occurs in two allophonic forms: fricative [w] preceding /i/ wiksa 'stomach', ēnawī 'eye', wakī 'sap, sticky'; and [w] preceding consonants and /a/ awka 'savage', čawsina 'to shake', wawa 'baby', kanwa 'with you'.

1.6. The vowels occur in three diverse environments.
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/i/ occurs in two allophonic forms: high front lax [I] preceding /l/ and /n/ or following /h/ indi 'sun', kila 'a vegetable', hihi 'grasshopper'; and tense [i] elsewhere maki 'hand', ima 'what', čiri 'cold', siririna 'to lie down'.

/a/ occurs in three allophonic forms: low front, lax [æ] following palatal consonants haña 'girl's sister', л'якина 'to sorrow', yačaška 'he knew'; mid tense [e] occurring in a checked syllable between a preceding palatal consonant and a following /y/, in that order, uyay 'listen! obey!', anlyay 'choose!'; and low lax [a] occurs elsewhere angu 'root', al'yu 'dog', taksana 'to wash clothes'.

/u/ occurs in three allophonic forms: high back, lax [U] which varies freely with the two back tense phones, high [u] and mid [o], uma 'head', puru 'gourd', siriún 'he is lying down', lulun 'egg'.

2. Stress and juncture. Stress is nonpredictable and therefore phonemic. It most frequently occurs, however, on the penultimate syllable of the word. In a few word classes stress may occur on the ultimate syllable; for convenience, therefore, we write stress only in the latter instances. wasi 'house', nina 'fire', rimana 'to tell', wasiy 'in the house', oagra 'in the field', rimáun 'he is talking', miktun 'he is eating', siriún 'he is lying down'. Stress is accompanied by high pitch.

There are three junctures in Quichua, one terminal, and two nonterminal. The terminal juncture, #, is accompanied by falling voice on the syllable immediately preceding the juncture and a higher pitch on the stressed syllable of the word preceding the terminal juncture. wa³wa² si²sa³ta² pi²tin⁴mi¹ # 'The child cuts the flowers (emphatic)'. (High pitch is 4, low pitch is 1). There is usually a breath intake following the terminal juncture.

The two nonterminal junctures include the double-bar
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juncture //, and the single-bar juncture /. The double-bar juncture is characterized by pause and by falling voice on the syllable preceding the juncture. The word preceding // does not carry the phrase stress found in terminal juncture, nor does the voice fall as much. či³ ka²ni²lus²mán³da² // rí²rán³či² u²ráy⁴ma¹ ≠ 'Then from Canela, we went farther down river'. The single-bar juncture is characterized by level pitch, or slightly raised pitch, and very slight pause. či² kí³ka³ / ní³ka⁴wa² ≠ 'That book, it is mine'.

3. Distinctive features. In chart number 1, the phonemes of Quechua are charted according to their distinctive features, utilizing nine binary oppositions. In the chart + stands for the term on the left, and − for the term on the right.

Chart I

DISTINCTIVE FEATURES

| 1. Vocalic/Non-Voc. | p | pų | b | t | łu | d | k | ḱ | ʃ | c | z | s | ʂ | h | r | l | ɬ | m | n | ñ | w | y | i | u |
| 2. Consonantal/Non-C. | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 3. Compact/Diffuse | − | − | − | − | + | + | + | − | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 4. Grave/Acute | + | + | + | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − |
| 5. Nasal/Oral | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − |
| 6. Sharp/Plain | − | + | + | + | + | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − |
| 7. Voiceless/Voiced | − | + | + | + | + | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − |
| 8. Continuant/Interr. | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − |
| 9. Strident/Mellow | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − | − |

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A phoneme may be a bundle of features. Every given phoneme may be distinguished from every other phoneme by at least one feature. The phoneme p, for example, is similar to b in that it is nonvocalic, consonantal, compact, grave, sharp and nonnasal but differs (in opposition 7) in that p is voiceless and b is voiced. In comparing p with m we note a contrast only in opposition 5 in that p is oral whereas m is nasal; the remaining features are identical for both. p differs from p̃ only in the sharp versus plain opposition. p is differentiated from t and d by opposition 4 which shows p as grave and t and d as acute; p is further differentiated from d by opposition 7 where d is voiced. As is indicated on the chart, each phoneme contrasts with every other phoneme by at least one distinctive feature.

4. Syllable patterns. The syllable is easily elicited and phonetically definable with minimum ambiguity at syllable boundary. Thus the syllable is a useful matrix for describing distribution of phonemes. Two syllable types may be defined: +C+V+C which may occur word initial (as well as medial and final), and CVV+C which may occur only word medial or final. Type I is more frequent both in list frequency and text frequency. As may be seen, consonant clusters do not occur within a syllable.

The distribution of the phonemes within syllables is best presented in terms of distributional classes of phonemes. The inventories of the phoneme classes are not mutually exclusive in content but the classes as set up here simplify the statement of distribution of individual phonemes. These classes are valid for both syllable types. Class C₁ includes all consonants. Of these d and k̃ occur only when C₁ is word medial. Class C₂ includes all fricatives, liquids, semi-vowels, and ċ, k, g, m and n. Of these only k, g, m, n, l, s and y occur when C₂ is word final. Class C₃ includes
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š word medial and n word medial and final. Class V₁ includes all vowels. Class V₂ includes a and u. Class V₃ includes only u.

4.1. The syllable patterns generated by type 1 are V, VC, CV, and CVC.

V₁ may occur word initial and medial: u.ču 'hot pepper', a.λu 'mold', i.ma 'what', a.sī.na 'to laugh', pu.ri.u.ra 'he was walking'.

VC syllables are of two varieties which are mutually exclusive in their distribution. Word initial V₁C₂ occurs: in.dī 'sun', aλ.ku 'dog', uš.pa 'grey, ash', aw.ka 'savage', ur.ma.na 'to fall'. In word medial and final positions V₂C₃ occurs: pu.ri.uš.ka 'he has been in the process of walking', si.ri.ún 'he is lying down', pa.ki.un.mi 'he is breaking (it)'.

C₁V₁ occurs word initial, medial and final: ka,ha 'drum', ri.ma.na 'to tell', ŋu.ka.ta 'me', sa.ča 'jungle'. It may also occur as a monosyllabic word: pl 'who', čī 'that', ŋa 'now, already'.

C₁V₁C₂ occurs not only word initial, medial or final, but also as a monosyllabic word: kan 'you', pay 'he', čag.ra 'field', si.kaš.ka 'he has climbed', kan.jīs 'seven', ŋu.kan,čī 'we'.

4.2. The syllable patterns generated by type 2 are CVV and CVVC.

C₁V₂V₃ occurs only word medial: a.pau.ra 'he was carrying', mas.kau.wa.ra 'he was looking for me', pu.kuu.ra 'she was blowing', hi.ču.rra 'she was throwing (it) away', mi.ku.rr.ni 'I am eating'.

C₁V₂V₃C₃ occurs word medial and final: pu.ńūun 'he is sleeping', mi.ku.nauš.ka 'they have been in the process of eating', ri.maun.gi 'you are talking', raun.ga 'he will do
5. Consonant clusters. Consonant clusters occur only word medial across syllable boundary and include a maximum of only two consonants. The consonants may be divided into five classes: stops (S), fricatives (F), nasals (N), liquids (L), and semivowels (Sv). These classes crosscut the ones given above for distribution of phonemes in the syllable. All possible combinations of the above classes occur except FF, LF and LL. Out of a possible 576 different combinations of consonant phonemes only seventy-seven clusters actually occur.

5.1. The following SS clusters (stop plus stop) are noted: c and ŋ followed by k; k as the first member followed by p, t, c, č or g: pučku 'fuzzy', pička 'five', akpi 'being in the place', yayakta 'for father', cukcuna 'to pull apart', akča 'hair', ūkguna 'others'.

SF clusters occur with the voiceless velar stop (k) preceding s, and both voiceless and voiced (k, g) preceding š: taksana 'to wash clothes', šikšina 'to itch', ugša 'grass (used for roofing houses)'.

SN clusters occur with only the voiced velar (g) as the first member and either m or n as second member: šugma 'to the other', čignina 'to hate'.

SL clusters pattern the same as SN with only the voiced velar as the first member of the cluster. All three liquids occur as the second member: čagra 'field', wagšina 'to ruin', pugšana 'to play'.

SSv clusters show only one combination: tugušana 'to explode'. It should be noted that this is not palatalization of the voiced velar, for there is a phonetic syllable break, with slight open transition, between the two consonants.
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5.2. FS clusters show both alveolar and alveopalatal spirants occurring preceding stops p, t, and k, and h preceding t: kaspi 'stick', gasta 'surname', waska 'wine', ušpa 'ash, grey', mašti '(word filler)', pišku 'bird', imawahta 'why'.

FN clusters occur with all three spirants preceding the bilabial nasal (m). Alveolar and alveopalatal spirants (s, š) precede the alveolar nasal (n): ismu 'rotten', casna 'thus', kušma 'tunic', kušni 'smoke', ringahmi 'he was going to do something'.

FL clusters contain only one combination: kaspiliYa 'like a stick'.

FSv clusters show the alveolar spirant preceding both semivowels: aswa 'fermented drink', putasyaška 'become greatly swollen'.

5.3. NS clusters occur with the bilabial nasal (m) preceding bilabial stops (p, b), and the alveolar nasal (n) preceding alveolar (t, tV, d, c, z), alveopalatal (č, ř), and velar (k, g) stops: pampalija 'skirt', hambti 'poison', čuntina 'to stir the fire', indi 'sun', hantYa 'a fish', cuncu 'ragged', punzu 'fuzzy', řukanči 'we', punja 'day', řinki 'soot', čunga 'ten'.

NF clusters occur with the same nasals as NS (m, n), both of which precede s: kimsa 'three', ansa 'a little'.

NN cluster combination occurs only across morpheme boundaries within a word: randinmi 'he sells (emphatic)', čapitunmanda 'from Chapitun'.

NL clusters show only the alveolar nasal (n) as the first member of the cluster and all three liquids as the second member: rinri 'ear', tínlna 'to pull tight', řunlYa 'quietly'

As was described in 1.3., the phonetic quality of the alveolar nasal preceding a liquid is [ŋ].

NSv clusters occur with the bilabial nasal (m) preceding
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the alveopalatal semivowel (y), and the alveolar nasal (n) preceding the bilabial semivowel (w): tamya 'rain', kanka 'with you'.

5.4. LS clusters show that all three liquid phonemes (r, l, lỹ) occur as the first member of the cluster and the three voiceless stops (p, t, k) as the second member of the cluster, with a limited distribution of k not following l and t not following lỹ: tarpuna 'to plant', hurli 'sour', urku 'hill', ħilpina 'to split', palta 'avocado', alỹpa 'earth', kulỹki 'money'.

LN clusters occur with each liquid preceding m: warmi 'woman', halmana 'to chop weeds', wilmĩma 'body hair'.

LSv cluster occurs in only one combination: ċalywa 'fish'.

5.5. SvS clusters occur with both semivowels (w, y) as the first member of the cluster, with the bilabial semivowel preceding the voiceless stops, and the alveolar semivowel preceding b, t, č, k and g: niwpna 'first, before', lỹawtu 'crown of feathers', wawkti 'boy's brother', yakuybi 'in the water', payta 'him', ayca 'meat', yaykuna 'to enter', payguna 'they'.

SvF clusters show both semivowels occurring before the alveolar fricative: ni̇wosa 'blind', aysana 'to slide, pull'.

SvN clusters occur with the alveopalatal semivowel only as the first member of the cluster and both the bilabial and alveolar nasal as the second member: payma 'to him', kayna 'yesterday'.

SvL clusters occur with the bilabial semivowel preceding the alveolar liquids, and the alveopalatal semivowel preceding all but the alveolar lateral: awru 'bitter', sawli 'large knife', wayra 'wind', aylỹyu 'family'.

SvSv cluster shows only one combination: ušaywa 'with strength'.
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Chart II presents the patterns of clustering in Quichua.

Chart II

CONSONANT CLUSTER PATTERNS

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The following interphonemic specifications may be noted concerning the consonant clusters: ñ never occurs in a cluster, nor do the voiceless palatalized stops, p and t never occur as the first member of a cluster. A stop phoneme occurs in over half the total number of clusters.

These consonant clusters may be divided into two groups. If the first member of the cluster occurs also as a word-final consonant and the second member of the cluster occurs as a word-initial consonant, the cluster is defined as "dissolvable." If either member of the cluster does not occur at the appropriate word boundary, the cluster is defined as "nondissolvable." In Quichua dissolvable clusters are more numerous than the nondissolvable ones. In a running text of 1,021 words, thirty dissolvable clusters recurred 140 times in contrast to only eight nondissolvable clusters which recurred 54 times.

Though Spanish loan words introduce very few new phonemes, they do introduce new clusters, most of which are dissolvable: kr, ld, ls, lñ and lg. The non-dissolvable ones introduced are rb, rd, rs and pr.

6. Phoneme frequency. An actual phoneme count of 100 phrases yielded a total of 2,010 occurrences. Of this number 966, or forty-eight percent, were vowels, with a equalling more than i and u added together. From the 236 recurrences of the phoneme i, the allophone [I] was noted three times. [æ] was recorded twenty-five times in the 532 recurrences of the phoneme a.

1The section of this paper on consonant clusters and dividing them into dissolvable and nondissolvable groups, was done at Indiana University under the direction of Sol Saporta in his class, Quantitative Linguistics, 1958. His help in working out the details is very much appreciated.
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The largest group of consonants were the stops, which numbered 395 (twenty percent). A further break-down of this group shows that voiceless stops are four and one-half times more prevalent than their voiced counterparts, with the voiceless velar stop leading the list. Unreleased k was recorded fifteen times of the total 106 recurrences of the voiceless velar stop phoneme.

The nasals account for fifteen percent of the total with an actual count of 300, n being the most frequent. Over one-third (49 out of 126) of the recurrences of the alveolar nasal phoneme have the velar quality.

Liquids follow with 128 occurrences (six percent), r recurring more often than the laterals.

Semivowels are slightly less frequent with an actual count of 122, also six percent of the total. The [b] allophone of w was recorded once in the fifty-five times this phoneme occurred.

The spirants were the smallest group, numbering 99, or five percent. Of the three spirants recorded, ʃ recurred over twice as many times as the others. The velar fricative allophone [x] of h was noted only once in the four times this phoneme occurred.

7. Loan words. When a Spanish word is spoken by a monolingual or by a Quichua who knows very little Spanish, it undergoes certain changes. Usually the reason for the change is to conform to the Quichua phonemic system. Some words, however, are changed even though they contain the same phonemes or sequences as in Quichua.

The first group we consider are words containing the stop phonemes. Though b occurs word initial, most Spanish initial b's become w: basura > wasura 'trash', tabaco > tuwaku 'tobacco'. There are many words in which d is replaced by r: dedo > riru 'finger'; but the reverse is
true in the case of relámpago which becomes dilampagu 'lightning'. The velar stop is changed to b or to nasal plus velar: aguja > abuha 'needle', hormiga > hurminga 'ant'. Spanish word-initial v becomes a regular stop rather than the allophone of w: verde > birdi 'green'.

The next group of words contain fricative phonemes. A large group of Spanish words beginning with the consonant f are changed to h when spoken by the Quichua: fuerza > hurusa 'strength', s becomes z in mesa > miza 'table' (perhaps to distinguish it from misa 'mass').

Since consonant clusters do not occur word initially in Quichua, Spanish words containing initial clusters are changed by adding a vowel between the two consonants: trabajar > tarabana 'to work'. In word-medial clusters an alveolar stop is replaced by a velar stop: Pedro > pigru 'Peter'. Though both st and št occur word medial in Quichua, the alveolar sibilant is changed to the alveopalatal: costillas > kuštilyas 'ribs'.

Regarding vowels, the more a Quichua Indian is able to converse in Spanish the greater the possibility of his using the vowel quality of the original Spanish word. The monolingual, on the other hand, changes all e vowels, whether as a member of a cluster or as the only vowel in the syllable, to i: cielo > silu 'sky', pensar > pensana 'to think'. Spanish o and u phonemes tend to become more lax to fit the Quichua vowel quality u: poder > pudina 'to be able', basura > wasura [wasÚra] 'trash'.

3. Morphophonemics. In this section we classify the allomorphic alternations according to the kinds of changes which occur at morpheme boundaries. Each group of allo-
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morphemic changes illustrates a particular Rubric. In what follows, Voegelin's system of Rubrics is used. Quichua does not demonstrate any alternations which could be classed under his Rubrics 2, 6, 7, or 8.

Under Rubric 1 we give those alternations characterized by the addition of a series-generating component to a marginal consonant of one of the allomorphs.

Morphemes whose alternants otherwise begin with a voiceless stop have an allomorph beginning in a voiced stop of the same quality when following a nasal. This is illustrated with four different suffixes (hyphen represents morpheme division): Noun stem plus genitive suffix -pa, or locative suffix -pi: sinik-pa 'porcupine's', cillis-pa 'streamless region's'; sača-pi 'in the jungle', punja-pi 'in the daytime'; but kam-ba 'yours', hatum-ba 'the big one's'; hatum-ba 'in the big one', atam-bi 'on the frog'. Nouns plus object suffix -ta: wasi-ta 'the house', ayča-ta 'meat', puru-ta 'gourd'; but kan-da 'you', atan-da 'the frog', wakin-da 'others'. Nouns and verbs plus question suffix -ču: ali-ču 'is it good?', lumu-ču 'manioc?', mana-ču 'isn't it?'; but kan-ju 'you?', tiyan-ju 'is there?', čarín-ju 'does he have?'.

The voiceless velar stop is replaced by voiced when preceding a suffix beginning with l or m: šuk 'one', rimak 'the speaker'; but šug-ly'a 'only one', and rimag-ma 'to the speaker'.

Rubric 3 is characterized by substitution of a given consonant by another consonant in the same manner class. A morpheme-final alveolar nasal is replaced by a bilabial

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2Acknowledgment for the Rubric type description is due to C. F. Voegelin and his lectures in his Languages of the World class, 1958. The author is very grateful for this and many other suggestions incorporated into this paper.

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nasal when followed by a suffix beginning with br 'kan 'you', hatun 'big', tazín 'nest'; but kam-ba 'yours', hatun-ba 'the big one's', tazín-bi 'in the nest'.

Rubric 4 is characterized by substitution of a given consonant by another consonant in the same homorganic class. A suffix beginning with a continuant (see 3. on distinctive features) occurs following vowels and semivowels, whereas the interrupted phoneme follows other consonants: sinik-pa 'porcupine's', rimak-pa 'the speaker's', but ñuka-wa 'my', pay-wa 'his', wiña-wa 'Wiña's'.

Under Rubric 5 we give those alternating forms characterized by loss of one or more phonemes. When two vowels of the same quality occur at morpheme boundary the first vowel is usually dropped: čil'ya anga ~ čil'yanga 'it will be just that one', ruku uma ~ rukuma 'old head', čiši-ybi ~ čišibi 'in the evening'. When two consonants of the same quality occur at morpheme boundary the first consonant is sometimes dropped: wanduk-kuna ~ wandukuna 'trumpet flowers', tukučin niša ~ tukučiniša 'wanting to end it'.

In the locative morpheme -ybi, there may be loss of not only the consonant phoneme but also the semivowel preceding that consonant: sača-pi ~ sača-ybi ~ sača-y 'in the jungle'. When the vowel and consonant are dropped, the stress remains on the syllable which was stressed when the full morpheme was present.

9. Dialect differences. There are several mutually intelligible dialects of Quichua spoken in Ecuador, both in the mountains and in the eastern jungle. Material was gathered from eight different areas and the following characteristics were noted in relation to the dialect spoken at Puyo Pongo. For easier reference we will number the dialect areas as follows: A. Agato, Imbabura province, B. Calderón, Pichincha province, C. Salasaca, Tungurahua
province, D. Colta, Chimborazo province, E. Cuenca, Azuay province, F. Saraguro, Loja province, G. Dos Ríos, Napo province, H. Puyo Pongo, Pastaza province. The first six are from the mountain areas, dialect A being the most northern dialect and dialect F the most southern. Dialects G and H are both in the jungles, G in the northern area and H in the southern.

There are no aspirated stops in either dialect G or H. The word-initial p which is aspirated in dialects C, D, E and F, is pronounced with friction [ph] rather than aspiration in dialects A and B. Thus the word pukuna 'to blow' would contain the following initial phonemes in the different dialects: p/\p/p\h/p\h/p\h/p\h/p/p/p.

The consonant of the locative morpheme is actualized as b in dialects B, C, G and H; the voiceless counterpart in the other areas. The consonant of the genitive morpheme is b in dialects B and C, w in the two jungle areas, and p in the other dialects.

The aspirated t is not so widely distributed, occurring in only a few words in which the stop precedes the vowel a. This feature is noted only in dialects D and E. The word tangana 'to push' illustrates this difference: t/-t/t\h/t\h/t/t/t.

The velar stop is aspirated in the same areas which aspirate the bilabial stop (C, D, E and F), but instead of a fricative in dialects A and B, there is only aspiration. Thus kiwa 'weed' has h/h/k\h/k\h/k\h/k/k.

The alveopalatal affricate is voiced in dialects A, G and H when following a nasal, and voiceless in the other dialects. The word sinjul 'hard' is noted: j/\j/c/\c/c/\5/\5/j/j. There are a few words (kanja 'outside', punja 'day', čunjuli 'intestines') which have the voiced phoneme in all dialects except B.

Only dialects E and F use the alveopalatal sibilant in
ECUADOR QUICHUA PHONOLOGY

the word misi 'cat'. The majority of illustrations with the sibilant phonemes show a conformity to either one or the other.

Preceding s the bilabial nasal becomes an alveolar nasal in dialects A, C and G, to give such words as kimsa 'three' the following distribution: n/m/n/m/m/m/n/m.

The most noticeable distinction between the mountain and the jungle dialects is the use of ʔ (dialects A, B, C, D and E). The word tulũ 'bone' clearly illustrates this: ʔ/ʔ/ʔ/ʔ/ʔ/ʔ/ʔ/ʔ. Preceding k word medially, dialects A and B also use the palatalized lateral.

All word-initial r's are retroflexed in the mountain dialects and flapped in the jungle dialects.

When word-initial w precedes i, the consonant is dropped in dialect G. Therefore wiñana 'to grow' retains the w in all dialects except G, where it is pronounced ñana. Speakers in this dialect also drop the first consonant and vowel of the word wauki 'boy's brother', so that it becomes uki. In the word yuyarina 'to think', the first vowel is dropped and the initial consonant becomes syllabic. Thus the word is pronounced iarina in this area.

Dialect H metathesizes medial or final r with word-initial y, so that yawar 'blood' becomes raway.

One word which does not fit any pattern is the word for chicken. Its distribution is as follows: atalpa/atalita/atal/ atizpa/wazpas/walpa/atalba/atalba. 
Phonemic Units in the Secoya Word

by Orville E. Johnson and Catherine Peeke

0. Introduction.
1. Classification of phonemic units.
2. Contrasts between phonemic units illustrated.
3. Variant manifestations of phonemic units.
4. Further distributional restrictions.

0. Introduction. Phonemic units in Secoya\(^1\) include segmental phonemes as well as certain constructions which,

\(^1\)Small groups of Secoya have been encountered along the Napo, the Putumayo, and tributaries of the Aguarico rivers, in Ecuador, Peru, and Colombia. Known speakers of this dialect total approximately 160 persons, while known speakers of each of the three related dialects, Siona, Angotero, and Orejón, average around the same in number.

Data for this paper were gathered by Orville and Mary Johnson on various field trips to the village of Cuyabeno on a tributary of the Aguarico River in northeastern Ecuador, during the years 1955 to 1960.

Fernando Palyaguaje, chief of the Cuyabeno group, is the informant on whose dialect the present analysis was based; because of dialect variation within the village itself, there is great variation in stress-group conditioning between the speech of different individuals.

Kenneth L. Pike gave invaluable assistance on stress problems, as well as on other phases of analysis and description, during special linguistic workshops held in Ecuador in October, 1960, and in May, 1961.

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within the structure of the phonological word, function in capacities comparable to the function of the segmental phonemes.

To posit units composed of segments larger than, but with function comparable to that of, the phoneme, is to be committed at the outset to a hierarchical approach. Impetus for this type of description stems from Kenneth L. Pike's (1955) trimodal structural framework. Analysis has been made according to function of classes of units as components in larger constructions, after the model of Pike's slot-class correlative, although such a model may not always be clearly reflected in the description.

Commitment to a hierarchical approach implies recognition of structural levels or layerings. Within the stress group structure of Secoya, two such significant levels are recognized; these are related to constructions having a nuclear-marginal relationship. The stress group (or phonological word) is such a nuclear-marginal construction; and the syllable, which fills positions within the stress-group nucleus and margin, is also a nuclear-marginal construction.

The fact that in Secoya each of these nuclear-marginal constructions is composed of a potentially complex nucleus plus its marginal elements implies included constructions pertaining to the nucleus; these included constructions, however, are not of the nuclear-marginal type but rather sequential and coordinate in arrangement.

It might be inferred, since these coordinate constructions comprise distributional matrices for certain of the classes identified in 2., that they represent further levels within the system. But in no case do they provide the only kind of matrix for every class at a given level; nor may they be construed to be constructions which may function in every position in a larger structure, for nuclear-marginal constructions create a dichotomy whereby components of the
nucleus construction are never the same as those of the marginal construction. Hence, any intermediate construction may have reference to positions in one and one only of these constructions.

Rather, if the "levels" are to be recognized as successive stages where constructions include all, and are wholly composed of, functioning classes of units or constructions at a given lower level, the nuclear-marginal construction together with its included complexity must mark the threshold. Using this criterion, it may be stated that classes of segmental phonemes fill all positions at syllable level, i.e. syllable-margin position and positions in the simple or complex nucleus of the syllable. Syllables, in turn, fill all positions at phonological word level, i.e. positions in the simple or complex nucleus of the stress group and positions in the stress-group margin.

The plan of this paper is to classify phonemic units according to contrastive-identificational components and features, to illustrate their mutual contrast and variants, and to describe their distribution.²

A series of variable components and/or features which applies to a given class of units is both identificational, in that applicability of the series delimits class membership and defines the class and its members, and contrastive, in that delineating cuts made by one series of components and/or features intersect with delineating cuts made by another series operating on a different plane, thus providing a two-dimensional grid of criteria sufficient to separate each phonemic unit from all other units in its class.

²Distributional matrices are described except in the case of stress-group margins (see 1.6.), where varied morphological suffix strings determine the incidence of stress. Analysis is lacking at this point.
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The resulting classification of units, relevant as a matter of identification at the level of the units being classified, is subject to realignment according to distributional classes pertinent to larger constructions within the hierarchy.

1. Classification of phonemic units. In this section phonemic units (simple or complex) are charted according to homogeneous classes for which contrastive-identificational components and features, in series, form the two-dimensional grid.

Realignment according to distributional classes follows the charts.

1.1. Class of consonants. See Chart I.

Chart I
CONSONANTS

<table>
<thead>
<tr>
<th></th>
<th>Bilabial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless stop</td>
<td>p</td>
<td>t</td>
<td>ċ</td>
<td>k</td>
<td>kₜ</td>
<td>?</td>
</tr>
<tr>
<td>Voiced stop</td>
<td></td>
<td>d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sibilant</td>
<td></td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semivowel</td>
<td>w</td>
<td></td>
<td>y</td>
<td></td>
<td>h</td>
<td></td>
</tr>
</tbody>
</table>

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Two distribution classes of consonants are determined by position in the syllable or in the syllabic (syllable nucleus): distribution class C, including every consonant phoneme, functions in margin position of any syllable type; distribution class ?, including only the glottal stop, functions in final position in V? and V? syllabic types.

1.2. Class of vowels. See Chart II.

Chart II

VOWELS

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>i</td>
<td>i</td>
<td>u</td>
</tr>
<tr>
<td>Low</td>
<td>e</td>
<td>a</td>
<td>o</td>
</tr>
</tbody>
</table>

One distribution class of vowels, including every vowel phoneme, functions in any V position within the syllabic. Distribution in the second position of VV and YV syllabics (the subscript, , indicates nasalization of the syllabic, not of the individual vowel which occurs in that position) is restricted to a vowel diverse from that occurring in the first position. Co-occurrence restrictions are listed in 4.3.

1.3. Class of syllabics. Variable features of syllabic types are relative complexity (simple, double-vowel, and complex) and orality versus nasalization, which is recognized as being pertinent at this level. See Chart III.
PHONEMIC UNITS IN THE SECOYA WORD

Chart III

SYLLABIC TYPES

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>V</td>
<td>Y</td>
</tr>
<tr>
<td>Double-vowel</td>
<td>VV</td>
<td>YY</td>
</tr>
<tr>
<td>Complex</td>
<td>V?</td>
<td>Y?</td>
</tr>
</tbody>
</table>

Since syllabics function as nucleus of the syllable, there are at least as many syllable types as there are syllabic types. Thus each syllabic type constitutes a distinct distribution class, distributed uniquely as manifestation of the syllable nucleus in syllables which are classified in part by the syllabic type as a contrastive-identificational component.

1.4. Class of syllables. In addition to diverse syllabic type manifesting the syllable nucleus as contrastive-identificational components of syllable types, the presence or absence of syllable margin provides a second dimension of contrastive-identificational criteria. See Chart IV.

Chart IV

SYLLABLE TYPES

<table>
<thead>
<tr>
<th></th>
<th>V</th>
<th>y</th>
<th>VV</th>
<th>YY</th>
<th>V?</th>
<th>y?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin present</td>
<td>CV</td>
<td>Cy</td>
<td>CVV</td>
<td>CYV</td>
<td>CV?</td>
<td>CY?</td>
</tr>
<tr>
<td>Margin absent</td>
<td>V</td>
<td>Y</td>
<td>VV</td>
<td>YY</td>
<td>V?</td>
<td>Y?</td>
</tr>
</tbody>
</table>
PHONEMIC STATEMENTS

Three distribution classes of syllables are determined by position within the stress-group nucleus or margin: distribution class (C)V₁, including every syllable type, functions in initial position in (C)V(C)V or (C)V(C)V stress-group nucleus types, or in stressed marginal positions; distribution class (C)V₂, including every syllable having simple or double-vowel nucleus, functions in other stressed nuclear positions, i.e. in (C)V nucleus type or final in (C)V(C)V nucleus type; and distribution class (C)V₃, including every syllable having a simple nucleus, functions in unstressed nuclear or marginal positions.

1.5. Class of stress-group nuclei. Contrastive-identificational features of stress-group nucleus types are varying nuclear stress patterns (single stress, stress-stress, stress-nonstress, and nonstress-stress), and relative length (one or two syllables) of the stress contour, as marked in its final boundary by post-contour juncture, (Post-contour juncture is phonetically apparent principally as a change of rhythm in connection with transition from contour to post-contour pattern of the stress-group margin.) Initial boundary of the stress contour is coincident with the initial boundary of the stress group.

Nuclear stress patterns have characteristics which differ from those of marginal stress patterns. Single-stress pattern involves relatively fortis enunciation accompanied, ordinarily, by high pitch, the syllable is phonetically lengthened, and the contour closes with post-contour juncture. Double-stress pattern is characterized by relatively fortis enunciation on both syllables, lengthening of the first syllable, and post-contour juncture; the usual pitch pattern begins with a mid-falling pitch on the first syllable, rising abruptly to high on the second syllable. Stress-nonstress and nonstress-stress are characterized by slightly more
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fortis enunciation and lengthening of the stressed syllable, with accompanying higher pitch, usually. See Chart V.

Chart V

<table>
<thead>
<tr>
<th>STRESS-GROUP NUCLEUS TYPES</th>
<th>(C)V.</th>
<th>(C)V(C)V.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single stress</td>
<td>(C)V.</td>
<td></td>
</tr>
<tr>
<td>Stress-stress</td>
<td></td>
<td>(C)V(C)V.</td>
</tr>
<tr>
<td>Stress-nonstress</td>
<td></td>
<td>(C)V(C)V.</td>
</tr>
<tr>
<td>Nonstress-stress</td>
<td></td>
<td>(C)V(C)V.</td>
</tr>
</tbody>
</table>

In the same way that each syllabic type constitutes a distinct distribution class (1.3.), here each stress-group nucleus type constitutes a distinct distribution class, distributed uniquely as manifestation of the word nucleus in words classified partly on the basis of such nucleus types as contrastive-identificational components.

Any of these distribution classes may also function as either member of a compound word nucleus containing two such members. The phonological word nucleus corresponds roughly to the morphological word stem in Secoya.

1.6. **Stress-group margins.** Contrastive-identificational features of stress-group margin types are varying marginal stress patterns (unidentified as yet), and relative length of the post-contour segment of the stress group. Initial boundary of the stress-group margin is marked by post-contour juncture; final boundary is coincident with the final boundary of the stress group. Stress-group margin types manifest optional word-margin positions.
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Since the word margin corresponds rather closely to the suffixal elements in Secoya morphology, the relative length of the word-margin and stress patterns (whether innate or perturbed) are determined largely by morphological structure. Phonemic stress-group margin types have not been identified.

1.7. Stress groups. It follows that stress group types have as contrastive-identificational components diverse types of simple or compound word nucleus manifested by stress-group nuclei, and optional diverse word-margin types manifested by stress-group margins. Since the latter have not yet been analyzed, phonemic word types and classes are not identified here.

Boundaries of stress groups (symbolized by space) are identified as the boundaries of a stress group which has nucleus and margin, in that order, with a stress-group juncture marking the beginning and end of succeeding stress groups. This juncture is heard phonetically as rhythm change between the close of marginal stress patterns and attack on new nuclear stress-group patterns; or it may be noted by silence, when heard initial or final; or it may not be heard at all, but recognized through recognition of the stress-group nucleus as beginning a new stress group of which juncture is one of the features.

2. Contrasts between phonemic units illustrated. In this section contrasts are illustrated between units at a given level, in cases where these units are phonetically similar.

2.1. Consonantal contrasts. Contrasts between pertinent suspect consonant phonemes are illustrated as follows:

Contrasts at bilabial position between /p/, /m/, and
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/w/: peáhí 'it is shallow', meáhí 'it is drifting', weáhí 'it is hanging'.

Contrasts at alveolar position between /t/, /d/, and /s/: toáko 'she is grinding', doáko 'she is standing it up', soáko 'she is washing'; alveolars /t/ and /n/: tá?mó 'variety of wild turkey', ná?so 'crayfish'; alveolars /d/ and /n/: déyámká 'closer', néyáko 'she is hanging it'; alveolars /n/ and /s/: ná?núko 'she is sewing', sá?súko 'she is rinsing it'.

Contrast at palatal position between /ć/ and /y/: čóko 'she is laughing', yóko 'Paullinia yoco, a stimulating drug'.

Contrast at velar position between /k/ and /kW/: këhi 'he is pounding it', kë?ëhi 'he is cutting it'.

Contrast at glottal position between /?/ and /h/: yá?í 'variety of vine', yáhi 'sweet potato'.

Contrasts as to point of articulation between voiceless stops /p/, /t/, /k/, and /?/: hópó 'half', yótó 'variety of game bird', yóko 'yoco drug', yó?ó 'work'.

Contrasts as to point of articulation between nasals /m/, /n/, and /y/ (ñá is a variant of /y/): mö?á 'variety of tree', këmá 'metal', ná?ó 'variety of fish', yáho 'potato'.

Contrasts between semiconsonants /w/, /y/, and /h/: wá?ó 'variety of monkey', yá?ó 'mud', há?ó 'leaf'.

Contrasts of /ć/ with /t/, /k/, and /kW/: ñëáhi 'it is fermenting', tóáhi 'it stings'; ñëá 'fermented drink', ñká 'down river'; cákáhi 'he is jumping', këákáhi 'he is just talking'.

2.2. Vocalic contrasts. Contrasts between pertinent suspect vowels are illustrated as follows:

Contrasts of /i/ with /e/, /y/, and /a/: wi?yósi?i 'I shall open', wë?yósi?i 'I shall carry', kióhi 'he is wrapping', kióhi 'it is boiling', tük? 'coin', tüká 'circle'.

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Contrasts of /e/ with /ɪ/ and /a/ (for contrast with /i/ see above): wěõhí 'he is cutting hair', wľõhí 'he is beginning'; wéwãhí 'he is molding', wáwãhí 'he is floating'.

Contrasts of /ɪ/ with /a/, /u/, and /o/ (for contrast with /i/ and /e/ see above): wékõ 'tapir', wékã 'bamboo'; slõko 'she is tying it', suãko 'she is starting a fire'; tlõko 'she is cutting it', toãko 'she is grinding it'.

Contrasts of /a/ with /u/ and /o/ (for contrast with /i/, /e/, and /ɪ/ see above): táí 'variety of turtle', tíí 'rat'; áyãhí 'he is keeping it', óyãhí 'he is twisting thread'.

Contrast of /u/ with /o/ (for contrast with /ɪ/ and /a/ see above): úhó 'wild turkey', óhó 'milk'.

(For contrasts of /o/ with /ɪ/, /a/, and /u/ see above.)

Although nasalization is treated as a high-level feature of the syllable, it may be of value to present the same vowel contrasts in the environment of nasalization:

Contrasts of /ɪ/ with /e/, /ɒ/ and /a/: sõõplõ 'head', sõõpõ 'clay pot', sõõko 'she is shutting it', sõõko 'she is cooking it'; õko 'she took it', õko 'she ate it'.

Contrasts of /ɒ/ with /a/, /u/, and /o/: yâyõ 'moon', yâyã 'nail'; hũhũko 'it is sharp', hũhũko 'she is singing'; mõõ 'cedar', mõõ 'stalk of bananas'.

Contrasts of /a/ with /u/ and /o/: hũhũhí 'it is rotting', hũhũhí 'he is singing'; mõõ 'I am portioning out, serving', mõõ 'I am fishing'.

Contrast of /u/ with /o/: tõõhí 'he is snoring', tõõhí 'it is rolling'.

2.3. Contrasts in syllabic types. Contrast between oral and nasal syllabic types is illustrated as follows: hũõhí 'he is putting it on', hũõhí 'he is sick'; tõõko 'she is placing it', tõõko 'she is weaving'. (The reader is reminded that both vowels within a double-vowel nucleus are phonetically nasalized; thus [tõõko].)
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Contrast between syllabic types of different degrees of complexity (V, VV, and V?) is illustrated in the first syllable of the following words: hopi 'brain', halpa 'fan', papa 'yarina palm'.

2.4. Contrasts in syllable types. Since the shape of the syllabic nucleus provides one series of contrastive components of the syllable, these contrasts are illustrated in 2.3. The other series of contrastive components is presence or absence of syllable margin, illustrated as follows; nihõ éode eyi 'I am poisoning fish'.

2.5. Contrasts in stress-group nucleus types. Contrasts between types of stress-group nuclei are illustrated as follows: single stress, sié 'blood'; stress-stress, uné 'variety of palm nut', ápó 'variety of grass', yúwí 'balsa'; stress-nonstress, fimí 'man', áwí 'heart', yówí 'canoe'; nonstress-stress, isi 'sun', api 'stomach', yayí 'moon'.

3. Variant manifestations of phonemic units. Units identified in 1. have free or conditioned variant manifestations involving features determined to be noncontrastive with respect to such units, and therefore not entered on the charts as contrastive-identificational features.

3.1. Consonantal variants. Consonant phonemes whose variant manifestations show features not appearing on the chart in 1.1. may vary freely or may be conditioned by features on a higher level than the phoneme.

Free variants of /s/ in any position are [s] and the affricate [ts]: /sié/ [sié] [tsié] 'blood'; /síshí/ [síshí] [tsíshí] 'it is cold'.

Variants of /d/ are [d], which is the norm, occurring word initial and varying freely with [r] word medial, although [r] is the usual variant word medial in fast speech.
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/dáíhi/ [dáíhi] 'he is coming'; /kúdá/ [kúdá] [kúrá] 'chicken'.

Variants of the three semivowels /w/, /y/, and /h/ are oral [w], [y], and [h] in oral syllables, and nasal [w], [n], and [h] in nasal syllables: /séwóhi/ [séwóhi] 'he is answering', /wéwé/ [wéwé] 'variety of tree'; /yóe/ [yóe] 'quail', /dóyé/ [dóyé] 'variety of fish', /yátá/ [yátá] 'deer', /yéyé/ [yéyé] 'arm band'; /hopó/ [hopó] 'half', /yátá/ [yátá] 'sweet potato', /wéhí/ [wéhí] 'he is wrapping'.

Voiceless consonants may have phonetically lengthened variants when occurring under conditions described in 3.3.

3.2. Vocalic variants. Vocalic variants, other than those conditioned by nasalization or lengthening of the syllabic, may be described according to a range of allophonic variation. Generalized statements concerning the types of environments in which allophones occur serve only to indicate conditioning factors noted most frequently, whereas others may easily take precedence over these.

/i/ has variants ranging from [i] to [iː]. It may be stated in general that [i] is the predominant allophone found occurring in stressed syllables, while [iː] may usually be found in unstressed syllables. /siá/ [siá] 'egg', /sáhiʔi/ [sáhiʔi] 'he went'.

/e/ has variants ranging from [æ] to [æ]. [æ] is the predominant allophone found preceding the semivowels, other than following labialization, [æ] is predominant following labialization, and [æ] in other environments. Further restrictions are placed on the allophones in other situations, particularly in the environment of nasalization. /méá/ [méá] 'variety of ant', /mó/ [mó] 'barbasco'; /wéyí/ [wéyí] 'I am lying in a hammock', /yóe/ [yóe] 'variety of quail'; /éʔsá/ [éʔsá] 'rapidly'.
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/ɔ/ has variants ranging from [ɔ] to [o]. In general, [ɔ] is the predominant allophone in most environments except contiguous to /k/, where [o] is predominant. Here also, other conditioning factors may enter in. /h̞amɔ/ [h̞amɔ] 'armadillo', /á pó/ [ápɔ] 'grass', but /ɔkɔ/ [ɔkɔ] 'water', /h̞áʔkɔ/ [h̞áʔkɔ] 'mother'.

All vowels have nasalized variants when occurring within a nasal syllable. /t̞õkɔ/ [t̞õkɔ] 'she is weaving'. (Compare 2.2.)

The vowel /ɪ/ has a nasalized variant [ŋ] when it occurs as the second member of a nasalized syllable. /h̞áɪ/ [h̞áŋ] 'he'.

All vowels have long and short variants conditioned by the type of syllable in which they occur, since, within analogous positions within the stress-group nucleus or margin, all syllabic types, whether simple or double vowel or complex, are approximately equal in mora timing. Thus, in positions where the syllabic is phonetically lengthened, a single vowel is phonetically long; and, conversely, in positions where the syllabic is phonetically short, vowels in double-vowel or complex syllabics are phonetically quite short. See 3.3. for conditioning factors and illustrations.

All vowels have voiceless variants when functioning in phonetically lengthened syllabics under conditions described in 3.3.

3.3. Variants of syllabic types. All syllabics are phonetically longer when they function as nucleus of the stressed syllable in single-stress, initial-stress, or final-stress word nucleus, or in first position of double-stress word nucleus, and all syllabics are phonetically shorter in other positions. /f̞m swore/ [f̞m swore] 'man', /kúdā/ [kú-r̞ə] 'chicken', /ap Ɦ / [ap Ɦ] 'stomach', /suak̞o/ [suak̞-ko] 'she is starting a fire' (in which the syllabic, not the individual
vowel, is long); but /wēhāo/ [wēhāo] 'married woman' (in which the double-vowel syllabic is phonetically short).

Under such conditions, and where the margin of the following syllable is manifested by a voiceless consonant, phonetic lengthening of the simple syllabic may (especially in the case of a nasal syllabic) actualize as a phonetically voiceless vocoid to give a phonetic pattern of [Ỵ] or [Ỵ] (Ỵ=voiceless vocoid). /sōk̡i/ [sōk̡i] 'tree'.

However, under the same conditions, it may be the voiceless consonant manifesting the margin of the following syllable which receives phonetic length (see 3.1.). /pētē/ [pê-tē] [pêt̡-ē] 'duck'.

In some cases, both the syllabic and the consonant are phonetically lengthened. /hōp̡f̡/ [hō-p̡f̡] [hō-p̡-f̡] 'brains'; /pīk̡o/ [pīk̡o] [pīk̡-o] 'smoke'.

/Ỵ/ syllabic under conditions of stress, and preceding /h/ in the margin of the following syllable, has variants of vocalic or syllabic nasal release, depending on the vowel quality of the syllabic. /k̡p̡he/ [k̡p̡-he] 'tarl', /k̡p̡hōp̡l̡/ [k̡p̡-hōp̡l̡] 'variety of fowl'.

/Ỵ/ syllabic has variants in stress placement, when stress falls on such a syllabic. Placement is predictable according to the quality of the two vowels manifesting the two positions within the syllabic. Low central /a/ invariably receives such stress when it occurs in either position; low front /e/ or low back /o/ receive stress when occurring in a syllabic with a high vowel; and in other combinations, such as /e/ with /o/ or any two high vowels in combination, there is a hovering stress over the syllabic. /ỵaḷḷi/ [ỵaḷḷi] 'dog', /ỵo/ [ỵo] 'bread', /mīḷa/ [mīḷa] 'cedar' /sēp̡ḷḷ/ [sēp̡ḷḷḷ] 'clay pot'. (Phonemically, stress could be written on either of the two syllabic positions or indicated in connection with the entire syllable.)
3.4. Syllable type variants. Syllable types are in general conditioned by stress contours as follows (although there may be some variation): phonetic syllable lengthening by length of syllabic manifesting the syllable nucleus (3.3.), or of consonant manifesting the syllable margin, under stated conditions (3.3.); and downglide of stress and pitch on a syllable functioning in stressed position of single-stress, initial-stress, or final-stress word nucleus. /VV/ [N€N] /ao/ [aʊ] 'bread'; /CVVC/ [CV CY] /kow/ [koʊ ʊ] 'fingernail'; /CVVCV/ [CVV CV] /kiowa/ [kio wa] 'foot'; /VCV/ [VCV] /api/ [əpi] 'stomach'.

There is predictable mid-falling pitch on a syllable functioning in first position of a double-stress word nucleus, and higher pitch on a syllable functioning in second position. /CVCV/ [CVC CV] /kuma/ [ka ma] 'variety of tree'; /CVVCV/ [CVVC CV] /yaow/ [yaʊ ʊ] 'white-lipped peccary'.

The pitch, however, is found to vary from utterance to utterance whereas the stress remains constant within analogous phonological and morphological environments.

Phonetically complex variants of the syllable reflect phonetic complexity of consonants and syllabics of syllabics, in the case of the phonetic glottal release (3.3.); and of consonants in the case of /i/ [ɪ] and of /k/ [kw] [k]. Because of the nonsuspect pattern of single consonants in marginal position these phonetic clusters are interpreted as unit phonemes. /ot/ [otʃ] 'fermented drink', /kwaka/ [kwakə] 'he is just talking'.

In spite of its generally nonsyllabic quality, the [w] in the phonetic sequence [kw] could conceivably be interpreted as the vowel /o/ or /u/, occurring as first member of a double-vowel syllabic. This interpretation is rejected for the following reasons: (1) On purely phonetic grounds, the quality is that of consonant rounding and the phonetic
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timing is, in general, the same for this complex as for simple consonants, so that the complex is phonetically [kw] as well as phonemically /kw/. /kwɛhi/ [kwɛhi] 'he is cutting it'. (2) Treatment of the rounding quality as a vowel would create an atypical syllabic pattern, *[VV?]. /kwâ?kodo/ [kwâ?koro], but not *[koâ?koro] 'kettle'.

A sequence of syllables, /CV.CV/, in which the margin of the second syllable (low dot represents syllable division) is manifested by glottal stop, may be replaced by the phonetic sequence [CVâ?V] or [CVâ?V]. /pá?iko/ [páiko] [páiko] [páiko] 'she is'.

4. Further distributional restrictions. While some distributional restrictions determine distributional classes (see 1.), other restrictions have not proved to have phonemic significance.

4.1. Restrictions on consonant distribution. Nasal consonants /m/ and /n/ are restricted to occurrence in marginal position of nasal syllables. Conversely, the one voiced stop, /d/, is restricted almost exclusively to occurrence within oral syllables; one exception, however, provides the contrast cited above in 2.1.

Marginal position of a syllable following a CV? or V? syllable is not manifested by the glottal stop.

4.2. Restrictions on vowel distribution. Geminate vowel clusters have no place within the system where all syllabics, within analogous position within the stress group, are approximately equal in mora length. Sequences of vowel combinations observed within the syllabic include all possible combinations except the following: geminates, combinations of high central with other high vowels, low front plus any high vowel, any low vowel plus high back vowel, and two apparently nonsystematic gaps, *ue and *ae.
PHONEMIC UNITS IN THE SECOYA WORD

4.3. Restrictions on syllable distribution. Although any syllable type may occur in any stressed position within the stress group, CVV and VV syllables tend to occur only in initial position within the stress-group nucleus, rarely in stress-group final position, or in the stress-group margin. Thus typical nuclear patterns are illustrated: CVV, weá 'corn'; VV, éo 'barbasco'; CVCY, yúdé 'now'; CVVCV, siópl 'head'; CV?CV, há?kó 'mother'; V?CV, é?sá 'rapidly'. Some less common patterns are: VCYV, ñhó 'lady'; CV?VV, yôhó 'little sister'.

Following nasal syllables any other syllable may occur, except that if the margin of the following syllable is manifested by a semivowel or a glottal stop, such consonants are phonetically nasal and the syllable nucleus must be manifested by a nasal syllabic; i.e. the syllable is phonemically a nasal syllable. /weáhi/ [weáhi] 'it is subsiding' versus /weáhi/ [weáhi] 'he is hanging it', in both of which the final morpheme, -hi ~ -hí, is 'present third person singular masculine'.

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Siona Phonemics (Western Tucanoan)

by Alva and Margaret Wheeler

0. Introduction.
1. Consonant contrasts.
2. Consonant variants.
3. Vowel contrasts.
4. Vowel variants.
5. Stress.
6. Syllable types.

0. Introduction. The salient features of Siona

The Siona Indians (Steward [1948] refers to the Siona as Stioní, but mentions Siona as an alternate name) number about two hundred and live on the upper Putumayo River. About fifty live on the Ecuador side and the remainder on the Colombia side of the river. Those of one dialect, most commonly known as Siona, numbering about one hundred and fifty, dwell in three villages, beginning with Nueva Granada just below the mouth of the Cuhemblí River and continuing downriver to Buena Vista and Piñuña Blanca respectively. A distance of about twelve miles separates each of the villages, and eight Siona families are scattered along the river between Buena Vista and Piñuña Blanca.

Another dialect, referred to as Macaguaje, but also known as Siona, includes about fifty people, who dwell in two villages, El Tablero and El Hacha, located fifteen and twenty-five miles down the Putumayo from the mouth of the San Miguel River. Steward (1948) also mentions the Macaguaje as an alternate name for Enca-
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phonemics as presented in this paper are (1) phonetic features of two series of stops, simple and glottalized, (2) variants of glottal stop, (3) length plus decrescendo and voiceless offglide patterns of vowel allophones, (4) stress patterns, and (5) syllable structure as conditioned by stress dynamics.

1. Consonant contrasts. Consonants consist of stops, sibilants, continuants, nasals, and glottals. The simple stop series /p/, /t/, /k/, and /kʰ/ contrasts with the glottalized series /pʰ/, /tʰ/, /kʰ/, and /kʰʷ/ at each point of articulation, labial, alveolar, velar, and labiovelar.

bellado, but later states (p. 739) that "the Macaguaje are evidently now called Siona." Cofan and Witoto Indians also live in these same villages.

The authors gathered data for this paper on two four-month field trips to Buena Vista on the Putumayo River, Ecuador, during 1960 and 1961. The authors are especially indebted to Kenneth L. Pike for help in organizing the data at linguistic workshops in Limoncocha, Ecuador.

The term "Siona" is used by outsiders and the tribespeople alike, and consists of two Siona morphemes, /sʰʰ/, 'field', and /-na/ 'direction toward', the combination meaning 'to the field'. It is often used as a response to the greeting, 'Where are you going?'

Downriver ethnological information is based on a survey trip by M. B. Borman and O. E. Johnson of Summer Institute of Linguistics, September - October, 1958.

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/p/, /p'/: /pété/ [pɛ̃tɛ]² 'duck', /p'étó/ [p'ɛ̃tô] 'variety of palm nut'.

/t/, /t'/: /tîôhi/ [tîôhi] 'he is putting upon', /t'îôhi/ [t'îôhi] 'he is causing to submerge'; /tútú/ [tû ú] 'wind', /tút'úp'î'/ [tûrûp'î] 'type of shoulder bag'.

/k/, /k'/: /kówî/ [kó-wî] 'claw', /k'ówî/ [k'ó-wî] 'soup'.

/kw/, /kw'/: /kwâôhi/ [kwâôhi] 'it is calming', /kw'âôhi/ [kw'âôhi] 'he is enclosing'.

/kw/, /kw'/: /kâhâyi/ [kâhâyi] 'I intend to tell', /kw'âhâyi/ [kw'âhâyi] 'I am getting tired'.

Simple sibilants are alveolar /s/, and palatal /ç/. Glottalized alveolar sibilant /s'⁴/ and palatal /ç/ contrast with simple alveolar /s'/:

/s/, /s'/: /sânt'ô/ [sânt'o] 'entrance', /sâ?sâ/ [sâj sâ] 'variety of hardwood', /s'âs'á/ [s'âs'á] 'variety of gnat'.

/s/, /ç/: /sâôyî/ [sâôyî] 'I am sending', /çâôyî/ [tšâôyî] 'I am spearing'.

Simple palatal sibilant /ç/ contrasts with voiceless

²All citation forms are pause-group medial unless otherwise indicated, in order to avoid pause-group final phonological features characteristic of elicitation forms. These features, such as glottal stop varying with /h/, are not discussed in this paper.
SIONA PHONEMICS

alveolar stop /t/ /tútˈúpˈi/ [tćeˈúpˈi] 'type of shoulder bag', /čútˈu/ [tćeˈú] 'variety of snail'.

Continuants occur at the labial /w/ and palatal /y/ points of articulation. The labial continuant contrasts with labial and labiovelar stops:

/w/, /p/: /wékō/ [wćeˈkō] 'variety of green parrot', /pékō/ [pćeˈkō] 'maggot'.

/w/, /p/: /wáhi/ [wáˈhi] 'he is fighting', /pˈáhi/ [pˈćeˈhi] 'he has'.

/w/, /kW/: /wéhi/ [wćeˈhi] 'he is resting', /kWćehi/ [kWćeˈhi] 'he is cutting'.

/w/, /kW/: /wfihi/ [wćeˈfihi] '(the grass) is growing', /kWćeˈfihi/ [kWćeˈfihi] 'he is shouting'.

Nasals occur at the labial /m/ and alveolar /n/ points of articulation. The labial nasal contrasts with labial stops and continuants:

/m/, /p/: /mćeˈkā/ [mćeˈkā] 'thing', /pćeˈpā/ [pćeˈpā] 'variety of palm tree'.

/m/, /p/: /m ćeˈpā/ [mćeˈpā] 'variety of gnat', /p ćeˈpā/ [pćeˈpā] 'class of small birds'.

/m/, /w/: /wćeˈhi/ [wćeˈhi] 'he is drifting', /wćeˈhi/ [wćeˈhi] 'it is drying up'.

The alveolar nasal contrasts with the palatal continuant:

/n/, [ŋ] which is an allophone of /y/: /pćeˈnē/ [pćeˈnē]
PHONEMIC STATEMENTS

'variety of palm fruit', /ʔyɛ/ [ʔiŋɛ] 'this'; /nəsə/ [nə̝ sə] 'variety of monkey', /yàtɔ/ [nə̝ tà] 'variety of large ant'.

Glottals consist of a stop /ʔ/, simple fricative /h/, and labialized fricative /hʷ/, which contrast with each other and with velar stops:


/ʔ/, /hʷ/: /ʔɛhɔi/ [ʔɛ-hɔi] 'he hooked himself', /hʰɛhɔi/ [hʰɛ-hɔi] 'it exploded'.

/ʔ/, /k’: /ʔɔkɔ/ [ʔɔkɔ] 'variety of game bird',
/k’ɔtɔ/ [k’tɔ] 'wild cane'.

/h/, /hʷ/: /hɛhɔi/ [hɛ-hɔi] 'he pulled ashore',
/hʰɛhɔi/ [hʰɛ-hɔi] 'it exploded'.

/h/, /k/: /hɔhi/ [hɔhi] 'he is shooting', /kɔhi/ [kɔhi] 'he is advising'.

/hʷ/, /kʷ/: /hʰɛhi/ [hʰɛ-hi] 'it is exploding',
/kʰɛhi/ [kʰɛ-hi] 'he is cutting'.

2. Consonant variants. Consonantal variation has a very small range, and the basic phonetic quality of the segment is usually maintained. Among the stops the greatest degree of variation occurs at the alveolar point of articulation. The simple stop /t/ is usually fronted and is interdental with some speakers. Aspirated and/or fortis variants
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The glottalized counterpart of the alveolar stop is usually retroflexed, and voiced and/or lenis articulation is optional: /t̚á⁠ʃ̚i⁠/ 'I am coming', [t̚i⁠ʃ̚i⁠] voiceless retroflexed, [t̚i⁠ʃ̚i⁠] voiceless retroflexed lenis, [d̚i⁠ʃ̚i⁠] voiced retroflexed, [d̚i⁠ʃ̚i⁠] voiced retroflexed lenis; /t̚ó⁠ʊ̊t̚ó⁠ʃ̚i⁠/ 'I am boring', [t̚i̊ʊ̊t̚i⁠+t̚i⁠ʃ̚i⁠] voiceless retroflexed, [t̚i̊ʊ̊t̚i⁠+d̚i⁠ʃ̚i⁠] voiceless retroflexed lenis, [d̚i̊ʊ̊t̚i⁠+d̚i⁠ʃ̚i⁠] voiced retroflexed, [d̚i̊ʊ̊t̚i⁠+d̚i⁠ʃ̚i⁠] voiced retroflexed lenis.

Voiced alveolar flap [̚ı] is a variant of /t̚/ and occurs only intervocalic, or as onset of unstressed syllable following glottal stop. [t̚] and other variants as shown above occur elsewhere: /hótı'ı̊/ [hó̊r̚ı̊] 'flower', /p̚é̊t̚u/ [p̚i̊f̚ı̊ɾ̚u] 'all', /k̚ó̊t̚i̊/ [k̚ı̊p̚ı̊ɾ̚ı̊] 'more'.

The simple stops /p̚/, /k̚/, and /k̚W/ have variants parallel to those of /t̚/ except for fronting: /p̚f̚k̚ı̊/ 'smoke', [p̚i̊h̚k̚ı̊] unaspirated, [p̚i̊h̚h̚h̚ı̊] fortis unaspirated, [p̚i̊h̚h̚h̚ı̊] fortis aspirated; /k̚Wá⁠ʃ̚k̚ʊ̊k̚ı̊/ 'she
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is boiling', \[k^{\text{wh}}\text{'á}+k\text{'uk'ıo}\] unaspirated, \[k^{\text{wh}}\text{'á}+k\text{hú'k'ıo}\] aspirated, \[k^{\text{wh}}\text{'á}+k\text{'uk'ıo}\] fortis unaspirated, \[k^{\text{wh}}\text{'á}+k\text{hú-k'ıo}\] fortis aspirated.

The glottalized stops /p'/, /k'/, and /k'w'/ have variants parallel to those of /t'/ except for retroflexion: /p'ʃp'ʃl'/ 'variety of buzzard', \[p'ʃp'ʃl'/voiceless, \[p'ʃl'/voiceless lenis, \[b'ʃl'/voiced, \[b'ʃl'/voiceless lenis; /k'ʃk'ıhi/ 'he is barking', \[k'ʃʃk'ıhi/voiceless, \[k'ʃk'ıhi/voiceless lenis, \[g'ʃk'ıhi/voiced, \[g'ʃk'ıhi/voiced lenis; /k'w'ʃk'ıhi/ 'he is enclosing', \[k'w'ʃk'ıhi/voiceless, \[k'w'ʃk'ıhi/voiceless lenis, \[g'w'ʃk'ıhi/voiced, \[g'w'ʃk'ıhi/voiced lenis.

The feature of glottalization is very light, and the glottalized series can best be distinguished by the laryngealization which occurs on following vowels (see 4.).

[y] and [ı] at the palatal position are allophones of the phoneme designated /y/. [ı] occurs preceding nasalized vowels: /γıyé/ [γıyé] 'tree grape', /γıyé/ [γıŋıę] 'this', /yátá/ [ı̃hátá] 'variety of large ant'. [y] occurs elsewhere and is characterized by light oral friction.

/w/ is nasalized [w] before a nasalized vowel: /wąsół/ [wą̃söl] 'pole', /k'ąwåhi/ [k'ąwåhi] 'it is flying'.

The phonemic status of glottal stop /?/ is established by contrast between /yáʃ/ [yáʃ] 'tiger', and /yáʃı/
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[yiˈaːiˈfi] 'variety of vine'. It occurs word initial, intervocalic, and preconsonantal, with a different set of variants for each environment. Intervocalic glottal stop is audible and moderately released to the following vowel in slow speech forms, and in fast speech forms which constitute the peak of a phrase group. Laryngealization [iˈV:iˈV:i] occurs throughout the articulation of the adjacent vowels. Heavy stress /ᵻ/ identifies the peak syllables of a phrase group: /w̥ak'/ [wiˈaːiˈfi] 'meat', /səsə w̥aˈtif'e ʔaˈiːfi-h/ [səʔ sə wiˈaːiˈti ʔaˈiːfi-h] 'I ate peccary meat'. When the fast speech form containing intervocalic glottal stop occurs in a nonpeak position of the phrase group, the glottal stop is lenis or disappears. Laryngealization is maintained on the adjacent vowels, and is carried over to the following vowels through intervening continuants and glottals /w/, /y/, /ʔ/, /h/, or /hʷ/: /yiˈi tˈihoˈɾε saˈowi-h/ [yiˈi tˈihoˈɾε saˈowi-h] 'I sent my wife', /kʰiˈi w̥aˈt̪iːt e p̥aˈiː-h/ [kʰiˈi w̥aˈt̪iːt e p̥aˈiː-h] 'I have a comb'.

Preconsonantal glottal stop has variants: glottal stop plus internal open juncture [-ŋ-], glottal stop plus light release [-ʔ-], glottal stop plus fortis release [-ʔ̌-]. Glottal stop plus internal open juncture occurs only before

5 Final /-h/ and /-ʔ/ are features of pause-group phonology (see Footnote 2).

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stops (except [Ɂ], which is a variant of /t'/) and labial con-
sonants: /pa\pá/ [pa\+pá] 'variety of palm tree', /wátfí/
wáj+tf] 'machete', /píkok'î/ [pí+kók'î] 'father',
/t'ép't'oyî/ [t'ép't'ép't'oyî] 'I am boring', /k'áwá/
[k'áwá+wá] 'wheel'. Glottal stop plus light release occurs
only before /y/, /n/., and [Ɂ]: /kípt'o/ [kí+p't'o] 'home
site', /wána/ [wá+na] 'creatures', /yìyó/ [yì+yó]
'bead'. Glottal stop plus fortis release occurs only before
sibilants and other glottals /s/, /s'/, /č/, /h/, and /h'/:
/wášó/ [wášó] 'variety of small agouti', /hóčá/
hóčá [hóčá] 'fermented manioc drink', /yázhí/ [yázhí]
'variety of worm', /s'áwšá/ [s'áwšá] 'variety of gnat'.

Word initial glottal stop varies freely from moderate to
lenis articulation. In fast speech forms, word initial glot-
tal stop is maintained in utterance medial position: /ókó/
[ókó] 'water', /páf p'áphiókó-?/ [páf p'áphiókó-?]
'there is much water', /pópó'ót'e yóoókód'h/ [pó-
pó'ót'e yóoókód'h] 'she is making manioc bread'.

All other consonants have only one allophone.

3. Vowel contrasts. Vowels contrast with each other
at six phonemic tongue positions: front, central, and back,
each with high and low counterparts, /i/, /e/, /i/, /a/,
/u/, /o/.
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/i/, /e/ /píkó/ [pʰíkó] 'smoke', /pékó/ [pʰékó] 'maggot'.
/i/, /iː/ /wíhi/ [wíːhi] '(the grass) is growing',
/wíhi/ [wíːhi] 'he is standing up'.
/e/, /aː/ /tʰéhi/ [tʰéːhi] 'it is hanging', /tʰáhi/ [tʰáːhi] 'he is bringing'.
/e/, /iː/ /yéké/ [yɛkɛ] 'other (neuter)', /yékí/ [yɛkɛ kí] 'other (masculine)'.
/y/, /aː/ /síók'ô/ [síók'ô] 'she is toasting', /sáók'ô/ [sáók'ô] 'she is sending'.
/y/, /uː/ /súáyã/ [súáyã] 'I am tying up', /súáyã/ [súáyã] 'I am starting the fire'.
/y/, /oː/ /rökô/ [rôtʰkô] 'medicine', /rëkô/ [rôtʰkô] 'water'.
/a/, /oː/ /kâkâ/ [kókâ] 'speech', /rëkô/ [rôtʰkô] 'water'.

Each oral vowel has a contrasting nasalized counterpart:
/i/, /iː/ /sí'ísi'hi/ [síːsiːsi'síhi] 'he is dirty',
/sí'ísi'hi/ [síːsiːsi'síhi] 'he is washing (his face)'.
/e/, /eː/ /wékí/ [wëkí] 'tapir', /wëká/ [wëká] 'variety of bamboo'.

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/ɪ/-/i/- /t'ihi/- [t'ihi] 'he is submerging', /t'ihi/-
[t'ihi] 'he is bending double'.

/a/-/ɑ/- /p'ɑhi/- [p'ɑ·hi] 'he has', /p'ɑhi/- [p'ɑ·hi]
'he is negative'.

/u/-/ʊ/- /hʊhé/- [hʊhé] 'variety of game turkey',
/hʊhé/- [hʊhə] 'variety of small fish'.

/o/-/o/- /kówl/- [kó·wl] 'I received', /kówl/- [kó·wl]
'I helped'.

4. Vowel variants. Oral vowels have the same tongue
positions as their nasalized counterparts except for low front
/e/-, which has the value [ɛ], and /ə/-, which has the value [æ]:
/tɛ'ek'i/- [tɛ'ek'i] 'one', /sɛ'æ/- [sɛ'hæ] 'peccary'.

A glottalized consonant causes laryngealization of the
initial articulation of the following adjacent vowel [V], or
double vowel unit [V₁V₂]: /p'ósá/- [p'ősá] 'bixa', /k'ówl'/
[k'tó·wl] 'soup', /s'ě'yí/- [s'ě'yí] 'I am grabbing'.

Preconsonantal glottal stop causes laryngealization of
the final articulation of the preceding vowel [V₁]: /wáʔtf/
[wáʔtf] 'machete', /hóʔyá/- [hóʔyá] 'domestic'.

Intervocalic glottal stop causes laryngealization through-
out the adjacent vowels (see 2.).

All vowels have the following allophones conditioned by
stress dynamics and following consonant: [V·] vowel plus
length and decrescendo occurs only on a stressed syllable immediately preceded by word juncture and immediately followed by unstressed syllable or word juncture: /wʧ/ [wʧ] 'variety of agouti', /sʧkoʧa/ [sʧkʰoʧa] 'offspring (plural)', /sʧyʧ/ [sʧ-yʧ] 'I am taking'. The vowel length and decrescendo is lost in fast speech forms outside the heavy-stress phrase-group peaks. [Vʰ] vowel plus voiceless offglide occurs only before a simple stop or simple sibilant when the following syllable is stressed: /qʰapási/ [qʰapási] 'variety of jungle fruit', /násʰo/ [nʰsʰo] 'variety of monkey', /mʰnákʰoní/ [mʰnakhoní] 'with you'. [V] simple vowel occurs elsewhere: /kʰutʰá/ [kʰutʰá] 'chicken', /yèkʰkoʧa/ [yèkʰkʰoʧa] 'others', /mʰhʰa/ [mʰhʰa] 'sand'.

5. Stress. Phonemic stress is present in two degrees within the word, which is defined as the minimum elicitable form or such a minimum form expanded by following unstressed syllables. Although no very good minimal contrasts have been found, stress is a conditioning factor for variations in other phonemes (see 2. under /tʰ/, and 4. under vowel allophones conditioned by stress).

Basic stress patterns include: (1) Stress on word initial syllable followed by unstressed syllable or word juncture: /tʰó/ [tʰó] 'just that and nothing more', /yókʰu/ [yó-kʰu]
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Heavy stress /ˈ/ occurs as a feature of phrase-group rhythm dynamics, not discussed in detail here (see 2. under glottal stop).

6. Syllable types. The contrasting phonemic syllable types are:

/CV/: /sáyákˈo/ [sáyákˈo] 'she is putting it on herself'. /CV, /: /sáfˈkˈo/ [sáfˈkˈo] 'she is going'. /CVʔ/: /sáʔpˈkˈo/ [sáʔpˈkˈo] 'she is mixing'.

/CV, /V, / has one basic phonetic manifestation, consisting of consonant onset plus two unlike vowels [CV, V, ]. Certain phonetic cues indicate that this sequence of vowels comprises a single syllable and not two. The two vowels are articulated together as a combined unit, the timing of the whole is equivalent to that of a single stressed vowel phoneme, and there is no rearticulation of the second vowel. One peak of stress occurs on both vowels with a slight rise in pitch. Laryn-
gealization conditioned by preceding glottalized consonant carries through the initial articulation of the double vowel set, and is not limited to the initial articulation of the first vowel (see 2.). /kʰɑ/ [kʰə] 'variety of buzzard', /tʰɑ/ [tʰə] 'fire', /pʰɑkʰɑ/ [pʰɑkʰɑ] 'manioc bread', /sɑfɨ/ [sɑfɨ] 'I am going', /pʰéôhi/ [pʰéôhi] 'there is not any', /hɑːfɨ/ [hɑːfɨ] 'affirmative response'.


These three phonetic manifestations represent one phonemic syllable type because of the phonemic interpretation of vowel variants [V], [Vʰ], and [V•] (see 4.).

/CVʔ/ has three basic phonetic variants: (1) Consonant onset plus simple vowel peak with coda of glottal stop plus
PHONEMIC STATEMENTS


These three phonetic manifestations represent one phonemic syllable type, because of the phonemic interpretation of preconsonantal glottal-stop variants [ʔ+], [ʔ], and [ʔ] (see 2.).

The onset of each syllable type includes some consonant phonemes which consist of more than one phonetic segment:

/ʔ/ [ʔʃ]: /ʔófhi/ [ʔófhi] 'he is calling out', /tʰʔkáhí/ [tʰʔ+káhí] 'he is jumping'; /kʰ/ [kʰ]: /kʰʔyéʃ/ [kʰʔ+yéʃ] 'near', /kʰʔkúk'o/ [kʰʔ+kúk'o] 'she is boiling'; /kʰʔ/ [kʰʔ]: /kʰʔáhí/ [kʰʔ+áhí] 'he is enclosing'; /hʰ/ [hʰ]: /hʰʔyhéʃ/ [hʰʔ+yhéʃ] 'convulsions'. The interpretation of each phonetically complex onset as a single consonant phoneme is based on the fact that their short duration is no
greater than that of single consonant phones in this environment, and on structural pressure. Nonsuspect sequences of consonants do not occur syllable initial, nor do sequences of three vowels, or of two vowels plus glottal stop, occur. These restrictions, along with the fact that $[^W]$, as a feature of the simultaneous consonant articulation, has a much shorter duration than a vowel in syllable-peak position, force the interpretation of $[^kW]$, $[^kW']$, and $[^hW]$ as single unit phonemes.

Restrictions as to distribution of these three phonemic syllable types in the word matrix are: (1) the minimum elicitable form may consist only of /CV$_1$V$_2$/ and the [CV•] variant of the /CV/ type, without being followed by one or more syllables, and (2) the [CV$^h$] variant of /CV/ and the /CV$^o$/ syllable type never occur word finally in the middle of a pause group.
2

GRAMMATICAL STUDIES
AND TEXT ANALYSIS
Ecuador Quichua Clause Structure

by Carolyn Orr

0. Introduction.
1. Clause types.
2. Major parts of clause.
3. Expansions.
4. Illustrations.

0. Introduction. The clause structure of Quichua as spoken in the eastern jungles of Ecuador is readily adaptable in its initial analysis to description according to the tagmemic model. Quichua clauses are units of predication; their minimum form obligatorily includes some kind of predicate. The clause may occur as a complete sentence or as part of a complex sentence.

1. Clause types. Clauses are identified as either independent or dependent. Contrastive primary types of independent clauses are declarative, imperative and interrogative. Each of the above independent clause types, as

1Data for the present paper were gathered at Limoncocha, on the lower Napo River in eastern Ecuador, during field trips 1959 - 1961.

See also "Ecuador Quichua Phonology" based on the Puyo dialect, present volume. Major differences between the two dialects are in the past tense markers -ra/-rka, purpose markers -nga/-nga, location markers -i/-pi, possessive markers -wa/-pa, and in vocabulary.

The analysis and presentation of this material has been greatly facilitated by discussion with Kenneth L. Pike.

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well as dependent clauses, may be further subdivided into intransitive and transitive clauses. Other minor classifications, which would yield still further layers of subdivision, are omitted from this description.

1.1. Independent versus dependent. Features which distinguish independent clauses from dependent clauses are:
(1) An independent clause may occur as a complete sentence, whereas a dependent clause may never occur alone but must always occur with an independent clause. (2) Within the predicate margins of each clause markers occur which differentiate between independent and dependent clauses. The predicate of independent clauses includes obligatory tense-aspect and person-subject markers. The predicate of dependent clauses includes neither tense-aspect nor person-subject markers, but instead indicates either (a) same or different person-subject in relation to the subject of the independent predicate with which it is associated in the sentence, or (b) purpose without regard to subject.

Same subject: Verb stem + -sa
Different subject: Verb stem + -hpi
Purpose: Verb stem + -ngapa

A very restricted type of dependent clause, which is not based on the criteria above, is the relative clause. It is an independent clause preceded by imasna 'how' and dependent upon a preceding, fully independent clause which contains verbs such as 'see', 'know', 'tell', etc. This clause is not usually heard in conversations or texts and my recording of it has been in a teaching context only. In checking the examples, the informants would, in each case, not repeat the clause as I had recorded it, but changed the dependent clause to become the object of the verb which had occurred in the independent clause. yačanči imasna bulivar sucrindi ispaňakunata binsirka 'we know that Bolivar
with Sucre the Spanish beat' — bulívar sucríndi ispanaku-nata binsiškata yašandí 'Bolivar with Sucre the Spanish beat we know'.

1.2. **Declarative versus Interrogative versus Imperative.** Independent clause types are distinguished from one another by the verb margins. In declarative and interrogative clauses, the margins include obligatory separate tense-aspect and person-subject markers. In imperative clauses, both imperative aspect and person-subject are indicated by a special portmanteau list of imperative person markers. Interrogative clauses in contrast with declarative and imperative clauses, obligatorily include one of a list of interrogative markers which may be divided into two types: (1) a list of interrogative words such as píta 'who', maykanda 'which', etc.; and (2) the bound morpheme -çu which may occur on any head word of the sentence. Interrogative clauses are actually declarative clauses with the interrogative markers superimposed upon them. They are analyzed here as a separate clause type rather than as an expansion of the declarative clause type because of their occurrence in the question-response situation where a declarative clause would not ordinarily occur.

1.3. **Intransitive versus Transitive.** Every clause, dependent or independent, must be further classified as intransitive or transitive. This distinction is based on the minimal construction of the clause, thus contrasting with the distinction between independent clause types in 1.2, which is based on the margin of the verb. The construction of the clause channels all verbs into one of two verb lists: intransitive or transitive.

In intransitive clauses the object is obligatorily absent; whereas transitive clauses include an obligatory direct object. Transitive clauses imply an object which must be ex-
2. **Major parts of clause.** Each clause contains a predicate which includes not only the verb as head of the verb phrase but its modifiers also. The object may also be composed of more than a single word. In this section each
of these major parts of the clause nucleus will be discussed, showing how each part helps identify a particular clause type, and showing some of the expansions within a given phrase.

2.1. Predicate.

2.1.1. Simple predicate constructions. There are no restrictions of occurrence of particular verbs on the basis of which the dependent/independent or the declarative/interrogative/imperative contrasts can be established. This is in contrast to the intransitive/transitive contrast which, among other things, demonstrates mutually exclusive lists of verbs which may function as predicate in each clause type.

Verbs functioning as predicate in a dependent clause occur with -ša suffixed to the stem when the subject of the dependent clause is the same as that of the independent clause. kantaša šamurkani '(I) singing, I came', paktasa lumuta pilarkani '(I) arriving, I dug manioc'. When the subject of the dependent clause is different from the subject of the independent clause, -hpı is suffixed to the verb stem to form the dependent clause predicate. kaparihpi ŋuka mas kaparirkani 'When (he) shouted, I shouted more', wawata sakihpi wakangami 'If (I) leave the baby, he will cry'.

When -ngapa is suffixed to the verb stem, such a predicate makes no distinction which helps to correlate the subjects in the two clauses. When the subjects of the two clauses are different, an independent subject is usually expressed in the dependent clause. hambita randingapa šamunı 'I come in order to buy medicine', sačama rirka ayčata maskangapa 'He went to the jungle in order to hunt meat', pay ringapa sakirirkani 'I stayed so he could go', kulata randirkani paykuna upyangapa 'I bought the Colas for them to drink'.

In contrast to verbs which function as predicates in
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dependent clauses, verbs which function as predicates in independent clauses occur with obligatory person-subject and tense-aspect markers. The person-subject markers -ni '1st sing.', -ng1 '2nd sing.', -n '3rd sing. present tense', -nči '1st pl.', -ngiči '2nd pl.', -mu- '3rd pl.' help to identify declarative and interrogative clauses. The obligatory tense-aspect markers are -rka 'past tense', -# 'present tense', and -ška 'completive aspect'. First and third singular future person-subject markers are -ša '1st sing.' and -nga '3rd sing.'. Second singular and all plural future person-subject markers are the same as those used in all other tenses.

In addition to the endings listed above, the interrogative clause is identified by one of two classes of interrogative-clause markers. For a clause which requires a yes-or-no answer, the interrogative marker consists of the morpheme -ču suffixed to any head word on which the center of attention in the clause is being focused. kaya ringiču 'Are you going tomorrow?', kayaču ringi 'Is it tomorrow that you go?', kanču ringi 'Are you the one who is going?', kan ringiču 'Are you going (instead of staying)?'. For a clause which requires other than a yes-or-no answer an interrogative word or expression suffixed by -ta introduces the interrogative clause and constitutes the interrogative marker. maymata rihungi 'Where are you going?', imapata kasna ranurka 'Why did they do that?', pipata čayta randihungi 'For whom are you buying that?'.

Predicates of imperative clauses are identified by occurrence of verbs having a special list of imperative person-subject markers suffixed to the verb stem but with very few intermediary optional suffixes included. Imperative person-subject markers are -y '2nd sing.', -yči '2nd pl.', -ču '3rd person', and -šun '1st pl.'. puñuy 'sleep!', wasima
2.1.2. **Expanded predicate constructions.** Expansions of the verb functioning as predicate in any clause type include optional phrase-level constructions having such semantic components as: intensity, sinči 'hard', ukta 'fast', etc.; similarity, kasna 'like this', ěina 'thus', etc.; negation, mana 'no, not', ama 'don't' (occurs with imperative clauses only, and requires an obligatory -ču suffixed to the head verb); onomatopoetic modification, tas 'fast', hanga hanga 'limping', etc. These optional constructions may occur singly or in combinations, preceding the predicate-functioning verb. Illustrations: ukta šamurkani 'I came fast', mas sinčita kaparirkani 'I called louder', pulúk pulúk pulúk timbun 'It boils (making this sound)', yapa alinlyą hanga hanga purimun 'He comes walking with a slow limp'.

2.2. **Direct object.** The direct object which identifies transitive clauses may be manifested by a pronoun or noun suffixed by -ta. A noun in any position may be preceded by one or more modifiers which, in their most frequent order, are: specifier, kay 'this', čay 'that', ūkapa 'my', etc.; number, šuk 'one, another', aška 'many', etc.; color, yana 'black', puka 'red', etc.; or another noun, lulun kara 'eggshell', sirth limon 'the lemon which is lying (there)'. The object expression most frequently occurs preceding the verb. Ćuna wagrata čarin 'He has ten cows', iškay ičiliyą kaspita apamurka 'He brought two small sticks', paypa yapa hatun kanuwata šuwarka 'She stole his very large canoe'.

3. **Expansions.** Each clause type may be expanded by subject, time and location as optional components; the im-
perative clause, however, occurs with very few expansions. Of 400 clauses studied, the clause nucleus occurred alone in 171; 179 occurred with the clause nucleus plus one expansion; 46 occurred with the nucleus plus two expansions; and only four included all the possible expansions. Although the order of occurrence varied for these different components, the most frequent order is subject, time, location, nucleus (i.e. predicate or expanded predicate). Each of the expansions will be discussed separately in this section.

3.1. **Subject.** As in the object (see 2.2.) the subject may be expressed by a pronoun or a head noun preceded by one or more modifiers. The subject is identified not by any particular suffix but by position, context and the personal endings of the verb. iškay čurungu wawa kišpinurka 'Two monkey babies escaped', šuka aparkani 'I took it', čay ūk hatun yana sirih alųku kaniwarka 'That big black dog lying there bit me', mikuy pasaška 'Eating is finished'.

3.2. **Time.** Time is expressed by temporals kayna 'yesterday', čišita 'afternoon'; or by temporal expressions made up of two temporals kaya čišita 'tomorrow afternoon', tuta punčayanata 'at early daybreak'; or by temporals formed by a demonstrative pronoun or a derived noun plus waša 'after, later, behind'. This latter expression is often used as a connector between sentences. kayna čišita paypa wasimanda šamurka 'Yesterday afternoon he came from his house', kuna rinimi 'I'm going now', humuta takarka, takaška waša aswata mangapi hundačirka. čay waša upir-kanči. 'She mashed the manioc. After mashing it she filled the container with manioc. Then we drank it.'

3.3. **Location.** Location is expressed by demonstrative adjectives, nouns or noun phrases with the locational markers -pi 'in', -ma 'to', -manda 'from', suffixed to the head word.
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kaypi ḫuray 'Put it here!', karu urku partima pušarka 'To the far hill place he took him', ūukanči pušuna wasipī paktamurkanči 'At our sleeping house we arrived', yakumanda šamuška 'He has come from the water'.

3.4. Manner. Manner is expressed by the manner marker -wa suffixed to nouns or noun phrases. paypa iłųapawa wančirkani 'I killed (it) with his gun,' rukukunawa rimurka 'They went with the older people', čai hatun kaspiwa wahtay 'Hit (it) with that big stick!'

3.5. Second object. In clauses which might be considered referent or benefactive because of the occurrence of an indirect object or a benefactive have been set up here as a second object expansion due to the identical phonological form which occurs on both the object, the referent and the benefactive. The -ta object marker, when identifying the referent, may occasionally be substituted for -ma of the locationals. imapata čay mušuh kılıykata rikučirkangī wawakumata 'Why did you show the new book to the children?', rirkani hambita randingapa wawapahta 'I went to buy medicine for the child'.

4. Illustrations. In this section examples are given of each of the varied clause types, in both minimal and expanded constructions. When the dependent clause is in focus it is underlined.

4.1. Dependent clauses.

4.1.1. Dependent intransitive clause. Minimal: čimbaşa runata makanata munarka 'Crossing over he wanted to hit the man', paktamuhpi ninawata apičirkanči 'When he arrived we started the fire'. Expanded: šukma wamburiša mana tigrarka 'Flying to another, he didn't return', čay
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waša kasna tukuhpí hatun 1yaktapi pay wañurka 'Then, that happening, in the big town he died', pay kaya avionbi šamyapapa pagarqaní 'So he could come in the airplane to- morrow, I paid'.

4.1.2. Dependent transitive clause. Minimal: lumuta čuraša čaparkaní 'Putting the manioc down, I waited', wawata tupahpi kušiyarkaní 'When he found the child I was happy', nikungapa randirkaní 'I bought it in order to eat it'. Expanded: mama wañuška waša anahma pušahpi čaypi kaw-sarka 'After his mother died he took him upriver and there he lived', pilšeška waša ašangapi čuraša apamurkaní 'After harvesting it, putting it in the basket, I brought it', apamur- pi mama šigramanda ayčata yušiša nupayi čuraša rupačin 'If he brings it, mother taking the meat from the bag, putting it on the fire, she singes it'.

4.2. Independent clauses.

4.2.1. Independent intransitive clauses.

Declarative. Minimal: šayahuní 'I'm standing', ša- muškanči 'We've come', tamyahun 'It's raining'. Expanded: pay yakupi puhiyan 'He's playing in the water', tukjuy ūras yapa karuta purinči 'All the time we walk very far', kayna čišita paypa wasimanda alinaša šumurka 'Yesterday afternoon he came slowly from his house'.

Interrogative with interrogative word. Minimal: may- mata rihungí 'Where are you going?', imapahta kaparirka 'Why did it cry out?', maykanda wakahun 'Which one is cry- ing?'. Expanded: imapahta kuna šitu rinun 'Why are they going at this moment?', maykanda Tenamanda šumurka 'Which one came from Tena?'.

Interrogative with interrogative suffix. Minimal: piti- riškašo 'Has it pulled apart?', puhiyančiščišo 'Are you (pl.) playing?', šamunčo 'Is he coming?'. Expanded: kuči wasi-
manda .lu.šiškařu 'Has the pig left the pen?', kunalVa ćay-
manda šamungiču 'Right now did you come from there!'.

**Imperative.** Minimal: čapay 'Walt!', ukta kalypay
'Run fast!', ama šamuyču 'Don't come!'. Expanded: kayma
šamuy 'Come here!', pahlYama riy 'Go outside!'.

**4.2.2. Independent transitive clauses.**

**Declarative.** Minimal: unguyta aličin 'It heals the
sickness', yandata šurarka 'He put down the firewood',
palandatas lumutas muyukunatas mikuč 'He eats bananas,
manioc and fruits'. Expanded: ćay čurikunamanda šuhašata
mas yalY lYaširka 'Of all his sons he loved one more than
all', hayakta wawakuna unguskapit upiščič 'When children
are sick we make them drink bitter medicine', kayma pistapči
paypa wawki payta wahtarka 'Yesterday on the airstrip his
brother hit him'.

**Interrogative with interrogative word.** Minimal: ima-
tata apamurka 'What did he bring?', pita kay muyuta munan
'Who wants this marble?', ima urasta lVuširka 'When did
she peel it?'. Expanded: imaya šurarka ūka kučilYušata
'Where did he put my knife?', imapata yapa tutamandata
lu.šinurka 'Why did they leave so early in the morning?'.

**Interrogative with interrogative suffix.** Minimal: ay-
čata tuparkangiču 'Did you find meat?', mangata maylaša-
čušu 'Shall I wash the cooking pot?'. Expanded: kuna alYa-
pata alYačušu 'Is he digging the dirt now?', kančama lYača-
pata warkušaču 'Shall I hang the clothes outside?', kune-
Yačatašu wančirkangči 'Just right now did you kill it?'.

**Imperative.** Minimal: kučilYušata apamuy 'Bring the
knife!', wawata kuyučiy 'Swing the baby!', makita ukta
mayNay 'Hurry and wash your hands!'. Expanded: kaypi
plityči 'You (pl.) cut it here!', kuna urmačiy 'Now drop
it!'.
Structural Summary of Záparo

by Catherine Peeke

0. Introduction.
1. Syntagmemes.
2. Tagmemes and hypertagmemes.
3. Morpheme classes.

0. Introduction. This brief sketch of Záparo\(^1\) gram-

\(^1\)The investigation was undertaken under the auspices of the Summer Institute of Linguistics in cooperation with the Ecuadorian Ministry of Public Education. A survey was conducted by Mary Sargent and the author in the months from July to November, 1953, into the jungle areas reportedly Zaparoan. One native speaker of the language was located and served as our first informant. A second field trip was made between July and December, 1954, at which time the contact was more successful. Two bilingual informants, speaking Záparo and Quichua, were encountered and employed; they are Anita and Jacinta Santi. Analysis was made considerably more cumbersome because of having to work through the jungle trade language, Quichua, which has replaced Záparo to the extent that the latter is used only upon occasion, such as at a gathering of the older members of the tribe or when it is desired that the particulars of conversation be concealed from outsiders.

Since the language is dying out and a return to the Záparo area of the jungle in the near future is not anticipated, further amplification and testing of conclusions does not seem practicable; it is therefore felt to be valuable to publish present findings as we have them. The paper does not pretend to be exhaustive in its presentation; in most sections there is a residue of data which a lack of materials renders impossible to analyze at the moment. We have attempted, rather, to present a comprehensive picture of the grammar as a whole, in its main outlines.

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The Záparo syntagmeme as described in this paper is an emic class of utterances grouped together according to tagmatic components and their distribution in the syntagmeme. Each grammatical 'slot', together with its 'filler', which may be a class of morphemes or a class of hypermorphemes or a class of morphemes and hypermorphemes, or a composite class composed of any of the preceding, constitutes a tagmeme. A hypertagmeme is a combination of two or more obligatory tagmemes. The combination of slot plus filler into a unit, the tagmeme, serves to expedite the description of distributional or syntactic relationships.

This structural summary of Záparo is presented in three main sections, the first of which describes the syntagmemes and their formulas including the constituent tagmemes and their formulas; in the second section these tagmemes are relisted in the order in which they first appeared, with their distribution cutting across the previous syntagmeme; and in the third section the morpheme classes are listed by themselves, cutting across their distribution within the tagmemes.

1. Syntagmemes. In this section are presented two basic syntagmeme types in Záparo: first, a group of action syntagmemes including indicative, interrogative, and imperative action; and secondly, a group of stative syntagmemes including indicative and interrogative stative syntagmemes. Each of these syntagmemes is presented as to its minimum

²I am grateful to Pike and other colleagues for many helpful suggestions during the preparation of this paper.

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formula, potentially expanded formula, and transposed linear ordering in case of emphasis of individual slots. Formulas are designed to reveal basic and optional tagmemic components, which are briefly named in this section and are described in minimum and expanded forms in 2.

1.1. Indicative-action syntagmeme.

1.1.1. Minimum formula of indicative-action syntagmeme. The minimum indicative-action syntagmeme is composed of one basic tagmeme and one basic hypertagmeme. A condensed form of the minimum indicative-action syntagmeme formula is: \(^3\)

\[^3\] Unit fillers of slots are enclosed in brackets [ ], so that a tagmeme is indicated in the formula by: +slot[filler]; an expandable tagmeme is represented by: +slot[filler( )], parentheses indicating that the filler may be expanded internally; and an expandable or unexpandable hypertagmeme is indicated in the formula by: +Slot[Filler], upper case initial letters indicating that manifestations of at least two obligatory tagmemes are included in the hypertagmeme. The plus sign, +, indicates the obligatory nature of the tagmeme; plus or minus, ±, indicates that the tagmeme is optional.

Alternate forms of composite fillers which represent morpheme distribution subclasses are enclosed in angular braces, \(\langle \rangle\), thus: +slot\(\langle\text{filler}\rangle\); or one or more of the alternate subclass fillers may be expandable or hypertagmemic, thus:

\[\text{filler} +\text{slot}\left\langle\text{filler( )}\right\rangle\]. If attention is being focussed on only one of the distribution-subclass fillers of a slot, an abbreviated formula such as +slot<filler> is used, as in the illustration at the end of 1.1.1.

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This formula is to be read as follows: \(^4\) An obligatory, basic subject slot is filled by a composite morpheme-hypermorpheme class including two alternate distribution subclasses; the class noun-expression which is composed of morphemes and hypermorphemes; and the class subject-pronoun which is composed of morphemes. An obligatory, basic Predicate hypertagmemic slot is filled by a unit class, Indicative-Verb, which is composed of hypermorphemes.\(^1\)

The two obligatory (++) tagmemes which constitute the hypertagmeme \([+P[\text{Ind-V}]]\) may be indicated within parentheses in the formula.\(^5\) The more detailed formula of obligatory items in the minimum indicative-action syntagmeme is:

\(^4\)The following abbreviations are used: act action, aj adjective, ajl adjectival, ap apposition, asp aspect, av adverb, avl adverbial, cd compound, cf comparative, cl causal, con connector, dir directional, e emphasis, emphatic, f future, g gender, i, int interrogative, imp imperative, ind indicative, item item, l location, m motion, md modifier, mn manner, n noun, nl nominal, nm nominative, no number, o object, p predicate, pc process, pnct punctiliar, pos possessor, possessive, pr pronoun, pt particle, q qualifier, r root, rel relational, s subject, sc source, st stem, suf suffix, sv stative, t time, v verb, vl verbal, w word, x expression.

Any of these may be used with upper case initial letters to denote hypertagmemic composition.

\(^5\)Optional included tagmemes are not indicated in this section; for tagmemic content of this and all formulas see 2, where tagmemes and hypertagmemes are described in the order in which they appear in this section.
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\[ +s(a^{(n-x)}_{s-pr}) +p[ind-v(+act([v-st()])) +ind-asp([ind-asp-suf])] \]

This formula is to be read as follows: 'An obligatory, basic subject slot is filled by a composite morpheme-hypermorpheme class including two alternate distribution subclasses: morpheme-hypermorpheme-class noun-expression and morpheme-class subject-pronoun; and an obligatory, basic Predicate hypertagmemic slot is filled by hypermorpheme class Indicative-Verb, which is composed of the manifestations of two tagmemes: an obligatory, included action slot filled by morpheme-hypermorpheme-class verb-stem; and an obligatory, included aspect slot filled by morpheme-class aspect-suffix.' As an example of the minimum indicative-action syntagmeme note naw mášiča 'he is hiding', which is:

\[ +s(a-pr) +p[ind-v(+act([v-st()])) +ind-asp([ind-asp-suf])] \]

naw 'he' mášiča 'hide' -ča 'continuative'.

1.1.2. Potential expansion of indicative-action syntagmeme. The expanded indicative-action syntagmeme is composed of the basic tagmemes or hypertagmemes of the minimum formula, with the possibility of an additional nine optional tagmemes. There is free variation of linear order between object-1 and object 2, with the preferred order

---

6 Unit fillers of included slots are enclosed in brackets, but the brackets are doubled if they are included within a like formulaic symbol.

7 The phonemes of Záparo are: p, t, k, c, č, s, š, m, n, r, w, y, h, ?, i, ā (phonetically equivalent to ĭ), o, and a. Grateful acknowledgment is made to my co-worker, Mary Sargent, for her phonemic analysis and other unpublished data.
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(seen by frequency of occurrence) indicated in the formula. Source slot may occur in the indicated linear order or following subject slot. All other tagmeme slots remain constant in the order given except as changed by emphasis of certain slots as described in 1.1.3-8.

\[\text{+con[con-pt] +md[aJ-x()] +sc[sc-pt] +s<n-x()> +t[f-pt] +P[Ind-V]}\]
\[\text{+mn-1[mn-pt-1] +mn-2[mn-pt-2] +o-1<n-x()> +I-t[av()] +o-2<Rel-N>}\]

In this formula the minimum indicative-action syntagme is expanded by the addition of the following nine optional tagmeme slots: optional connector slot filled by morpheme-class connector-particle; optional modifier slot filled by morpheme-hypermorpheme-class adjective-expression; optional source slot filled by morpheme-class source-particle; optional future slot filled by morpheme-class future-particle; optional manner-1 slot filled by morpheme-class manner-particle-1; optional manner-2 slot filled by morpheme-class manner-particle-2; optional object-1 slot filled by a composite morpheme-hypermorpheme class including two alternate distribution subclasses: morpheme-hypermorpheme-class noun-expression, and morpheme-class object-pronoun; optional location-time slot filled by morpheme-hypermorpheme-class adverb; and optional object-2 slot filled by a composite morpheme-hypermorpheme-class including two alternate distribution subclasses: hypermorpheme-class Relational-Noun, and morpheme-class object-pronoun. As examples of the potential expansion of indicative-action syntagme note: (a) taykwá ko mño rókraka čiripáka ira 'I have no money for the papaya', which is:

\[\text{+con[con-pt] +s<s-pr> +P[Ind-V(+act[[v-eyJ()]] +ind-asp[ind-asp-suf]])}\]
\[\text{taykwà 'not' ko 'I' mi 'have' -no 'negative'}\]
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(b) ko-anaka nawkiriča fa parayta kwí 'my head hurts me a lot', which is:

+s<n-x>(see 2.1) +P[ind-V(+act[[v-st]]) +ind-asp[[ind-asp-suf]])
ko-anaka 'my head' nawkiri 'hurt' ča 'continuative'

+mn-1[mn-pt-1] +mn-2[mn-pt-2] +o-1<o-pr>
fa 'very' parayta 'much' kwí 'me'.

1.1.3. Emphasis of manner slots in indicative-action syntagmeme. Sections 1.1.3-8 present further possible expansions and alternant forms for the basic indicative-action syntagmeme, by which emphasis of the various constituents may be shown.

When manner slots occur emphasized in the indicative-action syntagmeme the basic slots must be present, optional slots may occur, and the only change in the linear order of occurrence is that optional emphatic-manner-1 and emphatic-manner-2 slots occur following optional connector slot and preceding optional modifier slot. Any other slot which may occur emphasized (see 1.1.4-8) may also occur emphasized in the same utterance with emphatic-manner slots. The emphatic-manner slots are filled by morpheme classes of manner-particles:

+e-mn-1[mn-pt-1]; +e-mn-2[mn-pt-2]

In these formulas, optional emphatic-manner-1 slot is filled by morpheme-class manner-particle-1; and optional
emphatic-manner-2 slot is filled by morpheme-class manner-particle-2.8

Thus partially-expanded indicative-action syntagmeme with emphasized manner slots may be represented by the following partially-expanded formula:

\[ +con[con-p] +e-mn-1[mm-pt-1] +e-mn-2[mm-pt-2] +md[adj-x0] +s<S-pr> +P[Ind-V] + \ldots \]

(For aid in reading this and further formulas, the reader is directed to abbreviations listed in Footnote 4.)

As an example of emphasis-of-manner slots in the indicative-action syntagmeme note iá komá noká anawkatahá

\[ +e-mn-1[mm-pt-1] +e-mn-2[mm-pt-2] +s<S-pr> +P[Ind-V(+act([v-st]))] \]

iá 'very'    komá 'strongly'    noká 'it'    anawkata 'hurt'

\[ +ind-asp([ind-asp-suf()]) +o-1<o-pr> \]

ka 'continuative'    naw 'him'.

1.1.4. **Emphasis of modifier slot in indicative-action syntagmeme.** When modifier slot occurs emphasized in the indicative-action syntagmeme, optional modifier slot is replaced by optional Emphatic-Modifier hypertagmemic slot,

8An alternate analysis would treat these as the same tagmemes as mn-1[mm-pt-1] and mn-2[mm-pt-2], see 1.1.2, thus creating a new emphasis syntagmeme to account for the change in linear order of occurrence. The regular syntagmeme plus the various emphatic syntagmemes make up a class of syntagmemes of this general indicative action type.
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basic slots must be present, the other optional slots may occur, emphatic-location-time slot may also occur following Emphatic-Modifier hypertagmemic slot, and there is no other change in the linear order of occurrence of any tagmeme. Optional Emphatic-Modifier hypertagmemic slot is filled by a hypermorpHEME class of fillers:

\[ +E-Md[E-Aj-X(+md[[a]-\alpha()]) +s[[e-\alpha]])] \]

Thus the partially-expanded indicative-action syntagmeme with Emphatic-Modifier may be represented by the following partially-expanded formula:

\[ +con[con-pt] +E-Md[E-Aj-X] +s<^{n-x()}> +P[md-V] + \ldots \]

As an example of emphasis-of-modifier slot in the indicative-action syntagmeme note samičáha naw masākā naw napāha 'he chases (looks for) his new pocket knife', which is:

\[ +E-Md[E-Aj-X(+md[[a]-\alpha()]) +s[[e-\alpha]])] +s<\text{pr}> +p[m-v()] \]

\[ \text{samícāha} '\text{new'} \quad \text{ha} '\text{emph.'} \text{ mā'āha} '\text{chase'} \]

\[ +o<^\text{n-x}> (\text{see 2.13}) ^9 \]

\[ \text{naw-napāha} '\text{his knife'.} \]

1.1.5. Emphasis of object-1 slot in indicative-action syntagmeme. When object-1 slot occurs emphasized in the indicative-action syntagmeme, optional object-1 slot is replaced by optional emphatic-object-1 slot, basic slots must

\[ ^9 \text{A motion-verb, not described; and so throughout the paper.} \]
be present, other optional slots may occur, and the only change in linear order of occurrence is that emphatic-object-1 slot occurs following optional modifier slot and preceding optional source slot. The emphatic-object-1 slot is filled by a composite morpheme-hypermorpheme class, thus:

\[ +e-o-1<e-n-x() \]
\[ _E-\hat{O}-Pr(+o[pr] +e[pt]) > \]

Thus expanded indicative-action syntagmeme with Emphatic-Object-1 slot may be represented by the following formula:

\[ +con[con-pt] +md[aj-x()] +e-o-1<e-n-x() \]
\[ _E-\hat{O}-Pr > +so[so-pt] +s<n-x()> _e-pr > +f[f-pr] \]

For explanation of component tagmemes see 1.1.2. As an example of indicative-action syntagmeme with emphasized object-1 note ariáwko káwno cáyələ 'a snake bit the dog', which is:

\[ +e-o-1<e-n-x()> +s<n-x()> +P[ind-V(+act(<<v-st()>> +ind-asp[[ind-asp-suf]])]) \]

ariáwko 'dog' káwno 'snake' cáyələ 'bite' rə 'completed action'.

1.1.6. **Emphasis of location-time slot in indicative-action syntagmeme.** When location-time slot occurs emphasized in the indicative-action syntagmeme, optional location-time slot is replaced by optional emphatic-location-time slot. Basic slots must be present, other optional slots may occur, and the only change in linear order of occurrence is that emphatic-location-time slot occurs following optional modifier slot or optional emphatic-modifier slot and preceding
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basic subject slot. Optional emphatic-location-time slot is filled by a morpheme-hypermorpheme class of fillers:

\[ +e-l-t(e-av()) \]

In this formula emphatic-location-time slot is filled by morpheme-class emphatic-adverb. Thus expanded indicative-action syntagmeme with emphatic-location-time slot may be represented by the following formula:

\[ +con[con-pt] +md[a]-x() +e-l-t(e-av()) +sc[sc-pt] +s\langle n-x() \rangle +fl[fl-pt] +P[Ind-V] +mn-1[mn-pt-1] +mn-2[mn-pt-2] +c-1\langle n-x() \rangle +o-2\langle o-pr \rangle \]

As an example of indicative-action syntagmeme with emphatic-location-time slot note noarī nokā na sanatāka 'afterwards it will cool off', which is:

\[ +e-l-t(e-av()) +s\langle s-pr \rangle +fl[fl-pt] +P[Ind-V(+act([v-st()]) +ind-asp([ind-asp-suf]))]

noarī 'after' noka 'at' na 'will' sanāta 'cool' -ka 'continuative'.

1.1.7. Emphasis of object-2 slot in indicative-action syntagmeme. When object-2 slot occurs emphasized in the indicative-action syntagmeme, optional object-2 slot is replaced by optional Emphatic-Object-2 hypertagmemic slot, basic slots must be present, other optional slots may occur, and the only modification in linear order of occurrence is that Emphatic-Object-2 hypertagmemic slot occurs following optional modifier slot and preceding basic subject slot and optional source slot. Emphatic-Object-2 hypertagmemic slot is filled by a composite class of hypermorpheme classes:
Thus expanded indicative-action syntagmeme with Emphatic-Object-2 hypertagmemic slot may be represented by the following formula:

\[
\text{+con[con-prl] +mdlaj-x()} \quad \text{+E-O-2} \quad \text{E-Rel-N} \quad \text{+sc[sc-pr]} \quad \text{+s\{n-x()\} \quad +ffl-prl}
\]

\[
\text{+P[Ind-V]} \quad \text{+mn-1[mn-pr-1]} \quad \text{+mn-2[mn-pr-2]} \quad \text{+o-1\{n-x()\} \quad +1-t[av()]}
\]

As an example of indicative-action syntagmeme with Emphatic-Object-2 note parato irá noka na ikwá 'it will get windy', which is:

\[
\text{+E-O-2} \quad \text{E-Rel-N\{+pos-x<pos-pr> +rel[rel-nl] \quad +s<pr> +ffl-prl \quad +p[m-v()]}
\]

parato 'wind’s'  \quad \text{ira 'right, for' noka 'it' na 'will' ikwá 'go'.}

1.1.8. Emphasis of subject slot in indicative-action syntagmeme. When subject slot occurs emphasized in the indicative-action syntagmeme, basic subject slot is replaced by basic Emphatic-Subject hypertagmemic slot, basic Predicate hypertagmemic slot must be present, any optional slot may occur, and there is no change in linear order of occurrence of any tagmeme. Basic Emphatic-Subject hypertagmemic slot is filled by a hypermorpheme class of fillers:

\[
\text{10 Composite fillers of included slots are enclosed in angular brackets, but the angular brackets are doubled if they are included within a like formulative symbol.}
\]
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\[ +E-S [E-S-X (+s^{n-x()}_{s-pr} +e[e-p]] ) +P[\text{Ind-V}] \]

Thus minimum indicative-action syntagmeme with Emphatic-Subject hypertagmemic slot may be represented by the following formula:

\[ +E-S [E-S-X] +P[\text{Ind-V}] \]

As an example of indicative-action syntagmeme in which subject slot is emphasized note kāna-ha na ináwha noka no 'we shall give it to him', which is:

\[ +E-S [E-S-X(+s<s-pr> +e[e-p]]) +f[f-pr] +P[\text{Ind-V}(+act[\text{v-st}])] \]

kāna 'we' ha 'emph.' na 'shall' inaw 'give'

\[ +lnd-aspl[\text{lnd-asp-sufl}]) +o-1<o-pr> +o-2<o-pr> \]

-ha 'future' noka 'it' no 'him'.

1.2. Interrogative-action syntagmeme.

1.2.1. Minimum formula of interrogative-action syntagmeme. Minimum interrogative-action syntagmeme is composed of three basic tagmemes which remain constant in the order given:

\[ +s^{n-x()}_{s-pr} +f[\text{int-plt}] +P[\text{int-v()}] \]

In this formula the minimum interrogative-action syntagmeme is represented by the following three tagmemes: basic subject slot filled by a composite morpheme-hypermorpheme class including two distribution subclasses: mor-
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pheme-hypermorphism-class noun-expression, and mor-
pheme-class subject pronoun; basic interrogative slot filled
by morpheme-class interrogative-particle; and basic predi-
cate slot filled by morpheme-hypermorpheme-class interroga-
tive-verb. As an example of the minimum interrogative-
action syntagmeme note n-ánano-tá camitaká 'is her brother
coming to life?', which is:

\[ +s<n-x>(\text{see 2.1}) +\text{int}[\text{int-pt}] +\text{p}[\text{int-\text{v}}](\text{see 2.29}) \]
\[ n-\text{ánano} \text{ 'her brother'} -tá \text{ 'interro.' camitaká 'come to life'.} \]

1.2.2. Potential expansion of interrogative-action
syntagmeme. The expanded interrogative-action syntagmeme
is composed of manifestations of basic tagmemes of the mini-
um formula, with the possibility of an additional six optional
tagmemes. There is free variation of linear order between
object-1 and object-2 slots when both occur. When only one
or the other of these slots occurs, however, that one occurs
in the central position following basic interrogative slot and
preceding basic Predicate hypertagmemic slot. All other
tagmemes remain constant in the linear order given in the
following formula, except as modified by emphasis as
described in 1.2.3,4.

\[ +\text{con}[\text{con-pt}] +\text{i-mn}[1-\text{mn-\text{pt}}] +\text{mn-2}[\text{mn-\text{pt-2}}] +\text{md}[a]-\text{x}(\text{i}) +s<n-x>(\text{i}) \]
\[ +\text{int}[\text{int-\text{pt}}] +\text{0-1}<n-x>(\text{i}) +\text{p}[\text{int-\text{v}}](\text{o}) +\text{o-2}<\text{Rel-N}>(\text{o-pr}) +\text{1-t}(\text{av}(\text{o})) \]

As examples of the potential expansion of the
interrogative-action syntagmeme note: (a) taykwá naw-tá
kina înaw noka 'doesn't he give it to you?', which is:

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1.2.3. Emphasis of object and location-time slots in interrogative-action syntagmeme. Description of emphasis of object and location-time slots in interrogative-action syntagmeme is essentially the same as that of emphasis of object and location-time slots in indicative-action syntagmeme (see 1.1.5-7), except that in interrogative-action syntagmeme obligatory interrogative slot filled by morpheme-class interrogative-particle may occur following emphasized object or location-time slots with corresponding semantic change. As an example of emphasis of object and location-time slots in interrogative-action syntagmeme note tamá anf-ha ča-ta ikiriča 'were you right here?', which is:

+mн-2[mн-pт-2] tа-1-[e-av](see 2.19) +s<e-pr> +int[пt] +o-1<e-pr> +p[int-в](see 2.28) tama 'only' anf-ha 'here (emph.)' ča 'thou' -ta 'interr.' ikiriča 'were'.

1.2.4. Emphasis of subject slot in interrogative-action syntagmeme. Description of emphasis of subject slot in interrogative-action syntagmeme is essentially the same as that of emphasis of subject slot in indicative-action syntagmeme (see 1.1.8). Thus minimum interrogative-action syntagmeme with Emphatic-Subject hypertagmemic slot may be represented by the following formula:
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+E-E-S-X]  +int[+ptl]  +p[+int-v()]

As an example of interrogative-action syntagmeme in which subject slot is emphasized note ná-ha-ta maká-? 'do they climb?', which is:

+E-E-S-X(+s<pr> +e[+ptl])  +int[+ptl]  +p[+int-v](see 2.29)
na 'they' -ha 'emph.' -ta 'interr.' maká-? 'climb'.

1.3. Imperative-action syntagmeme.

1.3.1. Minimum formula of imperative-action syntagmeme. The minimum imperative-action syntagmeme is composed of two basic tagmemes which remain constant in the order given:

+s[imp-s-pr]  +p[imp-v()]

In this formula, the minimum imperative syntagmeme is represented by the two tagmemes: basic subject slot filled by morpheme-class imperative-subject-pronoun; and basic predicate slot filled by morpheme-hypermorpheme-class imperative-verb. As an example of the minimum imperative-action syntagmeme note ča ikó-? 'sit down!', which is:

+s[imp-s-pr]  +p[imp-v](see 2.34)
ča 'thou'  ikó-? 'sit!'

1.3.2. Potential expansion of imperative-action syntagmeme. The expanded imperative-action syntagmeme is composed of the two basic tagmemes of the minimum formula, with the possibility of an additional seven optional tagmemes. There is free variation of linear order between
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object-1 and object-2 slots when both occur. When only one of the two object slots occurs, however, that one occurs in
the central position following basic subject slot and pre-
ceeding optional future slot; or two object-2 tagmemes may
occur in the two object positions. All other tagmemes remain constant in the linear order given in the following
formula, except as changed by emphasis as described in
1.3.3.

\[ +mn-2[mn-pr-2] +md[a]-x()l +s[imp-s-pr] +o-1<n-x()l \]

\[ +f[p-1] +p[imp-v()] +o-2<o-pr, +l-t[av()l \]

As examples of the potential expansion of the imperative-
action syntagmeme note: (a) kiná noka áta ko-Íra atíhi
'pull it over there for me!', which is:

\[ +s[imp-s-pr] +o-1<o-pr> +p[imp-v()] +o-2<Rel-N+pos-x<pos-pr>> \]

kina 'ye' noka 'it' áta 'pull' ko- 'my'

\[ +rel[rel-n]> +l-t[av](see 2.19) \]
ira 'right' atíhi 'that way';

(b) támá ása pa na asatárokóma 'let's just run for
nothing!', which is:

\[ +mn-2[mn-pr-2] +md[a]-x()l +s[imp-s-pr] +f[p-1] +p[imp-v()] \]

tama 'only' ása 'for nothing' pa 'we' na 'shall' asatárokóma 'run'.

1.3.3. \underline{Emphasis of modifier slot in imperative-action}
syntagmeme. Description of emphasis of modifier slot in
imperative-action syntagmeme is essentially the same as
that of emphasis of modifier slot in indicative-action syntagmeme.
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meme (see 1.1.4). As an example of emphasis of modifier
slot in imperative-action syntagmeme note kawirà-ha
nakonan̄ha ča na ikó 'you will sit down at all the (fallen)
trees!'

\[-E-Md[E-A]x+(mdl[{aj-x}]) +e[{e-pt}]) +s-{l-}[e-av](see 2.19)
\]

kawira 'all' -ha 'emph.' nakonan̄ha 'at trees'

\[+s[imp-s-pr] +f[-pt] +p[imp-v()]
\]

ča 'thou' na 'will' iko 'sitt'.

1.3.4. Emphasis of object and location-time slots in
imperative-action syntagmeme. Description of emphasis of
object and location-time slots in imperative-action syntag-
meme is essentially the same as that of emphasis of object
and location-time slots in indicative-action syntagmeme (see
1.1.5-7). As an example of emphasis of object and location-
time slots in imperative-action syntagmeme note kaná-ha ča
noká ino-? 'give it to us!', which is:

\[-E-O-2<E-O-Pr(=olo-pr) +e[{e-pt}]> +s[imp-s-pr] +o-{l-o-pr} +p[imp-v](see 2.34)
\]

kana 'us' -ha 'emph.' ča 'thou' noka 'it' ino-? 'give!

1.4. Indicative stative syntagmeme.

1.4.1. Minimum formula of indicative-stative
syntagmeme. The minimum indicative-stative syntagmeme is
composed of three basic tagmemes which remain constant in
the order given:

\[
+p-nm\begin{cases}
\vphantom{n-x}n-x() \\
\vphantom{n-x}a\rightarrow w() \\
\vphantom{n-x}sv-ind\{sv-ind-\text{pt}\} +e\vphantom{n-x}^{sv-pr}\end{cases}
\]

\[
\begin{cases}
\vphantom{n-x}n-x() \\
\vphantom{n-x}a\rightarrow w() \\
\vphantom{n-x}sv-ind\{sv-ind-\text{pt}\} +e\vphantom{n-x}^{sv-pr}\end{cases}
\]

\[
\begin{cases}
\vphantom{n-x}n-x() \\
\vphantom{n-x}a\rightarrow w() \\
\vphantom{n-x}sv-ind\{sv-ind-\text{pt}\} +e\vphantom{n-x}^{sv-pr}\end{cases}
\]

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In this formula the minimum indicative-stative syntagmeme is represented by the three tagmemes: basic predicate-nominative slot filled by a composite class including four distribution subclasses: morpheme-hypermorpheme-class noun-expression, morpheme-hypermorpheme-class adjective-word, hypermorpheme-class Nominal-Adjective, and hypermorpheme-class Process-Adjective; basic stative-indicative slot filled by morpheme-class stative-indicative-particle; and basic subject slot filled by a composite class including two distribution subclasses: morpheme-hypermorpheme-class noun-expression, and morpheme-class stative-pronoun. Note that in contrast with the subject-predicate linear order of action syntagmeme, the subject slot here follows the predicate, which is here represented by the predicate-nominative and the stative-indicative slots. As an example of the minimum indicative-stative syntagmeme note cawanaw tā kwi 'I am a ghost, a spirit', which is:

\[ +p-nm<n-x()> +sv-ind[sv-ind-pto] +s<sv-pr> \]

cawanaw 'spirit' ta 'be' kwi 'I'.

1.4.2. Potential expansion of indicative-stative syntagmeme. The expanded indicative-stative syntagmeme is composed of the three basic tagmemes of the minimum formula, with the possibility of an additional five optional tagmemes. All tagmemes remain constant in the linear order given in the following formula:

\[ +\text{con}[\text{con-pto}] +mn-1[\text{mn-pto-1}] +mn-2[\text{mn-pto-2}] +\text{md}[aj-x()] \]
\[ +p-nm<\text{aj-w()}> +\text{sd}[\text{aj-x()}] \]
\[ +sv-ind[sv-ind-pto] +s<n-x()> +\text{ap}[n-x()] \]
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As an example of the expanded indicative-stative syntagmeme note taykwa mašičá ta kaʔno mašiča 'we aren't orphans', which is:

+tcon[oon-pt] +p-nm<n-xx>(see 2.36) +sv-ind[sv-ind-pt] +s<sv-pr>
taykwa 'not' mašiča 'orphan' ta 'be' kaʔno 'we'

+sp[n-x](see 2.39)
mašiča 'orphan':

1.4.3. Emphasis on stative-indicative slot in indicative-stative syntagmeme. When stative-indicative slot occurs emphasized in the indicative-stative syntagmeme, basic stative-indicative slot is replaced by basic Emphatic-Stative-Indicative hypertagmemic slot, other basic slots must be present, any optional slot may occur, and there is no change in the linear order of occurrence of any tagmeme. Basic Emphatic-Stative-Indicative hypertagmemic slot is filled by a hypermorpheme class of fillers:

\[ E-Sv-Ind[E-Sv-Ind-Pt(+sv-ind[[sv-ind-pt]] +e[[s-pt]])]\]

As an example of indicative-stative syntagmeme in which stative-indicative slot is emphasized note náa ayóřoraka ta-há kwi katalína 'that is my name: Catherine', which is:

+md[aj-x()] +p-nm<aj-w()> +E-Sv-Ind[E-Sv-Ind-Pt(+sv-ind[[sv-ind-pt]])
náa 'thus' ayóřoraka 'named' ta 'be'

+e[[e-pt]])] +s<sv-pr> +sp[n-x()]
-ha 'emph.' kwi 'I' katalína 'Catherine'

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1.5. Interrogative-stative syntagmeme.

1.5.1. Minimum formula of interrogative-stative syntagmeme. The minimum interrogative-stative syntagmeme is composed of three basic tagmemes which remain constant in the order given:

\[ +p-nm\langle \text{n-}x() \rangle +sv-\text{int[sv-int-pt]} +s\langle \text{n-}x() \rangle \]

\[ \text{n-}x() \text{ Nl-Aj} \text{ Pc-Aj} \]

In this formula the minimum interrogative-stative syntagmeme is represented by the three tagmemes: basic predicate-nominative slot filled by a composite class including four distribution subclasses: noun-expression, morpheme-hypermorpheme-class adjective-word, hypermorpheme-class Nominal-Adjective, and hypermorpheme-class Process-Adjective; basic stative-interrogative slot filled by morpheme-class stative-interrogative-particle; and basic subject slot filled by a composite class including two distribution subclasses: morpheme-hypermorpheme-class noun-expression, and morpheme-class stative-pronoun. As an example of the minimum interrogative-stative syntagmeme note manopá atá marasó?a 'are the children many?', which is:

\[ +p-nm\langle aj-w\rangle(\text{see }2.36) +sv-\text{int[sv-int-pt]} +s\langle n-x\rangle(\text{see }2.38) \]

manopá 'many' atá 'be?' marasó?a 'children'.

1.5.2. Potential expansion of interrogative-stative syntagmeme. The expanded interrogative-stative syntagmeme is composed of the three basic tagmemes of the minimum formula, with the possibility of an additional three optional
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tagmemes, all of which remain constant in the linear order given in the following formula:

\[ \text{+s}\langle n-x() \rangle \text{+p-nm\langle n-x() \rangle} \text{+p-nm\langle aj-w() \rangle} \text{+sv-int\langle sv-int-ptl \rangle} \text{+p-pnct\langle pnct-ptl \rangle} \text{+s\langle sv-pr \rangle} \]

As an example of the expanded interrogative-stative syntagmememe note oacaká ariáwko atá-? 'is it a good dog?', which is:

\[ \text{+md\langle aj-x(\text{see 2.11}) \rangle} \text{+p-nm\langle n-x() \rangle} \text{+sv-int\langle sv-int-ptl \rangle} \text{+p-pnct\langle pnct-ptl \rangle} \text{+s\langle sv-pr \rangle} \]

oacaká 'good' ariawko 'dog' atá 'be' -? 'punctiliar' ≠ 'it'.

2. Tagmemes and hypertagmemes. In this section basic and optional tagmemic components are relisted in the order of their first appearance and described with their distribution cutting across the syntagmemes of 1., to which cross-reference numbers are included at each reference. In addition, cross-reference numbers to 3. are included at each reference to the morpheme classes listed there.

2.1. \text{s\langle n-x() \rangle}. Obligatory, basic subject slot is filled by a composite morpheme-hypermorpheme-class including two alternate distribution subclasses: morpheme-hypermorpheme-class noun-expression, and morpheme-class subject-pronoun.

The \text{s\langle n-x() \rangle} tagmeme occurs under the following conditions: (a) as an included manifestation of division-
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subclass filler Pc-Av(,+s<sub>n-x</sub><sup>n-x</sup><<sub>s-pr</sub>) +act[v-st()] +pc[pc-suf] +av1-pc[av1-pc-suf]) (see 2.19.3); (b) as included manifestation of the hypertagmeme E-S[X-E-S-X(+s<sub>n-x</sub><sup>n-x</sup><<sub>s-pr</sub>) +e[e-pt()]]) (see 2.27); (c) or as basic subject tagmeme in indicative and interrogative-action syntagmemes (see 1.1, 2). As an illustration of (c) note ko-nokličaka ikšča 'it is my (custom of) seeing', which is:

  +s<n-x(+pos-x<<pos-pr>>) +item[n-st()] +g-no[g-no-suf])>
  ko-'my'  nokiča 'seeing'  -ka 'nonpersonal sg.'
  +P[ind-V(+act[v-st()]) +ind-asp[ind-asp-suf]])
  ikšča 'is'  -ča 'continuative'.

Tagmemic components of the two alternate distribution subclasses are now examined:

2.1.1. n-x(+pos-x<<pos-pr>) +item[n-st()] +g-no[g-no-suf]). This formula represents a possible expansion of included basic tagmeme item[noun-stem()] (see 2.2). Manifestations of the basic tagmeme item[noun-stem()], unexpanded or expanded by pos-x<<pos-pr>(see 2.3), and/or by g-no[g-no-suf] (see 2.4), form the morpheme-hypermorpheme-class noun-expression. As an illustration note táhí iasoka-tá asáma 'where is the tapir running?', which is:

  +t-mn[t-mn-pt] +s<n-x(+item[n-st()] +g-no[g-no-suf])> +int[int-pt] +p[m-v()]
  táhí 'where?'  iasó 'tapir'  -ka 'nonpers. sg.'  -tá 'interr.' asáma 'run'.

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2.1.2. s-pr. Alternate distribution-subclass subject-pronoun (see 3.1), may not be expanded. As an illustration note noká catåka 'it rains', which is:

\[ +s<s-pr> +P[ind-V(+act[\nu-st()]) +ind-asp[ind-asp-suf])] \]

noka 'it'  
cata 'rain'  
-ka 'continuative'.

\[ 2.2. \text{item}[n-st \{ \begin{array}{c} n \\ Cd-N \end{array} \} ] \]

\[ \{ \begin{array}{c} n \\ Cd-N \\ Vl-N \\ Pc-N \end{array} \} \]

Included basic item

slot is filled by morpheme-hypermorpheme-class noun-stem, a composite class of four division subclasses, as indicated within braces in the formula.

The item tagmeme occurs under the following conditions: (a) as the basic tagmeme whose manifestations, unexpanded or expanded by pos-x<pos-n-x()/pos-pr (see 2.3), and/or by g-no[g-no-suf] (see 2.4), form the morpheme-hypermorpheme-class noun-expression, alternate distribution-subclass filler of subject slot (see 2.1, 2.27, and 2.38); of object-1 slot (see 2.18); and of predicate-nominative slot (see 2.36); and as filler of item-n slot (see 2.19.2), and of apposition slot (see 2.39). (b) Occurs as the basic tagmeme whose manifestations, unexpanded or expanded by pos[pos-pr] (see 2.5), and/or by g-no[g-no-suf] (see 2.4), form the morpheme-hypermorpheme-class possessive-noun-expression, alternate distribution-subclass filler of posses-

\[ \text{\textsuperscript{11}} \text{Braces following the bracketed filler, thus: } \text{filler\{ } \text{}, enclose a composite morpheme-hypermorpheme class of subclass fillers divided on the basis of internal composition, but united as one filler on the basis of the structural unity of its members and their function as members of a unit distributional class.} \]
sive-expression slot (see 2.3). (c) Occurs as the basic tag-meme whose manifestations, unexpanded or expanded by pos-x<pos-n-x()> (see 2.3), and/or by g-no[g-no-suf] (see 2.4), and/or by e[e-pt] (see 2.20), form the morpheme-hypermorpheme-class emphatic-noun-expression, alternate distribution-subclass filler of emphatic-object-1 slot (see 2.25,1). (d) Occurs as included manifestation of distribution-subclass filler Ni-Aj{+item[n-st()]} +ajl-n[ajl-n-suf]} (see 2.36,3).

Tagmemic components of the four alternate morpheme-hypermorpheme-class fillers are now examined.

2.2.1. item[n].\footnote{If attention is being focussed on only one of the alternate division-subclass fillers of a slot, an abbreviated formula such as slot{filler} is used, as here.} Alternate division-subclass noun (see 3.2) may not be expanded. As an illustration note ipákawka mašáka 'The turtledove is calling', which is:

\begin{verbatim}
+s<+item(n) +g-no[g-no-suf]> +P[ind-V(+act[1v-st()])
ipákaw 'turtledove' -ka 'nonpersonal sg.' maka 'call'
+ind-asp[[ind-asp-suf]])
-ka 'continuative'.
\end{verbatim}

2.2.2. item{Cd-N} or item{Cd-N{+item-a[n-a]
+item-b[n-b]}}. Alternate division-subclass Compound-Noun is composed exclusively but obligatorily of manifestations of the two tagmemes item-a slot filled by morpheme class noun-a (see 3.3), and item-b slot filled by morpheme-class noun-b

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(see 3.4). As an illustration note sawanláwka 'cotton thread', which is:

\[ \text{item\{Cd-N\{+item-a[n-a] +item-b[n-b]\}\}} \]
\[ \text{ + sawanaw 'cotton' + iawka 'cord, thread'.} \]

2.2.3. \text{item\{VI-N\} or item\{VI-N\{+o-1<\text{o-pr}\} \}
\[ +o-2<\text{Rel-N}\] +act-n[v-st()] +n1-v[nl-v-suf])}. Alternate division-subclass Verbal-Noun is composed obligatorily of manifestations of the two tagmemes: action slot filled by morpheme-hypermorpheme-class verb-stem (see 2.7); and nominal-v slot filled by morpheme-class nominal-v-suffix (see 3.5). The hypermorpheme-class Verbal-Noun may be optionally expanded by tagmeme o-1<\text{o-pr}\} (see 2.18),
and/or by tagmeme o-2<\text{Rel-N}\} (see 2.21). As an illustration note taykwá ko panfá ča-ta ikwáno 'I don't want to go with you', which is:

\[ +\text{con[con-pr]} +s<s-pr> +\text{P[Ind-V(+act(v) +Ind-aspl[ind-asp-suff])]} \]
\[ \text{ taykwa 'no' ko 'I' panf 'want' -ča 'continuative'} \]
\[ +o-1<n-x(+item\{VI-N\{(+o-2<<\text{Rel-N}\{((+pos-x<<\text{pos-pr}>> +\text{rel[rel-nl]])\})>>}
\[ \text{ča- 'thy' + ta 'with'} \]
\[ +\text{act-n\{v\}} +n1-v[nl-v-suf])})} \>
\[ \text{ tay 'go' -no 'infinitive nominalizer'.} \]

2.2.4. \text{item\{Pc-N\} or item\{Pc-N\{+act-pc[v]}
\[ +\text{pc[pc-suf] +n1-pc[nl-pc-suf]}\}}}. Alternate division-sub-
class Process-Noun is composed exclusively but obliga-
torily of manifestations of three tagmemes: action-pc slot
filled by morpheme-class verb (see 3.6); process slot filled
by morpheme-class process-suffix (see 3.7); and nominal-pc
slot filled by morpheme-class nominal-pc-suffix (see 3.8).
As an illustration note acacaka 'something to eat', which is:

\[
\text{item}\{\text{Pc-N} (+\text{active-st}()) +\text{pc} (+\text{pc-suf}) +\text{nl-pc} (+\text{nl-pc-suf})}\}
\]
\[
\text{aca} \ '\text{eat}' \ -\text{oa} \ '\text{process}' \ -\text{ka} \ '\text{something}'.
\]

2.3. pos-x \(\langle \text{pos-n-x()} \rangle\). Included optional possessor-
expression slot is filled by a composite morpheme-hyper-
morpheme class including two alternate distribution-sub-
classes: morpheme-hypermorpheme-class possessive-noun-
expression and morpheme-class possessive-pronoun. The
pos-x tagmeme occurs under the following conditions: (a)
as an optional expansion of the tagmeme item[n-st()] whose
manifestations comprise the morpheme-hypermorpheme-class
n-x (see 2.1.1); (b) as an included manifestation of distribu-
tion-subclass-filler Rel-N(+pos-x \(\langle \text{pos-n-x()} \rangle\) +rel[rel-n])
(see 2.21.1); (c) or as an included manifestation of distribu-
tion-subclass-filler E-Rel-N(+pos-x \(\langle \text{pos-n-x()} \rangle\)
+rel[rel-n] +e[ee-rtl]) (see 2.26.1).

Tagmemic components of the two alternate distribution
subclasses are now examined.

2.3.1. pos-n-x(+pos[pos-pr] +item[n-st()]
+g-no[g-no-suf]). This formula represents a possible expan-
sion of basic included tagmeme item[n-st()] (see 2.2). Mani-
festations of the basic tagmeme item[n-st()], unexpanded or
expanded by pos[pos-pr] (see 2.5), and/or by g-no[g-no-suf] (see 2.4) form the morpheme-hypermorpheme-class possessive-noun-expression. As an illustration note ko-níáno
faka ta 'it is my son's possession', which is:

+p-nm<n-x(+pos-x<pos-n-x{(+pos[pos-pr] +item[n-st()] +g-no[g-no-suf]))>
  ko- 'my'
  níá 'child'
  -no 'masc. sg.'

+item(n)> +sv-ind[sv-ind-pt] +s[sv-pr]

faka 'possession' ta 'be'
≠ 'it'.

2.3.2. pos-pr. Alternate distribution-subclass possessive-pronoun (see 3.9), may not be expanded. As an illustration note kína níata 'your town', which is:

 n-x(+pos-x<pos-pr> +item{n})
  kína 'your'
  níata 'town'.

2.4. g-no[g-no-suf]. Included optional gender-number slot filled by morpheme-class gender-number-suffix (see 3.10) occurs under the following conditions: (a) as one of the expansions of tagmeme item[n-st()] when its manifestations comprise the morpheme-hypermorpheme-class n-x (see 2.1.1); (b) or as one of the expansions of tagmeme item[n-st()] when its manifestations comprise the morpheme-hypermorpheme-class pos-n-x (see 2.3). As an illustration of (a) note níáno 'son', which is:

 n-x(+item[n-st()]+g-no[g-no-suf])
  níá- 'child'
  -no 'masc. sg.'
2.5. pos[pr-pos]. Included optional possessor slot filled by morpheme-class possessive-pronoun (see 3.9) occurs as an expansion of tagmemes item[n-st()] when its manifestations comprise the morpheme-hypermorpheme-class pos-n-x (see 2.3.1). As an illustration note ko-áno ariawko 'my mother's dog', which is:

\[ n-x(+pos-x<pos-n-x(+pos[pr] +item[n-st()])> +item[n-st()]) \]

ko- 'my' ano 'mother' ariawko 'dog'.

2.6. P[Ind-V] or P[Ind-V(+act[[v-st()]] +cl[[cl-suf]] +ind-asv[[ind-asv-suf]])]. Obligatory, basic Predicate hypertagmemic slot is filled by hypermorpheme-class Indicative-Verb, which is composed obligatorily of manifestations of the two included tagmemes: action slot filled by morpheme-hypermorpheme-class verb-stem (see 2.7); and indicative-aspect slot filled by morpheme-class indicative-aspect-suffix (see 2.8). The hypertagmeme P[Ind-V] occurs unexpanded or expanded by cl[cl-suf] (see 2.9) in indicative-action syntagmeme (see 1.1). As an illustration note iihá áka ariawko càyra kaního 'yes, now the dog has bit the rabbit, it's all done', which is:

\[ +con[con-pl] +sc[sc-pl] +s<n-x()> +P[Ind-V(+act[[v-st()]]]) \]

iihá 'yes' áka 'done' ariawko 'dog' cày 'bite'

\[ +ind-asv[[ind-asv-suf()]] +o-1<n-x()> \]

-RA 'completed action' kaního 'rabbit'.

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2.7. act[v-st \{ V \}]. Included basic action slot is
CD-V \{ NI-V
AJ-V
VI-V \}.

filled by morpheme-hypermorpheme-class verb-stem, a com-
posite class of five division subclasses as indicated within
braces in the formula. The action tagmeme occurs under the
following conditions: (a) as an included manifestation of the
hypertagmeme \( P[Ind-V(+act[[v-st()]] +cl[[cl-suf]]
+ind-asp[[ind-asp-suf]])] \) (see 2.6); (b) as an included mani-
festation of the division-subclass filler \( Pc-Av(+s^{n-x()}\)
+act[v-st()] +pc[pc-suf] +avl-pc[avl-pc-suf]) \) (see 2.19.3); (c) as an included manifestation of division-subclass filler
\( VI-N(+o-1^{n-x()}\) +o-2<Rel-N> +act-n[v-st()]
+nl-v[nl-v-suf]) \) (see 2.2.3); (d) as an included manifestation
of the distribution-subclass filler \( Pc-Aj(+act[v-st()]
+pc[pc-suf] +ajl-pc[ajl-pc-suf]) \) (see 2.36.4); (e) or as the
basic included tagmeme whose manifestations form the mor-
pheme-hypermorpheme-class int-v, filler of p slot in any
interrogative syntagmeme (see 1.2). Thus:
\( p[int-v(+act[[v-st()]] +cl[[cl-suf]] +int-asp[[int-asp-suf]]
+pnct[[pnct-pt]])] \) (see 2.29); (f) or as the basic included
tagmeme whose manifestations form the morpheme-hypermor-
hemorpheme-class imp-v, filler of p slot in any imperative
syntagmeme (see 1.3). Thus:
\( p[imp-v(+act[[v-st()]]
+cl[[cl-suf]] +imp-asp[[imp-asp-suf]] +pnct[[pnct-pt]])] \)
(see 2.34).

Tagmemic components of the five alternate morpheme-
hypermorpheme-class fillers are now examined.
2.7.1. act{v}. Alternate division–subclass verb (see 3.6) may not be expanded. As an illustration note ḗa ikó–? 'sit down!', which is:

\[ +\text{imp-s-prl} +\text{imp-v}(+\text{act}(v) +\text{punct}(\text{punct-ptr})) \]
\[ ḗa 'thou' \quad \text{iko 'sit'} \quad ? 'punctiliar'. \]

2.7.2. act{Cd-V} or act{Cd-V(+item-c[n-c] +act-c[v-c])}. Alternate division–subclass Compound–Verb is composed exclusively but obligatorily of manifestations of the two included tagmemes; item–c slot filled by morpheme–class noun–c (see 3.11); and action–c slot filled by morpheme–class verb–c (see 3.12). As an illustration note oihanoki 'consider, reflect', which is:

\[ \text{act} \{\text{Cd-V}(+\text{item-c[n-c] +act-c[v-c]}) \}
\]
\[ \text{oihanoki 'heart' } \quad \text{noki 'look'.} \]

2.7.3. act{Nl-V} or act{Nl-V(+item-v[n-v] +vl-n[vl-n-suf])}. Alternate division–subclass Nominal–Verb is composed exclusively but obligatorily of manifestations of the two included tagmemes; item–v slot filled by morpheme–class noun–v (see 3.13); and verbal–n slot filled by morpheme–class verbal–n–suffix (see 3.14). As an illustration note tawawho 'twist cord', which is:

\[ \text{act} \{\text{Nl-V}(+\text{item-v[n-v] +vl-n[vl-n-suf]}) \}
\]
\[ \text{tawaw 'cord'} \quad \text{ho 'verbalizer'.} \]

2.7.4. act{Aj1-V} or act{Aj1-V(+q-v[aj-v] +vl-j[vl-j–suf])}. Alternate division–subclass Adjectival–
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Verb is composed exclusively but obligatorily of manifestations of the two included tagmemes: qualifier-\textit{v} slot filled by morpheme-class adjective-\textit{v} (see 3.15); and verbal-\textit{j} slot filled by verbal-\textit{j}-suffix (see 3.16). As an illustration note ošīna 'become white', which is:

\[\text{act(Aj1-V+(e-v[a]j-vl +vl-j[vl-j-sulf])}\]

\[\text{oši 'white' -na 'verbalizer.'}\]

2.7.5. \text{act(Vl-V)} or \text{act(Vl-V+(act-v[v-v] +vl-v[vl-v-sulf]))}. Alternate division-subclass Verbal-Verb is composed exclusively but obligatorily of manifestations of the two included tagmemes: action-\textit{v} slot filled by morpheme-class verb-\textit{v} (see 3.17); and verbal-\textit{v} slot filled by morpheme-class verbal-\textit{v}-suffix (see 3.18). As an illustration note marawhaw 'tie (a person)', which is:

\[\text{act(Vl-V+(act-v[v-v] +vl-v[vl-v-sulf])}\]

\[\text{maraw 'tie (things)' -haw 'verbal.'}\]

2.8. ind-asp[ind-asp-suf]. Obligatory indicative-aspect slot filled by morpheme-class indicative-aspect-suffix (see 3.19) occurs as an included manifestation of the hypertagmeme \text{P[Ind-V+(act[v-st()] +cl[[cl-sulf]] +ind-asp[[ind-asp-suf]])]} (see 2.6). As an illustration note naw-tá-ha kana anša 'we are coming with him', which is:

\[\text{P[Ind-V+(act[v] +ind-asp[[ind-asp-suf]])}\]

\[\text{ant 'come' -ša 'continuative.'}\]
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2.9. cl[cl-suf]. Included optional causal slot filled by morpheme-class causal-suffix (see 3.20) occurs under the following conditions: (a) as an optional expansion of the hypertagmeme P[Ind-V(+act[[v-st()]] +cl[[cl-suf]])
+ind-asp[[ind-asp-suf]])] (see 2.6); (b) as an optional expansion of the tagmeme act[v-st()] when its manifestations comprise the morpheme-hypermorpheme-class int-v (see 2.29); (c) or as an optional expansion of the tagmeme act[v-st()] when its manifestations comprise the morpheme-hypermorpheme-class imp-v (see 2.34). As an illustration of (c) note kíná náw tawhí tâ 'let him hear!', which is:

+s[imp-s-pr] 0-2-o-pr> +p[imp-v(+act(v) +cl[[cl-suf]])]
kína 'ye', náw 'him', tawhí 'hear', -tâ 'causal'.

2.10. con[con-pt]. Optional connector slot filled by morpheme-class connector-particle (see 3.21) occurs unexpanded in any indicative syntagmeme (see 1.1, 4). As an illustration note iihá itáwra n-átiča 'yes, he speaks truly', which is:

+con[con-pt] +E-Md[E-Aj-X(+md[[a]x]] +cl[[a-pt]])] +s<pr>
iiha 'yes', itáwra 'truly', n- 'he'

+iP[Ind-V(+act(v) +ind-asp[[ind-asp-suf]])]
ati 'speak', -ča 'continuative'.

2.11. md[a]-x() or md[a]-x(+q[[a]]) +no[no-suf]
+c(f[[cf-pt]])]. This formula represents a possible expansion of included basic tagmeme qualifier[adjective] (see 3.22).
Manifestations of the basic tagmeme q[aj], unexpanded or expanded by no[no-suf] (see 2.12), and/or by cf[cf-pt] (see 2.13) form the morpheme-hypermorpheme-class adjective-expression. The tagmeme md[aj-x()] occurs under the following conditions: (a) as included manifestation of the hypertagmeme E-Md[E-Aj-X(+/md[aj-x]) +e[e-pt]]) (see 2.24); (b) or as optional modifier tagmeme in any syntagmeme (see 1.1–5). As an illustration of (b) note rōtōka marāyha ikiča 'it is a slippery fish', which is:

\[
\begin{align*}
+\text{nd}[\text{aj-x}(+q[aj]) +\text{no}[\text{no-suf}])] +s<n-x()> +\text{p}[\text{Ind-V}(+\text{act}v)] \\
\text{roto 'slippery'} -\text{ka 'sg.'} & \text{ marāyha 'fish' iki 'is'} \\
+\text{ind-asp}[[\text{ind-asp-suf}])] \\
-\text{ča 'continutive'}. 
\end{align*}
\]

2.12. no[no-suf]. Included optional number slot filled by morpheme-class number-suffix (see 3.23) occurs under the following conditions: (a) as one of the expansions of tagmeme q[aj] when its manifestations comprise the morpheme-hypermorpheme-class aj-x (see 2.11); (b) or as the only expansion of tagmeme q[aj] when its manifestations comprise the morpheme-hypermorpheme-class aj-w (see 2.36.2). As an illustration of (a) note cokākā 'shallow', which is:

\[
\begin{align*}
\text{aj-x}(+q[aj] +\text{no}[\text{no-suf}]) \\
cokā 'shallow' -\text{ka 'sg.'} 
\end{align*}
\]

2.13. cf[cf-pt]. Included optional comparative slot filled by morpheme-class comparative-particle (see 3.24) occurs as an expansion of the tagmeme q[aj] when its manifestations comprise the morpheme-hypermorpheme-class...
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aj-x (see 2.11). As an illustration note natoká-itoka 'redder', which is:

\[
\text{m}d|\text{aj-}x,+q|a]|j|+\text{nol}([\text{no-suf}]) +\text{ef}([\text{ef-plt}])
\]

nato 'red' -ka 'sg.' -itoka 'more'.

2.14. sc[sc-pt]. Optional source slot filled by morpheme-class source-particle (see 3.25) occurs unexpanded in indicative-action syntagmeme (see 1.1). As an illustration note ati-ha-na n-ikifga 'they say he is here', which is:

\[
+\text{e-}l-[\text{e-avp}]-t([\text{avp}]) +\text{ef}([\text{ef-plt}]) +\text{sc}([\text{sc-plt}]) +s<s-pr>
\]

ati 'here' -ha 'emph.' -na 'quote' n- 'he'

+\text{P}([\text{Ind-V}]+\text{act}(v)+\text{ind-asv}([\text{ind-asv-suf}])]

iki 'be' -fa 'continuative'.

2.15. f[f-pt]. Optional future slot filled by morpheme-class future-particle (see 3.26) occurs unexpanded in indicative and imperative-action syntagmeme (see 1.1, 3). As an illustration note ko na animáha 'I shall come', which is:

\[
+s<s-pr> +f[f-pt] +p(m-vt)]
\]

ko 'I' na 'shall' animáha 'come'.

2.16. mn-1[mn-pt-1]. Optional manner-1 slot filled by morpheme-class manner-particle-1 (see 3.27) occurs unexpanded in any indicative-action, imperative-action, and indicative-stative syntagmeme (see 1.1, 3, 4). As an illustration note lâ maycaka ta 'he is very stingy', which is:

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2.17. mn-2[mn-pt-2]. Optional manner-2 slot filled by morpheme-class manner-particle-2 (see 3.28) occurs expanded in any action syntagmeme (see 1.1-3) and in indicative-stative syntagmeme (see 1.4). As an illustration note nanaká-ka ikwá iá paráyta 'the blood goes very much', which is:

+s<n-x()> +sc[sc-pt] +p[m-v()] +mn-1[mn-pt-1] +mn-2[mn-pt-2]
nanaka 'blood' -ka 'accom- ikwá 'go' iá 'very' paráyta 'much',
plished fact'

2.18. o-1〈n-x()〉. Optional object-1 slot is filled by a composite morpheme-hypermorpheme class including two alternate distribution-subclasses: morpheme-hypermorpheme-class noun-expression and morpheme-class object-pronoun. The object-1 tagmeme occurs under the following conditions: (a) as optional expansion of division-subclass filler VI-N〈+o-1〈n-x()〉 +o-2〈Rel-N〉 +act-n[v-st()]〉
+nl-v[nl-v-suf()]) (see 2.2.3); (b) or as optional object-1 tagmeme in any action syntagmeme (see 1.1-3). As an illustration note iá komá noka anawkataká naw 'it causes him to hurt very much', which is:

+s<mn-1[mn-pt-1] +s<mn-2[mn-pt-2] +s<s-pr> +P[ind-V+act{v}]
ia 'very' komá 'much' noka 'it' anawká 'hurt'

+s[<el-suf()] +ind-asp[(ind-asp-suf())] +o-1<o-pr>
tá 'causal' -ka 'continutive' naw 'him'.

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Tagmemic components of the two alternate distribution subclasses are now examined.

2.18.1. n-x(). For description of tagmemic components see 2.1.1. As an illustration note kö ahaatatáka ko-níáno 'I am throwing away my son', which is:

+<s-pr> +p[ind-v(+act{vi-v} +ind-asp[ind-asp-suf1])] +0-1<n-x(+pos-x<<pos-pr>>
ko 'I'
ahaatatá 'throw'
-ka 'continuative'
ko- 'my'
+item(n) +g-no[g-no-suf1]>
nta- 'child'
-no 'masc. ag.'

2.18.2. o-pr. Alternate distribution-subclass object-pronoun (see 3.29) may not be expanded. As an illustration note asá-ha kiná noka noki 'just look at it!', which is:

+E-md[E-aj-x(+md[aj()]) +e[[a-pr]]] +a[imp-s-pr] +0-1<o-pr> +pl[imp-v()]
asá 'only'
ha 'emph.'
kina 'ye'
noka 'it'
lokí 'look'.

2.19. l-[av()] or l-[av {ni-av} ] Pc-[av] . Optional

location-time slot is filled by morpheme-hypermorpheme-class adverb, a composite class of three division subclasses, as indicated within braces in the formula. The location-time tagmeme occurs under the following conditions: (a) occurs unexpanded as optional location-time tagmeme in any action syntagmeme (see 1.1–3). As an illustration note ča nóka ina patáhína 'put it on the floor', which is:

+a[imp-s-pr] +0-1<o-pr> +pl[imp-v()] +l-[av()]
ča 'thou'
noka 'it'
inga 'put'
patahína 'on the floor'.
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(b) Occurs unexpanded or expanded by e[e-pt] (see 2.20) as the basic tagmeme whose manifestations form the morpheme-hypermorpheme-class emphatic-adverb, filler of optional emphatic-location-time slot in any action syntagmeme in which 1-t slot is emphasized (see 1.1.6, 1.2.3, and 1.3.3). Thus: e-[l-t[e-av(+1-t[[av()]] +e[e-pt]])]. As an illustration note oámira-ha kaná ìkwa 'we are going further downriver', which is:

\[ +e-[l-t[e-av(-1-t[av-w((+1-t-[av-r]\ +dir[dir-suf]))] +e[e-pt])]] \]

\[ oámí 'downriver' -ra 'further' -ha 'emph.' \]

\[ +s<š-pr> +p[m-v()] \]

kana 'we, excl.' ìkwa 'go'.

Tagmemic components of the alternate morpheme-hypermorpheme-class fillers are now examined.

2.19.1. 1-t{av-w()} or 1-t{av-w(+1-t-t[av-r]
+dir[dir-suf])}. This formula represents a potential expansion of included basic tagmeme location-time-r[adverb-root]
(see 3.30) whose manifestations, unexpanded or expanded by dir[dir-suf] (see 3.31) form the morpheme-hypermorpheme-class adverb, division-subclass filler of location-time slot. As an illustration note atíra 'further over there', which is:

\[ 1-t{av-w(+1-t-[av-r[av-r] +dir[dir-suf])}] \]

atí 'there' -ra 'further',

2.19.2. 1-t{NI-Av} or 1-t{NI-Av(+item-n[n-x()]
+avl-n[avl-n-suf])}. Alternate division-subclass Nominal-
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Adverb is composed exclusively but obligatorily of manifestations of the two included tagmemes: item-n slot filled by morpheme-hypermorpheme-class noun-expression (see 2.1.1); and adverbial-n slot filled by morpheme-class adverbial-n-suffix (see 3.32). As an illustration note kina ni'tahina 'in your town', which is:

1-t{NI-Av(+item-n[n-x{(+pos-k<pos-pr> +item({n})})]} +avl-n[avl-n-suf]}
kina 'your'
i'ta 'town'
i-hina 'in, at'.

2.19.3. 1-t{Pc-Av} or 1-t{Pc-Av(+s<n-x()>}
+act[v-st()] +pc[pc-suf] +avl-pc[avl-pc-suf]}. Alternate division-subclass Process-Adverb is composed exclusively but obligatorily of manifestations of the four included tagmemes: subject slot filled by the composite morpheme-hypermorpheme-class which consists of the distribution-subclasses noun-expression and subject-pronoun (see 2.1), action slot filled by morpheme-hypermorpheme-class verb-stem (see 2.7), process slot filled by morpheme-class process-suffix (see 3.7), and adverbial-pc slot filled by morpheme-class adverbial-pc-suffix (see 3.33). As an illustration note ianáwka ikičakari 'when there is sun', which is:

1-t{Pc-Av(+s<n-x()> +act{v}) +pc[pc-suf] +avl-pc[avl-pc-suf]}
ianawka 'sun'
iki 'be'
ča 'process'
kari 'upon, when'.

2.20. e[e-pt]. Included emphasis slot filled by morpheme-class emphasis-particle (see 3.34) occurs unexpanded under the following conditions: (a) as an optional expansion of tagmeme 1-t{av()}, when its manifestations comprise the morpheme-hypermorpheme-class e-av (see 2.19);
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(b) as an obligatory included manifestation of division-subclass-filler E-Aj-X(+md[aj-x()] +e[e-pt]) (see 2.24); (c) as an optional expansion of distribution-subclass-filler e-n-x(+pos-x.lowerpos-n-x()/pos-pr, +item[n-st()] +g-no[g-no-suf] +e[e-pt]) (see 2.25.1); (d) as an obligatory included manifestation of distribution-subclass-filler E-O-Pr(+o<o-pr> +e[e-pt]) (see 2.25.2, 2.26.2); (e) as an optional expansion of hypermorpheme-class E-Rel-N(+pos-x.lowerpos-n-x()/pos-pr, +rel[rel-n] +e[e-pt]) (see 2.26.1); (f) as an obligatory included manifestation of hyptagmeme E-S[E-S-X(+s<pos-n-x()/pos-pr> +e[[e-pt]])] (see 2.27); (g) and as obligatory included manifestations of hyptagmeme E-Sv-Ind[E-Sv-Ind-Pt(+sv-ind[[sv-ind-pt]] +e[[e-pt]])] (see 2.40). As an illustration of (a) note noká maháčakariha n-akwáká 'she is going when it is cooked', which is:

\[
\begin{align*}
\text{+e-1-t(e-av(+1-t(Pc-Av((+s<s-pr> +act(v) +pc[[po-suf]] +avl-pc([avl-po-suf])))
\text{noka 'it' mahá 'cook' -ca 'process' -kari 'when'}
\text{+e[[e-pt]]) +s<s-pr> +p[m-v()]
\text{-ha 'emph,' n- 'she' akwaka 'goes'.}
\end{align*}
\]

2.21. o-2<Rel-N> o-pr. Optional object-2 slot is filled by a composite morpheme-hypermorpheme class including two alternate distribution-subclasses: hypermorpheme-class Relational-Noun, and morpheme-class object-pronoun. The object-2 tagmeme occurs under the following conditions:
(a) as optional expansion of division-subclass-filler

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VI-N(+o-1<o-pr> +o-2<Rel-N> +act-n[v-st()] +n-l-v[n-l-v-suf]) (see 2.2.3); (b) or as optional object-2 tagmeme in any action syntagmeme (see 1.1-3). As an illustration of (b) note ča ko-iákira nokti 'look my direction!', which is:

+s[imp-s-pr] +o-2<Rel-N(+pos-x<<pos-pr>> +rel[rel-n])> +p[imp-v(+act(v)
ča 'thou' ko- 'my' iakira 'direction' nokti 'look'
+punct[?punct-plt]])
?- 'punctiliar'.

Tagmemic components of the two alternate distribution-subclasses are now examined.

2.21.1. Rel-N(+pos-x<pos-pr> +rel[rel-n]).
Alternate distribution-subclass Relational-Noun is composed exclusively but obligatorily of the two included tagmeme's possessor-expression slot filled by the composite morpheme-hypermorpheme class which consists of distribution-subclasses possessive-noun-expression and possessive-pronoun (see 2.3), and relational slot filled by morpheme-class relational-noun (see 3.35). As an illustration note konokī ča ikō ko-arata 'sit there like me!', which is:

+e-l-t[e-sav()] +s[imp-s-pr] +p[imp-v()] +o-2<Rel-N(+pos-x<<pos-pr>)
konokī 'there' ča 'thou' ikō 'sit' ko- 'my'
+rel[rel-n])>
arata 'like(ness)'.

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2.21.2. o-pr. Alternate distribution—subclass object-pronoun (see 3.29) may not be expanded. As an illustration note ča nāw maala’ noka ‘feed it to him!’, which is:

\[
+s[\text{imp-s-pr}] + o-2<o-pr> + p[\text{imp-v()}] + o-1<o-pr>
\]
\[
\text{če ‘thou’ nāw ‘him’ maala ‘feed’ noka ‘it’}
\]

2.22. e-mn-1[mn-pt-1]. Optional emphatic-manner-1 slot filled by morpheme-class manner-particle-1 (see 3.27) occurs unexpanded in indicative-action syntagmeme in which manner-1 slot is emphasized (see 1.1.3). As an illustration note iá nāakakāma amāriha ikīcā ‘it is a very high palm tree’, which is:

\[
+e-mn-1[mn-pt-1] + m[d][a-x()] + s<n-x()> + p[\text{ind-v(+act(v)}}
\]
\[
ia ‘very’ nāakakāma ‘high’ amāriha ‘palm’ ikīcā ‘it’
\]
\[
+ i n d - a s p([i n d - a s p - s u f l)])
\]
\[
\text{-če ‘continuative’}
\]

2.23. e-mn-2[mn-pt-2]. Optional emphatic-manner-2 slot filled by morpheme-class manner-particle-2 (see 3.28) occurs unexpanded in indicative-action syntagmeme in which manner-2 slot is emphasized (see 1.1.3). As an illustration note iá tamā asā-ha n-ātfīcā ‘he is only speaking in jest, or lying’, which is:

\[
+e-mn-1[mn-pt-1] + e-mn-2[mn-pt-2] + e-Md(E-A)-X(+md[\text{[a-x]}]) + e(e-pt())]
\]
\[
ia ‘very’ tamā ‘only’ asa ‘in jest’ ha ‘emph.’
\]
\[
+s<\text{pr}> + p[\text{ind-v(+act(v)}} + i n d - a s p([i n d - a s p - s u f l)])
\]
\[
n- ‘he’ ati ‘speak’ -če ‘continuative’
\]

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2.24. E-Md[E-Aj-X] or E-Md[E-Aj-X](+md[[aj-x()]]) +e[[e-pt]])]. Optional Emphatic-Modifier hypertagmemic slot is filled by hypermorpheme-class Emphatic-Adjective-Expression, composed obligatorily of manifestations of the two included tagmemes: modifier slot filled by morpheme-class adjective-expression (see 2.11), and emphasis slot filled by morpheme-class emphasis-particle (see 2.20). E-Md[E-Aj-X] occurs unexpanded in indicative and imperative-action syntagmemes in which modifier slot is emphasized (see 1.1.4 and 1.3.3). As an illustration note titha itúwra-ha n-átiča 'yes, he speaks truly', which is:

+con[con-pt] +E-Md[E-Aj-X](+md[[aj-x()]]) +e[[e-pt]])] +s<s-pr>

itíha 'yes'

itéwra 'truly' -ha 'emph.' n- 'he'

+P[Ind-V(+act[v]) +ind-asl[lind-asl-suf]]

ati 'speak' -ča 'continuative'.

2.25. e-o-1(e-n-x()) E-O-Pr). Optional emphatic-object-1 slot is filled by a composite morpheme-hypermorpheme-class including two alternate distribution-subclasses: morpheme-hypermorpheme-class emphatic-noun-expression, and hypermorpheme-class Emphatic-Object-Pronoun. The emphatic-object-1 tagmeme occurs in any action syntagmeme in which object-1 slot is emphasized (see 1.1.5, 1.2.3, and 1.3.3). As an illustration note morfíča-ha ča ko-íra takíkwa 'go carry water for me', which is:

+e-o-1(e-n-x(+item[n-st()]) +e[[e-pt]])] +s[imp-e-pr] +o-<Rel-N(+pos-x<<pos-pr)> morfíča 'water' -ha 'emph.' ča 'thou' ko- 'my'

+rel[rel-n]> +p[m-v()]

íra 'for' takíkwa 'go carry'.

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Tagmemic components of the two alternate distribution subclasses are now examined.

2.25.1. e-n-x(+pos-x⟨pos-n-x()⟩+item[n-st()])
  +g-no[g-no-surf] +e[e-plt]). This formula represents a possible expansion of included basic tagmeme item[n-st()] (see 2.2). Manifestations of the basic tagmeme item[n-st()], unexpanded or expanded by pos-x⟨pos-n-x()⟩ (see 2.3), and/or by g-no[g-no-surf] (see 2.4), and/or by e[e-plt] (see 2.20) form the morpheme-hypermorpheme-class emphatic-noun-expression. As an illustration note ítá na mfiča 'they are making a house', which is:

  +e-o-1⟨e-n-x()⟩ +s⟨s-pr⟩ +P[Ind-V(+act(v) +ind-asp[ind-asp-surf]])
  ítá 'house'    na 'they'    mit 'make' -ča 'continivative'.

2.25.2. E-O-Pr or E-O-Pr(+o⟨o-pr⟩ +e[e-plt]). Alternate distribution-subclass Emphatic-Object-Pronoun is composed exclusively but obligatorily of manifestations of the two included tagmemes: object slot filled by morpheme-class object-pronoun (see 3.29), and emphasis slot filled by morpheme-class emphasis-particle (see 2.20). As an illustration note naw-há kána apíkoko 'we are hitting him', which is:

  +e-o-1⟨E-O-Pr(+o{o-pr} +e[e-plt])⟩ +s⟨s-pr⟩ +P[Ind-V(+act(v)
  naw 'him' -ha 'emph.' kána 'we, excl.' apiiko 'hit'
  +ind-asp[ind-asp-surf]])]
  -ko 'continivative',

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2.26. E-O-2\(<E-\text{Rel-N}\)\). Optional Emphatic-
Object-2 hypertagmemic slot is filled by a composite hyper-
morpheme class including two alternate distribution sub-
classes: hypermorpheme-class Emphatic-Relational-Noun, and hypermorpheme-class Emphatic-Object-Pronoun. The
Emphatic-Object-2 hypertagmeme occurs in any action syn-
tagmeme in which object-2 slot is emphasized (see 1.1.7, 1.2.3, and 1.3.3). As an illustration note nawi-tá-ha kana
aníča 'we are coming with him', which is:

\[+E-O-2<E-\text{Rel-N}(+\text{pos}-x<<\text{pos-pr}>> +\text{rel}[\text{rel-n} +e[\text{e-pt}]) +s[\text{s-pr}]\]

\[\text{nawi} 'his' \quad \text{ta} 'with' \quad \text{ha} 'emph.' \quad \text{kan}a 'we, excl.'\]

\[+P[\text{Ind-V}(+\text{act}(v) +\text{ind-asp}[\text{ind-asp-suf}])]\]

\[\text{aníča} 'come' \quad -\text{ža} 'continuative'.\]

Tagmemic components of the two alternate distribution subclasses are now examined.

2.26.1. E-Rel-N or

E-Rel-N\(<\text{pos-n-x}<<\text{pos-pr}>> +\text{rel}[\text{rel-n} +e[\text{e-pt}])\).

Alternate distribution-subclass Emphatic-Relational-Noun is composed obligatorily of manifestations of the two included
tagmemes: possessor-expression slot filled by the com-
posite morpheme-hypermorpheme class which consists of
the two distribution-subclasses possessive-noun-expression and possessive-pronoun (see 2.3), and relational slot filled by morpheme-class relational-noun (see 3.35). The hyper-
morpheme-class E-Rel-N may be optionally expanded by
tagmeme e[\text{e-pt}]) (see 2.20). As an illustration note
nawi-kománo tá-ha n-âkwáka 'he is going with his father',
which is:

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2.26.2. E-O-Pr or E-O-Pr(+o[c-pr] +e[e-pt]). Alternate distribution—subclass Emphatic—Object—Pronoun is composed exclusively but obligatorily of manifestations of the two included tagmemes: object slot filled by morpheme-class object-pronoun (see 3.29), and emphasis slot filled by morpheme-class emphasis—particle (see 2.20). As an illustration note kaná-ha ča noká ino-'give it to us!', which is:

+E-O-2<E-O-Pr(+o[c-pr] +e[e-pt])> +e[imp-s-pr] +o-1[o-pr]

kana 'we' -ha 'emph.' ča 'thou' noka 'it'

+p[imp-v(+act(v) +pnot([pnot-ptr]))]

ino 'give' -? 'punctiliar'.

2.27. E-S[E-S-X] or E-S[E-S-X(+s<[^n-x()]>) +e[[e-pt]])]. Obligatory basic Emphatic—Subject hypertagmemic slot is filled by hypermorpheme-class Emphatic—Subject—Expression, composed obligatorily of manifestations of the two included tagmemes: subject slot filled by the composite morpheme-hypermorpheme class which consists of distribution—subclasses noun—expression and possessive—pronoun (see 2.1.1), and emphasis slot filled by morpheme-class emphatic—particle (see 2.20). The Emphatic—Subject tagmeme occurs in indicative and interrogative—action syntagmemes in which subject slot is emphasized (see 1.1.8 and
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1.2.4. As an illustration note ča-narf-ha kawkáka 'your uncle is returning', which is:

+E-S[E-S-X+s<n-x((+pos-x<pos-pr> +item(n)))+e[[e-pt]])
     ča- 'thy'
   nari 'uncle'
   -ha 'emph.'

+P[ind-V(+act{v} +ind-asp[ind-asp-suf]])
   kawká 'return'
   -ka 'continuative'.

2.28. int[int-pt]. Obligatory basic interrogative slot filled by morpheme-class interrogative-particle (see 3.36) occurs unexpanded in interrogative-action syntagmeme (see 1.2). As an illustration note ča-tá káyšo tarákáki 'did you bathe yesterday?', which is:

+s<s-pr> +int[int-pt] +p[int-v()] +l-t{Ml-Av(+item-n[n-x()] +av[n][avl-n-suf])}
   ča 'thou'
   -tá 'interr.'
   káyšo 'bathe'
   taráká 'yesterday'
   -kí 'during'.

2.29. p[int-v()] or p[int-v(+act[[v-st()]]) +cl[[cl-suf]]
       +int-asp[[int-asp-suf]] +pnct[[pnct-pt]])]. This formula represents a possible expansion of included basic tagmeme action[verb-stem()](see 2.7). Manifestations of the basic tagmeme act[v-st()], unexpanded or expanded by cl[cl-suf] (see 2.9), and/or by int-asp[int-asp-suf](see 2.30), and/or by pnct[pnct-pt](see 2.31) form the morpheme-hypermorpheme-class verb-stem. The p[int-v()] tagmeme occurs as basic predicate tagmeme in interrogative-action syntagmeme (see 1.2). As an illustration note pa-tá otataká noka 'are we finishing it?', which is:
2.30. int-asp[int-asp-suf]. Included optional interrogative-aspect slot filled by morpheme-class interrogative-aspect-suffix (see 3.37) occurs as an expansion of included tagmeme act[v-st()] when its manifestations comprise the morpheme-hypermorpheme-class int-v (see 2.29). As an illustration note n-ánano-ta camitakâ 'is her brother re-viving?', which is:

+s<n-x(+pos-x<<pos-pr>> +item(n))> +int[pt] +p[int-v(+act(v)
  n- 'her' anano 'brother' -ta 'interr.' camita 'revive'
  +int-asp[[int-asp-suf]])
  -ka 'continuous'.

2.31. pnc[pnc-pt]. Optional punctiliar slot filled by morpheme-class punctiliar-particle (see 3.38) occurs under the following conditions: (a) as an expansion of included basic tagmeme act[v-st()] when its manifestations comprise the morpheme-hypermorpheme-class int-v (see 2.29); (b) as an expansion of included basic tagmeme act[v-st()] when its manifestations comprise the morpheme-hypermorpheme-class imp-v (see 2.34); (c) or as optional punctiliar tagmeme in interrogative-stative syntagmeme (see 1.5). As an illustration of (a) note mochinâ ča-tá itákwa-? 'did you fall in the water?', which is:

+s<e-av()> +s<pr> +int[pt] +p[int-v(+act(v) +pnc[pnc-pt]])
  mochinâ 'in water' ča 'thou' -ta 'interr.' itákwa 'fall' -? 'punctiliar'.
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2.32. 1-mn[i-mn-pt]. Optional interrogative-manner slot filled by morpheme-class interrogative-manner-particle (see 3.39) occurs unexpanded in interrogative-action syntagmeme (see 1.2), and in interrogative-stative syntagmeme (see 1.5). As an illustration note tahi ča-tá ikwá 'where are you going?', which is:

\[-1\text{-mn}[i\text{-mn-pt}] +s<s\text{-pr}> +int[\text{int-pt}] +p[m\text{-v}()]

\[\text{tahi 'where?', ča 'thou' -tá 'interr.' -ikwá 'go'}.\]

2.33. s[imp-s-pr]. Obligatory basic subject slot filled by morpheme-class imperative-subject-pronoun (see 3.40) occurs unexpanded in imperative-action syntagmeme (see 1.3). As an illustration note anáyča ča asáma 'run fast!', which is:

\[+mn-2[\text{mn-pt-2}] +s[\text{imp-s-pr}] +p[m\text{-v}()]

\[\text{anáyča 'fast', ča 'thou', asáma 'run'}.\]

2.34. p[imp-v()] or p[imp-v(+act[[v-st()]] +cl[[cl-suf]]

\[+imp-asp[[\text{imp-asp-suf}]] +punct[[\text{punct-pt}]]\]]. This formula represents a possible expansion of included basic tagmeme action[verb-stem()] (see 2.7). Manifestations of the basic tagmeme act[v-st()], unexpanded or expanded by cl[[cl-suf]] (see 2.9), and/or by imp-asp[imp-asp-suf] (see 2.35), and/or by punct[punct-pt] (see 2.31) form the morpheme-hypermorpheme-class verb-stem. The p[imp-v()] tagmeme occurs as basic predicate tagmeme in imperative-action syntagmeme (see 1.3). As an illustration note ča ko onfata-ʔ 'take me across!', which is:
2.35. imp-asp[imp-aspsuf]. Included optional imperative-aspect slot filled by morpheme-class imperative-aspect-suffix (see 3.41) occurs as an expansion of included basic tagmeme act[v-st()] (see 2.7) when its manifestations comprise the morpheme-hypermorpheme-class imperative-verb (see 2.34). As an illustration note ča atfikwá kwi 'don't talk to me!', which is:

+sl[imp-s-pr] +p[imp-v(+act{v}) +imp-aspsuf] +o2<o-pr>  
ča 'thou' ati 'talk' -fkwa 'not' kwi 'me'

2.36. p-nm<aj-w(). Obligatory, basic predicate-nominative slot is filled by a composite morpheme-hypermorpheme-class including four alternate distribution-subclasses: morpheme-hypermorpheme-class noun-expression, morpheme-hypermorpheme-class adjective-word, hypermorpheme-class Nominal-Adjective, and hypermorpheme-class Process-Adjective. The predicate-nominative tagmeme occurs in any stative syntagmeme (see 1.4, 5). As an illustration note papaká atá-? 'is it bland?', which is:

papa- 'bland' -ka 'sg.' atá 'be?' -? 'punctiliar' # 'it'.

Tagmemic components of the four alternate distribution-subclasses are now examined.

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2.36.1. n-x(). For description of tagmemic components, see 2.1.1. As an illustration note ko-ñaño faka ta 'it is my son's possession', which is:

+p-nm<n-x<pos-x<pos-n-x((+pos[pos-pr] +item{n} +g-no[g-no-suf])>)
  ko- 'my' nía 'child' -no 'masc. sg.'
+item{n})> +sv-ind[sv-ind-pt] +s<sv-pr>
 taka 'possession' ta 'be' ≠ 'it'.

2.36.2. aj-w() or aj-w(+q[aj] +no[no-suf]). This formula represents a potential expansion of included basic tagmeme qualifier[adjective] (see 3.22). Manifestations of the basic tagmeme q[aj], unexpanded or expanded by no[no-suf] (see 2.12) form the morpheme-hypermorpheme-class adjective-word. As an illustration note maycakâ ta kwi 'I am stingy', which is:

+p-nm<aj-w(+q[aj] +no[no-suf])> +sv-ind[sv-ind-pt] +s<sv-pr>
 mayca 'stingy' -ka 'sg.' ta 'be' kwi 'I'.

2.36.3. Ni-Aj or Ni-Aj(+item[n-st()]+ajl-n[ajl-n-suf]). Alternate distribution subclass Nominal-Adjective is composed exclusively but obligatorily of manifestations of the two included tagmemes: item slot filled by morpheme-hypermorpheme-class noun-stem (see 2.2), and adjectival-n slot filled by morpheme-class adjectival-n-suffix (see 3.42). As an illustration note ariáwkoraka 'having a dog', which is:

p-nm<Ni-Aj(+item{n}+ajl-n[ajl-n-suf])>
 ariawko 'dog' -raka 'having'.

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2.36.4. Pc-Aj or Pc-Aj(+act[v-st()] +pc[pc-suf] +a1l-pc[a1l-pc-suf]). Alternate distribution-subclass Process-Adjective is composed exclusively but obligatorily of manifestations of the three included tagmemes: action slot filled by morpheme-hypermorpheme-class verb-stem (see 2.7); process slot filled by morpheme-class process-suffix (see 3.7); and adjectival-pc slot filled by morpheme-hypermorpheme-class adjectival-pc-suffix (see 3.43). As an illustration note makácaitoka 'good for sleeping', which is:

\[ p-nm<pc-Aj{(+act[v]) +pc[pc-suf] +a1l-pc[a1l-pc-suf]}> \\
\textit{maká 'sleep' -ca 'process' -itoka 'qualitativa'.} \]

2.37. sv-ind[sv-ind-pt]. Obligatory basic stative-indicative slot filled by morpheme-class stative-indicative-particle (see 3.44) occurs unexpanded under the following conditions: (a) as included manifestation of the hypertagmeme E-Sv-Ind[E-Sv-Ind-Pt(+sv-ind[sv-ind-pt]) +e[le-pt]]) (see 2.40); (b) as basic stative-indicative tagmeme in indicative-stative syntagmeme (see 1.4). As an illustration note maáříča tá kwi 'I am a child', which is:

\[ +p-nm<n-x(+item[n]) +g-no(g-no-suf) +sv-ind[sv-ind-pt] +s<sv-pr> \\
\textit{maáří 'child' -ča 'pers. sg.' ta 'be' kwi 'I'.} \]

2.38. s<\textit{sv-pr}>. Obligatory basic subject slot is filled by a composite morpheme-hypermorpheme class including two alternate distribution subclasses: morpheme-hypermorpheme-class noun-expression; and morpheme-class stative-pronoun. The \textit{s<sv-pr>} tagmeme occurs in any
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stative syntagmeme (see 1.4, 5). As an illustration note papaká atá noká išô 'is its flesh tender?', which is:

+p-nm<aj-w(+q[a]) +no[no-suf]> +sv-int[sv-int-pt] +s<n-x(+pos-x<<pos-pr)> papa 'soft' -ka 'sg.' atá 'be?' noka 'its'

+i Item (n)]> išô 'flesh'.

Tagmemic components of the two alternate distribution subclasses are now examined.

2.38.1. n-x(). For description of tagmemic components see 2.1.1. As an illustration note anaká atá anakoká 'is the chili pepper hot?', which is:

+p-nm<aj-x(+q[a]) +no[no-suf]> +sv-int[sv-int-pt] +s<n-x+item(n)} anak 'hot' -ka 'sg.' atá 'be?' anakoko 'chili pepper'

+g-no[g-no-suf]> -ka 'nonpersonal sg.'

2.38.2. sv-pr. Alternate distribution subclass stative-pronoun (see 3.45) may not be expanded. As an illustration note oka itômo tâ kwi 'I am like a woman', which is:

=mn-2[mm-pt-2] +p-nm<n-x>() +sv-ind[sv-ind-pt] +s<sv-pr> oka 'like' itômo 'woman' ta 'be' kwi 'I'.

2.39. ap[n-x()]. Optional apposition slot filled by morpheme-hypermorpheme-class noun-expression (see 2.1.1) occurs as an expansion of indicative-stative syntagmeme (see 1.4). As an illustration note taykwá mašičá ta kâ?no

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māṣiĉa 'we aren't orphans', which is:

+p-nm<ṣi-w(> +E-Sv-Ind[E-Sv-Ind-Pt] [+sv-Ind[[sv-ind-pt]] +e[[e-pt]])]
pahāa 'not yet'

raįawno 'to return'.

2.40. E-Sv-Ind[E-Sv-Ind-Pt] or
E-Sv-Ind[E-Sv-Ind-Pt(+sv-Ind[[sv-ind-pt]] +e[[e-pt]])].
Obligatory basic Emphatic-Stative-Indicative hypertagmemic
slot is filled by hypermorpheme-class Emphatic-Stative-
Indicative-Particle, which is composed exclusively but
obligatorily of manifestations of the two included tagmemes:
stative-indicative slot filled by morpheme-class stative-
indicative-particle (see 2.37); and emphasis slot filled by
emphasis-particle (see 2.20). E-Sv-Ind[E-Sv-Ind-Pt]
occurs unexpanded in indicative-stative syntagmeme in which
stative-indicative slot is emphasized (see 1.4.3). As an
illustration note pahāa ta-ha raįawno 'not yet is (his)
return', which is:

+p-nm<ṣi-w(> +E-Sv-Ind[E-Sv-Ind-Pt(+sv-Ind[[sv-ind-pt]] +[[e-pt]])]
pahāa 'not yet'

+e< sa-w(> -ha 'emph.'

raįawno 'to return'.

2.41. sv-int[sv-int-pt]. Obligatory basic stative-
interrogative slot filled by morpheme-class stative-inter-
rogative-particle (see 3.46) occurs unexpanded in interroga-
tive-stative syntagmeme (see 1.5). As an illustration note
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sóopay atá no 'is he a demon?', which is:

+p-nm<n-x()> +sv-int[sv-int-pt] +s<sv-pr>
soopay 'demon' atá 'be?' no 'he'.

3. Morpheme Classes. In this section morpheme classes are listed in the order of their appearance and described with their distribution cutting across the tagmemes of 2., to which cross-reference numbers are included at each reference.

3.1. subject-pronoun. A class of subject-pronoun particles, which is one of the manifesting classes of the tagmemes subject<noun-expression()> (see 2.1).

(a) ko~k- 'I, 1st sg.' (Second allomorph occurs preceding initial o-verbs.) As illustrations note ko ìkóríča 'I was sitting', which is:

+s<s-pr> +P[ind-V(+act{v}) +ind-asp[ind-asp-suf]]]
ko 'I'  iko 'sit'  -riča 'imperfect';

and, k-oínọfọča 'I am hungry', which is:

+s<s-pr> +P[ind-V(+act{v}) +ind-asp[ind-asp-suf]]]
ki  'I'  oínọ 'hunger'  -ọča 'continuative'.

(b) ča/k- 'thou, 2nd sg.' (Second allomorph occurs in free variation with the first only preceding initial i-.) As an illustration note ča na itákwa-ha 'you will fall', which is:

+s<s-pr> +f[f-pt] +P[ind-V(+act {v}) +ind-asp[ind-asp-suf]]]
ča 'thou' na 'will' itákwa 'fall' -ha 'future'.

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(c) nā̃w-á̃n- 'he, she, 3rd sg. personal.' (Second allomorph occurs preceding initial a-, i-, and ą-.) As illustrations note nā̃w onfāka 'he is crossing over', which is:

\[ +s < s-pr > +P[\text{Ind-V(act)} +\text{ind-asp}[[\text{ind-asp-sufll}}]] \]
\[ \text{nā̃w 'he'} \quad \text{onfā 'cross'} \quad -\text{ka 'continuative'}; \]

and, n-ā̃ynōko 'he is crying', which is:

\[ +s < s-pr > +P[\text{Ind-V(act)} +\text{ind-asp}[[\text{ind-asp-sufll}}]] \]
\[ \text{n- 'he'} \quad \text{āynō 'cry'} \quad -\text{ko 'continuative'}; \]

(d) nōkā 'it, 3rd sg. nonpersonal.' As an illustration note nōkā nawičā 'it shines!', which is:

\[ +s < s-pr > +P[\text{Ind-V(act)} +\text{ind-asp}[[\text{ind-asp-sufll}}]] \]
\[ \text{nōkā 'it'} \quad \text{nawi 'shine'} \quad -\text{ča 'continuative'}; \]

(e) pā 'we, 1st pl. incl.' As an illustration note pā nā atīha 'we shall talk', which is:

\[ +s < s-pr > +P[\text{Ind-V(act)} +\text{ind-asp}[[\text{ind-asp-sufll}}]] \]
\[ \text{pā 'we'} \quad \text{nā 'shall'} \quad \text{ati 'talk'} \quad -\text{ha 'future'}; \]

(f) kānā 'we, 1st pl. excl.' As an illustration note kānā anfīčā 'we are coming', which is:

\[ +s < s-pr > +P[\text{Ind-V(act)} +\text{ind-asp}[[\text{ind-asp-sufll}}]] \]
\[ \text{kānā 'we, excl.' anf 'come'} \quad -\text{ča 'continuative'}; \]

(g) kīnā 'yē, 2nd pl.' As an illustration note kīnā-tī ikwākā 'are you going?', which is:
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+s<s-pr> +int[int-pt] +p[int-v(+act{v}) +int-asp([int-asp-suf])]

kina 'ye' -ti 'interrogative' ikwa 'go' -ka 'continuative'.

(h) na 'they, 3rd pl.' As an illustration note na pínoko 'they are shouting', which is:

+s<s-pr> +P[ind-V(+act{v}) +ind-asp([ind-asp-suf])]

na 'they' pínoko 'shout' -ko 'continuative'.

3.2. noun. A class consisting of all noun roots, which is one of the manifesting classes of included tagmeme item[noun-stem()] (see 2.2). Examples are:

áyna 'breadfruit'; atáwar 'chicken'; fsoo-aso 'meat' (second allomorph occurs following pronouns n- '3rd sg. personal', and p- '1st pl. incl.'); ita 'house'; kaasawro 'beads'; sáwko 'corn'; šíma 'demon'; táto 'land turtle'; cótoka 'lard'; čiripá- 'papaya'; wáma 'variety of leaf'; etc.

3.3. noun-a. A class which manifests the tagmeme item-a[noun-a] (see 2.2.2).

The only known example is sawánaw 'cotton', which occurs compounded with noun-b -already 'wine', to form the hypermorpheme-class Compound-Noun. The combination forms the compound noun, sawánawka 'cotton thread', the only known instance of Compound-Noun.

3.4. noun-b. A class which manifests the tagmeme item-b[noun-b] (see 2.2.2).

The only known example is iáwko-áwka 'wine' (second allomorph occurs following pronouns n- '3rd sg. personal', and p- '1st pl. incl.'), which occurs compounded with noun-a, sawánaw 'cotton', to form the compound noun, sawánawka 'cotton thread' (see 3.3).

3.5. nominal-v-suffix. A class of seven nominal-v-
suffixed, which manifests the included tagmeme nominal-v[nominal-v-suffix] (see 2.2.3). These seven nominal-v-suffixed occur obligatorily with morpheme allo-
classes verb 1-7, respectively (see 3.6), to comprise the
hypermorpheme-class Verbal-Noun, alternate manifestation
of item tagmeme (see 2.2).

(a) -ya=a 'agent nominalizer.' (Second allomorph
occurs only following verb stem šitaw= 'fish with poison'.)
As an illustration note šitáwap a 'fish-poisoners', which is:

n-x(+item{VI-N(+act-n-1{v-1}) +nl-v-1[nl-v-suf-1])} +g-no[no-suf])
šitaw 'poison fish' -a 'agent nominalizer' -pa 'personal pl.'

(b) -ika 'custom nominalizer.' As an illustration note
oračaka '(practive of) singing', which is:

n-x(+item{VI-N(+act-n-2{v-2}) +nl-v-2[nl-v-suf-2])} +g-no[no-suf])
or 'sing' -ika 'custom nominalizer' -ka 'nonpersonal sg.'

(c) -so 'purpose nominalizer.' As an illustration note
acásoka 'something to eat', which is:

n-x(+item{VI-N(+act-n-3{v-3}) +nl-v-3[nl-v-suf-3])} +g-no[no-suf])
aça 'eat' -so 'purpose nominalizer' -ka 'nonpersonal sg.'

(d) -ro 'instrument nominalizer.' As an illustration
note nokirō 'mirror', which is:

item{VI-N(+act-n-4{v-4}) +nl-v-4[nl-v-suf-4])}
nokirō 'look' -ro 'instrument nominalizer'.

(e) -yaw 'negative nominalizer.' As an illustration note
táwhiyaw 'disobedient', which is:
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item{V1-N(+act-n-5{v-5}) +nl-v-6[nl-v-suf-5])}
  tawhi 'hear'    -yaw 'negative nominalizer'.

(f) -to 'item nominalizer.' As an illustration note ácato 'food', which is:

item{V1-N(+act-n-6{/v-6}) +nl-v-6[nl-v-suf-6])}
  aca 'eat'    -to 'item nominalizer'.

(g) -no 'infinitive nominalizer.' As an illustration note awkóno 'to walk', which is:

item{V1-N(+act-n-7{/v}) +nl-v-7[nl-v-suf-7})}
  awko 'walk'    -no 'infinitive nominalizer'.

3.6. verb. A class consisting of all verb roots, which manifests the included tagmeme action-vc[verb] (see 2.2.4), and is one of the manifesting classes of tagmeme action[verb- stem()] (see 2.7), and of included tagmeme action-n[verb-stem()] (see 2.2.3). Examples are:

aha 'fire, throw'; iha 'burst'; ikini=akini ikana= -akana= 'vomit' (second allomorph occurs following pronoun n- '3rd sg. personal', third allomorph occurs preceding suffixes -ta 'causal' and -ra 'accomplished fact', and fourth allomorph occurs when both conditions are present); aaka 'get better'; kayso 'bathe'; mahaw 'cut'; maka= maka 'sleep' (second allomorph occurs preceding suffixes -ta 'causal' and -ra 'accomplished fact'); niši 'think'; onana 'whistle'; pooko 'spread'; riaw 'turn'; sani 'try'; tawa 'hate'; cata 'spill'; čimoho 'enjoy'; etc.

As one of the manifesting classes of included tagmeme act-nl-v-st(), the alternate morpheme-class verb includes a list of distributionally determined alloclasses, verb 1-7.
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These occur obligatorily with nominal-v-suffixes 1-7, respectively (see 3.5), to comprise the hypermorpheme-class Verbal-Noun, alternate manifestation of item tagmeme (see 2.2).

3.6.1. verb-1. Examples are: mii 'do'; šitaw 'poison waters to kill fish'; tawhi 'hear'; nataw 'clean'; mahi 'cook'; pani 'want'; amaki 'buy'. As an illustration of the occurrence of alloclass verb-1 note natáwyana' 'a person who cleans', which is:

\[
n-x(+\text{item}Vl-N{(+\text{act-n-1}{(v-1)}{+nI-v-1(nI-v-suf-1)})) +g-no(g-no-suf))
\]
\[
\quad \text{nataw 'clean'} \quad -ya \ 'agent nominalizer' \quad -naw \ 'personal sg.'
\]

3.6.2. verb-2. Examples are: ora 'sing'; mii 'do';
pani 'want'; kakihaw 'dry'; ina 'place'; iatawho 'dance'.
As an illustration note iatawhočaka '(act or art of)
dancing', which is:

\[
n-x(+\text{item}Vl-N{(+\text{act-n-2}{(v-2)}{+nI-v-2(nI-v-suf-2)})) +g-no(g-no-suf))
\]
\[
\quad \text{iatawho 'dance'} \quad -ioa \ 'gerundive nominalizer' \quad -ka \ 'nonpersonal sg.'
\]

3.6.3. verb-3. Examples are: tawhi 'hear'; aca
'eat'; noki 'look'; mahi 'cook'; čita 'weave'. As an illustration note čitásoka 'a thing to weave', which is:

\[
n-x(+\text{item}Vl-N{(+\text{act-n-3}{(v-3)}{+nI-v-3(nI-v-suf-3)})) +g-no(g-no-suf))
\]
\[
\quad \text{čita 'weave'} \quad -so \ 'purpose nominalizer' \quad -ka \ 'nonpersonal sg.'
\]

3.6.4. verb-4. The only known example is noki 'look';
see 3.5 (d) for illustration of its use.

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3.6.5. verb-5. Examples are: tawhi 'hear'; aca 'eat'; noki 'look'. As an illustration note nokiyáw 'not one who sees', which is:

\[
\text{item}\{V1-N(+act-n-5\{v-5\}) +nl-v-5[nl-v-suf-5]\}
\text{ noki 'see' -yaw 'negative nominalizer'.}
\]

3.6.6. verb-6. An example is aca 'eat'; see 3.5 (f) for illustration of its use.

3.6.7. verb-7. A list of all verb roots; see 3.6, above, for examples. As an illustration note panino 'to want', which is:

\[
\text{item}\{V1-N(+act-n-7\{v\}) +nl-v-7[nl-v-suf-7]\}
\text{ panino 'want' -no 'infinitive nominalizer'.}
\]

3.7. process-suffix. A class which manifests the tagmeme process[process-suffix] (see 2.2.4, 2.19.3, and 2.36.4).

-ca~ča 'process or passive idea.' (Second allomorph occurs following final -i verb stems.) As an illustration note noka mahōčakari 'its having been cooked', which is:

\[
\text{+l-t(Pc-Av(+s<s-pr> +act\{v\}) +pc[pc-suf] +avl-pc[avl-pc-suf]\})}
\text{ noka 'it' maha 'cook' -ca 'process' -kari 'upon, when' .}
\]

3.8. nominal-pc-suffix. A class which manifests the tagmeme nominal-pc[nominal-pc-suffix] (see 2.2.4).

-ka 'something, an item.' As an illustration note nokicčaka 'something to see', which is:
3.9. **possessive-pronoun.** A class of possessive-pronoun particles, which manifests the tagmeme possessor[possessive-pronoun] (see 2.5) and is one of the manifesting classes of the tagmeme possessive-expression<possessive-noun-expression()>possessive-pronoun
(see 2.3).

(a) ko-~k- 'my, 1st sg.' (Second allomorph occurs preceding initial o-.) As illustrations note ko-ítá 'my house', which is:

\[
\text{n-x(+pos-x<pos-pr>+item(n))} \\
\text{ko- 'my'} \quad \text{íta 'house'};
\]

and, k-oíha 'my heart', which is:

\[
\text{n-x(+pos-x<pos-pr>+item(n))} \\
\text{k- 'my'} \quad \text{oíha 'heart'}.
\]

(b) ča-~ki-~k- 'thy, 2nd sg.' (Second allomorph occurs preceding initial a- and o-, and third allomorph occurs preceding initial i- and a-) As illustrations note ča-níano 'thy son', which is:

\[
\text{n-x(+pos-x<pos-pr>+item(n)+g-no[g-no-suf])} \\
\text{ča- 'thy'} \quad \text{níá- 'child'} \quad \text{no 'masc. sg.'};
\]

and, k-iráno 'thy husband', which is:
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n-x(+pos-x<pos-pr> +item(n))

k- 'thy'

trano 'husband'.

(c) núa- 'his, hers, 3rd sg. personal.' (Second allomorph occurs preceding initial vowels.) As illustrations note núa-nománoka 'his blowgun', which is:

n-x(+pos-x<pos-pr> +item(n) +g-no[g-no-suf])

núa- 'his'

nománó- -ka 'nonpersonal sg.'

'blowgun'

and, n-áno 'his mother', which is:

n-x(+pos-x<pos-pr> +item(n))

n- 'his'

áno 'mother'.

(d) noka 'its, 3rd sg. nonpersonal.' As an illustration note noka tóiča 'its fruit!', which is:

n-x(+pos-x<pos-pr> +item(n))

noka 'its'

tóiča 'fruit'.

(e) pa-~p- 'our, 1st pl. incl.' (Second allomorph occurs preceding initial vowels.) As an illustration note pa-kánaro?a 'our kinfolk', which is:

n-x(+pos-x<pos-pr> +item(n) +g-no[g-no-suf])

pa- 'our'

káná- -ro?a 'personal pl.

'kinsman' (an isolated form).

(f) kana 'our, 1st pl. excl.' As an illustration note kana mfato 'our daughter', which is:

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(g) kina 'your, 2nd pl.' As an illustration note kina ánó 'your mother', which is:

\[
\begin{align*}
\text{n-} & \text{x(+pos-x<pos-pr> +item(n))} \\
\text{kina 'your' ánó 'mother'}. 
\end{align*}
\]

(h) na 'their, 3rd pl.' As an illustration note na paatoró 'their patrón', which is:

\[
\begin{align*}
\text{n-} & \text{x(+pos-x<pos-pr> +item(n))} \\
\text{na 'their' paatoró 'patrón'}. 
\end{align*}
\]

3.10. **gender-number-suffix.** A class of gender-number-suffixes, which manifests the tagmeme gender-number[gender-number-suffix] (see 2.4). Examples are:

(a) -ka 'nonpersonal sg.' As an illustration of its use note amašĩka 'variety of minnow', which is:

\[
\begin{align*}
\text{n-} & \text{x(+item(n) +g-no(g-no-sufl))} \\
\text{amašĩ-} & \text{ka 'nonpersonal sg.'} \\
\text{'minnow'} & 
\end{align*}
\]

(b) -ʔa 'nonpersonal pl.' As an illustration note amašĩʔa 'minnows', which is:

\[
\begin{align*}
\text{n-} & \text{x(+item(n) +g-no(g-no-sufl))} \\
\text{amašĩ-} & \text{ʔa 'nonpersonal pl.'} \\
\text{'minnow'} & 
\end{align*}
\]

(c) -naw 'personal sg.' As an illustration note iričanaw 'wife', which is:

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\[ n-x(\text{+item}(n) \ +g\text{-no}(g\text{-no}-\text{suf}) \]  
\[ \text{irica} \ -'\text{wife}' \ -\text{pa} \ '\text{personal pl.}' \]

(d) -\text{pa} 'personal pl.' As an illustration note \text{irica}pa 'wives', which is:

\[ n-x(\text{+item}(n) \ +g\text{-no}(g\text{-no}-\text{suf}) \]  
\[ \text{irica} \ -'\text{wife}' \ -\text{pa} \ '\text{personal pl.'} \]

(e) -no 'masc. sg.' As an illustration note \text{niamo} 'son', which is:

\[ n-x(\text{+item}(n) \ +g\text{-no}(g\text{-no}-\text{suf}) \]  
\[ \text{niao} \ -'\text{child}' \ -no \ 'masc. sg.' \]

(f) -to 'fem. sg.' As an illustration note \text{niat}o 'daughter', which is:

\[ n-x(\text{+item}(n) \ +g\text{-no}(g\text{-no}-\text{suf}) \]  
\[ \text{niao} \ -'\text{child}' \ -to \ 'fem. sg.' \]

Etc. Nouns must be listed according to their singular and plural endings for there is not enough regularity about the distribution of any gender-number-suffixes to warrant grouping of nouns according to classes on such a basis.

3.11. noun-c. A class which manifests the tagmeme item-c[noun-c] (see 2.7.2).

\text{oif}a 'heart', which occurs compounded with verb-c, noki-noka- 'look', to form the compound verb, oihanoki- oihanoka 'consider, reflect'. (Second allomorph in each case occurs preceding suffixes -tA 'causal' and -rA 'completed action'.) This is the only known instance of Compound-Verb.

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3.12. verb-c. A class which manifests the tagmeme action-c[verb-c] (see 2.7.2).

nokt=noka - 'see.' (Second allomorph occurs preceding suffixes -tə 'causal' and -rə 'completed action.') Occurs compounded with noun-c, oihan 'heart', to form the compound verb, oihanokt=oihanoka 'consider, reflect' (allomorphs distributed as above). This is the only known instance of Compound-Verb.

3.13. noun-v. A class of distributionally determined morpheme-alloclasses noun-v-1-6, which manifest allotagmas 1-6 of included tagmeme item-v[noun-v] (see 2.7.3). Alloclasses 1-6 occur obligatorily with verbal-n-suffixes 1-6, respectively (see 3.14) to comprise the hypermorpheme-class Nominal-Verb, alternate manifestation of action tagmeme (see 2.7).

3.13.1. noun-v-1. Examples are: tawav 'cord'; akaso 'mouth'. As an illustration of the occurrence of allotagmas item-v-1[n-v-1] note tawawho 'twist cord', which is:

\[
\begin{align*}
\text{act(Nt-V(+item-v-1[n-v-1] +vi-n-1[vl-n-suf-1]))} \\
\text{tawaw 'cord'} & \quad \text{ho 'verbalizer'.}
\end{align*}
\]

3.13.2. noun-v-2. The only known example is sokanaka 'louse'. As an illustration of its occurrence note sokanakana 'delouse', which is:

\[
\begin{align*}
\text{act(Nt-V(+item-v-2[n-v-2] +vi-n-2[vl-n-suf-2]))} \\
\text{sokanaka 'louse'} & \quad \text{na 'verbalizer'.}
\end{align*}
\]

3.13.3. noun-v-3. Examples are rapaka 'dirt'; ríra 'pus'; kásoma 'fermented drink'; paráto 'wind'. As an illustration note rapakaf 'get dirty', which is:

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3.13.4. **noun-v-4.** The only known example is cônta 'shelter'. As an illustration of its occurrence note côntaw 'build a shelter', which is:

\[
\text{act}(\text{NI-V} (+\text{item-v-4[n-v-4]} +\text{vl-n-4[vl-n-suf-4]}))
\]

\[
cônta \text{ 'shelter'} \quad -w \text{ 'verbalizer'}.
\]

3.13.5. **noun-v-5.** Examples are: màano 'many'; paràhà 'grandmother'. As an illustration note màanošì 'multiply', which is:

\[
\text{act}(\text{NI-V} (+\text{item-v-5[n-v-5]} +\text{vl-n-5[vl-n-suf-5]}))
\]

\[
\text{maano 'many'} \quad -sì \text{ 'verbalizer'}.
\]

3.13.6. **noun-v-6.** Examples are: cofna 'nettle'; tčàwha 'salt'; iråwčì = -atårwčì 'pitch, tar' (second allomorph occurs following pronouns n- '3rd sg.' and p- '1st pl. incl.'). As an illustration note tčawhakaw 'make salty', which is:

\[
\text{act}(\text{NI-V} (+\text{item-v-6[n-v-6]} +\text{vl-n-6[vl-n-suf-6]}))
\]

\[
tčawha \text{ 'salt'} \quad -kaw \text{ 'verbalizer'}.
\]

3.14. **verbal-n-suffix.** A class of six verbal-n-suffixes, which manifests the included tagmeme verbal-n [verbal-n-suffix] (see 2.7.3). These six verbal-n-suffixes occur obligatorily with morpheme-alloclasses noun-v-1-6, respectively (see 3.13), to comprise the hypermorpheme-class Nominal-Verb, alternate manifestation of action tagmeme (see 2.7).
(a) -ho 'verbalizer of class-1 nouns.' As an illustration note akasoho 'converse', which is:

\[
\text{act}(\text{NI-V(+item-v-1[n-v-1] +vl-n-1[vl-n-suf-1])})
\]

\[
\text{akaso 'mouth'} \quad \text{-ho 'verbalizer'.}
\]

(b) -na 'verbalizer of class-2 nouns.' See 3.13.2 for illustration of its use.

(c) -i 'verbalizer of class-3 nouns.' As an illustration note kaasomaif 'make fermented drink', which is:

\[
\text{act}(\text{NI-V(+item-v-3[n-v-3] +vl-n-3[vl-n-suf-3])})
\]

\[
\text{kaasoma 'drink'} \quad \text{-i 'verbalizer'.}
\]

(d) -w 'verbalizer of class-4 nouns.' See 3.13.4 for illustration of its use.

(e) -sti 'verbalizer of class-5 nouns.' As an illustration note parahaši 'become an old woman', which is:

\[
\text{act}(\text{NI-V(+item-v-5[n-v-5] +vl-n-5[vl-n-suf-5])})
\]

\[
\text{paraha 'grandmother'} \quad \text{-sti 'verbalizer'.}
\]

(f) -kaw 'verbalizer of class-6 nouns.' As an illustration note cofnakaw 'sting with nettles', which is:

\[
\text{act}(\text{NI-V(+item-v-6[n-v-6] +vl-n-6[vl-n-suf-6])})
\]

\[
\text{cofnan 'nettle'} \quad \text{-kaw 'verbalizer'.}
\]

3.15. adjective-v. A class of distributionally determined morpheme-alloclasses adjective-v-1-3, which manifest allotagmas 1-3 of the tagmeme qualifier-v[adjective-v] (see 2.7.4). Alloclasses 1-3 occur obligatorily with verbal-j-suffixes 1-3, respectively (see 3.16), to comprise
the hypermorpheme-class Adjectival-Verb, alternate manifestation of action tagmeme (see 2.7).

3.15.1. adjective-v-1. Examples are: piča 'soft'; kaká 'black'; nasáa 'straight'; nató- 'red'; číš- 'white'; săa 'long'; aičórka 'sweet'. As an illustration of the occurrence of allotagma q-v-1[aj-v-1], note saana 'lengthen', which is:

\[
\text{act} \{\text{Aj}1-V(\text{q-v-1[aj-v-1]} \text{ +vl-j-1[vl-j-suf-1]})\}
\]

sää 'long'    -na 'verbalizer'.

3.15.2. adjective-v-2. Examples are: opána 'hot'; kárá- 'fat'. As an illustration note káraši 'become fat', which is:

\[
\text{act} \{\text{Aj}1-V(\text{q-v-2[aj-v-2]} \text{ +vl-j-2[vl-j-suf-2]})\}
\]

kara- 'fat'    -ší 'verbalizer'.

3.15.3. adjective-v-3. Examples are: saana- 'cold'; soito 'dented, bent'. As an illustration note soitota 'become dented, bent', which is:

\[
\text{act} \{\text{Aj}1-V(\text{q-v-3[aj-v-3]} \text{ +vl-j-3[vl-j-suf-3]})\}
\]

soito 'bent'    -ta 'verbalizer'.

3.16. verbal-j-suffix. A class of three verbal-j-suffixes, which manifests the included tagmeme verbal-j [verbal-j-suffix] (see 2.7.4). These three verbal-j-suffixes occur obligatorily with morpheme-alloclasses adjective-v-1-3, respectively (see 3.15), to comprise the hypermorpheme-class Adjectival-Verb, alternate manifestation of action tagmeme (see 2.7).

(a) -na 'verbalizer of class-v-1 adjectives.' As an illustration note ayčokana 'get sweet', which is:

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act{Aj-V(+q-v-1[a]-v-1] +vl-j-1[vl-j-suf-1])

ayoka 'sweet'  -a 'verbalizer'.

(b) -sî 'verbalizer of class-v-2 adjectives.' As an illustration note opanaši 'get hot', which is:

act{Aj-V(+q-v-2[a]-v-2] +vl-j-2[vl-j-suf-2])

opana 'hot'  -sî 'verbalizer'.

(c) -ta 'verbalizer of class-v-3 adjectives.' As an illustration note sanatata 'make cold', which is:

+act{Aj-V(+q-v-3[a]-v-3] +vl-j-3[vl-j-suf-3]) +cl[cl-suf]

sana 'cold'  -ta 'verbalizer'  -t 'causal'.

3.17. verb-v. A class of distributionally determined morpheme-alloclasses verb-v-1-5, which manifests allotagmas 1-5 of included tagmeme action-v[verb-v] (see 2.7.5). Alloclasses 1-5 occur obligatorily with verbal-v-suffixes 1-5, respectively (see 3.18), to comprise the hypermorpheme-class Verbal–Verb, alternate manifestation of action tagmeme (see 2.7).

3.17.1. verb-v-1. Examples are: maka 'sleep'; saka 'jump'; maraw 'tie'. As an illustration of the occurrence of allotagmas act-v-1[v-v-1], note marawhav 'tie (a person)', which is:

act{Vl-V(+act-v-1[v-v-1] +vl-v-1[vl-v-suf-1])

maraw 'tie (things)'  -haw 'verbal'.

3.17.2. verb-v-2. Examples are: tawha 'play'; samata 'open'; aha 'fire, throw'. As an illustration note tawhata 'to entertain', which is:

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act(VI-V(+act-v-2[v-v-2] +vl-v-2[vl-v-suf-2]))

tawha 'play' -ta 'verbal'.

3.17.3. verb-v-3. Examples are: cokira 'bathe'; mahaw 'cut'; awko 'descend'. As an illustration note mahawho 'cut', which is:

act(VI-V(+act-v-3[v-v-3] +vl-v-3[vl-v-suf-3]))

mahaw 'cut' -ho 'verbal'.

3.17.4. verb-v-4. Examples are: irahatata 'get holey'; samatata 'cave in'; carota 'hang'; isimanota 'come open'; corata 'make to laugh'; apirata 'make an odor'; parata 'let go ahead of'; totata 'come loose'; kawkara'ta 'extricate'; ahirata 'spear'. As an illustration note cota 'laugh', which is:

act(VI-V(+act-v-4[v-v-4] +vl-v-4[vl-v-suf-4]))

corata 'make laugh' -ta (replacing -rata) 'verbal'.

3.17.5. verb-v-5. Examples are: cokira 'wash'; amitata 'tear'; rawatata 'part'; etc. As an illustration note rawatata 'come apart', which is:

act(VI-V(+act-v-5[v-v-5] +vl-v-5[vl-v-suf-5]))

rawatata 'part' -tata (replacing -tata) 'verbal'.

3.18. verbal-v-suffix. A class of five verbal-v-suffixes, which manifests the included tagmeme verbal-v [verbal-v-suf] (see 2.7.5). These five verbal-v-suffixes occur obligatorily with morpheme-alloclasses verb-v-1-5, respectively (see 3.17), to comprise the hypermorpheme-class Verbal-Verb, alternate manifestation of action tagmeme (see 2.7).
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(a) -haw 'verbal with class-v-1 verbs.' There is a meaning change in some instances, no apparent meaning change in others. As illustrations note makahaw 'dream,' which is:

\[
\text{act}(\text{VI-}V(\text{+act-v-1}[v-v-1] \text{ } +\text{vl-v-1}[\text{vl-v-suf-1}]))
\]
\[
\text{maka} \ '\text{sleep} \quad -\text{haw} \ '\text{verbal};
\]
and, sakahaw 'jump', which is:

\[
\text{act}(\text{VI-}V(\text{+act-v-1}[v-v-1] \text{ } +\text{vl-v-1}[\text{vl-v-suf-1}]))
\]
\[
\text{saka} \ '\text{jump} \quad -\text{haw} \ '\text{verbal}.
\]

(b) -ta 'verbal with class-v-2 verbs.' The morpheme -ta adds the causal idea to some stems, subtracts it from others, and makes no apparent change in others. As illustrations note anita 'bring', which is:

\[
\text{act}(\text{VI-}V(\text{+act-v-2}[v-v-2] \text{ } +\text{vl-v-2}[\text{vl-v-suf-2}]))
\]
\[
\text{an}i \ '\text{come} \quad -\text{ta} \ '\text{verbal};
\]
and, mašita 'hide one's self', which is:

\[
\text{act}(\text{VI-}V(\text{+act-v-2}[v-v-2] \text{ } +\text{vl-v-2}[\text{vl-v-suf-2}]))
\]
\[
\text{maši} \ '\text{hide (someone)}' \quad -\text{ta} \ '\text{verbal};
\]
and, nišawta 'converse', which is:

\[
\text{act}(\text{VI-}V(\text{+act-v-2}[v-v-2] \text{ } +\text{vl-v-2}[\text{vl-v-suf-2}]))
\]
\[
\text{nišaw} \ '\text{converse} \quad -\text{ta} \ '\text{verbal}.
\]

(c) -ho 'verbal with class-v-3 verbs.' The morpheme -ho adds the causal idea to some stems, and makes no apparent meaning change in others. As illustrations note cokiraho 196
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'bathe (another)', which is:

\[ \text{act}(\text{VI-V}(+\text{act-v-3[v-v-3]} + \text{vl-v-3[vl-v-suf-3]})) \]

cokira 'bathe self' -ho 'verbal'.

and, awkoho 'descend', which is:

\[ \text{act}(\text{VI-V}(+\text{act-v-3[v-v-3]} + \text{vl-v-3[vl-v-suf-3]})) \]

awko 'descend' -ho 'verbal'.

(d) -ta (replacing -ta, -nota, -rata, or -tata) 'verbal with class-v-4 verbs.' As illustrations note carota 'be hung', which is:

\[ \text{act}(\text{VI-V}(+\text{act-v-4[v-v-4]} + \text{vl-v-4[vl-v-suf-4]})) \]

carota 'hang' -ta (replacing -ta) 'verbal'.

and, išimata 'open', which is:

\[ \text{act}(\text{VI-V}(+\text{act-v-4[v-v-4]} + \text{vl-v-4[vl-v-suf-4]})) \]

išimanota 'come open' -ta (replacing -nota) 'verbal'.

and, pata 'precede', which is:

\[ \text{act}(\text{VI-V}(+\text{act-v-4[v-v-4]} + \text{vl-v-4[vl-v-suf-4]})) \]

parata 'let precede' -ta (replacing -rata) 'verbal'.

and, ahita 'throw or fire (something)', which is:

\[ \text{act}(\text{VI-V}(+\text{act-v-4[v-v-4]} + \text{vl-v-4[vl-v-suf-4]})) \]

ahirata 'spear' -ta (replacing -rata) 'verbal'.

and, irahata 'perforate', which is:

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\[ \text{act}(\text{V1-V}(+\text{act-v-4}[\text{v-v-4}] +\text{v1-v-5}[\text{v1-v-suf-4}])) \]
\[ \text{irahata 'get holes'} \quad -\text{ta (replacing -tata) 'verbal'.} \]

(e) \(-\text{tata (replacing -ra or -tata) 'reflexive.'} \) As illustrations note \text{cokata} 'bathe self', which is:

\[ \text{act}(\text{V1-V}(+\text{act-v-5}[\text{v-v-5}] +\text{v1-v-5}[\text{v1-v-suf-5}])) \]
\[ \text{cokira 'bathe another'} \quad -\text{tata (replacing -ra) 'reflexive'}; \]

and, \text{amatata 'be torn'}, which is:

\[ \text{act}(\text{V1-V}(+\text{act-v-5}[\text{v-v-5}] +\text{v1-v-5}[\text{v1-v-suf-5}])) \]
\[ \text{amitata 'tear'} \quad -\text{tata (replacing -tata) 'reflexive'.} \]

3.19. **indicative-aspect-suffix.** A class of indicative-aspect-suffixes, which manifests the included tagmeme indicative-aspect[indicative-aspect-suffix] (see 2.8). Examples are:

(a) \(-\text{ka} \sim -\text{ca} \sim -\text{ko} \ 'continuative aspect.' \) (Second allomorph occurs following final \(-i\); third allomorph occurs following final \(-o\).) As an illustration note \text{p-acaka 'we are eating'}, which is:

\[ +\text{s<s-pr} +\text{P[Ind-V(+act{v}) +ind-asp[ind-asp-suf]]} \]
\[ \text{p- 'we, incl.'} \quad \text{aca 'eat'} \quad -\text{ka 'continuative'.} \]

(b) \(-\text{ha} \sim -\text{ho} \ 'future aspect.' \) (Second allomorph occurs following final \(-o\).) As an illustration note \text{ca na itikwaha 'you will fall'}, which is:

\[ +\text{s<s-pr} +\text{f[pt]} +\text{P[Ind-V(+act{v}) +ind-asp[ind-asp-suf]]} \]
\[ \text{ca 'thou' na 'shall'} \quad \text{itikwa 'fall'} \quad -\text{ha 'future'.} \]
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(c) -ra 'completed action.' As an illustration note arlawko kawnocáyra 'the snake bit the dog', which is:

+e-o-1e-n-x() +e<n-x()> +P[Ind-V(+act(v) +ind-asp[[ind-asp-suf]]])
arlawko 'dog' kawnoc 'snake' cay 'bite' -ra 'completed action'.

(d) -riča 'imperfect aspect.' As an illustration note ko-níhina anawkiríča kwí 'my back hurt me very much', which is:

+s<n-x(+pos-x<pos-pr>) +item(n)> +P[Ind-V(+act(v)
ko- 'my' níhina 'back' anawkí 'hurt'
+ind-asp[[ind-asp-suf]]) +o-1e-o-pr>
-riča 'imperfect' kwí 'me'.

(e) -no 'negative.' As an illustration note taykwá ayōšoka ikíno 'there is no firewood', which is:

-con[icon-pt] +e<n-x()> +P[Ind-V(+act(v) +ind-asp[[ind-asp-suf]])]
taykwa 'not' ayōšoka 'firewood' ikí 'is' -no 'negative'.

(f) -wara 'narrative.' As an illustration note na átawara 'they flew', which is:

+s<s-pr> +P[Ind-V(+act(v) +ind-asp[[ind-asp-suf]])]
na 'they' ata 'fly' -wara 'narrative'.

3.20. causal-suffix. A class which manifests the tagmeme causal[causal-suffix] (see 2.9).

-ta 'causal.' As an illustration note kína n-akọta-? 'cause him to sit down!', which is:

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3.21. **connector particle.** A class which manifests the tagmeme connector[connector-particle] (see 2.10). Examples are: taykwá 'no, not'; tihá 'yes'; tiákata 'yes'; kapa 'nevertheless' (this one member of the class may occur in final linear order); niá 'therefore'; pákl 'in order that'; etc.

3.22. **adjective.** A class consisting of all adjective roots, which manifests the tagmeme qualifier[adjective] (see 2.11 and 2.36.2). Examples are:

káwni 'shiny'; aná- 'bitter'; irísi- 'fat'; moka- 'fetid'; oíca 'good, pretty'; paná- 'flat'; róto- 'slick'; saa 'long'; takí- 'young'; coká- 'shallow'; čimfato- 'painted'.

3.23. **number-suffix.** A class which manifests the tagmeme number[number-suffix] (see 2.12).

-ka 'singular.' As an illustration note pičaká atá-? 'is it soft?', which is:

\[ +p-nm<aj-w(+q[a]) +no(no-suf)> +sv-int[sv-int-pt] +pact[punct-pt] +s<sv-pr> \]

piča 'soft' -ka 'sg.' atá 'be?' -? 'punctiliar' # 'it'.

3.24. **comparative-particle.** A class which manifests the tagmeme comparative[comparative-particle] (see 2.13).

-itoka 'more, comparative degree.' As an illustration note natoká-itoka 'redder', which is:

\[ md[aq-x(+q[[a]]) +no(no-suf] +cfl(cf-pt)]] \]

nato 'red' -ka 'sg.' -itoka 'more'.

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3.25. source-particle. A class of source particles, which manifests the tagmeme source[source-particle] (see 2.14).

(a) ana∞-na 'hearsay, quote.' (Second allomorph occurs following modifier slot, subject slot, or any emphasized slot.) As an illustration note ati-ha-na n-ikĩka 'they say he is there', which is:

\[-s-1-t[e-s-v]+[-s-s-v<0+w(0)>]+e[[s-e-p]]+s[sc-pte]+s<s-pr>+P[ind-v(+act{v})
ati 'there' -ha 'emph.' -na 'hearsay' n- 'he' fkt 'is'
+ind-asphalt[ind-asphalt-suf]]
-ţa 'continuative'.

(b) aká∞-ka 'accomplished fact.' (Second allomorph occurs following modifier, subject, or any emphasized slot.) As an illustration note aká ariawko cáyra kāiho 'now the dog has hit the rabbit, it's all done!', which is:

\[+sc[sc-pte]+s<n-x()>+P[ind-v(+act{v})+ind-asphalt[ind-asphalt-suf]]+o-1<n-x()>\]
aká 'done! ariawko 'dog' cay- 'hit' -ra 'completed action' kāiho 'rabbit'.


na 'shall, will.' As an illustration note kāna-ha na acahá noka 'we shall eat it!', which is:

\[+E-S[E-S-X+s<s-pr>+e[[e-pte]]]+f[f-p]+P[ind-v(+act{v})\]
kāna 'we' -ha 'emph.' na 'shall' aca 'eat'
+ind-asphalt[ind-asphalt-suf]]+o-1<o-pr>
-ha 'future' noka 'it'.

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3.27. **manner-particle-1.** A class which manifests the tagmeme manner-1[manner-particle-1] (see 2.16), and the tagmeme emphatic-manner-1[manner-particle-1] (see 2.22).

iá 'intensifier.' As an illustration note iá máycaka ta 'he is very stingy', which is:

\[-mn-1[nn-pt-1] +p-nm<a\>w(+q[a]) +no(no-sufl) > sv-ind[sv-ind-pt] +s<sv-pr]\]

ia 'very' máycaka 'stingy' -ka 'sg.' ta 'be' ≠ 'he'.

3.28. **manner-particle-2.** A class of manner particles, which manifests the tagmeme manner-2[manner-particle-2] (see 2.17), and the tagmeme emphatic-manner-2[manner-particle-2] (see 2.23).

komá 'intensely, profoundly'; náta 'bloodthirstily'; óka 'like'; pákwa 'like'; paráyta 'in sight'; tama 'just, only'; timá 'fast'; točá 'now'; etc. As an illustration note točá naw máátáka 'now he is cutting', which is:

\[e-mn-2[nn-pt-2] +s<s-pr> +P[ind-ν(+act{v}) +ind-asp[ind-asp-suf]]l\]

točá 'now' naw 'he' másta 'cut' -ka 'continuative'.

3.29. **object-pronoun.** A class of object-pronouns, which manifests the tagmeme object[object-pronoun] (see 2.25.2, 2.26.2), and is one of the manifesting classes of the tagmeme object-2<Relational-Noun> (see 2.21), and of the tagmeme object-1<noun-expression()> (see 2.18).

(a) ko=kwi 'me, 1st sg.' (Second allomorph occurs following verbs.) As an illustration note ča-tá kacaka ináw kwi 'will you give me something?', which is:

\[s<s-pr> +int[ntl-nt] +o-1<n-x(+item{n}) +g-noig-no-sufl] > plint-v{v} +o-2<o-pr]\]

ča 'thou' -ta 'interrogative' kaca 'thing' -ka 'nonpersonal sg.' ináw 'give' kwi 'me'.

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(b) ŝa 'thee, 2nd sg.' As an illustration note ko na ináwha noká ŝa 'I shall give it to thee', which is:

+s<s-pr> +[[f-pta] +P[ind-V(+act{v}) +ind-asp[[ind-asp-sufl]]] +o-1<o-pr> +o-2<o-pr>
ko 'I' na 'shall' inaw 'give' -ha 'future' noka 'it' ŝa 'thee'.

(c) (naw~n~)=no 'him, her, 3rd sg. personal.' (First and second allomorphs occur preceding predicate slot, third following; second allomorph occurs preceding initial vowels.) As illustrations note kána-ha na ináwha noka no 'we shall give it to him', which is:

+E-S[E-S-X(+s<s-pr> +e([e-pta])) +f[~f-pta] +P[ind-V(+act{v})
kána 'we' -ha 'emph.' na 'shall' inaw 'give'
+ind-asp[[ind-asp-sufl]]] +o-1<o-pr> +o-2<o-pr>
-ha 'future' noka 'it' no 'him';

and, kiná n-Akotá-? 'make him sit down!', which is:

+s[imp-s-prl] +o-1<o-pr> +P[imp-V(+act{v}) +e[[cl-sufl]] +pnt([pnt-pta])]
kina 'ye' n- 'him' ilko 'sit' -a 'causal' -? 'punctiliar'.

(d) noka 'it, 3rd sg. nonpersonal.' As an illustration note náw-ha acáká noka 'he is eating it', which is:

+E-S[E-S-X(+s<s-pr> +e([e-pta])) +P[ind-V(+act{v})
naw 'he' -ha 'emph.' nca 'eat'
+ind-asp[[ind-asp-sufl]]] +o-1<o-pr>
-ha 'continuative' noka 'it'.

(e) pa 'us, 1st pl. incl.' As an illustration note náwha pa máltakwa-? 'let her come feed us!', which is:
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(f) kana / kaʔno 'us, 1st pl. excl.' (Second allomorph occurs in free fluctuation with the first following predicate slot.) As an illustration note morohaka sakahóriča káʔno 'a bee was angry with us', which is:

+s<n-x()> +P[ind-V(+act{V1-V} +ind-asp[ind-asp-suf])] +o-1<o-pr>
morohaka 'bee' sakaho 'be angry' -riča 'impf.' kaʔno 'us'.

(g) kina / kiʔno 'you, 2nd pl.' (Second allomorph occurs in free fluctuation with the first following predicate slot.) As an illustration note taykwá naw-tá kina ináw nóka 'does he not give it to you?', which is:

+con[con-pt] +s<pr> +int[int-pt] +o-2<o-pr> +p[int-V] +o-1<o-pr>
taykwá 'not' naw 'he' -tá 'interr.' kina 'you' inaw 'give' nóka 'it'.

(h) na 'them, 3rd pl.' As an illustration note káasoma ča na narotá 'give them chicha to drink!', which is:

+t<o-1<n-x()> +s[imp-s-pr] +o-2<o-pr> +p[imp-v(+act{v}) +cl[cl-suf]]
káasoma 'chicha' ča 'thou' na 'them' naró 'drink' -tá 'causal'.

3.30. adverb-root. A class consisting of all adverb roots, which manifests the tagmeme location-time-r{adverb-root} (see 2.19.1). Examples are:

aniʔaniti- 'here' (second allomorph occurs when any suffix is added); áti 'there (far)'; oámi- 'downriver'; oákámi 'upriver'; kamhi 'across river'; noarf 'after'; konoki 'there (near)'; tiki 'together'; etc. As an illustration note oákámira-ha n-akwáka 'he is going farther upriver', which is;

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+e-l-t[e-av(+l-t{av-w(+l-t-r[[av-r]] +dir[[dir-suf]])} +e[[e-pr]])]
  okaami 'upriver' -ra 'farther' -ha 'emph.'

+s<s-pr> +p[m-v(v)]
  n= 'he' akwaka 'is going'.

3.31. directional-suffix. A class of directional-suffixes, which manifests the tagmeme directional[suffix] (see 2.19.1). Examples are:

(a) -hi 'direction.' As an illustration note ča noká áta ko-fra atshi 'drag it that way for me', which is:

+s[imp-s-pr] +o-1<o-pr> +p[imp-v(v)] +o-2<Rel-N(pos-x<pos-pr)>>
  ča 'thou' noka 'it' ata 'drag' ko- 'my'

+rel[rel-n]> +l-t{av-w(+l-t-r[av-r]) +dir[dir-suf]}
  ira 'right, for' ati 'there' -hi 'direction'.

(b) -ra 'farther, further.' As an illustration note atirá kina noká iná-? 'put it a little further over there', which is:

+e-l-t[e-av(+l-t{av-w} +dir[[dir-suf]])] +s[imp-s-pr] +o-1<o-pr>
  ati 'there' -ra 'farther' kina 'ye' noka 'it'

+p[imp-v(+act(v) +pnot[[pnot-p]}])
  ina 'place' -? 'punctiliar'.

3.32. adverbial-n-suffix. A class of adverbial-n-suffixes, which manifests the tagmeme adverbial-n[suffix] (see 2.19.2). Examples are:

(a) -anoah i 'after.' As an illustration note tarakáanóah i 'day after tomorrow', which is:

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1-t{Ni-Av(+item-n[n-x()]) +avl-n[avl-n-suf])}

taraka 'tomorrow'  -anoahi 'after'.

(b) -hina / -hi?na 'in, at.' (Second allomorph occurs only in fluctuation with the first in final position.) As an illustration note kanawahina 'in the canoe', which is:

1-t{Ni-Av(+item-n[n-x()]) +avl-n[avl-n-suf])}

kanawa 'canoe' -hina 'in'.

(c) -ma / -?ma 'to, at.' (Second allomorph occurs only in fluctuation with the first in final position.) As an illustration note mooma 'awa 'go down to the water', which is:

+m+e-1-t[e-av(+1-t{Ni-Av((+item-n[n-x()]) +avl-n[avl-n-suf]))})]

moo- 'water' -ma 'to'

+s[imp-s-pr] +p[imp-v()]

'awa 'descend'.

(d) -mara 'to, toward.' As an illustration note itamara 'toward the house', which is:

1-t{Ni-Av(+item-n[n-x()]) +avl-n[avl-n-suf])}

ita 'house' -mara 'toward'.

(e) -niha 'upon.' As an illustration note amakanha 'aikoko 'sit down on the wood!', which is:

+m+e-1-t[e-av(+1-t{Ni-Av((+item-n[n-x()]) +avl-n[avl-n-suf]))})]

amaka 'wood' -niha 'upon'

+s[imp-s-pr] +p[imp-v()]

'awa 'thou' aikoko 'sit'.

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(f) -hinahi~hanahi 'from.' (Second allomorph occurs following final -a.) As an illustration note masakahánahi 'from the platform', which is:

\[ l-t\{Ml-Av\{+item-n[n-x()] +avl-n[avl-n-suf])\} \]

masaka 'platform' ~hanahi 'from'.

(g) -mahi 'from.' As an illustration note ómaro karičámahi 'from (out) in the rain', which is:

\[ l-t\{Ml-Av\{-pos-x<pos-n-x()> +item-n[n-x()] +avl-n[avl-n-suf])\} \]

omaro 'rain's' kariča 'inside' ~mahi 'from'.

3.33. adverbial-pc-suffix. A class which manifests the tagmeme adverbial-pc[adverbial-pc-suffix] (see 2.19.3). -kari 'when, upon.' As an illustration note ča nok ča pančakari 'when you want to, take it', which is:

\[ +s[imp-s-prl] +c-l<o-pr> +p[imp-v()] +l-t\{Pc-Av\{+s<o-pr> +act\{v\}\} \]

ča 'thou' noka 'it' at ča 'take' ča 'thou' panč 'want'

\[ +pc[pc-suf] +avl-pc[avl-pc-suf]) \]

ča 'process' -kari 'when'.

3.34. emphasis-particle. A class of emphasis-particles, which manifests the tagmeme emphasis[emphasis-particle] (see 2.20).

(a) -ha iha 'emphasis.' (Second allomorph occurs following pronoun ko '1st sg.') As an illustration note kána-ha na acahá noka 'we shall eat it', which is:

\[ +E-S\{E-S-X\{+s<o-pr> +e\{e-ptl\}\} +s\{s-f\} +p[Ind-V\{+act\{v\}\} \]

kana 'we' -ha 'emph.' na 'shall' aca 'eat'
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(ind-asp[[ind-asp-suf]]) +o-1<o-pr>

ha 'future' noka 'it'.

(b) -kha 'only.' As an illustration note náw-kha anícà 'he only is coming', which is:

+E-8[E-8-X<+s<o-pr> +e[[e-plt]]] +P[ind-V(+act{v}) +ind-asp[[ind-asp-suf]]]

naw 'he' -kha 'only' aní 'come' -cà 'continuative'.

3.35. relational-noun. A class of relational-nouns, which manifests the tagmeme relational[relational-noun]
(seen 2.21.1. and 2.26.1). Examples are:

(a) ahata 'benefit.' As an illustration note čà ko-aháta íkóka 'you are sitting down for my benefit', which is:

+s<o-pr> +o-2<Rel-N(+pos-x<<pos-n-x<<(pos-pos-pr] +item{m})>] +P[ind-V(+act{v})

čà 'thou' ko 'my' ahata 'benefit' íko 'sit'

+ind-asp[[ind-asp-suf]]]

-ka 'continuative'.

(b) arata=rata 'likeness, like.' (Second alternate occurs with pronouns.) As an illustration note kina ánò
arata kiná noka máara 'you all do it like your mother, your
mother's way', which is:

+E-0-2<E-Rel-N(+pos-x<<pos-n-x((+pos[+pos-pr] +item{n})])]>> +rel[rel-n]]

kina 'your' ánò 'mother's' arata 'like'

+s[imp-s-pr] +o-1<o-pr> +P[imp-V(+act{v}) +pnot[[pnot-p-tl]]]

kina 'ye' noka 'it' máà 'do' -ra 'punettiiar'.

(c) korira =-ma 'direction, to.' (Second allomorph occurs bound to nouns.) As an illustration note ko-korirá

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'my direction', which is:

-o-2<Rel-N(+pos-x<pos-pr>> +rel(rel-n)>  
  ko- 'my'  korrta 'direction'.

(d) čirikwa 'proximity, near.' As an illustration note
naw-čirikwá-ha ča ikó 'sit near him!', which is:

  +E-O-2<E-Rel-N(+pos-x<pos-pr>> +rel[rel-n] +e[e-pt]>>  
    naw- 'his' čirikwa 'proximity' -ha 'emph.'

  +s[imp-s-pr] +p[imp-v()]

  ča 'thou'  iko 'sit'.

(e) iakra 'direction, toward.' As an illustration note
ča ko-iákra nok-I? 'look my direction!', which is:

  +s[imp-s-pr] +o-2<Rel-N(+pos-x<pos-pr>> +rel[rel-n]>>  
  ča 'thou'  ko- 'my'  iakra 'direction'

  +p[imp-v(act(v)) +pnot([pnot-pt])]

  nok-I 'look'  -I? 'punctiliar'.

(f) ta=ita 'with.' (Second allomorph occurs only with
pronoun ko- '1st sg.,') As an illustration note ani ča kana
tá ikí 'stay here with us!', which is:

  +1-t{av-w()} +s[imp-s-pr] +o-2<Rel-N(+pos-x<pos-pr>>  
  ani 'here'  ča 'thou'  kana 'our, excl.'

  +rel[rel-n]>> +p[imp-v()]

  ta 'with'  ikí 'stay'.

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(b) -rΛ 'completed action, perfect.' As an illustration note ko-tá irfrΛ 'did I get caught?', which is:

+s<s-pr> +int[int-ptl] +p[1nt-v(+act{v}) +int-asp[[int-asp-sufl]])
ko 'I' -tΛ 'interr.' iri 'get caught' -rΛ 'completed action'.

(c) -riša 'imperfect aspect.' As an illustration note ča-tá tawhřriša 'were you listening?', which is:

+s<s-pr> +int[int-ptl] +p[1nt-v(+act{v}) +int-asp[[int-asp-sufl]])
ča 'thou' -tΛ 'interr.' tawhř 'hear' -riša 'imperfect'.

3.38. punctiliar—particle. A class which manifests the tagmeme punctiliar[punctiliar—particle] (see 2.31).
-ʔ = -rΛ 'punctiliar.' (First alternate may occur preceding or following aspect suffixes; second alternate occurs following final -Λ in imperative syntagmeme only.) As an illustration note ča 1kó-ʔ 'sit down', which is:

+s[imp-s-pr] +p[imp-v(+act{v}) +punct[[punct-ptl]])
ča 'thou' 1ko 'sit' -ʔ 'punctiliar'.

3.39. interrogative—manner—particle. A class of interrogative—manner—particles, which manifests the tagmeme interrogative—manner[interrogative—manner—particle] (see 2.32). Examples are:

(a) tyá 'what?' As an illustration note tyá naw-tá atflt-ʔ 'what does he say?', which is:

+int-mm[int-mm-ptl] +s<s-pr> +int[int-ptl] +p[1nt-v(+act{v}) +punct[[punct-ptl]])
tyá 'what?' naw 'he' -tΛ 'interr.' atlt 'say' -ʔ 'punctiliar'.

(b) táhř 'where?' As an illustration note táhř lasoka-tá asáma 'where is the tapir running?', which is:
3.40. imperative-subject-pronoun. A class of imperative-subject-pronouns, which manifests the tagmeme subject[imperative-subject-pronoun] (see 2.33).

(a) ča~ča~k~- 'thou, 2nd sg.' (Second allomorph occurs preceding initial aw~; third allomorph occurs preceding initial i~ and a~.) As an illustration note ča noká tāšti 'wait for it!', which is:

+\text{imp-s-pr} +\text{o-1<o-pr}> +\text{imp-v()}\)
ča 'thou' noka 'it' tašti 'wait'.

(b) náwha 'he, him, she, her, 3rd sg. personal.' As an illustration note náwha pa máłtakwa~? 'let her come feed us!', which is:

+\text{imp-s-pr} +\text{o-1<o-pr}> +\text{plm-v()}\)
náwha 'she' pa 'us' máltakwa~? 'come feed!'

(c) pa 'we, us, 1st pl. incl.' As an illustration note kawfrá pa noká aca 'let's eat it all!', which is:
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+md[a]-x() +s[imp-s-prl] +o-1<o-pr> +p[imp-v()]

kawira 'all' pa 'we, incl.' noka 'it' aca 'eat'.

(d) kina 'ye, 2nd pl.' As an illustration note asa-há
kiná noka nokí 'just look at it!', which is:

+E-Md[E-A]-X+(+md[a]-x()) +e[ie-ptr]) +s[imp-s-prl] +o-1<o-pr> +p[imp-v()]

asa 'only' -ha 'emph.' kina 'ye' noka 'it' nokí 'look'.

3.41. imperative-aspect-suffix. A class which mani-
manifests the included tagmeme imperative-aspect[imperative-
aspect-particle] (see 2.35).

(a) -ka~ča~ko 'continuative aspect.' (Second allo-
morph occurs following final -i; third allomorph occurs
following final -o.) As an illustration note ča ko-aháta
ikóko 'sit as I am sitting!', which is:

+s[imp-s-prl] +o-2<Rel-N+(pos-x<pos-pr>> +rel[rel-nl]) +p[imp-v(+act(v)
ča 'thou' ko- 'my' ahata 'likness' iko 'sit'

+imp-as[imp-asp-suff]]

-ko 'continuative'.

(b) -akwa~ikwa~-ákwa~-okwa 'negative imperative.'
(Allomorphs occur following final -a, -l, -n, and -o, re-
spectively.) As an illustration note k-átákwa-ákwa 'don't
fall!', which is:

+s[imp-s-prl] +p[imp-v(+act(v) +imp-as[imp-asp-suff])]

k- 'thou' átákwa 'fall' -akwa 'negative imperative'.

3.42. adjectival-n-suffix. A class which manifests the
included tagmeme adjectival-n[adjectival-n-suffix] (see
2.36.3).

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-raka 'possessed of, having.' As an illustration note anóraka 'having a mother', which is:

p-nm<Nl-Aj(+item(n) +ajl-n[ajl-n-suf])>
ana 'mother'  -raka 'having'.

3.43. **adjectival–pc–suffix.** A class which manifests the included tagmeme adjectival–pc[adjectival–pc–suf] (see 2.36.4).

-itoka / -itoko / -itokl 'qualitative.' (Fluctuation not accounted for.) As an illustration note acacáitoka 'edible', which is:

p-nm<Pc-Aj(+act(v) +pc[pc-suf] +ajl-pc[ajl-pc-suf])>
aca 'eat'  -ca 'process' -itoka 'qualitative'.

3.44. **stative–indicative–particle.** A class which manifests the tagmeme stative–indicative[stative–indicative–particle] (see 2.37).

**ta 'stative, be.'** As an illustration note cáwanaw tá kwi 'I am a spirit, a ghost', which is:

+p-nm<n-x()> +sv-ind[sv-ind-pt] +s<sv-pr>
cáwanaw 'spirit' ta 'be' kwi 'I'.

3.45. **stative–pronoun.** A class of stative–pronouns, which is one of the manifesting classes of the tagmeme

subject<noun-expression()> (see 2.38).

(a) kwi 'I, 1st sg.' As an illustration note arláwkoraka tá kwi 'I have a dog', which is:

+p-nm<Nl-Aj(+item(n) +ajl-n[ajl-n-suf])> +sv-ind[sv-ind-pt] +s<sv-pr>
arláwko 'dog' -raka 'having' ta 'be' kwi 'I'.

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(b) ča 'thou, 2nd sg.' As an illustration note manño tá ča 'you are a youth', which is:

\[ +p-nm<n-x()> +sv-ind[sv-ind-pt] +s<sv-pr> \]
manño 'youth' ta 'be' ča 'thou'.

(c) no / # 'he, she, it, 3rd sg.' (Allomorphs in fluctuation, with the second occurring the more frequently.) As an illustration note káya ta 'he is a person', which is:

\[ +p-nm<n-x()> +sv-ind[sv-ind-pt] +s<sv-pr> \]
káya 'person' ta 'be' # 'he'.

(d) kana / ka?no 'we, 1st pl. excl.' (Allomorphs in fluctuation, with the second occurring the more frequently.) As an illustration note maycašta ká?no 'we are stingy', which is:

\[ +p-nm<aj-w(+q{aj}) +no[no-suf]> +sv-ind[sv-ind-pt] +s<sv-pr> \]
mayca 'stingy' -ka 'sg.' ta 'be' ka?no 'we'.

(e) kina / ki?na 'you, 2nd pl.' (Allomorphs in fluctuation.) As an illustration note itomará atá ki?na 'are you women?', which is:

\[ +p-nm<n-x()> +sv-int[sv-int-pt] +s<sv-pr> \]
itomará 'woman' atá 'be?' ki?na 'ye'.

3.46. stative-interrogative-particle. A class which manifests the tagmeme stative-interrogative[stative-interrogative-particle] (see 2.41).

atá-ati 'stative, be?' (Second allomorph occurs preceding pronoun ča '2nd sg.' ) As an illustration note
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mašiató atá-? 'is she an orphan?', which is:

+p-nm<n-x(item(n) +g-no[g-no-sufl]> +sv-int[sv-int-aml] +pact(pact-aml) +s<sv-pr>

mašia 'orphan' -lo 'fem. sg.' atá 'be' -? 'punctiliar' ≠ 'she'.

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Cayapa: Grammatical Notes and Texts

by Arne Abrahamson

0. Introduction. This paper is a tentative description of the grammatical structure of Cayapa. Since no material on Cayapa grammar has been published, it was thought desirable to gather together what has been analyzed and to present it, in spite of the lack of sufficient data to make an exhaustive description.

Many lacunae have been noted, and there was no opportunity to check the paper with informants, but the conclusions give an outline of Cayapa grammar into which further material may be incorporated.

Cayapa is a member of the Chibchan language family spoken by about 2000 Indians in the coastal jungles of Ecuador. With Colorado, it is located in the southernmost extension of this language family. The writer wishes to express his thanks to John Lindskoog for his help in eliciting data, and to Kenneth L. Pike and Ruth Brend for their many suggestions in presentation of material.
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It is hoped that this paper will provide material for the comparison of the grammatical structure of Cayapa with that of other Chibchan languages and stimulate future publication of more complete grammatical analyses.

Principal data were gathered during a six-week stay in the Cayapa tribe. They were analyzed according to the tagmemic theory developed by Kenneth L. Pike. The analysis is presented here, keyed to three illustrative texts.

1. Sentence. The Cayapa sentence is defined, for the purposes of this paper, as a minimum isolable unit of speech. There are two main classes of sentences, clause sentences and nonclause sentences. Only clause sentences are presented here. A clause sentence consists of a single base, with or without marginal expansions, plus intonation pattern. Intonation patterns are described in this paper only in connection with interrogative sentences (1.2.3).

Quotative is described in 1.2.5 under sentence types even though it is a grammatical unit that functions on a higher level than sentence, for it consists of a quotative base filled by a quotative dependent clause and a satellite filled by a discourse of any size plus an intonation pattern.

1.1. Sentence tagmeme. Tagmeme is defined as a grammatical substitution point with a corresponding class of substitutable items. The internal composition of sentence includes as tagmemes an obligatory base and optional satellites.

\(^2\)The only nonclause sentence occurring in the data is 'hee 'yes', which was given in response to a yes-or-no interrogative sentence.

\(^3\)No analysis is attempted of discourse nor of higher-level structures.
CAYAPA: GRAMMATICAL NOTES AND TEXTS

1.1.1. Base tagmeme is the obligatory nucleus of a sentence structure. There are two types: base filled by a single independent clause or a base filled by two coordinate clauses.4

1.1.2. Satellite tagmemes are optional marginal slots filled by dependent clauses. They are of two types, differentiated by internal construction, and by their distribution in relation to base tagmeme: satellite₁ occurs preposed to base, and is manifested by a dependent clause; satellite₂ occurs postposed to base, and is manifested by one of various dependent clause types.

1.2. Sentence types. There are four emic sentence types: declarative, imperative, yes-or-no interrogative, and content-information interrogative.

1.2.1. Sentence type 1 (declarative). The declarative sentence consists of either a single declarative base, a single declarative base plus satellite₁ or satellite₂, or a single declarative base plus both satellite₁ and satellite₂.

Tagmeme fillers. Declarative base is filled by a declarative independent clause (2.1.1). Satellite₁ is filled by dependent clause type 1 (2.2.1.1). Satellite₂ is filled by either dependent clause type 2 (2.2.2.1) or dependent clause type 3 (2.2.2.2).

4Since there is only one example of a base filled by two coordinate clauses, no definitive statements can be made concerning internal construction or marginal expansions. Note: A18 baasha hunga himin cumulunchi cusas engu chutu cusas chumi 'far there arrive—and all things here live—not things live' ('We arrived there which was far and all things which live not here lived there.')
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Formula. \(^5\) \(+Sat_1\) DepCl-1 \(+DecBase\) DecIndCl \(+Sat_2\) DepCl-2/DepCl-3

Illustrations. \(^6\) A7 hunu chutu—ayunchi meneen dishquepenene huqga caru tsuinsha hila—ambatusha hinu 'there stayed—having—morrow again early—morning there car belong went—Ambato go—to' ('Having stayed there, again early in the morning, we went to where the cars belong to go to Ambato.') For further examples of satellite\(_1\) see: A21-2, A61-2, A81-2, A121-2, A171, B31, B101-2, B171, B191, B211-2, C42. For further examples of satellite\(_2\) see: A87-9, A287-11, B135-7.

1.2.2. Sentence type 2 (imperative). The imperative sentence consists of an imperative base, with possible marginal expansions that are not described for lack of data.

Tagmeme fillers. Imperative base is filled by an imperative independent clause (2.1.2).

Formula. \(+ImpBase\) ImpIndCl

Illustrations. (elicited material) diheru patyudei 'fast talk—not' ('Do not speak fast!'); (elicited material) ūlyu cumuinchu besanginhu hidei 'you all song—do—to go' ('All of you go sing!').

1.2.3. Sentence type 3 (yes—or—no interrogative). The yes—or—no interrogative sentence consists of an interrogative base with a phonological interrogative marker; vowel length, nasalization, or high pitch, occurring sen-

\(^5\) Formula symbols: + = obligatory, + = optional, : = filled by. Illustration symbol —— marks the break between tagmemes, both in the citation, and the literal translation.

\(^6\) Occurrence of examples is indicated by the formula: e.g. A87-9 **A** = text A, 8 = eighth sentence, 7-9 = from the seventh word to the ninth word. All native data are written with an orthography that conforms to Spanish, except for the symbol 2.
CAYAPA: GRAMMATICAL NOTES AND TEXTS

tence final. Possible marginal expansions are not described for lack of data.

Tagmeme filler. The interrogative base is filled by a declarative independent clause (2.1.1).

Formula. \+IntBase\DecIndCl

Illustrations. (elicited material) ya uma hii 'he today went' ('He went today?'); (elicited material) ñu caspele alya catyu enu 'you before fish catch—not here' ('Have you not caught fish here before?')

1.2.4. Sentence type 4 (content-information interrogative). The content-information interrogative sentence consists of an interrogative introducer, and an interrogative base with a phonological interrogative marker: vowel length, nasalization, or high pitch, occurring sentence final.

Tagmeme fillers. The interrogative introducer slot is filled by content-interrogative words which have a double function of indicating question, and substituting for some tagmeme in the clause which fills the base tagmeme (4.2.1). Interrogative base is filled by a declarative independent clause (2.1.1).

Formula. \+IntIntr\ContIntWd \+IntBase\DecIndCl

Illustrations. (elicited material) naaña-----hiyu ñu 'why-----go you' ('Why did you go?'); (elicited material) tyee-----quíñq cahchilpupu 'what-----made broom' ('What is the broom made of?')

1.2.5. Quotative. The quotative consists of a quotative base, and a quotation.

Tagmeme fillers. Quotative base is filled by a quotative dependent clause (2.2.4.1). Quotation may be filled by any size of discourse.

Formula. \+QuBase\QuDepCl \+Quotations\Quotation

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Illustrations. B50 tseñu’—tsandimi anhee—heete-tyudel 'being-so—said angel—fear-not!' (‘Being so, the angel said, "Fear not!"’). For further examples see B22, B83.

2. Clause. The Cayapa clause is a grammatical unit of predication with an obligatory nucleus and optional satellites. There are two major classes of clauses, determined by their internal structure, and by their distribution in sentences: independent clauses occur as the base of a sentence; dependent clauses occur as sentence-level satellites or manifest various clause-level tagmemes, and contain extra tagmemes which distinguish them from independent clauses. Within these two classes, there are subdivisions which are determined by obligatory tagmemes and syntagmemic meaning.

2.1. Independent clauses. Independent clauses manifest sentence-level base tagmemes, and consist of obligatory predicate tagmemes with or without satellite tagmemes. The most common satellite tagmemes are presented in their most frequent order relative to the predicate tagmeme.¹

Independent clauses are of two different emic types, differentiated by the contrastive structure of the predicate tagmeme and the presence or absence of certain other tagmemes.

¹tseñu 'being so' is a discourse introducer which functions on a higher level than sentence. It indicates that actions or events have transpired in the preceding discourse which motivate action in the new discourse.

²Present data indicate that there is no strict positional order for tagmemes. More data are needed to establish the factors which determine their occurrence.

Illustrations of positional variations:
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2.1.1. Independent clause type 1 (declarative). The declarative independent clause consists of an obligatory declarative predicate tagmeme and optional marginal tagmemes.

Obligatory tagmemes. The declarative predicate is filled by a declarative independent verb phrase (3.3). In an earlier draft of this paper, a division was made between transitive and intransitive predicate tagmemes. Further analysis, however, has revealed that there is no clear dichotomy, and no distinction is made between them.

Optional tagmemes. Subject is filled by a noun phrase (3.1) or a dependent clause type 7 (2.2.3.4). Temporal is filled by a temporal (4.1.2), a temporal phrase (3.2), or a dependent clause type 5 (2.2.3.2). Locative is filled by a locative adverb (4.2.2.3) or a noun phrase (3.1). Object is filled by a noun phrase (3.1) or a dependent clause type 4 (2.2.3.1). Modifier is filled by a modifier adverb (4.2.2.2).

Formula. +Sbj; +Sbj_x; +Temp; Temp_x; +Loc; Loc_x; +Obj; Obj_x; +Mod; ModAdv; +DecPred; DecIndVbPhr

Illustrations. (elicited material) ya—uma—cicheesha—yamu—tya?quive 'he—today—tree—near—him—shot!' ('Today he shot him near the tree.'); Al lala—entsa chuchoya pulanchi—urintesha—hila 'we—this month past—Oriente—went!' ('This past month, we went to the Oriente.') For further examples see: A6x—7, A7x—8,

A3 Pred himi Temp huntsa ayunchi Loc quitsusha 'went—that morrow—Quito!' ('On the morrow we went to Quito.')

(text material) Temp unce tinsha Pred maala Loc quitsusha 'eleven about—returned—we—Quito!' ('We returned to Quito about eleven.')

A5 Loc quitsusha Temp siete y media tuisha Pred vihila 'Quito—seven and half about—enter—we!' ('We entered Quito about seven-thirty.')

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2.1.2. Independent clause type 2 (imperative). The imperative independent clause consists of an obligatory imperative predicate tagmeme and optional marginal tagmemes.

Obligatory tagmeme. The imperative predicate is filled by an imperative independent verb (4.1.3.3).

Optional tagmemes. Temporal is filled by a temporal (4.1.2) or a temporal phrase (3.2). Subject is filled by a noun phrase (3.1). Locative is filled by a locative adverb (4.2.2.3) or a noun phrase (3.1). Object is filled by a noun phrase (3.1).

Formula. +Temp:Temp_x +Sbj:NnPhr +Loc:Loc_x +Obj:NnPhr +ImpPred:ImpIndVb

Illustrations. (elided material) ayu---ñulya cumuin-chi---beesangtisude! 'you all---song-do' ('All of you be singing!'); see also B504.

2.2. Dependent clauses. Dependent clauses are of four major divisions: clauses which manifest only sentence-level satellite tagmemes; clauses which manifest both sentence-level satellite tagmemes and clause-level tagmemes; clauses which manifest only clause-level tagmemes; and clauses which manifest quotative base tagmeme of a quotative.

2.2.1. The dependent clause that manifests only sentence-level satellite tagmeme is of one emic type, conditional.

2.2.1.1. Dependent clause type 1 (conditional). The conditional dependent clause manifests sentence-level satellite tagmeme and is diagnostically marked by conditional verb suffix -tu.

Obligatory tagmeme. Predicate is filled by a conditional dependent verb (4.1.3.2).

Optional tagmemes. Subject is filled by a noun phrase.
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(3.1). Temporal is filled by a temporal (4.1.2). Locative
is filled by a locative adverb (4.2.2.3) or a noun phrase
(3.1). Three optional tagmemes are included in the list, but
all three have not been found together in any one clause.

List of tagmemes which occur: +Subject, +Temporal,
+Locative, +Predicate

Illustrations. Subject tagmeme. B21₁-₂ quepe—-hitu...
'night—-come...' ('night having come...'). Temporal tag-
meme. A2₈₂-₃ ...uma—-hitu... '...already—-come...'
('...having already arrived...'). Locative tagmeme. A₂₁₁-₂
hunga—-hitu... 'there—-go...' ('having gone there...');
for further examples see: A₆₂, A₇₁-₂, A₁₇₁, B₃₁, B₈₁,
B₁₀₁-₂, B₁₇₁, B₂₁₁-₂.

2.2.2. The dependent clauses that manifest both sen-
tence-level tagmemes and clause-level tagmemes are of two
tonic types, purposive and causative.

2.2.2.1. Dependent clause type 2 (purposive). The
purposive dependent clause manifests sentence-level satel-
lite₂ or clause-level purposive tagmeme, and is diagnosti-
cally marked by purposive verb suffix -nu.

Obligatory tagmeme. Predicate is filled by a purposive
dependent verb (4.1.3.2).

Optional tagmemes. Subject is filled by a noun phrase
(3.1). Locative is filled by a locative adverb (4.2.2.3) or
a noun phrase (3.1).

Formula. +Sbj:NnPhr +Loc:Locₓ +PurpPred:Purp
DepVb

Illustrations. B₁₃₅₋₇ ...maria—-hunga—-chunu
'...Mary—-there—-live-to' ('...for Mary to stay there');
for further examples see: A₇₁₀₋₁₁, A₈₇₋₉, A₁₂₄₋₅, B₁₅₁₋₃,
B₁₇₂₋₅.

2.2.2.2. Dependent clause type 3 (causative). The
causative dependent clause manifests sentence-level satellite or clause-level causative tagmeme, and is diagnostically marked by relator tagmeme, mitya, which occurs as a free form.

Obligatory tagmemes. Predicate is filled by an independent declarative verb (4.1.3.1). Relator is filled by a relator word (4.2.2.4).

Optional tagmemes. Subject is filled by a noun phrase (3.1). Object is filled by a noun phrase (3.1).

Formula. +Sbj:NnPhr +Obj:NnPhr +CausPred:DecIndVb +Rel:RelWd

Illustrations. B2917 ... inu—querahdetu—mitya
'... me—know—not—because' ('...because they did not know me...'); for further example see B1317.

2.2.3. The dependent clauses that manifest only clause-level tagmemes are of four emic types, objective, temporal, instrumental, and subject, which are differentiated by differences in predicate tagmemes, and their distribution within the clause structure.

2.2.3.1. Dependent clause type 4 (objective). The objective dependent clause manifests the clause-level object tagmeme. It is marked as objective by the suffix -nu affixed to the subject of the dependent clause.

Obligatory tagmeme. Predicate is filled by a declarative independent verb (4.1.3.1).

Optional tagmemes. Subject is filled by a noun phrase (3.1). Locative is filled by a locative adverb (4.2.2.3) or a noun phrase (3.1). Object is filled by a noun phrase (3.1).

Formula. +Obj:Sbj:NnPhr +Loc:Locx +Obj:NnPhr +ObjPred:DecIndVb

Illustration. (elicited material) ... marucumu---hurga---
cuchamu---quive... '...man---there---dog---hit...' ('He saw---the man hit the dog there.').
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2.2.3.2. Dependent clause type 5 (temporal). The temporal dependent clause manifests clause-level temporal tagmeme, and is diagnostically marked by one of various temporal verb suffixes which give slightly different total meaning. These are described under dependent verb Chart 2 (4.1.3.2).

Obligatory tagmeme. Predicate is filled by a temporal dependent verb (4.1.3.2).

Optional tagmeme. Locative is filled by a locative adverb (4.2.2.3) or a noun phrase (3.1). Subject is filled by a noun phrase (3.1). Object is filled by a noun phrase (3.1).

Formula. +Loc:Locx +Sbj:NnPhr +Obj:NnPhr +TempPred:TempDepVb

Illustrations. (elicited material) hunqqa—-rucunu—-catañu... 'there—-man—-saw—after...' ('after he saw the man there...'); B881-2 hesus—-aawañu... 'Jesus—-grown—after...' ('after Jesus was grown...').

2.2.3.3. Dependent clause type 6 (instrumental). The instrumental dependent clause manifests the clause-level instrumental tagmeme, and is diagnostically marked by instrumental verb suffix -chi.

Obligatory tagmemes. Predicate tagmeme is filled by an instrumental dependent verb (4.1.3.2). Locative is filled by a locative adverb (4.2.2.3).

Formula. +InstPred:InstDepVb +Loc:LocAdv

Illustration. A175-8...hecaanchi—-cailala 'flying—by—above' ('...by means of flying above').

2.2.3.4. Dependent clause type 7 (subject). The subject dependent clause manifests the clause-level subject tagmeme, and is diagnostically marked by the absence of any suffix.

Obligatory tagmemes. Locative is filled by a noun phrase (3.1). Predicate is filled by a declarative dependent verb (4.1.3.2).

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2.2.4. The dependent clause that manifests only quotative base is of one emic type, quotative.

2.2.4.1. Dependent clause type 8 (quotative). The quotative dependent clause manifests the quotative base tagmeme, and consists of an obligatory quotative predicate with or without marginal expansions.

Obligatory tagmeme. Predicate is filled by a quotative independent verb (4.1.3.4).

Optional tagmemes. Temporal is filled by a temporal dependent clause (2.2.3.2). Subject is filled by a noun phrase (3.1).

Formula. +Loc:NnPhr +SbjPred:DeoDepVb
Illustration. B92-3 samariyasha—chu?...
'...Samaria—live...!' ('...those who live in Samaria...').

3. Phrase. A Cayapa phrase consists of one or more head words with optional modifiers. There are three classes of phrases, differentiated by different head tagmemes, and by their occurrence as fillers of different slots.

3.1. Noun phrase. Construction subtypes of noun phrases manifest clause-level subject, object, or relational tagmemes, and phrase-level modifier tagmeme. Noun phrase fillers are reduplicated within the phrase construction when emphasis is incorporated into the grammatical unit, e.g.

B22-3...main---main---hesus---hesusnu... '...one---
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one—Jesus—Jesus' ('one Jesus'); see also B24₂⁻₃, B26₁⁻₂.

Obligatory tagmemes. Head is filled by a noun with one of the following suffixes indicating the slot in which the particular phrase subtype occurs: -chi instrumental, -sha locative, -ba associative, -nu object, or with no suffix, indicating occurrence in subject slot.

Optional tagmemes. Locative is filled by a locative adverb (4.2.2.3) which occurs only when locative tagmeme is manifested. Limiter is filled by a limiter adjective (4.2.3.2). Modifier is filled by a modifier adjective (4.2.3.1), or a noun phrase. Possessive is filled by a possessive noun (4.1.1.1).

Formula. +Loc: loc-adv +Lim: lim-adj +Mod: NnPhr/adj +Poss: poss-n +Hd:n

Illustrations. As instrumental. B44₂⁻₅...nacululu—halichi '...soft—cloth—with' ('...with soft cloth'); see also B17₇. As locative. B24₃⁻₁₀...hunga—vagaa vash-quimula—rucula?—hunu '...there—cow watcher—men's—place' ('...there at the cow watcher men's place'); for further examples see A10₂⁻₃, B12₂⁻₄, C5₁⁻₃. As associative. (elicited material) ...maria?—naatalaba...

'...Mary's—brother—with...' ('...with Mary's brother ...'); for further example see B8₄⁻₅. As object. B1₈₄⁻₇...huntsa—cavalu vashcuimulu—chachilanu '...those—horse watcher—people' ('...those shepherd people'); for further examples see: B₄₂⁻₃, B₂₃₅₋₇, B₂₇₇. As subject. B₂₈₄⁻₅...cumuinchichi—chachi... '...all—people,...' ('...all the people...'); for further examples see: B₂₅₁⁻₂, B₂₆₅⁻₆, B₂₆₁₁₋₁₂, B₈₃₁₁₋₁₂.

3.2. Temporal phrase. The temporal phrase manifests the clause-level temporal tagmeme, and it consists of an obligatory temporal head with or without modifiers.
Obligatory tagmeme. Temporal head is filled by a temporal adverb (4.2.2.1) or a temporal complex (4.1.2).

Optional tagmemes. Limiter is filled by a limiter adjective (4.2.3.2). Modifier is filled by a modifier adjective (4.2.3.1).

Formula. \( +\text{Lim:lim-adj} +\text{TempHd:temp}_x +\text{Mod:adj} \)

Illustrations. A\(_{12-4}\) ...entsa---chuchaya---pulanchi...
'...this---month---past...!' ('...this past month...'); for further examples see: A\(_{32-3}\), A\(_{52-4}\), A\(_{64-5}\), A\(_{92-5}\), A\(_{142-3}\), A\(_{154-5}\), A\(_{161-2}\), A\(_{172-3}\), B\(_{22-3}\).

3.3. Verb phrase. The verb phrase manifests the clause-level predicate tagmeme, and consists of one or more verb heads. If the action of the verb heads is simultaneous, the first verb head occurs with simultaneous action marker -sai.

Obligatory tagmeme. Verb head\(_2\) is filled by an independent verb (4.1.3.1).

Optional tagmeme. Verb head\(_1\) is filled by an independent verb with or without simultaneous suffix -sai.

Formula. \( +\text{VbHd}_2:\text{vb}/\text{vb-sai} +\text{VbHd}_2:\text{vb} \)

Illustrations. B\(_{95}\) ...himi... ('...went...'); B\(_{55-6}\) ...vi?---paami '...entered---came out' ('...entered and came out'); (elicited material) ...quisai---hami '...playing---came' ('...came playing'); for further examples see: B\(_{179-3}\), C\(_{22-4}\).

4. Word. A Cayapa word is a grammatical unit, composed of a stem with or without affixes, which manifests phrase-level tagmemes. There are two main divisions: inflected words, which are heads of phrases; uninflected words, which fill specific slots.

4.1. Inflected words. Inflected words are of three emic types, noun, temporal, and verb.
4.1.1. The nouns found in the data are of three derivational subclasses, simple stems (quepe = 'night'), compound stems (he?macule = he?mu 'flyer' + cule 'canoe' = 'airplane'), uyaruco = uya 'savage' + rucu 'man' = 'foreigner'), and nominatives (himu = hi 'to go' + -mu 'nominalizer' = 'traveler', liveequemu = liveequ 'to liberate' + -mu 'nominalizer' = 'Saviour').

Since pronouns occur with the nominal affixes, they are considered as a subclass of nouns occurring in the same slots with certain semantic restrictions.

Illustrations. With object marker. A28e ...inu... 'I + -nu object marker...!' ('...me...'); B18i ...chachi-laniu '...people + -nu object marker' ('...people'). With respect marker. B2i yaya... 'he + -ya respect marker...!' ('He-Jesus...'); B1h hesusya... 'Jesus + -ya respect marker...' ('Jesus...'). With associative marker. B11h ...yaiba... '...they + -ba associative marker...!' ('...with them...'); B84 ...diasba... '...God + -ba associative marker...!' ('...with God...'). With possessive marker. C52 ...lama?... '...we + -? possessive marker...' ('...our...'); B54 ...marla?... '...Mary + -? possessive marker...' ('...Mary's...').

4.1.1.1. A noun becomes a possessive noun by the addition of possessive suffix -?, e.g. B54 ...marla?... '...Mary + -? possessive marker...' ('...Mary's...').

4.1.1.2. Certain examples of prefixes and suffixes of nouns have been found, but the data are not sufficient to indicate order of prefixes or order of suffixes nor the limitations on co-occurrence. Those affixes which have been previously mentioned are not listed.

Prefix examples are:

 augmentative aas- A18s ...aapusu... (aa- 'augmentative + -pusu 'lake' = 'big lake').

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diminutive caa- B17₃ ... caacusanu... (caa- 'diminutive' + -cusa- 'thing' + -nu 'object marker' = 'small thing'), another vee- A8₄ ... veeecaru... (vee- 'another' + -caru 'car' = 'another car').
Suffix examples are:
relational -tala B10₃ ... veepebulutala... (vee- 'another' + -pebulu- 'town' + -tala 'relational' = 'at another town').
directional -quee (elicited material) ... yuquee... (yu- 'house' + -quee 'directional' = 'hear the house').
specifier -ŋ (elicited material) ... rucuŋ... (rucu- 'man' + -ŋ 'specifier' = 'this man').

4.1.2. A temporal consists of a single word A1₃ ... chuchaya... 'month', or a word complex A5₂₄ ... sieytmedia... 'seven-thirty', and fills clause-level temporal slot or head slot of temporal phrase.

4.1.3. Verbs manifest the head tagmeme of verb phrases and are of two major classes, independent and dependent. Independent verbs manifest the predicate tagmemes of independent clauses. Dependent verbs manifest the predicate tagmemes of dependent clauses, and are diagnostically marked by dependent verb suffixes.

Verb stem classes fall into five derivational subclasses: 1. simple roots (as cata 'look', mi 'went'), 2. compounds (as besang' 'to-sing' = besa- 'song' + -ŋ- 'connector' + -gi 'do'; tsuhi 'to-fall' = tsu- 'fall' + -hi 'go'; tyetyu-tyetyuqui 'to-shoot repeatedly' = tyetyu- 'shot' + -tyetyu- 'shot' + -qui 'do'), 3. adjective root plus verbalizer (as lula 'to-heat' = lu- 'hot' + -la 'verbalizer'), 4. verb root

-ŋ- connector is explained on the phonological level. See "Cayapa Phonemics," in this volume. A statement of syllable divisions, as well as the Cayapa alphabet, is included in the same paper.
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plus activizer (as lulawaa 'to-heat something' = lu- 'hot' + -la- 'verbalizer' + -waa 'activizer'), 5. noun or adjective stem plus a verb suffix (as tyetyuve 'is-shot' = tyetyu- 'a shot' + -ve 'person marker'; urave 'is-good' = ura- 'good' + -ve 'person marker').

4.1.3.1. The morphemic construction of declarative independent verbs is shown in Chart I.

**Chart I**

**AFFIX ORDER OF INDEPENDENT VERBS**

<table>
<thead>
<tr>
<th>±</th>
<th>+VbStem</th>
<th>±</th>
<th>±</th>
<th>±</th>
<th>±</th>
<th>±</th>
</tr>
</thead>
<tbody>
<tr>
<td>ma-</td>
<td>-nu</td>
<td>-de</td>
<td>-tsu</td>
<td>-wa</td>
<td>-yu</td>
<td>-ve -la</td>
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<td>progress.</td>
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<td>person</td>
</tr>
<tr>
<td></td>
<td>-ya</td>
<td></td>
<td></td>
<td>-mi</td>
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<td>past</td>
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<td></td>
<td>passive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-tyu</td>
<td></td>
<td>-shi</td>
<td>negative</td>
<td>emphatic</td>
</tr>
</tbody>
</table>

Restrictions of chart:
1. -ya passive, occurs only with -mi, simple past.
2. -shi emphatic, occurs only with -tyu, negative.
3. -nu incomplete action, does not occur with -wa, past.
4. -mi simple past, always occurs verb final.

Illustrations.
A1g ...hila (hi- 'went', -la 'plural person'; 'went-they').
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B12 ...nacayami... (naca- 'born', -ya- 'passive', -mi 'simple past'; 'born-was').

C32 ...caindyushii (cain- 'take', -dyu- 'negative', -shi 'emphatic'; 'take-not-will').

(elicited material) ...mafindetsuyu (ma- 'habitual', -fi- 'eat', -n- 'connector', -de- 'plural', -tsu 'progressive future action', -yu 'person marker'; 'again-eat-will').

(elicited material) ...quindetsuwayu (qui- 'do', -n- 'connector', -de- 'plural', -tsu- 'progressive action past', -wa- 'past', -yu 'person marker'; 'doing-were-wel').

(elicited material) ...quinudetsuyu (qui- 'do', -nu- 'incompleted action', -de- 'plural', -tsu- 'progressive action future', -yu 'person marker'; 'do-will-wel').

4.1.3.2. The morphemic construction of declarative dependent verbs is shown in Chart II.

**Chart II**

**AFFIX ORDER OF DEPENDENT VERBS**

<table>
<thead>
<tr>
<th>+VbStem</th>
<th>±</th>
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<th>±</th>
<th>±</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>-h</td>
<td>-de</td>
<td>-tu</td>
<td>-hu</td>
</tr>
<tr>
<td>negative</td>
<td></td>
<td></td>
<td>cond.</td>
<td>temporal</td>
</tr>
<tr>
<td>-chi</td>
<td>instrum.</td>
<td>-tsu</td>
<td>progress.</td>
<td></td>
</tr>
<tr>
<td>-nu</td>
<td>purposive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-taa -naa -bala -ndu</td>
<td>temporal</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Restrictions of chart:

1. Suffixes which occur verb final without any medial affixes are: -nu purposive; -chi instrumental; -taa same subject, punctiliar completed preceding predication; -nua different subject, punctiliar completed preceding predication; -bala preceding predication not seen by the actor; -ndu temporal simultaneous predication.

2. -nua completed predication with results still in effect, does not occur with -tu conditional.

Illustrations.

A289 . . . querahdetu... (quera- 'know', -h- 'negative', -de- 'plural', -tu 'conditional'; 'known-not-having').
A178 ... hecaanchi... (heca- 'fly', -n- 'connector', -chi 'instrumental'; 'flying-means-by').
B234 ... bandetsũnũ... (ha- 'come', -n- 'connector', -de- 'plural', -tsu 'progressive', -nua 'temporal'; 'coming-after').
A7tt ... hinu (hi- 'go', -nu 'purposive'; 'go-to').
(elicited material) panda quiyana wahta panda tananu 'platano root plant-after platano have' (wah- 'plant-to', -taa 'temporal'; 'planting-after').
(elicited material) mana uĩnaa tyaʔqinutsuve 'deer talk-when shoot-will-he' (ui- 'talk', -nua 'temporal'; 'talk-when').
(elicited material) quicca taambala iya haantsuyu 'paper down-brought-after I come-will' (taam- 'bring down', -bala 'temporal'; 'down-brought-after').
(elicited material) cuhndu catayu 'rising saw-he' (cuh- 'to-rise', -ndu 'temporal'; 'rising').

4.1.3.3. The morphemic construction of imperative independent verbs is shown in Chart III.
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Chart III
AFFIX ORDER OF IMPERATIVE VERBS

<table>
<thead>
<tr>
<th>±</th>
<th>+VbStem</th>
<th>±</th>
<th>±</th>
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</thead>
<tbody>
<tr>
<td>ma-</td>
<td>-tsu</td>
<td>-de/-da singular</td>
<td>-dei/-dya plural person</td>
</tr>
<tr>
<td>habitual</td>
<td>progress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-tyu</td>
<td>negative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Illustrations.
B268...piiquidei... (piiqui- 'write', -dei 'plural person'; 'write-you-all')
B504...heetetyudei... (heete- 'to-fear', -tyu- 'negative', -dei 'plural person'; 'fear-not-you-all')

(elicited material) yanu beesa quicaantsude 'him song do-cause' (quicaa- 'do-cause', -n- 'connector', -tsu- 'progressive', -de 'singular person'; 'do-cause')

(elicited material) beesaangidya 'song-do-us' (beesa- 'song', -ŋ- 'connector', -gi- 'do', -dya 'plural person'; 'song-do-us')

4.1.3.4. Present data indicate that the morphological construction of a quotative verb consists of a verb stem plus either -mi simple past or person markers, -ve third singular, -ya first singular, -la plural. A chart is not given because of limited data, but illustrations are listed.

Illustrations.
B502...tsandimi... (tsandi- 'say', -mi 'simple past'; 'said')

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B88₃...tsandila... (tsandi- 'say', -la 'plural person'; 'said-they').

4.2. Uninflected words. Uninflected words are divided into three divisions, differentiated by their occurrence on the different grammatical levels, sentence, clause, and phrase.

4.2.1. Uninflected words which occur only on sentence-level are content-interrogatives. (elicited material) naña... 'why', (elicited material) tyee... 'what'.

4.2.2. Uninflected words which occur on the clause-level are of four emic types, differentiated by occurrence in different clause-level tagmemes.

4.2.2.1. Temporal adverbs manifest the clause-level temporal tagmeme. A28₂...uma... 'already', B7₇...caspele... 'before', B8₃...yuma... 'long-ago', B83₄ chala... 'now'.

4.2.2.2. Modifier adverbs manifest the clause-level modifier tagmeme. A8₆...menen... 'again', B8₅...pare-hu... 'equal', B25₃...yuh... 'much', B28₄...diheru... 'quickly'.

4.2.2.3. Locational adverbs manifest the clause-level locative tagmeme. A2₄ hugga... 'there', A2₃...enu... 'here', A7₄ humu... 'there'.

4.2.2.4. Relator word manifests the clause-level relator tagmeme. B28₄...mitya 'because'.

4.2.3. Uninflected words which occur on the phrase-level are of two emic types, modifier adjective, and limiter adjective.

4.2.3.1. Modifier adjective manifests the phrase-level
4.2.3.2. Limiter adjectives manifest the phrase-level limiter tagmeme, and are of two subtypes: demonstrative and quantity.

Demonstrative adjective illustrations. A12...entsa... 'this', A32...huntsa... 'that'.

Quantity adjective illustrations. A64...ma... 'one', A184...cumunchi... 'all', B104...mantsa... 'some'.

5. Texts. Informant was Santiago Bareapa.

Text A. 'A Trip to the Oriente.'

(1) lala 2entsa 3chuchaya 4pulanchi 5urientesha 6hila.
(2) hunga 2hitu 3enu 4himi 5san 6lurenzusha.
(3) 3himi 2huntsa 3ayunchi 4quitusha.
(4) 5san 6lurenzunu 3dishqueuenene 4luhimi.
(5) 4quitusha 3stete 5y 4media 5tuisha 6vihila.
(6) 6itsehtu 3vihitu 3ayunchi 4ma 5malu 4quitunu 6chula.
(7) hunga 2chutu 3ayunchi 4menen 5dishqueuenene 6hunga 7caru 8tsuinsha 9hila 10ambatusha 11hinu.
(8) 11ambatusha 2hitu 3hunu 4veecaru 5macala 6menen 7shel 8merasha 9hinu.
(9) 11shel 2merasha 3cuatu 5y 6mediasha 7hila 8shel 9merasha.
(10) 6itsehtu 3ayunchi 4hunga 3ma 5pebulu 6limun 7cucha 8pebulusha 9hinu 10hila.
(11) 9hinu 2huñureq.
(12) 4tiempu 3urahtu 3aruneta 4hunu 5hinu 6himi.
(13) hai7hunu 4tiempu 3urahtu 3shuhua 4shanchin 5quepeñun 5mitya 6haiindyu.
(14) 3ayunchi 2unce 3tinsha 4hami.
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(15) 1tschut 2she 3renu 4ma 5malu 6chula.
(16) 1huntsa 2ayunchi 3hila.
(17) 1hitu 2ma 3hura 4medya 5hela 6hecaanchi 7caitala.
(18) 1baasha 2hunga 3himpi 4cumuinchchi 5cusas 6engu 7chutyu 8cusas 9chumii.
(19) 1tschutu 2hunga 3aapusu 4cumuinchchi 5animu 6puhuetila 7na 8pihugaa 9shuhu...
(20) 1tschutu 2uma 3hitu 4cumuinchchi 5chachi 6inu 7yuh 8queralu 9inu 10querahedetu 11mitya.

Translation. (Items in parentheses are added to smooth out the English translation.)

(1) We 2this 3past 4month 5went (to the) 6Oriente.
(2) 2Having gone 1there (from) 2here (we) 3went (to) 4San 5Lorenzo. (3) (On) 2that 3morrow (we) 4went (to) 5Quito.
(4) (We) 4left 5San 6Lorenzo 7early (in the) 8morning. (5) (We) 4entered 5Quito 6about 7seven-thirty. (6) (Being 7so 8having entered (on the) 9morrow (we) 10stayed (In) 11Quito 12one 13day. (7) 2Having stayed 1there (on the) 2morrow 3again 4early (we) 5went 6there (where the) 7cars 8belong 9to go (to) 10Ambato. (8) 2Having gone (to) 9Ambato (we) 4again 5took 6another car 7there 8to go (to) 9Shell 10Mera. (9) (We) 4arrived (at) 11Shell 12Mera (at) 13four-thirty. (10) (Being 11so (on the) 12morrow 13there 14one 15town 16Limon 17Cocha 18town (we) 19went 20to go. (11) (We) 2were 1to go. (12) (The) 2weather 3was bad (when the) 4plane 5went 6to go 7there. (13) (It) 6came not 7because (the) 2weather 3was bad 4night (and) 5rain 6coming (It) 7did not come. (14) (On the) 2morrow 3about 4eleven (it) 5came. (15) (Being 6so (we) 7lived (at) 8Shell 9Mera 10one 11day. (16) (On) 2that 3morrow (we) 4went. (17) 2Having gone (we) 5flew 6one 7hour 8and 9half (by means of) 10flying 11above. (18) (We) 2arrived 3there (which was) 4far 5and 6all 7things (which) 8live not 9there 10lived (there).
(19) 1Being so (a) 3big lake (was) 2there (and) 4all 5ani-
mals 6existed 7even (the) 8water cow. (28) 1Being so
having arrived 2recently 3all (the) 4people 5stared (at)
me 6because (they) 7did not know 8me.

Text B. 'Christmas Story.' (This is a free-told story,
not a translation.)

(1) 1hesusya 2nacayami 3lalatsa 4hutyu.
(2) 1yaya 2yumaa 3timbu 4humi.
(3) 1hutyu 2lalatsa 3cweepu 4hutyu.
(4) 1ya 2lalatsa 3cweepu 4temi.
(5) 1ya 2ahcasha 3maria? 4ahcasha 5vi? 6paami.
(6) 1lalatsa 2nacayami.
(7) 1tsahutuyu 2caspele.
(8) 1querahtu 2hesus 3yamaa 4dyaasha 5parehu
6shumi.
(9) 1tsehtu 2samariyasha 3chu? 4belensha 5himi.
(10) 1hunga 2hitu 3bulu 4mantsa 5veepebulutala
6shubami.
(11) 1mantsa 2yalba 3bulu 4himi.
(12) 1tsehtu 2huntsa 3belen 4pebulusha 5himi
6chachi 7purehu.
(13) 1nucau 2nucaba 3lugaa 4hutyu 5maria 6hunga
7chunu.
(14) 1tsehtu 2mambela 3catami 4waagaya 5tsunu.
(15) 1cavaya 2cavalulaba 3tsunu 4ya 5yanu
6catami.
(16) 1tsehtu 2hesus 3hesusnu 4cam.
(17) 1cahtu 2cavalu 3panda 4finu 5caacusanu
6hesusnu 7halichi 8cuuce? 9pumi.
(18) 1tsehtu 2anhee 3mandangimi 4huntsa 5cavalu
6vashcuimu 7chachilanu.
(19) 1mandangitu 2hunga 3chachilanu 4himi.
(20) 1quepe 2himi.
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(21) iquepe jhihutu jmacaralaba jhimu.
(22) i'tsandiim bihunga jmain jmain jhesu jhesusu nu jmacave.
(23) i'tsandi'nu jhunga jvainu jhandetsu'nu jhunga jvaga jvashquimula jsheetyala.
(24) i'tsehu janheela janheela jcumunich i'besan-gila jhunga jvagaa jvashquimula j'rujula? lbunu.
(25) i'nasaret 2chachila jyuh jnatyala.
(26) i'ruma iruma jluendimi jcumunich i'mumu jhula? jpebulusha jpliquidei jhunga jpebulusha jhula?
   jbulusha.
(27) i'tsehu jmadain jhunga i'tsandi jhunga jluendu j'udenu j'udenu jcasungila.
(28) i'dheru jmi'nuha jhimula jtyuwala... 
(44) i'maria jhalichi jvicaami jmacululu jhalichi...
(50) i'tsenu jtsandimi janheeb jheetejudei!...
(83) i'chala j'ius jadyus jqueca jin jcapuoachireng jliveequemunu jscata jmityi jtimi jhunga j2mandang-
   gemu... 
(88) i'hesu 2awa'nu jtsandila jentsa jcosa jdentsaityu.

Translation.

(1) iJesus jwas not jborn (the) jsame as we (are).
(2) iHe jwas (in existence a) jlong jtime ago.  (3) iBeing in existence (he) jdid not have (the) jbody jsame as we.
(4) iHe jdesired (a) jbody jsame as we.  (5) iHe jentered jMary's jwomb (and) jcame out (her) jwomb.  (6) (He) jwas born jsame as we.  (7) jBefore (he) jwas not (the) jsame.  (8) jBefore known jJesus jlong ago jlived jequal jwith God.  (9) jBeing so (those who) jlived (in) jSamaria jwent (to) jBethlehem.  (10) jHaving gone jthere (the) jgroup jstayed (at) jsome jother town.  (11) jSome jwent jwith their jgroup.  (12) jBeing so jmany jpeople jwent
(to) 2 that Bethlehem 4 town. (13) 4 Where (pray tell) 2 where 4 there 4 is not 3 room (for) 4 Mary 7 to stay. (14) 1 Being so (he) 4 found (a) 2 one (place) 4 a house for cows 5 to lie. (15) 4 He 4 found (a) 2 house (a) 4 horse house 2 with horses 2 to lie. (16) 4 Being so (she) 4 had 2 3 Jesus. (17) 4 Having delivered (she) 4 wrapped 7 Jesus with (a) cloth (and) 4 placed (him in the) 2 manger. (18) 4 Being so 2 angels 4 were sent (to) 4 those 5 horse 4 watcher 7 people. (19) 4 Being sent (they) 4 went (to the) 3 people 2 there. (20) (They) 4 went (at) 1 night. (21) 4 Night 4 having come (they) 4 went 3 with (the) stars. (22) (They) 4 said 2 there 7 born 3 one Jesus. (23) 4 After saying 3 to inform 2 those (and) 4 after coming 3 those 4 7 shepherds 8 were afraid. (24) 4 Being so 4 all (the) 2 3 angels 4 sang 6 there (at the) 7 3 shepherds' 10 place. (25) (The) 4 Nazareth 2 people 3 4 were very upset. (26) 4 2 Rome 3 ordered 4 all 3 to write 5 your 3 name (in the) 7 town 9 that 1 3 town 4 of 3 your 2 relatives. (27) 4 Being so (to) 3 that (one) 2 whomever (they) 4 said 5 that 7 order (they) 8 obeyed (that) 7 order. (28) 4 Quickly (the) 3 goers 4 filled (the) 2 road. (44) 4 Mary 3 covered (him) 4 with (a) cloth (a) 4 soft 3 cloth. (50) 4 Being so (the) 3 angel 2 said 4 fear not! (83) 1 That 12 sender 3 said 1 now 2 God 3 make (me) depart 3 because 5 my 4 eyes 4 have seen (the) 7 Saviour. (88) 2 After 1 Jesus 2 was grown (they) 4 said 4 these 6 unusual 5 things.

Text C. 'Franko's Marriage.'

(1) 4 farancu 2 camaunshan 3 geve 4 supungami.
(2) 4 veela 4 doquisi? 5 pace? 4 auia.
(3) 4 maalya 2 caindyushi.
(4) 4 itsange 2 catu 4 engu 4 feca 4 chu? 4 mitya
engu 4 tahamu.
(5) 4 hunga 5 lala? 4 pebulusha 4 demantsuve 5 farancu.
Translation.

(1) 4 Franko 3 4 was married (at) 2 Camarones. (2)
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1. Others went asked (and) gave (her). (3) (He) alone did not take (her). (4) Being so having taken (her) (they) brought (her) there upstream because (he) lives there. (5) Franko returned (to) our town there.

1. aapusu big-lake
2. aawãñu after-grown
3. adyus depart
4. ahcaasha womb
5. anhee angel
6. ambatusha Ambato
7. aruneta airplane
8. ayunchi tomorrow
9. baasha far
10. belensha Bethlehem
11. bulu group
12. bulusha relative
13. caacurasnu little-thing
14. cahtu having-delivered
15. canyushi will-not-take
16. cañala above
17. chala now
18. camaunsha Camarones
19. cami had
20. capucachi eyes
21. caru car
22. caspele before
23. cata seen
24. catami found
25. casuggila obeyed-plural
26. cavalu horse
27. cavalulaba with-horses
28. cavaya horse-house

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29. chachi people
30. chuchaya month
31. chula stayed-behind-plural
32. chutu having-stayed
33. chumi live
34. chutuyu live-not
35. cula gave-plural
36. cumuinchichi all
37. cusas thing
38. cuunce wrapped
39. cuatru y media four-thirty
40. cweepu body
41. dishqueuenene early-morning
42. dentsaityu unusual
43. diheru quickly
44. dins God
45. dyasba with-God
46. entsa this
47. enu here
48. farancu Frank
49. feca upstream
50. hailnu came-not
51. halichi cloth-with
52. hami came
53. hanchi come-with
54. handetsunu after-coming-plural
55. hecaanchi by-means-of-flying
56. heetetyudei fear-not
57. hela flew-plural
58. hesusya Jesus
59. hila went-plural
60. himi went
61. himula travelers
62. hinu to-go

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63. hitu having-gone
64. humi was
65. humu there
66. huntsa that
67. hunga there
68. hura hour
69. hutyu be-not
70. inu my
71. inu me
72. lala we
73. lala? our
74. lalatsa same-as-we
75. limun cucha Limon Cocha
76. liveequemu Saviour
77. luhimi left-behind
78. ma one
79. maalya alone
80. macala took-plural
81. macara star
82. macarala stars
83. macaralaba with-stars
84. main one
85. malu day
86. mandangimi sent
87. mandangimu sender
88. mandangitu being-sent
89. mantsa some
90. mambela one
91. maria Mary
92. maria? Mary's
93. medya half
94. menen again
95. mitya because
96. mifusha road

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97. mubain whomever
98. munu name
99. nacayami was-born
100. nacululu soft
101. nasaret Nazareth
102. natyala upset-plural
103. nuca a where
104. nucaba where-with
105. ñula? your
106. paami came-out
107. pace? asked
108. panda finu to-eat
109. parehu equal
110. pebulu town
111. pitiquidel write-plural-imperative
112. pulanchi past
113. pumi placed
114. purehu many
115. queca make
116. quepe night
117. querahdetu known-not
118. quitusha Quito
119. rucu man
120. rucula men
121. rucula? men's
122. ruma Rome
123. san lurenzusha San Lorenzo
124. samariyasha Samaria
125. shel merasha Shell Mera
126. siete y media seven-thirty
127. shubami stayed
128. shuhua rain
129. supungami married
130. tahañu brought-after
131. temi desired
132. tiempi weather
133. timi said
134. timbu time
135. tsandila said-plural
136. tsandimi said
137. tsenhu being-so
138. tsunsha belong
139. tuinsha about
140. tsunu to-lie
141. tuwala filled-plural
142. unce eleven
143. urahtu being-not-good
144. urientesha Oriente
145. uuden order
146. uudengimi ordered
147. vagaa cow
148. vainu to-inform
149. vashquimu watcher
150. vashquimula watchers
151. vescaru another-car
152. veela others
153. veepbulutala another-town
154. vih entered
155. vicaam covered
156. vihila entered-plural
157. vihitu having-entered
158. yuh much
159. yaya he-respect
160. ya he or house
161. yaiba with-their
162. yumaal long-ago
0. Introduction. Morphological analysis of a Siona text is presented in the three main sections of this paper, the text itself appearing in 1., the free translation in 2., and the analysis of the entire text into constituent morphemes in 3. In each of these three sections sentences are numbered to correspond with the numbering of sentences in each of the other two sections. A subscript numeral preceding each word in the text refers to its free translation in 2. and to the morphological analysis of that word in 3. The final section is composed of a series of morpheme-order charts for reference in connection with the analysis presented in 3.

Siona morphophonemics for the purposes of this paper is summarized as follows:

Vowel nasalization carries over to the following contiguous vowel, and to the following non-contiguous vowel within the same word through intervening h, h w, w, y, and ?; kāi vr. 2 'sleep' + -?i VIM 541 → kāiʔi; kāi 'sleep' + -yi VIM 531 → kāyiʔ; kāi 'sleep' + -ha VB 401 + -hiʔi VIM 544 → kāhiʔi.
A SIONA TEXT MORPHOLOGICALLY ANALYZED

Vowel nasalization carries back to the preceding contiguous vowel: s'íä nr. 1 'egg' + -t'o NIS 20-4 + -ä NIS 41 → s'íät'oa, 'nests'.

Like vowels elide across morpheme boundaries: t'á-vr. 1 'bring' + -á VS 102 + -k'o VIM 533 → t'ák'o.

Dissimilation from rounded u to unrounded i occurs before o: tů- vr. 1 'put upon' + -ó VS 103 + -hi VIM 534 → tʃóli.

1. Text. The following text was given by Francisco Piaguaje at Buena Vista, Ecuador, on January 4, 1961.

(1) t'ukiyáp'i tťák'ña, sťáä swáña spuénä swísta
t'uíp'i st'ání, sp'ák'y 16 yóóöt'e 11 kóläl 12 p'áíp'i
13 yékíña.

(2) sp'áki'ip'i 2yóó ɔskák'ína, sťáä sp'áä swáña
tyl'kání, sháäl'iltep'a, sťáä sá 10 tút'e 11 téótohaíl
12 ʃáft'uná.

(3) sháäl'íp'i, st'áä swáña swéóíl, gyó sáapt'o
żtká st'ání, sńáánl, 16sháäl'íp'i, 11 p'á 12yióná
13 st'ání, 14 ʃञáwí 15 p'á 16stúp'iá.

(4) t'ńáni, tšfini, sháäl'íp'i, 4yékíko'aa nículo
stúp'ái ʃníht'é.

(5) nículo, tšfini, sháäl'íp'i, 4p'á stúp'iá nículo
stúp'ái, sp'á swáña sńááñ kání.

(6) sháäl'íp'i, yékí ńłóko'ose ayátk'ína, sťáä
swáña ʃwasó st'įńt'ip'iti stúp'ái.

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(7) ip'ot'áni, há?át'íp'í, yékii mök'óseyá, yékikoaap'í 6?ot'át'e k'íp'yót'áwi, psi o 1 to tío yet'e 11 yá?á p'ayat'e.

(8) há?át'íp'í, yékikoa há?ó 4 tiá 6p'yót'áwi.

(9) yékii 4p'éi shúp'lk'a wí'et'e ñíkó, yuá 7míni, sé kévélat'e stió 10 t'ó'nt'áwi.

(10) t'íoni, há?át'íp'í, k'óówi.

(11) k'éóni, t'íhíni, 3p'a wípe k'éo 6p'yót'áwi.

(12) k'éó 2p'yót'áni, t'íhíni, há?át'íp'í, 9 tá ná k'ína, sé ip' swá'na wí'ína 9sá'íi.

(13) sání, sé sé yáták'ína, sé sé t'ái'íi, sé ip' swá'na.

(14) t'ání, yuá 3?ot'át'e 4píkání, t'íhíni, 6'átip'ayat'e swéó 6p'yót'ámata.

(15) t'ál t'íkíye.


(17) 2k'át'é ne 2t'áfmahí, 3kání kúyá 5swá'í yuá, yl'ít'e st'ó skók'íi 16m'í, 11 t'ó 12k'át'é ne 15sáhi'í, 14kálí, 15yuá 16wáhi 17yíhi 20p'álí 17p'ot'ó te 20yó'ósiko?o.

(18) há?álka 2káyeta, yíí, 4k'át'é 5t'áhí.

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(19) ḥā'āka 2klāp'i 3p'āk'i.
(20) ikokemā'iyi' 2yil'hp'i, ḥak'î, sák'î 3p'â'hî.
(21) ḥā'āka 2slâni, skāye, 4p'êoje, sîyô'ōhî'î', skâwi.
(22) ik'at'ê 2t'âfyet'î'jî 3p'amîhi 4p'âk'îte.
(23) iyâ't'a 2fēča 3p'âk'îte 4sèyâlase'e 5tî'âhî.
(24) ḥâ'âka 2slâni, sîl'â 4hîhâ 5t'ô'tâhî, sîyô'ōhî', 3p'â'îhî'î'.
(25) ḥâ'âka 2kâhînâ, shrî 4p'â'îft'i, 3p'âk'î 5tî'êk'î 3p'â'îhî 3tâwî'îî.
(26) it'âni, t'ô 3pîmîsek'â 4'îhî 5t'âni, hâ'ât'îp'î, 3sèe'ê 6k'êwâni, 4p'ônîk'î 4p'â'îhî 11p'âk'î 12lîmôkôdzanâ.
(27) ḥâ'âka 2slâni, šamôttê 4môk'ôseyâ 3p'âni, 4p'âk'î 3sèe'ê 3sâni, k'ât'ê 4k'âhê 11t'âk'î 12p'â'îhî.
(28) ḥâ'âka 2tî'êk'înâ, sîl'â 4wâ'înâ 5yêk'înî, 3p'ôhôvi, 3p'âk'î 5tî'êk'înâ.

2. Free translation.

(1) The foreigner 2having come, 3=everybody, 4=the Buena Vista 5people, 6=came, and 7=we 8were (here) 9to help with 9his 10work. (2) He 3speaking 4the work (i.e. telling what the work was), 5=all 6=the people 7gathered, and 8=first of all, 9we set out to new 10hardwood 11pillars 12in the much place (i.e. the woods). (3) Then, 3=everybody 4carried 5=the 6pillars, 7brought (them) 8toward 9the canoe 10entrance, 11brought (them) up, and, 12then, 13brought
(them) 11-12 to the ground (i.e. the house site), (and) 14 laid (them) down. (4) We laid (them) down, 12 finished, and 3 then, 4 others 5 began 6 to dig 7 in the ground. (5) 7 They dug, 2 finished, and 3 then, 2-3 everybody 10 gathered and 7 began 8 to stand up 4 the 5 pillars. (6) Then, 2 other (i.e. the next) 2 day 3 dawning, 5-6 everybody 2 began 3 to carry 7 crosspoles. (7) We began, and 2 then, 5 other (i.e. the next) 4 days, 5 others 2 began 1 to cut down 9 chonta palms 10 for putting on 9 the floor 11 in sheets. (8) Then, 2 others 2 began 4 to cut 3 leaf. (9) Another 2 group, also, 2 of people 15 began 1 to stand up 4 the house, 3 then 4 they went up (it), 1 and 12 began 1 to put upon (it) 9 the frame pieces. (10) They put (them) on, and 2 then, 3 they tied (them). (11) They tied (them), 2 finished, and 13 began 1 to tie up 4 the 4 house. (12) They began 1 to tie (it) up, 3 finished and 4 then, 5 as it was getting late, 4-7 everybody 2 went 8 home. (13) We went, and 3 when it was dawning 2 again, 4-7 everybody 2 came 9 again. (14) We came and 2 then 4 we split 9 the chonta palm (poles), 5 finished, and 13 began 1 to carry 9 the sheets of flooring. (15) Very 2 heavy they were! (16) Then, 6 when he (i.e. the chief) was not coming 1 completely (i.e. with all belongings) 2-4 even to those who were waiting for 3 him (i.e. the chief), 7 then 8 (to) all 9-10 the white people 11 with (us), 18 (to) all 14 the folks 13 who were helping with 12 the work, 16 (to) entirely 17-18 everybody 15 who were waiting (for him), 2 he wasn't coming 20 completely (i.e. with all belongings) 23 on the day 22 he 24 indicated. (17) "He is not coming 2 at all, is he?" 4 the white 5 flesh (i.e. folks) 6 now 2 were saying. 19 "You 2 just 3 are deceiving 7 me. 13 He has gone 11 just 12 for good, hasn't he?" 20 those who had done 18 the work 14 were saying and 15 were 18 now 17 wanting 18 to be alive (i.e. were now afraid). (18) Because they spoke 4 thus, 3 I (said), 5 "He is coming 2 completely (i.e. with all belongings). (19) That is what 3 she 2 told (me). (20) "I 2 do not deceive," she
said 7-as he left. (21) "That 2-being the case, 3-be quiet, and 4-work 5-nothingness (i.e. silence)," I said. (22) "It is nevertheless an arrival 6-completely (i.e. with all belongings) 7-concerning him." (23) Now then, 8-he is arriving 9-on the date 10-indicated 11-by him. (24) "That 2-being the case, 3-all 4-thinking 5-hard, and 6-working 7-hard." (25) As we were speaking 1-thus, 2-at that very moment, 3-she 4-arrived 5-with the airplane. (26) He came, 6-he came 7-just 8-up high, too, 9-to look, 10-then 11-again 12-he flew, and 13-he 14-turned around 15-to Limoncocha. (27) "That 2-being the case, 3-she had 4-three 5-days, 6-she 7-went 8-again (i.e. he was gone again for three days), and 9-10-he came 11-down (river) 12-completely (i.e. with all belongings). (28) As he was arriving 1-thus, 2-she 3-4-all 5-were happy 6-7-because he was arriving.

3. Analysis. The text is here analyzed into constituent morphemes, with English meanings given for each root morpheme. Each root morpheme is also identified as to its morpheme class by underlined abbreviation as follows:

- **acc.** accompaniment modifier
- **adv. 1** adverb 1
- **adv. 2** adverb 2
- **loc.** locational modifier
- **nr. 1** noun root 1 (inanimate)
- **nr. 1a** noun root 1a (inanimate)
- **nr. 2** noun root 2 (animate)
- **num.** numeral root
- **pr. 1** pronoun root 1
- **pr. 1a** pronoun root 1a
- **tem.** temporal particle
- **vr. 1** verb root 1
- **vr. 2** verb root 2
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Each suffix morpheme is identified by an upper case letter symbol as follows:

NAS Animate noun stem-forming suffix
NIS Inanimate noun stem-forming suffix
NM Noun margin suffix
NTS Temporal-spatial noun stem-forming suffix
VB Verb base-forming suffix
VDM Dependent verb margin suffix
VEM Emphatic-past verb margin suffix
VIM Indicative or imperative verb margin suffix
VPM Distant-past verb margin suffix
VS Verb stem-forming suffix
VSM Subjunctive verb margin suffix

Numerals following the upper case letter symbols refer to a particular morpheme on either the Verb Charts or the Noun Chart. Three-digit numerals refer to verb suffixes, and two-digit numerals with occasional third numeral (hyphenated) refer to noun suffixes. The initial digit indicates the order of the suffix series counting from the root.

(1) ɣúyá nr. 2 'foreigner', -p'i NM 51. ɣt'á-¹
(t'áf; t'á- vr. 1 'bring', -f VS 101), -kl VDM 501, -ná VDM 601. ɣsíñá pr. 1 'all'. ɣwá- nr. 2 'creature', -ná NAS 24-4. ɣspuéná wísta (Spanish: Buena Vista) 'name of Siona village'. ɣp'áf nr. 2 'people', -p'i NM 51. ɣt'á- (ɔ̃t'áf; t'á- vr. 1 'bring', -f VS 101), -ná VDM 521. ɣb'á pr. 1 'third person', -k'í NAS 24-1. ɣyóñó nr. 1a

¹CV₁ - occurs as an allomorph of reflexive verb stems CV₁ only before -kl VDM 501, -ko VDM 502, -kí VIM 542, -ko VIM 543, -ko? VIM 545, -ná VDM 521, and -hi? VIM 544.
'work', -t'e NM 54. 1kó vr. 2 'help', -hi VDM 513. 1p'áf-2 (=p'áf) vr. 2 'be', -p1 VIM 541. iyéki pr. 1 'other', -ná NAS 24-4, 'first person plural exclusive'.

(2) p'á pr. 1 'third person', -k'i NAS 24-1, -p'i NM 51. yóòó nr. 1a 'work'. ská vr. 2 'say', -k'i VDM 511, -ná VDM 601. sf'á pr. 1 'all'. p'áf nr. 2 'people'. swá?- nr. 2 'creature', -ná NAS 24-4. yóik- vr. 1 'gather', á VS 102, -ná VDM 521. shá?á pr. 1 'that', -t'i NTS 23-1, -t'e NM 54, -p'a NM 62, 'first of all'. ssà?ssá nr. 1 'variety of hardwood'. yóú nr. 1 'pillar', -t'e NM 54. ité?tó vr. 2 'hew', -haľ VB 401, -p1 VIM 541. 1p'áf adv. 1 'much', -t'u NTS 23-2, -ná NM 52.

(3) shá?á pr. 1 'that', -t'i NTS 23-1, -p'i NM 51. sf'á pr. 1 'all'. swá?- nr. 2 'creature', -ná NAS 24-4. swé?- vr. 1 'bear', -ó VS 103, -ná VDM 521. yóò nr. 1 'canoe'. sá?-3 (=sáf: sá- vr. 1 'take', -f VS 101), -t'o NIS 20-4, 'entrance'. t'iká loc. 'toward'. t'á- vr. 1 'bring', á VS 102, -ná VDM 521. smí- vr. 1 'bring up', á (~-á) VS 102, -ná VDM 521. shá?á pr. 1 'that', -t'i NTS 23-1, -p'i NM 51. 1p'á pr. 1 'third

2 CVý́- occurs as an allomorph of either CVý́f or CVý́f only before -p1 VIM 541.

3 sá?- occurs as allomorph of reflexive verb stem sáf 'go' only before -t'o NIS 20-4.

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person'. istryñánr.1 'ground', -ną NM 52. istryñávr.1 'bring', -á VS 102, -nį VDM 521. istryñávr.1 'lay down', -ą (~-ą) VS 102, -wį (~-wį) VIM 541. istryñápr.1 'third person'. istryñánr.1 'pillar', -pį (~-pį) NIS 20-2, -ą NIS 41.

(4) istryñávr.1 'lay down', -ą (~-ą) VS 102, -nį VDM 521. istryñávr.2 'finish', -nį VDM 521. istryñápr.1 'that', -tį NTS 23-1, -pį NM 51. istryñápr.1 'other', -ko NAS 24-3. istryñávr.2 'dig', istryñávr.2 'begin', -wį VIM 541. istryñánr.1 'ground', -t'e NM 54.

(5) istryñávr.2 'dig', -nį VDM 521. istryñávr.2 'finish', -nį VDM 521. istryñápr.1 'that', -tį NTS 23-1, -pį NM 51. istryñápr.1 'third person'. istryñánr.1 'pillar', -pį (~-pį) NIS 20-2, -ą NIS 41. istryñávr.1 'stand up', -o VS 103. istryñávr.2 'begin', -wį VIM 541. istryñápr.1 'all'. istryñánr.2 'creature', -ną NAS 24-4. istryñávr.1 'gather', -á VS 102, -nį VDM 521.

(6) istryñápr.1 'that', -tį NTS 23-1, -pį NM 51. istryñápr.1 'other'. istryñánr.1 'day', -se NIS 20-6. istryñávr.2 'dawn', -kį VDM 511, -nį VDM 601. istryñápr.1 'all'. istryñánr.2 'creature', -ną NAS 24-4. istryñávr.1 'crosspole'. istryñávr.2 'carry'. istryñávr.2 'begin', -wį VIM 541.

(7) istryñávr.2 'begin', -nį VDM 521. istryñápr.1
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'that', -t'1 NTS 23-1, -p'1 NM 51. icycle pr. 1 'other'.
mök'ó nr. 1 'day', -se NIS 20-6, -ya NIS 41. icycle pr. 1 'other', -kopa NAS 24-3, -p'1 NM 51. icycle pr. 1 'variety of palm', -t'e NM 54. k' é vr. 2 'cut down'.
p'i t'á vr. 2 'begin', -w1 VIM 541. pis-o (Spanish: piso) 'floor'. t'1 t'1 (~tú-) vr. 1 'put upon', -ó VS 103, -ye NIS 21, -t'e NM 54. yiyá t'í nr. 1 'split wood', -p'a NIS 20-5, -ya NIS 41, -t'e NM 54.

(8) hó p'è pr. 1 'that', -t'1 NTS 23-1, -p'1 NM 51. icycle pr. 1 'other', -kopa NAS 24-3. hó t'ó nr. 1 'leaf'.
tiá vr. 2 'cut'. p'i t'á vr. 2 'begin', -w1 VIM 541.

(9) icycle pr. 1 'other'. p'ág nr. 2 'people'. hú nr. 1 'group', -p'í NIS 20-2, -k'a NM 61. wi:jé nr. 1 'house', -t'e NM 54. niik vr. 1 'stand up', -ó VS 103. u'1 á tem. 'now'. ni- (~mi:n mi:n) vr. 1 'bring up', -l~ -f VS 101), -ni VDM 521. icycle ke nr. 1 'frame piece', -w1 (~-w1) NIS 20-3, -y NIS 41, -t'e NM 54. tiá (~tú-) vr. 1 'put upon', -ó VS 103. p'i t'á vr. 2 'begin', -w1 VIM 541.

(10) ti1 (~tú-) vr. 1 'put upon', -ó VS 103, -ni VDM 521. hó p'è pr. 1 'that', -t'1 NTS 23-1, -p'1 NM 51.
k' é g vr. 2 'tie', -w1 (~-w1) VIM 541.

(11) k' é g vr. 2 'tie', -ni VDM 521. thí vr. 2 'finish', -ni VDM 521. p'a pr. 1 'third person'. wi:jé.

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(12) ọk'ọ ọ vr. 2 'tie'. ọp'ọt'á vr. 2 'begin', -nl VDM 521. ọṣììljì vr. 2 'finish', -nl VDM 521. ọhẹẹ pr. 1 'that', -t'ì NTS 23-1, -p'ì NM 51. ọ́ọg'ì vr. 2 'get late', -k'ì VDM 511, -nà VDM 601. ọṣììljì pr. 1 'all'. ọwá- nr. 2 'creature', -nà NAS 24-4. ọwìẹ́ pr. 1 'house', -nà NM 52. ọsái- (Ọsái: sá- vr. 1 'take', -f VS 101), -ọ́ VIM 541.

(13) ọsái- (Ọsái: sá- vr. 1 'take', -f VS 101), -nl VDM 521. ọṣẹẹ pr. 1 'again'. ọṣàná vr. 2 'dawn', -k'ì VDM 511, -nà VDM 601. ọṣẹẹ pr. 1 'again'. ọt'ài- (Ọt'ài: t'à- vr. 1 'bring', -f VS 101), -ọ́ VIM 541. ọṣììljì pr. 1 'all'. ọwá- nr. 2 'creature', -nà NAS 24-4.

(14) ọt'ài- (Ọt'ài: t'à- vr. 1 'bring', -f VS 101), -nl VDM 521. ọyúá tem. 'now'. ọọt'á nr. 1 'variety of palm', -t'è NM 54. ọpíkà (Spanish: picar) 'split', -nl VDM 521. ọṣììljì vr. 2 'finish', -nl VDM 521. ọsái vr. 1 'sheet of flooring', -p'á NIS 20-5, -yà NIS 41, -t'è NM 54. ọwé- vr. 1 'bear', -ó VS 103. ọp'ọt'á vr. 2 'begin', -nà VPM 411, -te VPM 573.

(15) ọp'af pr. 1 'much'. ọt'íkí vr. 2 'be heavy', -ye VSM 563.

(16) ọhẹẹ pr. 1 'that', -t'ì NTS 23-1, -p'ì NM 51.
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ʔ̣́há nr. 2 'chief', -k'i NAS 24-1, -n̓ 1 NM 53. ʔ̣́hó vr. 2 'wait', -hí VDM 513. ʔ̣́a?̣ vr. 2 'be', -koʔa NAS 24-3, -t'e NM 54, -t̓ aʔa NM 64. ʔ̣ k'át'é adv. 2 'completely'. ʔ̣ t̓ a- vr. 1 'bring', -i VS 101, -m̓ aʔi VB 301, -k'i VDM 511, -n̓ 2 VDM 601. ʔyúá tem. 'now'. ʔ̣ s̓ iʔa pr. 1 'all'. ʔ̣ kúyá nr. 2 'white person'. ʔ̣ w̓ aʔ- nr. 2 'creature', -n̓ 2 NAS 24-4. ʔ̣ n̓ ák̓ o acc. 'with', -n̓ 1 NM 53. ʔ̣ ỵ oʔ̣ o nr. 1a 'work'. ʔ̣ k̓ o vr. 2 'help'. ʔ̣ w̓ aʔ- nr. 2 'creature', -n̓ 2 NAS 24-4. ʔ̣ p̓ ẹ̣́ o vr. 2 'be none', -t'u NTS 23-2, 'all'. ʔ̣ p̓ ẹ̣́ o vr. 2 'be none', -t'u NTS 23-2, 'all'. ʔ̣ s̓ iʔa pr. 1 'all'. ʔ̣ w̓ aʔ- nr. 2 'creature', -n̓ 2 NAS 24-4. ʔ̣ hó vr. 2 'wait', -koʔa NAS 24-3, -t'e NM 54, -t̓ aʔa NM 64. ʔ̣ k'át'é adv. 2 'completely'. ʔ̣ t̓ a- vr. 1 'bring', -i VS 101, -m̓ aʔi VB 301, -hí (~-hi) VIM 534. ʔ̣ p̓ á pr. 1 'third person', -k'i NAS 24-1. ʔ̣ m̓ oʔ̣ o nr. 1 'day', -se NIS 20-6. ʔ̣ s̓ éỵ ál̓ a (Spanish: señalar) 'indicate', -seʔe NIS 22.

(17) ʔ̣ k'át'éʔ-4 (≡ k'át'é) adv. 2 'completely', -n̓ 2 VSM 611. ʔ̣ t̓ a- vr. 1 'bring', -i VS 101, -m̓ aʔi VB 301, -hí (~-hi) VIM 534. ʔ̣ k̓ á vr. 2 'say', -hí VDM 513. ʔ̣ kúyá nr. 2 'white person'. ʔ̣ w̓ aʔ?̣ nr. 1 'flesh'. ʔyúá tem. 'now'. ʔỵ iʔi pr. 1a 'first person singular', -t'e NM 54.

'k'át'éʔ- occurs as an allomorph of k'át'é adv. 2 'completely' only before -n̓ 2 VSM 611.
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8'tó adv. 2 'just that and nothing more'.  gkóké vr. 2 'deceive', -k'í VIM 532. 10m'í'pr. 2 'second person'. 11'tó adv. 2 'just that and nothing more'.  12k'át'é- (=k'át'é) adv. 2 'completely', -ně VSM 611. 13sá- (=sá) sá-vr. 1 'take', -í VS 101), -hi?i VIM 544. 14ká vr. 2 'say', -hi VDM 513. 15yuá tem. 'now'. 16swáhi vr. 2 'be alive'.  17yí vr. 2 'want', -hi VDM 513. 18p'á- (=p'á?) vr. 2 'want', -óí VIM 541. 19yóó nr. 1a 'work', -te NM 54. 20yóó vr. 2 'to work', -si VB 402, -ko?a NAS 24-3.

(18) 21há?í pr. 1 'that', -ka NM 65. 22ká vr. 2 'say', -ye NIS 21, -ta NM 63. 23yí?í pr. 2 'first person singular'. 24k'át'é adv. 2 'completely'. 25t'á- vr. 1 'bring', -í VS 101, -hi VIM 534.

(19) 26há?í pr. 1 'that', -ka NM 65. 27kíá vr. 2 'tell', -p'í VIM 544. 28p'á pr. 1 'third person', -k'í NAS 24-1.

(20) 29kóké vr. 2 'deceive', -ma?íi VB 301, -yí (~-yí) VIM 531. 30yí?í pr. 2 'first person singular', -p'íi NM 51. 31ká vr. 2 'say', -k'íi VDM 511. 32sá- vr. 1 'take', -í VS 101, -k'íi VDM 511. 33p'á vr. 2 'have', -í VEM 421, -hi VEM 584.

(21) 34há?í pr. 1 'that', -ka NM 65. 35slá vr. 2 'develop', -nì VDM 521. 36kaye (Spanish: calle) 'be quiet'. 37p'éó vr. 2 'be nothing', -ye NIS 21. 38yóó vr. 2 'to
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work', -hî  VIM 552.  gká  vr. 2 'say', -wî  VIM 541.

(22) k'ât'ô  adv. 2 'completely'.  t'à-  vr. 1 'bring',
-î  VS 101, -ye  NIS 21, -tqâ  NM 64.  g'â?qî  vr. 2 'be',
-î  VIM 534.  g'á  pr. 1 'third person', -k'i  NAS 24-1,
-î  NM 54.

(23) yúá  tem. 'now', -t'a  NM 55.  gfeča (Spanish: fechar) 'date'.  g'á  pr. 1 'third person', -k'i  NAS 24-1,
-î  NM 54.  g'séyâla (Spanish: señalar) 'indicate', -se  NIS 22.  g'tqâ  vr. 2 'arrive', -hî  (~-hî)  VIM 534.

(24) hâqê  pr. 1 'that', -ka  NM 65.  gšâ  vr. 2 'develop', -i  VDM 521.  gšâ  vr. 1 'all'.  g'hî  vr. 2 'be hard'.  g'tóqî  vr. 2 'think', -hî  VDM 513.  g'yôqî  vr. 2
'to work', -hî  VDM 513.  g'â?qî  vr. 2 'be', -hî  VIM 552.

(25) hêgê  pr. 1 'that', -ka  NM 65.  gká  vr. 2 'say',
-î  VDM 513, -na  VDM 601.  ghôî  adv. 1 'punctually'.
 g'â?qî  vr. 2 'be', -t'î  NTS 23-1.  g'ô  pr. 1 'third person',
-î  NAS 24-1.  g'tqê  vr. 2 'arrive', -k'i  VDM 511.  g'â
vr. 2 'have', -q  VEM 421, -hî  VEM 584.  g'awîq
(Spanish: avión) 'airplane', -p'i  NM 51.

(26) t'à-  (~t'à:  t'à  vr. 1 'bring', -î  VS 101), -î
VDM 521.  g'tó  adv. 2 'just that and nothing more'.  g'âmî
vr. 2 'be high', -se  NIS 20-6, -k'a  NM 61.  g'yî-  vr. 1
'see', -q  (~-â)  VS 102.  g't'à-  (~t'à:  t'à  vr. 1 'bring',
-î  VS 101), -î  VDM 521.  hêâqê  pr. 1 'that', -t'î  NTS
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23-1, -p'i NM 51. ṭsēʔé adv. 1 'again'. ƙáwá vr. 2 'fly', -nį VDM 521. ꨥbólón- vr. 1 'turn', -f VS 101, -k'i VDM 511. ꨩpá vr. 2 'have', -? VEM 421, -hį VEM 584. ꨩpá pr. 1 'third person', -k'i NAS 24-1. ꨥılmôkóča (Spanish: Limoncocha)⁵, -nį NM 52.

(27) ƙáʔá pr. 1 'that', -ka NM 65. ꨥsíá vr. 2 'develop', -nį VDM 521. ꨥsámq num. 'two', -té⁶ (wetéʔé) num. 'one', 'three'. ꨥmök'ó nr. 1 'day', -se NIS 20-6, -yą NIS 41. ꨥpá vr. 2 'have', -nį VDM 521. ꨥpá pr. 1 'third person', -k'i NAS 24-1. ṭsēʔé adv. 1 'again'. ṭsáq- (wesáq sá- vr. 1 'take', -f VS 101), -nį VDM 521. ṭk'áté adv. 2 'completely'. ṭkáhé vr. 2 'go down'. ṭtá- vr. 1 'bring', -f VS 101, -k'i VDM 511. ꨥpá vr. 2 'have', -? VEM 421, -hį VEM 584.

(28) ƙáʔá pr. 1 'that', -ka NM 65. ṭfòʔá vr. 2 'arrive', -k'i VDM 511, -nį VDM 601. ṭsíʔá pr. 1 'all'. ꨥwáʔ- nr. 2 'creature', -nį NAS 24-4. ṭyék'i pr. 1 'other', -nį NAS 24-4, 'first person plural exclusive'. ꨥp'óhó vr. 2 'be happy', -wį VIM 541. ṭpá pr. 1 'third

⁵Limoncocha, advance base operated by the Summer Institute of Linguistics in Ecuador, is located at the juncture of the Napo and Jivino rivers.

⁶-té occurs as an allomorph of téʔé num. 'one' only following sámq num. 'two' in the compound stem meaning 'three'.

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person', -k'i NAS 24-1. ꝏ fงør. 2 'arrive', -k'i VDM 511, -n$ VDM 601.
## Grammatical Studies and Text Analysis

### Noun Chart

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<th>Derivation</th>
<th>Diminutive 2</th>
<th>Plural</th>
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<td>Noun Root 1 (Inanimate)</td>
<td>11 -t’u (Never occurs unless NES 31 -t’o occurs)</td>
<td>20-1 -k’u ‘long pointed shape’</td>
<td>31 -t’i ‘diminutive’</td>
<td>41 -γγ ‘plural’</td>
</tr>
<tr>
<td>Pronoun Root 1</td>
<td>20-2 -p’i ‘protruding shape’</td>
<td></td>
<td></td>
<td>~γ (Occurs only following vowels i, a, and o)</td>
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<tr>
<td>Numeral</td>
<td>20-3 -w’i ‘containing within’</td>
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<td>20-4 -c’o ‘hollowed-out shape’</td>
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<tr>
<td></td>
<td>20-5 -p’a ‘flattened-out shape’</td>
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<td>26-6 -x’u ‘unlimited space’</td>
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| Noun Root 1a (Inanimate) | | | | |

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<td>21 -w’u ‘abstraction of verb’</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Noun Core 3</th>
<th>Derivation 23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun Root 1 (Inanimate)</td>
<td>23-1 -t’i ‘time when’</td>
</tr>
<tr>
<td>Pronoun Root 1</td>
<td>23-2 -t’u ‘place where’</td>
</tr>
<tr>
<td>Adverb 1</td>
<td></td>
</tr>
<tr>
<td>Temporal Particle</td>
<td></td>
</tr>
<tr>
<td>Verb Base</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Noun Core 4</th>
<th>Derivation 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun Root 2 (Animate)</td>
<td>24-1 -k’i ‘masculine singular’</td>
</tr>
<tr>
<td>Pronoun Root 1</td>
<td>24-2 -k’o ‘feminine singular’</td>
</tr>
<tr>
<td>Verb Base</td>
<td>24-3 -mo ‘plural 1’</td>
</tr>
<tr>
<td></td>
<td>24-4 -γγ ‘plural 2’ (restricted to occur with -γγ ‘creature’, and γγ ‘other’!)</td>
</tr>
</tbody>
</table>

| Pronoun Root 1a (includes γγ ‘1st pers.’, and γγ ‘2nd pers.’) | |
| Accompaniment Modifier (Occurs only with NM 53 -x’u) | |

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<table>
<thead>
<tr>
<th>Noun Margin</th>
<th>Relation 50</th>
<th>Condition 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>51 -p't 'source of predication (e.g., subject, instrument, place from)'</td>
<td>61 -k'a 'also'</td>
<td></td>
</tr>
<tr>
<td>52 -ng 'goal of predication (e.g., object of action, direction toward)'</td>
<td>62 -p'a 'collective'</td>
<td></td>
</tr>
<tr>
<td>53 -nl 'animate goal of predication'</td>
<td>63 -la 'from, because of'</td>
<td></td>
</tr>
<tr>
<td>54 -l'e 'referent of predication (e.g., object referred to, place at)'</td>
<td>64 -eyg'g 'contrary to expectation'</td>
<td></td>
</tr>
<tr>
<td>55 -l'a 'manner of predication'</td>
<td>65 -la 'item'</td>
<td></td>
</tr>
<tr>
<td></td>
<td>66 -l'a 'like' (Occurs only with NM 65 -l'a)</td>
<td></td>
</tr>
</tbody>
</table>

The above morphemes of series 50 do not occur when one of series 60 occurs.
### SIMPLE VERB CHART

<table>
<thead>
<tr>
<th>Verb Stem 1</th>
<th>Verb Base</th>
<th>Negation</th>
<th>Aspect</th>
<th>Dependent Verb Margin 1</th>
<th>Condition 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Core 1</td>
<td>Voice 100</td>
<td>201 -kei (for me, him, her, us, them)</td>
<td>301 -mge</td>
<td>401 -kei (negative)</td>
<td>501 -ki 'masculine singular'</td>
</tr>
<tr>
<td>Verbal Root 1</td>
<td>101 -f 'reflexive'</td>
<td>(Occurs only with poss- 'turn')</td>
<td>(Occurs only before VTM)</td>
<td>(Occurs only before VTM)</td>
<td>601 -ng 'change of subject'</td>
</tr>
<tr>
<td></td>
<td>102 -e 'active' (Transitive type of action)</td>
<td>(Occurs only before -hi, -hi', -hi', -ki')</td>
<td>(Occurs only before -h, -hi, -hi', -ki')</td>
<td>(Occurs only before -h, -hi, -hi', -ki')</td>
<td>511 -kT 'masculine singular'</td>
</tr>
<tr>
<td></td>
<td>103 -e 'causative'</td>
<td>(Occurs only before -hi, -hi', -ki')</td>
<td>(Occurs only before -h, -hi, -hi', -ki')</td>
<td>(Occurs only before -h, -hi, -hi', -ki')</td>
<td>512 -k'o 'feminine singular'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verb Stem 2</th>
<th>Verb Base</th>
<th>Negation</th>
<th>Aspect</th>
<th>Dependent Verb Margin 2</th>
<th>Condition 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Core 1</td>
<td>Voice 100</td>
<td>402 -si (completion)</td>
<td>502 -ko 'feminine singular'</td>
<td>602 -ko 'feminine singular'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicative and Imperative Verb Margin</th>
<th>Verb Base</th>
<th>Negation</th>
<th>Aspect</th>
<th>Dependent Verb Margin 3</th>
<th>Condition 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb Function 3 520, 540, and 550</td>
<td>531 -yf 'first person singular, all plurals'</td>
<td>532 -k'T 'second person singular masculine'</td>
<td>664 -ka 'iam'</td>
<td>666 -ki 'negative'</td>
<td></td>
</tr>
</tbody>
</table>

*The above set indicates that the predication of the dependent verb is prior to that of the main verb.*
533 -ko 'second person singular feminine'
534 -hi 'third person singular masculine'
535 -ko 'second person singular feminine'

The above set indicates present tense, indicative.

541 -af 'first person singular', 'all plurals'
542 -kt 'second person singular masculine'
543 -ko 'second person singular feminine'
544 -pi 'third person singular masculine'
545 -pi (Occurs only following Ca, which is an allomorph of either Ca1 or Ca2)
546 -ko 'third person singular feminine'

The above set indicates simple past tense, indicative.

551 -da 'first person singular'
552 -dk 'second person singular and plural'

The above set indicates imperative mode.

<table>
<thead>
<tr>
<th>Subjunctive Verb Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb Function 4</td>
</tr>
<tr>
<td>----------------</td>
</tr>
</tbody>
</table>
| 561 -kt 'second and third person singular masculine'

| 562 -ko 'second and third person singular feminine'

563 -ye 'first person singular', 'all plurals'

564 -pi 'third person singular masculine'

565 -pi (Occurs only following Ca, which is an allomorph of either Ca1 or Ca2)

566 -ko 'third person singular feminine'

The above set indicates imperative mode.

581 -yg 'doubt'

May occur on any other word for emphasis.
# Grammatical Studies and Text Analysis

## Distant Past Verb Chart

<table>
<thead>
<tr>
<th>Verb Stem 1</th>
<th>Voice 100</th>
<th>Tense 410</th>
<th>Person-Number 570</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb Core 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verb Root 1</td>
<td>101</td>
<td>411</td>
<td>571</td>
</tr>
<tr>
<td></td>
<td>-t 'reflexive'</td>
<td>-mq 'distant past'</td>
<td>-kl 'second and third person singular masculine'</td>
</tr>
<tr>
<td></td>
<td>-= (Occurs only with pón- 'turn')</td>
<td></td>
<td>572</td>
</tr>
<tr>
<td></td>
<td>102</td>
<td></td>
<td>-ko 'second and third person singular feminine'</td>
</tr>
<tr>
<td></td>
<td>-å 'active (Transitive type of action)'</td>
<td></td>
<td>573</td>
</tr>
<tr>
<td></td>
<td>103</td>
<td></td>
<td>-te 'first person singular', 'all plurals'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verb Stem 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb Root 2</td>
</tr>
</tbody>
</table>

## Emphatic Past Verb Chart

<table>
<thead>
<tr>
<th>Verb Stem 2</th>
<th>Emphasis 420</th>
<th>Person-Number 580</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb Root 2</td>
<td>421</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-? (Glottal stop and nasalization of the preceding vowel) 'emphasis'</td>
<td>581</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-wि 'first person singular', 'all plurals'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>582</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-kl 'second person singular masculine'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>583</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-ko 'second person singular feminine'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>584</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-hi 'third person singular masculine'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>585</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-ko 'third person singular feminine'</td>
</tr>
</tbody>
</table>

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COMPARATIVE STUDIES
Correspondences in South Barbacoan Chibcha

by Bruce R. Moore

0. Introduction.
1. Phoneme inventories.
2. Distributional correlations.
3. Correspondences.
4. Further tentative correspondences.
5. Residue.

0. Introduction. In this paper an attempt is made to reconstruct correspondences between Colorado (C1) and Cayapa (Cy),¹ the two extant aboriginal languages of the Ecuadorian coastal jungle. Jijón y Campaño, Rivet, and others agree in placing these in the Barbacoan division of

¹Colorado is spoken by approximately six hundred Indians in the vicinity of Santo Domingo de los Colorados. Cayapa is spoken by a few thousand Indians along the Cayapas and neighboring rivers (see map). The Cayapa live in high houses on stilts and travel mainly by river, whereas the Colorado live in ground-level houses and travel mainly by trail. Of the two tribes, the Colorado appears to be the more monolingual and resistant to culture change. They are located about one hundred miles apart, through dense jungle.

The writer gathered Colorado material during field trips from 1956–1960. The Cayapa material is from field notes of John Lindskoog.
the Chibcha language family (Mason, 1950). Since they apparently represent the southernmost reaches of this division, I have used the term 'South Barbacoan' (SB) to designate the proto-language of these two.

1. Phoneme inventories. The consonant phonemes of Cl are: voiceless stops /p, t, k/; preglottalized and glottal stops /ʔb, ʔd, ʔ/ (henceforth written b, d, and ʔ);
fricatives /f, s, h/; nasals /m, n/; affricate /c/; liquids /l, r/; and semiconsonants /w, y/. The five vowels /i, u, e, o, a/ have a two-way front-back contrast at high and mid positions, plus one low vowel. Any vowel may follow any consonant, except that the sequence */yi/ does not occur. There is also phonemic nasalization, and an intersyllabic juncture phoneme, actualized as friction or aspiration, written *//.

Nonvocoid consonants contrast as to three features, each with three degrees of contrast. They are front, mid, or back position; stopped, semistopped, or continuant articulation; and zero (voiceless), oral (voiced) or extra-oral (nasalized or glottalized) quality. The following chart shows the nonvocoid consonants divided according to these sets of features.

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The difference between Colorado /ʔb/ and /ʔd/ (written elsewhere as /b/ and /d/) and Cayapa /b/ and /d/ (not preglottalized) was not considered among the correspondences because it involved no structural change.

No essential relationship is implied between the quality of nasalization and that of glottalization; this is simply a taxonomic device.
The Cy consonant phoneme structure differs from Cl in having an additional position of articulation, palatal, with phonemes /tY, dY, n, lY, ɛ, ɛ/; and the two velar phonemes /η/ and /g/. Cy has a four–vowel system, with high–low and front–back contrast: /i, u, e, a/; and a juncture phoneme /+/ (see 3., correspondence 3); it does not have phonemic nasalization.

Following is the corresponding consonantal chart for Cy:
2. **Distributional correlations.** Palatal sibilants [ʃ] and [ʒ], although nonphonemic in Cl, persist as allophones of /s/ and /ʃ/, occurring before high vowels. In current Cy (which probably reflects SB) alveolar and palatal sibilants contrast only before back vowels; before front vowels the distribution of Cy sibilant phonemes parallels that of Cl sibilant allophones, with palatals before /i/ and alveolars before /e/.

Cy /i/ does not occur after palatal stops, /y/, or alveolar sibilants.

Both languages have phonemic stress, but no attempt was made to reconstruct this, and no correspondences were found linking it to other reconstructions.

The only canonical shape of Cl syllables is CV; but juncture */ɪ/, one reflex of SB */h/, occurs between syllables in certain morphological circumstances, resulting in the pattern CV'CV. Cy syllables are C₁V, C₁VV, C₁VC₂, C₁VC₃, and C₁VVC₃. Any consonant except /ŋ/ may occur in C₁ position; /m, n, s, and ʃ/ occur in C₂ position, and only /ŋ/ and /ç/ occur in C₃ position. C₂ consonants do not occur word-finally. In all cognate cases, Cy syllable-final phonemes are reconstructed as SB */N/, */h/, or as a CV sequence; so that the shape of SB syllables can be stated with reasonable assurance to have been CV, CVN, and CVh.

3. **Correspondences.** The present study attempts to explain all the differences between 207 cognate pairs. This list of pairs was chosen from longer Cl and Cy word lists and includes, as nearly as possible, one example of each cognate morpheme found in the larger lists. That is, entries in the larger lists which were simply new combinations of

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4 These longer lists were prepared by Carrie Lindskoog (Cayapa) and Joyce Moore (Colorado).
morphemes were not included in the working list.

Most examples of cited cognates are monomorphemic, but in some cases it was more convenient to use polymorphemic pairs, only one morpheme of which was usually cognate. In order to facilitate reading at these points, all word-medial morpheme borders are indicated by hyphens. Where only portions of two forms are cognate and yet no morpheme border is apparent, the noncognate portion is enclosed in parentheses.

Seven correspondence types account for 186 cognate pairs; and, of the remaining 21, 5 can be subsumed under 4 additional, tentative correspondence types. Three more are probably cases of morphemic replacement, and 13 remain unresolved.

Correspondence type 1. The reflexes of SB palatals are Cl alveolars and Cy palatals.
SB ŭami, Cl nam, Cy ŭami 'brother-in-law'
SB tUuN, Cl tú, Cy tů 'pepper'
SB dYonkifiya, Cl dokila, Cy dYungifiya 'guayava'
SB sû, Cl sú, Cy şu-púka 'stone'
SB čači, Cl cá'ci, Cy čáči 'person'

Correspondence type 2. SB bisyllabic bound morphemes of certain phonemic shapes are monosyllables in their Cy reflexes, the original phonemes determining in what manner contraction shall occur. No contraction occurs in the cognate Cl morphemes.

If the original initial consonant of the second syllable was an alveolar fricative or affriicate, the Cy form is CVs-.
SB kaco-, Cl ka'co-, Cy kás- 'to sleep'
SB kasaN-, Cl ka'sa, Cy kás- 'new' (in compounds)
SB visa, Cl visá-tí-mi, Cy vis-mo 'stingy person'

If the original initial consonant of the second syllable was a palatal fricative or affriicate, the Cy form is CVš-.
SB kaši-, Cl ka'si-, Cy káš- 'to sweep'
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SB *mišu, Cl misú, Cy mís- 'head' (in compounds)
SB *biči, Cl biči, Cy bís- 'sore, lesion' (in compounds)

Of those forms in which the original initial consonant of the second syllable was a glottal consonant or a voiceless stop, some occur contracted to CV?- and some do not. All of these noncontracted forms, however, occur in Cy with the shape CVhCV. We assume, therefore, that the syllable-final /h/ prevented contraction and that the forms which did contract were of the form CVCV or CVNCV.

Contracted forms:
SB *peteN, Cl peťê, Cy pê?- 'to spoil'
SB *paN?a-, Cl pâ?a-, Cy pâ?- 'to request'
SB *taNhi-, Cl tâhi-, Cy tâ?- 'to take'

Noncontracted forms:
SB *pahta-, Cl paťa-, Cy pâhtya- 'to fall down'
SB *lahke-, Cl la'kê-, Cy lâhkê- 'yellow'

For further explanation of juncture in Cl peťê- above, see discussion under correspondence type 8.

If the original initial consonant of the second syllable was a liquid or vocoid, the second syllable is elided and the first syllable is compensatorily lengthened, as follows: a second vowel, /i/, is added in the first syllable if the initial consonant of the first syllable is palatal, and the vowel of the first syllable is lengthened (phonemically VV) if the initial consonant of the first syllable is alveolar. If the initial consonant of the first syllable is neither palatal nor alveolar, /i/ is added if the vowel of the first syllable was back and the vowel of the second syllable was front, or if the vowel of the first syllable was low /a/ and that of the second was high front /i/; otherwise the vowel is lengthened. The following examples are arranged according to the various criteria:

Addition of /i/ after initial palatal:
SB *čuru-, Cl curú-, Cy čuĩ- 'to wring'

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SB *t̥yuli-, Cl tulf-, Cy t̥úi- 'to push'
SB *t̥ele-, Cl telē-, Cy t̥éi- 'to tie'
SB *t̥eyal-, Cl teyā-, Cy t̥ái- 'to sharpen'

Lengthening after initial alveolar:
SB *tele-, Cl telē-, Cy tēe- 'to tie up'
SB *dila-, Cl dilā-, Cy dīl- 'to press down'
SB *lari-, Cl lāri-, Cy lá- 'to take out'
SB *tariN-, Cl tarī-, Cy tā- 'to steal'

After other initial consonants:
Addition of /i/ when first vowel is back and second is
front:
SB *pole-, Cl polē-, Cy pūi- 'to pass'
SB *furī-, Cl fūri-, Cy hūi- 'breath' (in compounds)
SB *howiN-, Cl hōwī-, Cy hūi- 'shaking' (in compounds)
Addition of /i/ when first vowel is low and second is
high:
SB *hali-, Cl halī, Cy hái- 'to bite'

Lengthening when other vowel arrangements occur:
SB *hele-, Cl helē-, Cy hēe- 'to fear'
SB *pilīya, Cl pilā, Cy pīl- 'written matter' (in compounds)
SB *ware-, Cl warē-, Cy wā- 'to cry'
SB *r̥ili-, Cl r̥ilī-, Cy r̥ili- 'to grind'

If the original initial consonant of the second syllable
was a nasal, the Cy contracted form is CVŋ-:
SB *pana-, Cl panā-, Cy pāŋ- 'to carry on back'
SB *nana-, Cl nanā-, Cy nāŋ- 'to carry on shoulder'
SB *mena-, Cl menā-, Cy mēŋ- 'to bury'

In three cases Cy free forms occur with final /ŋ/:
māŋ 'one', mūŋ 'who', and tMQ 'what'. The Cl cognates
of these are mā, mō, and tī, all of which frequently occur
with the suffix -na, so that they can be considered special
cases of the above pattern even though they are bimorphemic
and not bound. (The addition of /i/ in māŋ is still not ex-
plained.)

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Some Cy morphemes occur in both the long, original form and the contracted, bound form. Note piNya 'written material' (free form) and pfl- 'written material' (bound form). Compare Cl pilá 'written material'.

Correspondence type 3. A syllable-final nasal element /N/ existed in SB. Both Cl and Cy reflexes are in some environments phonetically a nasal consonant homorganic to the following consonant. This homorganic nasal occurs before all consonants except ?, h, y, w, and r in Cl. In Cy it occurs only before stops and affricates which are historically voiceless, and in the case of the stops it also conditions a voicing of the stop itself.

In Cl this phenomenon is actualized elsewhere as simple nasalization of the preceding vowel, while the Cy reflex in other positions is zero. This nasal element is now analyzed phonemically in Cl as vowel nasalization (with conditioned nasal consonant phones in some environments), and in Cy it is analyzed by Lindskoog and Brend as the phonemes /m, n,/ and /ŋ/ (with the velar nasal having lengthened allophones in some environments, actualizing as nasalized vowel in others). (See page 36 for details.)

SB *ʔaNpo, Cl /ʔapo/ [ʔámpo], Cy /ˈámbu/ 'tasty'
SB *huN-, Cl /hú-ka/ [húŋka], Cy /húnta/ [húnta] 'that'
SB *puNpu, Cl /púpu [púmpu], Cy /púmbu/ 'butterfly'
SB *puNki, Cl /púki/ [púŋki], Cy /púŋgi/ 'ear'
SB *maN-kaši-no, Cl /ma-ka'si-no/ [maŋkaAšino],
Cy /maŋ+gaš-nu/ [maŋgašnu] 'to sweep again'

In other positions the Cy reflex of SB */N/ is zero.

SB *beNbe, Cl bébe 'thick'
SB *kapIN, Cl ka'pí, Cy kápi 'tear' (noun)
SB *kayeN, Cl käye, Cy káya 'woman's sister'
SB *tʃuN, Cl tʃu, Cy tʃu 'pepper'
SB *teleNle, Cl telēle, Cy telēle 'root'
SB *ʃIN-, Cl ʃ(ː)ba, Cy ʃ(wi) 'sour'

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Correspondence type 4. The reflexes of SB */f/ before */o/ and */u/ are Cl /f/ and Cy /h/. The sequence /fu/ does not occur in Cy.
SB */fu/, Cl fú, Cy hú 'feather'
SB */foro/, Cl foró, Cy húru 'hole'

Correspondence type 5. The reflexes of SB */o/ are Cl /o/ and Cy /u/, */o/ and */u/ having merged in Cy.
SB */ho-, Cl hó-, Cy hú- 'to be'
SB */po, Cl pó, Cy pú 'thorn'
SB */ora, Cl óra, Cy úra 'good'

Correspondence type 6. The reflexes of SB */k/ are Cl /k/ and Cy /k/ and /g/. Lindskoog and Brend consider /g/ as a recently emerged phoneme which occurs contrastively only when Spanish loans are in view. If native words are considered exclusive of loans, [g] would be analyzed as an allophone of /k/.
SB */puNkd, Cl púkd, Cy púngi 'ear'
SB */dVonkila, Cl dokilá, Cy dVungila 'guayava'
SB */manku, Cl makú, Cy maŋg(ku) 'aunt'

Correspondence type 7. The reflexes of SB */e/ after */y/ or palatais are Cl /e/ (after corresponding alveolars) and Cy /a/.
SB */ilšeN, Cl ilše, Cy ilša 'cold'
SB */miyeN, Cl miye, Cy miya 'woman's sister'
SB */teyə-, Cl teyá-, Cy tVá- 'to sharpen'

Another hypothesis was suggested for the correspondence of Cl /a/ with Cy /a/ after palatais. If the original vowel were */a/, the palatal element could have merged with the vowel, raising the /a/ to /e/ and causing the loss of the palatal element completely. This would have been the structural impetus, then, to the loss of palatal components in Cl before other vowels as well. This hypothesis has these strong points in its favor, but would require that all Cy palatal-plus--/a/ sequences be alveolar-plus--/e/ in Cl; and
this is not the case in such pairs as Cl pa'tá-, Cy páhtya- 'to come down', Cl kliyá, Cy kliya 'son-in-law', and Cl yá, Cy yá 'house'.

Correspondence type 8. The reflexes of SB */h/ are as follows:

Syllable-initially it remained /h/ in both languages.
Syllable-finally before voiceless consonants, SB */h/ remained /h/ in Cy, and in Cl became a stem-marking juncture phoneme (phonetically affrication or aspiration).
SB *kuhcu, Cl ku'cú, Cy kūhou 'manioc'
SB *pahki, Cl pa'kí, Cy páhki 'bamboo'
SB *phípa, Cl pí'pá, Cy phípa 'mud'

But then, this juncture having attained a quasi-morphemic status in Cl as a marker of stem units, it tended to regularize itself by extending analogically to almost every stem having a medial voiceless consonant. Note the following:
SB *ʔasaN, Cl ʔa'sá, Cy ʔásə 'blood'
SB *kapíN, Cl ka'pí, Cy kápi 'tear' (noun)
SB *puka, Cl pu'ká, Cy púka 'stone, fruit'

But note, on the other hand, two of the very rare Cl stems without juncture before medial voiceless consonants: mátara 'iguana' and páca 'hundred'.

Two possible alternate explanations of the distribution of reflexes of */h/, not involving analogical change, were rejected.

First, two "h" phonemes could be postulated for SB */h₁/ and */h₂/, one of which was lost by merger in Cl and by simple dropping in Cy. This, however, results in a very lopsided distribution of sequences involving voiceless consonants. All in this corpus (but less than all if such stems as mátara 'iguana' and páca 'hundred' were historically SB) would be preceded by either */h₁/ or */h₂/, which appears unnatural.

Second, rather than introduce analogical change, two
correspondence types could be set up which appear superficially to have the same effect. The first would be that the SB sequence *hC (C indicates any voiceless consonant) has the Cl reflex */C/ and the Cy reflex /hC/; and the second would be that the SB sequence */C/ (without preceding /h/) has the Cl reflex */C/ and the Cy reflex /C/. But these correspondences would not allow for any cognate pairs at all in which a Cl voiceless consonant is not preceded by juncture. The juncture phoneme, however, does not occur only stem-medially, but before some verb suffixes in certain environments, as determined by the verb class and the number of syllables in the stem, so that some suffixes (including some that are cognate with Cy suffixes) occur both with and without preceding juncture. These postulated correspondence types would not allow for this. Compare Cl po-ju- 'not to put', Cy pū-tyu 'not put', in which po-/?u- is a verb stem and -ju/-tu a suffix, with Cl do-tu- 'not to close', in which -tu is the same suffix, but here occurring without juncture.

One more factor which argues in favor of interpreting Cl juncture as having been affected by analogical change is that newly borrowed words with medial voiceless consonants regularly occur with juncture. Note fō'foro 'match' (from Spanish fósforo), pa'payó 'papaya', pa'téya 'wash tub' (from Spanish batea), and pa'kúsa 'needle' (from Spanish aguja).

4. Further tentative correspondences. Of the 21 cognate pairs the differences of which are not entirely statable in terms of the above 7 correspondence types, 5 can be subsumed under 4 additional, tentative correspondence types.

Correspondence type 9. Normally Cl /c/ corresponds with Cy /c/ and /č/; and Cl /s/ with Cy /s/ and /š/. But in two cases there is a divergence, the proto-phoneme of
which is symbolized here as */S*/. The reflexes of */S*/ are Cl /s/ and Cy /c/.

SB* Sana, Cl saná, Cy cána 'raw'
SB* Sohkd, Cl soľđ, Cy cúňki 'man's sister'

Correspondence type 10. In one case, Cl hadō, Cy ṭādvī 'heavy', Cl /h/ corresponds with Cy /ʔ/. In current Cl the second consonant of the stem is preglottalized, and in no case in Cl does a CVCV sequence occur in which the first consonant is /ʔ/ and the second is a preglottalized voiced stop. On this basis we have assumed the original initial phoneme of this morpheme to be */ʔ/, with a change to /h/ occurring when Cl voiced stops became preglottalized.

Correspondence type 11. In another case, /ʔ/ and /h/ also correspond, but in an order the reverse of that in correspondence type 10 above. This is Cl ṭa'of, Cy háš- 'sneeze' (noun). Again, a check of Cl shows a limited distribution, no voiceless consonants occurring second-syllable-initially after a first-syllable-initial /h/. No such restriction is seen in Cy. We assume, then, that the protophoneme was */h/*, with reflexes of Cl /ʔ/ and Cy /h/.

Correspondence type 12. One case of metathesis occurs, in Cl holyō, Cy huyávlYu 'hawk'. If the original form is assumed to be */hoyílY*o, the metathesis can be attributed to the absence of the sequence */yl/* in Cl. This gives the correspondence SB */yl/, Cl ly, Cy yl. The change in Cy from /l/ to /a/ remains unexplained.

5. Residue. Of the remaining 16 cognate pairs, at least 3 may involve morphemic changes:

Cl ne-pa'paš, Cy née-pa 'foot'; ne- is a common compounding morpheme referring to the foot or leg, and it is probable that née- is a contraction, following correspondence type 2, of an earlier long form.

Cl cára, Cy cāa 'good, well'; This construction
follows the rules of correspondence type 2, but involves a free form. It is possible, however, that cáa was bound earlier.

Cl náma, Cy ná?ma 'daughter'. The Cl form is historically two morphemes, na 'child' and -ma 'feminine', and it is possible that still a third morphemic unit is involved in the Cy reflex.

Thirteen other cognates contain differences the available examples of which are too few to determine correspondences. Eight involve vowel change and 5 involve other unexplained differences.

Cl /e/ and Cy /i/:  
Cl dedé(ra)-, Cy ded́- 'to squat'  
Cl besú, Cy bišu 'shrimp'  
Cl /i/ and Cy /e/:

Cl /i/, Cy jën(sa) 'this'  
Cl jisá-ti-mí, Cy jés-mo 'stingy person'  
Cl /e/ and Cy /a/:

Cl helé, Cy héla 'fear'  
Cl wé-pana, Cy wá-pañ- 'to be scared, panic'  
Cl /a/ and Cy /e/:

Cl wa'sá, Cy wá-se 'kinkajou'  
Cl /i/ and Cy /u/:

Cl lú倭, Cy lYúYú 'flower'  
Cl /m/ and Cy /mb/:

Cl kimí, Cy kimbí 'humming bird'  
Cl /r/ and Cy /y/:

Cl kurú, Cy kúyu 'agouti'  
Cl /te/ and Cy /da/:

Cl máte, Cy mánda 'five'. The Cy form that one would expect in the second syllable here is dYá, a cognate of te 'hand', found elsewhere. The voicing of the stop is in accordance with correspondence type 3 and the change from /e/ to /a/ is explained by correspondence type 7, but the
change from a palatal to an alveolar stop in Cy remains unexplained.

Cl /tI/ and Cy /l/;

Cl ʔə-tI-, Cy ʔuiʔ- 'to call'

Cl /a/ and Cy /aI/;

Cl mə-, Cy mâiŋ 'one, again'

6. **List of cognates.** Following is a list of the cognates used in this study, alphabetized by the Cy forms. In each example the first form listed is Cy, the second Cl.

1. ʔa-, ʔa- 'to cook'
2. ʔaa-, ʔayä 'big'
3. ʔaa-wa, wä 'big'
4. ʔädYu, hadä 'heavy'
5. ʔähIi, ʔa'cI 'tickle'
6. ʔähta, ʔa'tä 'wet'
7. ʔaI∫I, ʔaI∫ 'branch'
8. ʔaIu, ʔaIa 'avocado'
9. ʔämbu, ʔäpo 'tasty'
10. ʔapa, ʔapä 'father'
11. ʔasa, ʔa'sä 'blood'
12. ʔayu, ʔayu(ın) 'tomorrow'
13. ʔee-, ʔerë- 'to send'
14. ʔele, ʔolë 'wild turkey'
15. ʔen(sa), ʔo 'this'
16. ʔes-mo, ʔisä-tI-mI 'stingy person'
17. ʔI-, ʔI- 'to become'
18. ʔI-, ʔilI- 'to grind'
19. ʔiIä, ʔise 'cold'
20. ʔiIu, ʔisI 'a kind of insect'
21. ʔiyu, ʔiyI 'mouse'
22. ʔI, ʔI 'squash'
23. ʔI- 'to float', ʔI- 'floating'
24. ʔIh(mo), ʔokö 'ghost'

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25. ḳũ Show, ḳō-ti- 'to call'
26. ḳūra, ḳōra 'good'
27. báre, baré 'long'
28. bēbe, bēbe 'thick'
29. béru, béru 'fishhook'
30. -bi, -bi 'in'
31. bš-, bíc 'sores, lesion'
32. bšu, besú 'shrimp'
33. b?al?i, b?all 'nutria'
34. bũ-, bũ- 'to uproot'
35. bú-, bǔ- 'trunk'
36. cāa, cára 'good, well'
37. cána, saná 'raw'
38. cú-, có- 'to lie down'
39. cúñkí, sōkill 'man's sister'
40. čá-, ca(yá)- 'to dawn'
41. čáči, cáči 'person'
42. -či, -ci 'desiderative suffix'
43. či, cide 'tree'
44. čifpi, cipf 'flea'
45. čilf, cilf 'cricket'
46. čípi, cip 'sweat'
47. čú-, cú- 'to be seated'
48. čúi-, ouru- 'to wring'
49. ded-, dedé(ra)- 'to squat'
50. dfi-, dilá- 'to squeeze'
51. dfhdí, díf 'stack, pile'
52. ḏuygfla, ḏoklā 'guayava'
53. fę-, fę- 'upstream'
54. fi-, fi- 'to eat'
55. fiña(ba), fiña 'white'
56. há-, há- 'to come'
57. hái-, half- 'to bite'
58. halá, halá 'left' (hand)

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59. hāla, halá 'wasp'
60. hāl'y1, half 'sheet'
61. hāk-, ɾa'of- 'to sneeze'
62. hēe-, helē- 'to fear'
63. hēla, helē 'fear'
64. hēle, helē 'jungle'
65. hi-, hi- 'to go'
66. hū-, hō- 'to be'
67. hū, fī 'feather'
68. hūn(ca), hū 'that'
69. hūi-, furif- 'breath'
70. hūi-, howi- 'shaking'
71. hūu-, forō- 'to make a hole'
72. huyályu, holiyō 'hawk'
73. kā-, kā- 'to get'
74. kā-, kā- 'forepart, fruit'
75. -ka, -ka 'completive suffix'
76. kāoa, ka'cā 'vomit'
77. kāpi, kā'pī 'tear' (noun)
78. kās-, ka'cō- 'to sleep'
79. kās-, ka'sā 'new'
80. kāsa, ka'sā 'new'
81. kās-, ka'sī- 'to sweep'
82. kāya, kāye 'woman's brother'
83. kē-, kē- 'to do'
84. kēla, kelā 'jaguar'
85. kēpe, ke'pē 'night'
86. kl(ka), kl(dó) 'skin'
87. kl'mbl, kl'mf 'humming bird'
88. kl'pī, kl'pī 'dream'
89. kl'si, kl'sī 'yesterday'
90. kl'ya, kl'yā 'son-in-law'
91. kū-, ku(wá)- 'to give'
92. kūh-, ku'(pá)- 'to get up'

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93. kúhou, ku'cú 'manioc'
94. kúš-, ku'oš- 'to drink'
95. kúyu, kurú 'agouti'
96. lá-, lá- 'to come up'
97. lá-, lá- 'lazy'
98. láa-, lári- 'to take out'
99. láhke-, la'ké 'yellow'
100. I'yu, I' 'ripe'
101. I'yu(?u)-, lu(wá)- 'to swallow'
102. I'yubá(ba), ku'ba 'red'
103. I'yúIyu, luß 'flower'
104. málu 'day', má-lo 'all day'
105. mány, má- 'one'
106. ma+-, má- 'one, again'
107. mályu, málu 'grubworm'
108. máma, máma 'grandmother'
109. mána, maná 'deer'
110. mánda, máte 'five'
111. mangú(ku), makú 'aunt'
112. meé-, merá- 'to hear'
113. méñ-, mená- 'to bury'
114. -mí, mí 'knowledge'
115. -mí, -mí 'aspect marker'
116. mínu, minú 'trail'
117. míš-, misú 'head'
118. miya, miyá 'woman's sister'
119. mú, mú 'louse'
120. múlu, moló 'beans'
121. múlyu, mulú 'lard'
122. múmu, mumú 'name'
123. mún-, mo 'who'
124. ná, ná 'child'
125. ná-ma, náma 'daughter'
126. nána, naná 'balsa'
127. náŋ-, naná- 'to carry on shoulder'
128. née-pa, ne-pa'pá 'foot'
129. né-mišu, ne-misú 'toe'
130. né lu, neló 'debt'
131. nélu, neló 'crab'
132. ŋhka, ni'ká 'tongue'
133. -nu, -no 'infinitive suffix'
134. ŋámi, namí 'brother-in-law'
135. ŋí, ní 'fire'
136. ŋú, nú 'you' (sg)
137. ŋú-la, nu-lá 'you' (pl)
138. pá-, pá- 'to speak'
139. pá?- , pá?a- 'to request'
140. pabá(ba), pabá 'black'
141. páhki, pa'kí 'bamboo'
142. páhta, pá'tá- 'to fall down'
143. pálá, palú 'two'
144. pán-, paná- 'to carry'
145. pás-, pasí- 'to forget'
146. pé, pē 'refuse'
147. pē?- , pőtē- 'to spoil'
148. péma, pemá 'three'
149. pe-sínýi, pē-sili 'intestines'
150. pl, pl 'water'
151. plá-, pliá- 'to lose'
152. plá- , pilá 'writing'
153. pilápa, pi'pá 'mud'
154. pilá, pilá 'writing'
155. pilá 'bridge'
156. pilá, pilá 'snake'
157. pú, pó 'thorn'
158. pú-, pó- 'to put into'
159. púí-, polé- 'to pass'
160. púka, pu'ká 'fruit, seed'
161. půlu, polo 'hard'
162. půmbu, půpu 'butterfly'
163. půngi, půki 'ear'
164. sá, sá(ba) 'bitter'
165. sábe, sábe 'rubber'
166. sú, sò 'vagina'
167. sú--, sō-- 'to live'
168. súi--, súlf-- 'to thread' (beads)
169. súpa, súpá 'hat'
170. šφ(wi), šφ(ba) 'sour'
171. šu–púka, su 'stone'
172. šúwa, suwá 'rain'
173. tá--, tá-- 'to have'
174. táa--, táha-- 'to bring'
175. táa--, tarf-- 'to steal'
176. tá?--, táhi-- 'to take'
177. tápe, ta'pé 'brush, weeds'
178. tē, té 'wood'
179. tēe--, telé-- 'to tie'
180. tēe--, teré-- 'to step on'
181. telé, telé 'crawling'
182. teléle, teléle 'roots'
183. tem–bůka, té–ka 'heart'
184. tf--, tf-- 'to say'
185. tī, tī 'what'
186. tū, tō 'ground, earth'
187. –tu, –to 'completive suffix'
188. tůu--, towf-- 'to twist'
189. tůu--, tolé-- 'to cut down a tree'
190. tů?--, to'té-- 'to kill'
191. tYa–pa, te–pa'pá 'hand'
192. tYái--, telá-- 'to loosen'
193. tYái--, teYá-- 'to sharpen'
194. tYú, tū 'pepper'

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195. -tyu, -tu 'negative suffix'
196. tyui-, tulif- 'to push'
197. tyuiña, tuná 'woman's skirt'
198. tyuwá, tuwá 'full'
199. wáa-, waré- 'to cry'
200. wá-pan-, wé-pana- 'to be scared'
201. wáse, wa'sá 'kinkajou'
202. wí-, wí- 'to enter'
203. wí, wí 'beads'
204. wina, winá 'drunk'
205. yá, yá 'he'
206. yá, yá 'house'
207. yá(mbu), yé 'squirrel'
Bibliography
by Catherine Peeke

Beasley, David and Kenneth L. Pike

Eastman, Robert and Elizabeth Eastman
n.d. Iquito syntax. (To appear in a subsequent volume in this SIL Linguistic Series.)

Larson, Mildred
n.d. Emic classes which manifest the obligatory tagmemes in major independent clause types of Aguaruna (Jivaros). (To appear in a subsequent volume in this SIL Linguistic Series.)

McQuown, Norman A.

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n.d. Quichua consonant clusters. (Unpublished manuscript.)
n.d. Some reconstructions in proto Ecuadorian Quichua. (Unpublished manuscript.)

290
Peeke, Catherine

Peeke, Catherine and Mary Sargent

Pike, Kenneth L.
(1955 Part II.)
(1960 Part III.)

Pike, Kenneth L. and Willard Kindberg

Prescott, William H.

Rich, Furne
n.d. Arabela phonemes and high level phonology. (To appear in a subsequent volume in this SIL Linguistic Series.)

Saint, Rachel and Kenneth L. Pike

Sargent, Mary

Sterling, M. W.

291
Steward, Julian and Louis Faron

Swadesh, Morris
1969 Mapas de clasificación lingüística de México y las Américas. Mexico City.

Turner, Glen D.
n.d. Sistema fonológico y alfabeto práctico para el idioma Jívaro. (Unpublished manuscript.)

Velie, Daniel and Ruth M. Brend
n.d. Orejón phonemics. (To appear in a subsequent volume in this SIL Linguistic Series.)

Wrisley, Betsy
n.d. Vocabulario Quichua. (Unpublished manuscript.)

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