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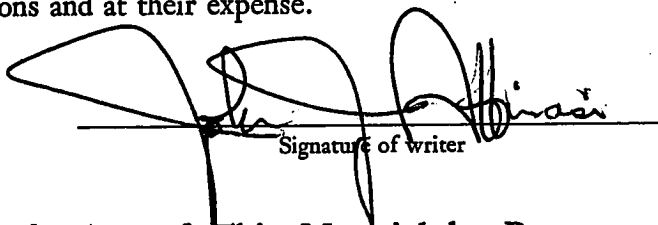
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THE UNIVERSITY OF CHICAGO

LAK T'AN

A GRAMMAR OF THE CHOL (MAYAN) WORD

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE SOCIAL SCIENCES
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
DEPARTMENT OF ANTHROPOLOGY

BY

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CHICAGO, ILLINOIS

DECEMBER, 1973

FOREWORD

What is presented in this study is a grammar of a Middle American Indian language, the language of the Chol Maya of Chiapas, Mexico. More specifically, this is a grammar of the Chol word. The main foci of the chapters are word phonology (and only peripherally clause and sentence phonology), word morphology (and only minimally and explanation of syntactic processes), and a lexicon of lexical roots and grammatical morphemes (with only rudimentary incursions into derivational lexicography and semantic domains).

The theory which underlies and organizes the linguistic data is eclectic and synthetic, drawing on the various theoretical positions advanced by linguists in the twentieth century. Not every theory is reconcilable with every other, in fact the history of linguistics in the last quarter century is filled with nearly as much polemic as scholarship. Nor do I attempt to utilize the varied approaches without modifications motivated by my own synthesis of opposing views, by verification given through the study of philosophical, anthropological and psychological linguistic investigations which are nearly invisible in much of the present study, and most of all by the exigencies of speaking and understanding Chol. For it is performance rules which are the beginning and end of any grammar.

The research for this dissertation was supported in part by a grant from the National Institute of Mental Health (1 FO1 MH48887-01), and by the Department of Anthropology of Columbia University. The multitude of people who were instrumental in the execution of this work in professional and theoretically inspirational ways is only partially reflected in the bibliography. To those I should like to add the names of the Attinasi family, whose trust never demurred, John M. Sheehan and Pie Duployé, O.P., who first opened the worlds of language and scholarship to me, and Lillian Lee Porter, who made it seem worth it even when it was not.

Many linguists and scholars aided the production, revision and theoretical and technical consistency of this study. To them, among whom A.K. Ramanujan, Michael Silverstein, Harvey Pitkin, N. Louanna Furbee Losee, Lawrence Feldman, Nicholas Hellmuth, Wilbur Aulie, Otto Schumann G., J.E.S. Thompson, Gertrude DUBY and the staff of Na-Bolom, Joan Tenenbaum, Kostas Kazazis, and The Whole Action are but a small number, I owe my gratitude. Allen Turner collected many plant and animal names in Limar (Municipality of Tila), and aided me in the dialect survey of the Eastern Dialects. For his insight into the phonetic, paralinguistic and sociolinguistic dimensions of language usage, my appreciation is due Norman A. McQuown. Professor McQuown's commitment to Mayan Studies, which spans near two-score years, makes him

doyen of that field. My profound respect continues to go out to the Chol people of the Municipality of Tila, Chiapas, who have carried linguistic and religious remnants of one of the great civilizations of history into the present day without pretense. Among these I must mention the family of Don Juan Pérez, the families López and Ramírez, and especially Mateo Pérez M. Finally, and most of all, I wish publicly to thank Paul Friedrich whose sensitivity and precision in matters linguistic are matched by the highest scientific and humanistic ethics.

If this study contains anything of worth, it is because I have managed to transmit the good in these persons from experience to paper; whatever is distorted or aberrant is due to my own intransigence.

The formal consistency of this dissertation has been immeasurably aided by Barbara O. Young who typed the final draft.

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LIST OF SYMBOLS

[]	Phonological Features, Phonetic Transcription, References to Sections of the Dissertation
()	Reference to Bibliography
/	Linguistic Environment
/ /	Morphophonological Transcription
#	Word Boundary
-	Morpheme Boundary
*	Unnatural or Aberrant Form, Reconstructed Form
~	Palatal Release (over consonants), Nasality (over vowels), Alternated With
ˊ	High Tone (over Chol vowels), Primary Accent (over Spanish vowels)
ˋ	Low Tone
·	Length
ː	De-voiced Length
ˑ	Primary Accent (in phonetic transcription, precedes syllable)
˒	Secondary Accent
˗	Glottalization
" "	English Gloss
<u> </u>	Spanish Orthography
" <u> </u> "	Non-Standard Form (equivalent to [sic])
→	Becomes, Yields (in synchronic description)
<	Derived From, Phonetically Fronted, Occurs After
>	Phonetically More Back, Occurs Prior To
^	Phonetically Higher
˘	Hachek (for "ch" /č/, "sh" /š/), Phonetically Lower
√	Lexical Root
[es]	Ethnospecies
[eg]	Ethnogenus, Ethnogeneric Term
[ed]	Eastern Dialects
[wd]	Western Dialects
V	Vowel

C	Consonant
.	Syllable Boundary
CAPITALS	Metalinguistic Notation: Grammatical Category, Rule Name
U	Unmarked
UStem	Unmarked Verb Stem
P	Past
PStem	Past Verb Stem
NP	Noun Phrase
VP	Verb Phrase
Ntl.	Nahuatl
Sp.	Spanish
AT	Allen Turner's Data

LIST OF PHONOLOGICAL RULES

Reference to Text	Number in Appendix	Rule Code Name
IIIF 7b	1.	MPR·VHPAST
IIIB 1c	2.	PR·VHARM
IIIF 4a	3.	MPR·VZERO
IIC 1a	4.	APR·GLOT
IIC 1a	5.	PR·ECHO
IIC 2b ii	6.	PR·GLADV
IIC 1	7.	SPR·VHI
IIC 1	8.	APR·6th
IIC 1	9.	SPR·SCHWA
IIC 1	10.	APR·PURE
IIC 1	11.	APR·OPE
IIIB 1a	12.	MPR·VLONG
IIIB 1a	13.	MPR·G#DEL
IIIB 1a	14.	MPR·#CDEL
IIIB 1a	15.	MPR·?DEL
IIC 2a v	16.	MPR·GLH
IIC 2a iv	17.	MPR·GLW
IIC 2a iv	18.	MPR·GLY
IIC 2a iv	19.	MPR·IDEL
IIIC 1b	20.	MPR·ZIMP
IIIC 2b	21.	MPR·PLADV
IIIC 2b	22.	MPR·EXPLADV
IIIC 2b	23.	MPR·HK
IIIC 2b	24.	MPR·KDEL
IIIC 2b	25.	MPR·KDEINT
IIC 2b iβ	26.	APR·KI
IIC 2b iβ	27.	APR·KE
IIC 2b iβ	28.	APR·KU
IIC 2b iβ	29.	APR·KCEN
IIC 2b 1β	30.	APR·K?

Reference to Text	Number in Appendix	Rule Code Name
IIID 2a	31.	MPR•VLEL
IIIF 2b iii	32.	PR•LDEL
IIIF 7f iv	33.	MPR•RTLDEL
IIC 2a v	34.	MPR•EL
IIC 2b iβ	35.	APR•TINI
IIA 2c iii	36.	APR•COR
IIC 2a i	37.	APR•CORN
IIC 2a iα	38.	PR•NASAS
IIC 2a iα	39.	PR•NVOI
IIC 2b ii	40.	PR•DEINT
IIC 2b ii	41.	DPR•CENC
IIA 2c iv	42.	APR•FOR
IIC 2a iv	43.	APR•WI
IIIC 2b	44.	PR•GEM
IIA 2a	45.	MARKING CONVENTIONS

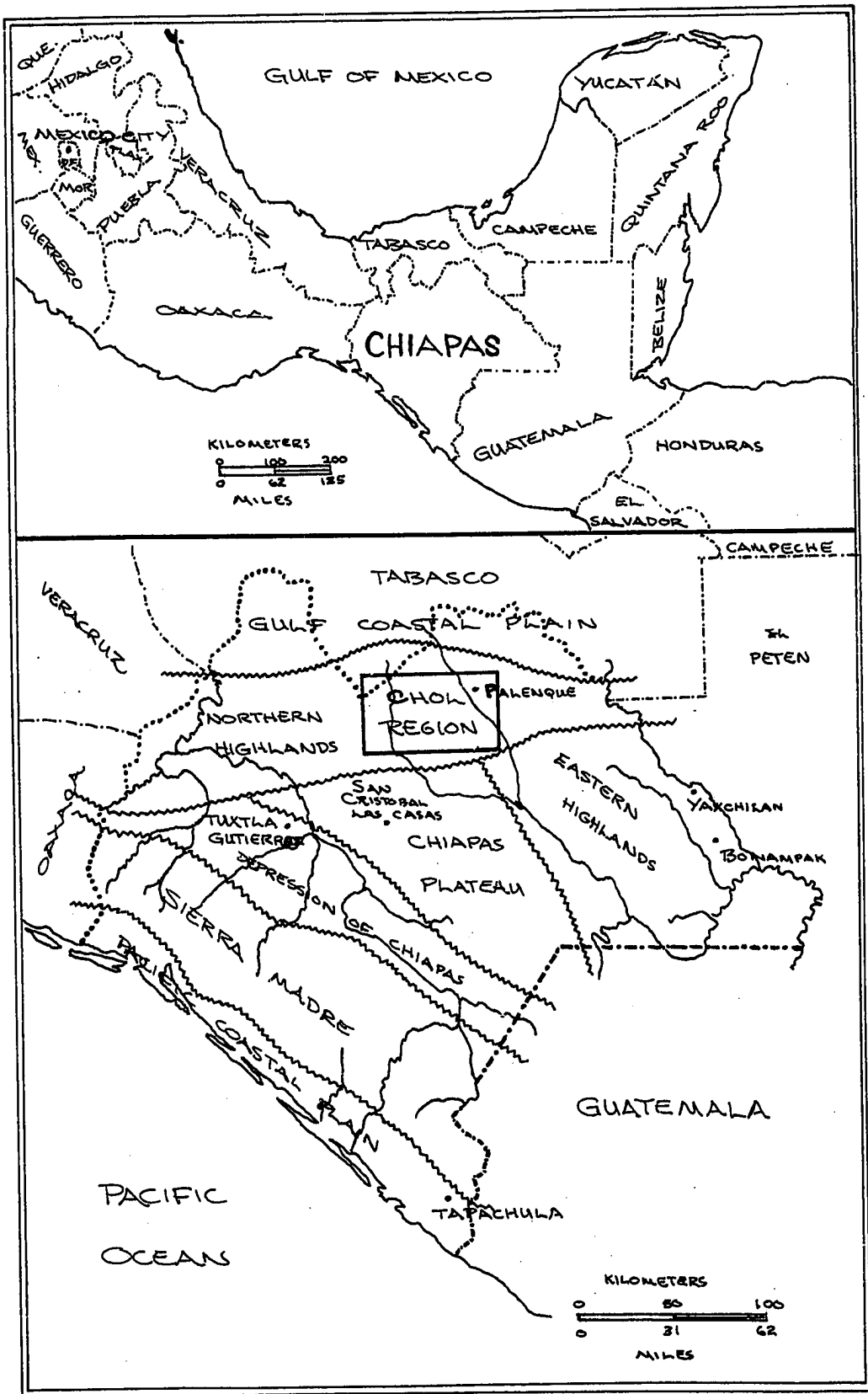


Fig. 1.--Mexico and Chiapas

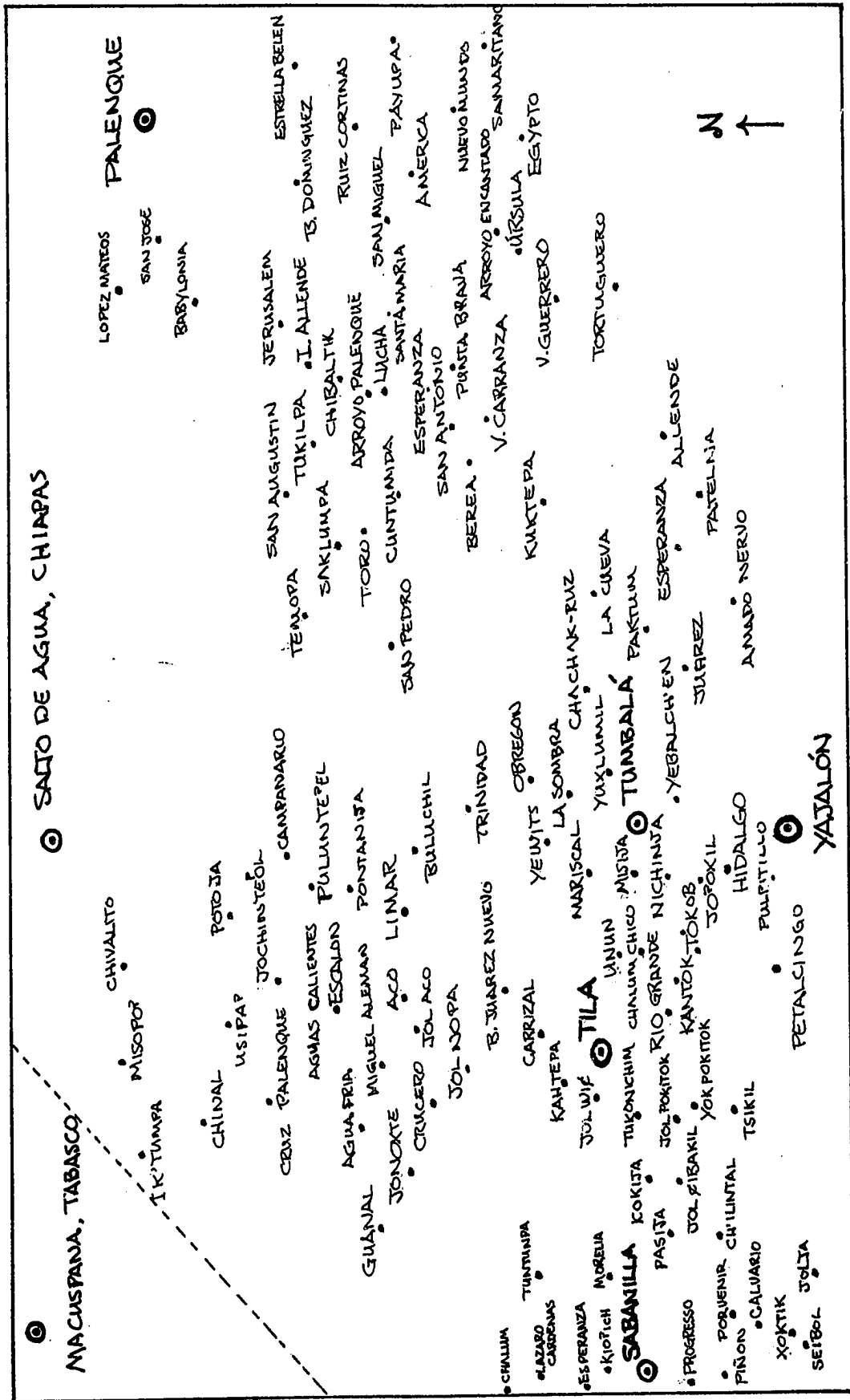


Fig. 2.--Chol Region

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CHAPTER I

OVERVIEW

IA. The Chol Language and People

Chol is a language of the Mayan linguistic stock spoken by approximately 70,000 people living in the northern highlands and the Gulf coastal plain in the state of Chiapas, Mexico. Together with Chorti of Guatemala, and the greatly diminished Chontal of Tabasco, Chol constitutes the Cholan (or Choloid) sub-family of languages within Mayan.

IA 1. Preliminary Remarks

IA 1a. What's in the Name

The name "Chol" is imposed from without and some confusion surrounding it must be clarified. The root /čol/ "cornfield, milpa," is the basis of the name. Slashing (/čo-bal/) with a machete to clear jungle-forest for cornplanting, and /išim/, maize corn itself, are both quasi-sacred to the Chol people; it is not unlikely that at the time of first contact they would have identified themselves to others as people of the milpa. Even today, the most frequent euphemism for the often pejorative "Indian" is campesino, "peasant, fieldworker."

To themselves, however, the Chol are identified by the term /kištanu/ (Sp. Cristiano), or /piʔal/ "companion,

friend," and their language is called /la-k t'an/ "our speech." It can be inferred from the primary referent of /kiřtanu/, which is neither "Christian" nor "Chol Indian," but simply "person, human being," and from the omni-personal /la-k/ in /la-k t'an/, which is better glossed "the speech of us-all" or even more simply, "speech," that these words of self-identification come from an era when distinction of nations and languages was unimportant to the Chol.

Most of Chol social and religious structure which survives was elaborated during the period between the time of initial contact and conversion in the seventeenth century, and the renewed acculturation attempts begun by both church and state less than half a century ago.¹ During that period the Chol were relatively isolated, living with nearly no contact with Western civilization except that of plantation life, in which the Chol played the role of near servitude. Consequently there was little occasion for distinguishing

¹The complex of acculturation is characterized by Land Reform, Trade, Communication by road and post office, Electrification, and religious orthodoxy, both Catholic and Protestant. Education and improved medical care should also be included in the complex, but accomplishment in these areas has been minimal, due to a more perfunctory attitude on the part of the non-Indian authorities. Lack of genuine effort in areas with the most to be gained by the Chol and the least return for the white in terms of money and prestige can only be termed racism. Otherwise the sacrifice of the merchants who endure hardships in the wilds to buy coffee at low prices and sell manufactures at incontestable mark-ups, would be matched by that of the schoolteachers who are frequently at conferences and on holiday, and by that of the medical teams on federal payroll who soil their hands only in the urbane setting of the cabaña in cities like San Cristobal de las Casas.

classes or nations of persons and types of speech.¹ The name "Chol" is a productive concept for the few who know Spanish and have had direct contact with representatives of government or religion. Those who have not had this contact (and many who have) feel unnatural uttering the word, and hesitate or joke in saying "Chol."

In the regions of the Eastern Dialects (Tumbalá, Salto de Agua, Palenque), the language and people are called "Ch'ol" with glottalization. In the western region (Tila, Sabanilla), the name is simply "Chol." Since the name "Chol" is not really a Chol word, the indeterminacy of the name presents no linguistic problem. The variation may be evidence for a theory of sound-symbolism and special proto-roots, but in itself is not conclusive [IIIB 2c].

IA 1b. Methodology and First Impressions of the Language

The present study represents two years of full-time investigation of the Chol language. My first entry into Chol country occurred in the Municipio of Tumbalá, in late March, 1971. Fourteen months were spent in Chol speaking areas, most of them in the Municipal Center of Tila, where the Chol Church is more active and less acculturated, and where

¹The Chols knew the Spaniards whom they called (and still call) /kašlan/ (< 16th cent. Sp. Castillano). Today the term means "stranger, white man." The Spanish language is called /kastiyu/ from a post-16th century variant of the same loan. The final accent, [š] for [s], and [l] instead of [y] for ll, indicate that /kašlan/ has been assimilated into Chol with greater cultural or historical depth.

80 percent of the population speak Chol daily. Many excursions were made into areas where nearly 100 percent of the speech is Chol.

A number of informants were engaged for texts and specific elicitations and for identifying and delimiting phonological variants. One main informant, Mateo Miguel Angel, and two auxiliary informants from the Vásquez family, Abram and Mateo, were mainly responsible for transcription and semantic aid in the grammatical analysis. The analysis itself utilized the traditional field methods of slip-files and paradigm elicitation, supplemented by an active hearing and speaking competence in the language, and moderately high-quality field recordings from a number of speech contexts. With this aid, the analysis was made in ten months' time; thus the present admittedly rudimentary study evolved from the first impressions of the language.

Chol might be called the Slavic of the Mayan languages. Phonological features which account for this impression include the palatalization of "t"'s and "n"'s, and the number of sounds produced in the central part of the oral cavity (more than half of the morphophonemes are positively marked for the feature of centrality including /č/, /š/, /ç/ and /l/) give the language a softness despite the popping harshness of preglottalized articulation so typical of Mayan languages. Chol has an unrounded, mid-high, central vowel /ʌ/, less tense and slightly lower than Russian [u]. Morphologically the language uses aspectual, modal and derivational

particles to enhance a limited number of stark and rather concrete lexical roots. In its discourse patterns Chol is antiphonal and highly intonated, with partial repetitions of sentences and fixed phrases of agreement playing a major role in the interaction between the participants in speech events. Sentence syntax ranges from simple existential predications, often consisting of but a single root with no affixes, to complex sequences of embedded propositions realized as sentences with several verbs. In these latter sentence types, syntax and intonation (as yet unanalyzed in any study, including this one) determine the relationships between propositions more than do conjunctive particles or special morphological affixes. Numerous highly structured styles exist for both sacred and secular domains; these include: prayer, chant (Attinasi: 1971), narrative, and greeting/phatic.

Like many American Indian languages, Chol discourse types require partial or total repetition of the sentence by the hearer to signal comprehension and to encourage the speaker to continue. Like Bengali, the verbs "go" and "come" serve as completion markers at the end of sentences composed of long strings of absolute verbal forms. Like French, highly-valued rigorous esthetic norms of correctness obtain extending to the choice of clitics, to precise allophones of vowels and to non-distinctive redundant phonetic features of consonants. Like Czech, of which Josef Durdik wrote in his

book on the esthetics of language, Kalilogie (Durdik: 1873), Chol is most beautiful when spoken by simple, unpretentious women (Garvin: 1964: p. 45).

IA 2. Chol Speakers

IA 2a. Contact with Other Languages

Chol speakers have frequent contact with speakers of Tzeltal, and less frequent contact with speakers of Yucatec Maya and Lacandón. Chol is linguistically closer to these latter two languages with more roots cognate with Yucatecan than with Tzeltalan. All these Mayan languages are mutually unintelligible, though related as are the Romance or Slavic languages. The analogy may be drawn with the Slavic family of the Indo-European language phylum as follows:

Chol is to Yucatecan as Tzeltalan is to
Polish is to Russian as Czech.

Thus, although there is a definite genetic relationship and there are many similar forms, no Chol can communicate freely with a speaker of another Mayan tongue without the effort of learning a foreign language. Many of the Chol from Tila and Tumbalá have learned /k'op/ "the Tzeltal language"; a few in Palenque have learned Yucatec Maya. Those who know no other indigenous language acknowledge comprehension of an occasional word or two.

A few Chols are merchants and commercial craftsmen, and an unknown number have left the traditional language and setting for the mestizo life of the national Mexican culture, but the most active speakers of the language are typical

campesinos. They are small scale farmers who work government-granted lands to raise corn and beans. The Chol, like other campesinos of Chiapas, are at the bottom of the coffee industry pyramid, growing, picking, drying and carrying coffee beans to be sold for 12-20 cents per pound. Other cash crops include yuca, yam, rice, cacao and surplus corn and beans. Most of these are not cash producing crops in the mountain region.

In the moister, lowland region of the Gulf coastal plain, two corn crops are possible yearly. In the higher regions, soil quality, lack of rainfall, and the sheer labor of working steep slopes prevent cultivation of a second crop. The diet of corn tortillas /wa:/, cold corn porridge /sa?/, and beans /bu?ul/ is supplemented by greens, squash, chile peppers, the vine-pear chayote, the yam-like camote and local fruits.

The typical Chol male lives patrilocally, in a small community called a colonia or rancho, depending on size and the presence of a chapel, in a house which he constructed of wattle and daub (or of softwood planks), usually with the aid of friends or kinsmen, which labor is either paid or reciprocated. He lives without electricity, running water or the benefit of the wheel.¹ He is self-reliant regarding

¹In the municipal centers there are at least dry weather roads, federal electrification projects in various stages of completion, and government-sponsored water tanks and pipelines. Only about 3,000 Chol live in the municipal center of Tila, 1,000 in Tumbalá, and virtually none in

the most essential necessities of life, shelter and food, and until a few decades ago grew cotton which was woven by women into cloth. Today ready-made clothing is a rarity and a sign of mestization, which in some quarters implies prestige. Self-reliance applies to work in a very strong measure. Although man-days may be traded, and kin or neighbors may be hired for special jobs, long-term employment is disdained, except for year-long religious or civil offices. Many Chol men have to work several months on banana plantations or cattle ranches in Tabasco, but the preferred work is always at home, in a man's own cornfield, coffee grove or house.

In the municipal center of Tila, religious festivals are an additional source of cash income. Food, shelter, drink, candles and herbs are sold to pilgrims. The income from the ten days' festival of Corpus Christi, for the average household, nearly equals that of the yearly coffee crop.

IA 2b. Population of the Dialect Areas

About 33,000 speakers of Chol live in the municipality of Tila, about 5,000 in the municipality of Sabanilla. These speak the Western Dialect and use /čonkol/ for the progressive aspect, and /tronel/ for the notion of "work." The 22,000 speakers from the municipality of Tumbalá, and the 5,000 from each of the municipalities of Palenque and Salto

other municipal centers of the Chol region. Many colonias have airstrips a few hundred yards in length. These are used by merchants, clergy and wealthier Chols.

de Agua use /woli/ instead of /čonkol/ and the more Mayan /eʔtel/ in place of the phonologically aberrant /tronel/. Any statement such as "Are you working," or "I am working" is a shibboleth for the division between the Western Dialects [wd], those of Tila and Sabanilla, and the Eastern Dialects [ed], those of Tumbalá, Palenque and Salto de Agua.

Western Dialects	Eastern Dialects	Gloss
čonkol-et ti tronel	woli-et ti eʔtel	"You are working"
čeʔ ku-y-i	hin ku-i	"Yes"
čonkol-on ti tronel	woli-on ti eʔtel	"I am working"

There are many other differences between the eastern and western dialect regions, and many differences within each major division. Some of these have to do with lexical items which are exclusively used in one area, or which have a pejorative connotation in another.

IB. Chol Studies

IB 1. Previous Linguistic Material Published on Chol

The descriptive material on Chol is limited to vocabularies; the analytical material available is nearly nil. Previous linguistic material has for the most part been practical in nature. Ancient (17th and 18th century) works and modern (20th century) materials written by Spanish and Mexican Catholic missionaries attempted to make Chol available to Spanish speakers for purposes of proselytizing and the maintenance of religion. Thus the language of religion: prayers, sacramental formulas and the names of sins were made available in Chol and Spanish for priests and confessors.

More recently, the fundamentalist missionary movement has prepared vocabularies for purposes of Bible translation, and as an aid to the Mexican Department of Education's literacy campaign. These groups, the Wycliff Bible Translators and the affiliated Summer Institute of Linguistics (SIL), have produced the majority of the existing publications on Chol.

Stoll (1894), Fernandez (1892), Sapper (1897, 1907), Starr (1902) and Becerra (1937) produced vocabularies, most of which were brief, comparative and unanalytic (cf. McQuown: 1967, and Hellmuth: 1970). In the SIL Bibliography, Wares (1968) lists 22 publications in applied linguistics, mostly primers for bilingualism and literacy, three works on animal names, two publications concerning Mexican history, and two health manuals. The entire New Testament is now published in a Chol-Spanish version; many old Testament books are translated and being readied for similar bilingual publication. This translation work is largely the work of Wilbur and Evelyn Aulie of Tumbalá. The SIL has published vocabularies supplemented by phonemic sketches, and morpheme function notation. Wilbur Aulie (1957) published a brief article on the numeral system. The longest wordlist published to date (1400 entries) appears as a glossary to Chol Texts on the Supernatural, collected and edited by Whittaker and Warkentin (1965).

Chol Texts on the Supernatural consists of three sections which contain 12, nine, and 19 texts respectively. The first section contains myths of creation ranging in length

from 16 to 108 sentences. These are valuable beginnings to the study of Chol myth, which from all indications is vast, rich and very alive as an oral tradition. The second section contains accounts of ceremonies of Chol religion, some of which are written with polemic insinuation by Protestant converts who have a thinly-veiled disdain for the rituals of the Chol Catholic Church. Judging from observation of religious ceremonies in Tila, the Chol ancients do not "sing just like the foreigners /kašlanob/ do when they sing love songs to their sweethearts," (p. 66). The ceremony of Guadalupe is related with the intention to make the practitioners appear foolish, childish and perpetually inebriated. "Also sometimes when there is no one to pour his liquor for him, he will foolishly say that he is going to die also, he will foolishly say," (p. 76). The texts of this second section range from 17 to 57 sentences in length.

The third section, like the second, is composed of personal accounts rather than tales from oral tradition. It deals with witchcraft and the spirit world. Sixteen of the 19 texts in this section range from 11 to 56 sentences in length, the remaining three are somewhat longer (82, 91, 123 sentences). The style of the latter two sections differs from that of the section composed of creation stories. The myths of the first section contain the narrative particle, which is frequently repeated in oral tradition (rules and frequency are yet to be formulated), and the progress of the text is more literary than conversational, with partial

repetitions causing the discourse to progress in an overlapping fashion. Although these texts are obviously the products of informants who are fervent Tumbalá converts to protestantism, there is a wealth of information concerning spiritual practices and supernatural belief, which survives as a syncretism of pre-conquest religion and colonial Christianity. There remains the task of sorting popular myth from polemic, and the further observational task of distinguishing concept from practice. Finally, analysis must evaluate the social impact and cultural value of these supernatural concepts and practices.

Chol Texts is valuable because it is the largest corpus of natively-produced Chol material available.¹ The notes and translations, however, are of minimal use, with subscripts to Chol words referencing English words in a running translation at the bottom of each page. Competence in the Chol language is a prerequisite for any understanding of Chol Texts rather than the result of a careful reading of this edition. The main reasons for the non-instructiveness of the book are the lack of grammatical analysis and the absence of phonetic and prosodic notation. A brief

¹The Bible translations are more extensive, but are produced by American translators. Two texts were published by Whittaker (under her maiden name, Anderson: 1957), and texts collected by Woodward (Aulie) and Yoruson (1948) are part of the Chicago Microfilm Collection of Manuscript Materials on Middle American Cultural Anthropology, Series #26.

discussion of these two components of a grammar seems pertinent to an overview of the Chol language.

A marker of a grammatical category carries information in relation to other markers in a system of grammatical ideas. Such a marker is most intelligible in relation to an entire system of grammatical oppositions and the markers thereof, i.e., as a component in a grammatical set or paradigm; it is least intelligible as a single word gloss referring to a marker in a completely different grammatical system, such as the English language. Though this fault is most egregious in the case of grammatical categories such as person, aspect, tense, case and number, it is equally regrettable in the case of many lexical items.¹ Lexical systems related to specific social, cultural, ecological and personal contexts (e.g., kinship, cooking, religion, climactic forces and the relationships of sex) are the bases for lexical sets in which any one lexical item carries by implication the sense of many other items. Together they form a semantic paradigm for a particular context. These sets are not closed. There may be a nucleus of items which nearly all speakers share, but which is more ample depending on the degree of competence of each speaker; or there may be an oscillation between aperture and closure dependent upon something as particular as the reference of an individual utterance, or as broad as the progress of linguistic change.

¹Cf. Grammatical vs. Lexical Meaning [IIIA 2].

Phonetic features to characterize the allophony of Chol are given in a single introductory paragraph in Chol Texts, the prosody of syllabic structures is neglected. These phonological essentials are treated in the present study. Still requiring analysis and exposition are other prosodic features including accent, intonation, pitch and length which have received little treatment in Chol studies, and merit much. The canon that Mayan languages have final syllable accents is by no means exceptionless. Qualification must be given regarding unaccented particles which are akin to dramatic throw-away lines [Clitics, III 4]. Accent alteration due to morphological conditioning, and the morphology and semantics of style all figure importantly in the prosody of Chol as well. As with all languages, sentence intonation and word pitch play an essential role in the transformation of Chol deep structure into surface utterance. The neglect of such prosodic features results in the falsification of the intricacy of Chol linguistic structure and dissimulates the complexity of sentences under the guise of imprecise and limited utterances of a primitive language.

Just as Chol Texts on the Supernatural is the best available textual material, "Chol de Tila" by Otto Schumann Galvez (MS) is the most extensive available grammatical material on Chol.¹ Schumann researched the /tukoničim/

¹The Aulies of the SIL have a grammatical sketch which, along with a dictionary of 4000 entries (W. Aulie: personal communication), is evidently the most extensive linguistic material on Chol. These manuscripts are on file in Tumbalá, and have been made available only to members of the SIL.

dialect of Tila, and produced a manuscript of 168 pages, of which 54 are devoted to grammatical and comparative analysis, and the remainder of the work is a lexicon of some 1400 entries. Schumann's work is acknowledged by the author to be incomplete and erroneous in some of the data.

The phonology and grammar presented by Schumann are bound to the too-frequent referral to concepts of Spanish linguistics, which do not apply in Chol. The use of the Spanish grapheme "j" for the pharyngeal spirant /h/ confuses the harsh constriction of the Spanish with the lenis and less constricted sound of the Chol. The pronouns are seen in traditional Latinate persons, and pronoun paradigms are multiplied without necessity. The grammatical relationships of the morpheme of tense/aspect /mu/ are treated too briefly. Like Chol Texts, "Chol de Tila" presents a lexicon of single-word glosses, no cross-references, and a minimal analytic sense of the root-and-derivation structure which is a key to the structure of the lexicon.

IB 2. Anthropological Studies of Chol

The published anthropological works on Chol have been summarized by Alfonso Villa-Rojas in three and one-fourth pages of the Handbook of Middle American Indians (Wauchope and Vogt: 1969: 234-237). Klaus Helfrich is preparing a monograph containing the results of his archaeological and ethnographic investigations undertaken in 1971. It can be inferred that the anthropological field regarding Chol is yet to be reaped.

IB 3. The Linguistic Anthropology of Chol

The present study presents the first extensive grammar written for the Chol language. It is the first step in the linguistic anthropology of Chol which has as its goal the explicitation of the role of language as a component of the socio-cultural life of a community. It is assumed that the grammar covertly embodies many of the orientations and values of the society. Overtly, speech expresses culture both in its content and in its form (or style). A grammar is here understood in the wide sense of a set of rules which relate the production and interpretation of sentences in an intelligible, accurate and economical way.

Intelligibility as a criterion depends greatly upon the intellectual milieu; each year advances in the theory of grammar enable more subtle kinds of analyses to be received intelligibly. Intelligibility requires consistency as well, both internal consistency which facilitates testing for contradictions in the analysis, the ferreting out of material gaps, and external consistency as well. External consistency might be best thought of as uniformity of approach, enabling accurate and expedient comparison with other studies in the same field. Comparative uniformity is not realizable until advances in theory establish bases for comparison. Distinctive phonological features, structural paradigms of morphology and of grammatical categories, and a radically-based lexicon have been proven to be somewhat stable analytical methods over the last two decades, a time

when most everything else in linguistics has been in great flux. Less proven are the concepts of rule ordering and syntactic transformation in phonology and grammar respectively. Analyses of discourse, style and prosody are least uniform of all. Attempts at the analysis of particular languages in these areas may well be pioneering forms of linguistic analysis. All these analytical orientations are utilized in the present study.

The criterion of accuracy demands care in the gathering and processing of data to avoid errors, phonetic detail which closely approximates the linguistic data to the spoken language, and analytic delicacy which avoids the extremes of solutions too weak or overly powerful. The power of a solution is the ratio between the number of rules in the grammar to the number of utterances in the natural language that the rules can generate or explain. Solutions analytically weak are unable to account for all the sentences of the language. Solutions too powerful generate more sentences than are generated naturally by a competent speaker. If an accurate grammar is to generate all and only the acceptable sentences of a language, and mark as aberrant those which are in some way unacceptable, delicacy of power is an essential component of accuracy.

Economy of solution more directly gauges the power ratio of a grammar. The dictum popularly and inappropriately known as "Ockham's razor"--Entities are not to be multiplied without necessity--is the key to economical solutions. The

more general the application of a grammatical solution, the fewer particular solutions are necessitated. Thus power and economy of solution increase mutually. If a powerful solution requires numerous constraints and provisos for its application, then the desire for power vitiates accuracy and works against economy. Economy appears to be a criterion which can only be met after accuracy is assured.

Although the writing of a grammar for a language is an endless endeavor, the assemblage of an increasing number of facts and concepts concerning grammatical structure suffices as the basis for wider anthropological work: The correlation of language and culture. Language can be investigated as a transmitting medium for cultural concepts: this is the role of folklore and linguistic ethnography. Language can be investigated as the matrix of the concepts which underlie the culture: this is the study of linguistic determinism, and involves a critical return to the Sapir-Whorf hypothesis. Variations in language usage can be investigated with relation to concomitant social factors: this is the study of socio-linguistics.

In the chapters which follow, folklore, linguistic aspects of ethnography, the relation of grammatical concepts to cultural concepts, and the social implications of linguistic variation receive little treatment except when elucidation of the linguistic system crucially depends upon such anthropological aspects, or when, by way of footnote, such information seems scientifically interesting. For the

most part, this study presents a grammatical description of the langue of Chol, i.e., the collectively shared linguistic concepts utilized by speakers and hearers of Chol for the production and interpretation of Chol speech.

CHAPTER II

PHONOLOGY

A separate chapter of phonetics is not included in this dissertation. All speech is first perceived as phonetic reality. The finer the listener's ear, whether attuned by linguistic training, or by native competence and/or long immersion in the cultural and linguistic context, the more of the phonetic reality will be perceived as semantically informational. Phonetics is the primary linguistic data, therefore the beginning of all analysis; it has no practical end point. Phonetic detail is crucial to every level of linguistic analysis: slight variation is sometimes optional and nearly meaningless, sometimes the signal of a shift of meaning in radical ways.

This chapter presents a systematic analysis of the phonological features which are distinctive in the phonological component of Chol grammar. After the presentation of this system, prosodic and phonetic information which relate this system to surface utterances is presented in sections on syllabic structures and allophonic variation. Phonological rules are assembled and partially ordered in the appendix.

IIA. Phonological Features of Chol

A feature is a unit of information. Whether simple or complex, a feature is atomic: it is assumed to be unitary, unalterable and exceptionless. Binary features mark information with maximum efficiency. Strict binarity requires that a minus, or negative marking; for a feature be as information-laden as a plus marking, and further requires that every element be marked for every feature. According to strict binarity, for example, five features will distinguish 2^5 or 32 elements, with no element unmarked for any feature and no features redundant.

Phonology has never held to strict machine-model binarity. Structural linguistics has long utilized weighted binarity, or markedness, and the neutralization of featured oppositions. "The strictly binary approach of generative phonology," (Harms: 1968, p. 18) is more of an ideal than a practiced rubric. Ternary features, those with plus-or-minus marking (\pm) are forbidden, but redundancy, both positive and negative for any feature, is allowed. The non-application of a feature in a particular matrix is also allowed. Because of the dissimilarity between the speech organs and algorithmic devices, because certain of these dimensions are salient in some speech sounds and other dimensions are unmistakably salient in other phones, it is not surprising that phonological binarity is not strict. Its use is no more instructive than the limitations of its use, which require other mechanisms for their description.

Phonological features are not atomic exceptionless classifications of the make-up of speech. They are articulatorily- or acoustically-based, but they do not give accurate precise descriptions of, articulatory or acoustic phenomena. To this extent they are not phonetic. Rather, every feature labels a range of similar phonological phenomena, such as stridency, height or flatness. These phenomena can be thought of as positions along a continuum which has the positive and negative values of the feature as its poles. Each structural morphophoneme, or perhaps each utterance of a phone, is an instance of the intersection of points along the continua of each of its distinctive and redundant phonological features. For ease of classification, the infinite possibilities of the continuum are reduced to two, positive and negative, the well-known pluses and minuses of structural analysis. The matrix of phonological features is reduced to include only the distinctive features within the phonological system.

A number of divergences from normal distinctive featural analysis are herein employed. It was felt that since the features are binary, and since binary information coding contains information in both halves of the "bit," there should be a second notation which gives more than primitive definition to the minus-term of the feature. For example, in addition to strident/non-strident, the label strident/mellow is given. In the case of syllabicity, the negative value of the feature is consonantal.

IIA 1. The Distinctive Features

IIA 1a. Syllabicity [syl]

syllabic non-syllabic

syllabic/consonantal

[+ syl] / [- syl]

Syllabic sounds serve as the nuclei of syllables.

A syllable is a spontaneously voiced unit of pulmonic air, defined either by muscular pulse in the lungs or by boundaries of increased constriction in the oral cavity. It is thus the minimum physical unit of speech (cf. Chomsky and Halle: 1968: p. 302).

The feature of syllabicity distinctively marks the six vowels /a ʌ e i o u / of Chol. Only syllabic sounds can be accompanied by tone and lengthened. Negatively, the feature marks morphophonemes which are not habitually the basis of or sole element in syllables. In effect, non-syllabicity [- syl] marks the consonants.

Many distinctive feature analyses grant separate feature status to consonantality, thus capturing the so-called intermediate phones: the glides, liquids and the glottal stop. There are several arguments possible and solutions vary (cf. Harms: 1968: pp. 23-26). The phonological particularities of various languages are largely responsible for alternative solutions, the theory being modified to give logical foundation to the data. Otherwise, only one solution would be used universally. For the present study, the following solution is proposed: one feature, syllabicity,

There are fewer distinctively syllabic morphophonemes (6) than distinctively non-syllabic (8), and the total number of non-syllabic morphophonemes (consonants) is 21. Were the numerical criterion the only basis for the choice of the name, syllabicity would be the privative value and consonantality the feature name and positive value. However, the importance of the syllable at linguistic levels higher than that of the phonological feature, and the importance of desyllabication and syllabication in phonological rules to capture crucial facts of the language, motivate the choice of syllabicity as the name for the major typological feature.

IIIA 1b. Interruption [int]

interrupted/non-interrupted

interrupted/continuant

[+ int] / [- int]

Interrupted sounds are produced in such a way that the breath flow is momentarily stopped.

The stops, of which there are nine, / p t k ʔ b p' t' k' r /, and the four affricated stops, / č ʃ č' ʃ' /, are characterized by the interruption of the flow of pulmonic air by means of a closure in the oral cavity [+ int]. This closure is effected by the lips or tongue, and in the case of the glottalized consonants, is accompanied by simultaneous closure of the glottis as well.

Sounds which are produced with uninterrupted breath flow are continuous [- int]. Constriction may be present concomitantly, as in /s/ and /š/, but not to the extent that

the airflow is stopped. The breath may be re-routed from oral to nasal passageways, as in /m/ and /n/. It may be colored by partial lateral, palatal or labial closure, as in /l/, /y/ and /w/; or it may be present non-syllabically in a syllabic environment, as is the case for the breathy spirant /h/.

The major class features of syllabicity and interruption distinguish the traditional classes of vowels and consonants as given in Table 2.

TABLE 2
FEATURE SPECIFICATION OF MAJOR SOUND CLASSES

	Vowels	Consonants	
		continuous	interrupted
[syl]	+	-	-
[int]	-	-	+

The remaining seven distinctive features concern articulatory and acoustic qualities which further distinguish morphophonemes within the major classes. Of these, centrality [cen] and height [hi] are most powerful, operating at nearly every taxonomic node (cf. Table 1, Paradigm of Distinctive Phonological Features).

As in all paradigms, at each level one criterion is applied to the entire system (Kay: 1969, p. 83). Wherever a horizontal line occurs, the feature is distinctive. The lack of a horizontal line opposite a feature name indicates

that the feature is redundant or does not apply. The major class features of syllabicity and interruption distinguish the nature of pulmonic airflow in the morphophonemes: they are thus major class features. Centrality distinguishes the articulatory position of the entire system along a horizontal axis in the oral cavity, and height, distinguishing all but seven morphophonemes, operates along a vertical axis in the oral cavity. The remaining five features distinguish particular characteristics of subclasses within the system.

IIIA 1c. Centrality [cen]

central/non-central

central/peripheral

[+ cen] / [- cen]

Central sounds are produced in the central region of the mouth.

For Chol, the central region extends from the back of the incisors to the end of the hard palate. Non-central sounds are produced with articulation or primary resonance occurring at the periphery of the speech tract.

This feature applies to every morphophoneme in the system, the count being 16 central and 17 peripheral. Chol is among the Mayan languages with a "sixth" vowel; it, and Aguacatec which has a palatalized /k^y/, are the only languages of the Mayan family with palatalized consonants. Given these characteristics, it seems correct that centrality be an important articulatory feature, and that the count of morphophonemes be nearly even for each value of the

opposition, with the preponderance going to the positive value of the feature.

IIA 1d. Height [hi]

high/non-high

[+ hi] / [- hi]

High sounds are produced with the meso-dorsum of the tongue higher than the neutral position.

Height distinguishes sounds in several natural groups:

TABLE 3
MORPHOPHONEMES DISTINCTIVELY MARKED FOR HEIGHT

	[+ hi]	[- hi]
sibilants	š	s
stops		
peripheral	k k'	p ? b p'
central	t t'	r
affricated	č č'	ç ç'
vowels	i i: u u:	e e: o o:

The central vowels /a/ and /ʌ/ are redundantly [- hi]; the semi-vowels /y/ and /w/ are distinguished by height, the former being distinctively high and the latter redundantly non-high; the nasal /n/ is distinctively [+ hi] and the nasal /m/ redundantly [- hi], a fact of importance in the nasal rule complex (cf. Marking Conventions 3, 8; PR: NASAS [IIC 2a i d]). All but seven morphophonemes / a: a ʌ: ʌ w m h/ are distinctively marked by the feature of height.

IIIA 1e. Stridency [str]

strident/non-strident

strident/mellow

[+ str] / [- str]

Strident sounds are produced with greater turbulence due to shape or texture of the resonating cavity, or to speed to pressure of airflow. The result is a greater noisiness in the sound.

Only the central consonants participate in the feature of stridency. Of the seven central interrupted consonants, four, the affricated stops, are strident. Of the five central non-interrupted consonants, two, the sibilants, are strident. Thus six central morphophonemes of twelve are strident. Mellow consonants include the three palatalized consonants /n/, /t/ and /t'/, and the palatal glide /y/, forming a natural class of particular distinction for Chol. The marking conventions 1 and 4 indicate that vowels and peripheral stops are in effect unmarked for the strident/mellow distinction. The remaining mellow morphophonemes are /l/, again distinctively Chol, and /r/, important for its marginality in the phonological system.

IIIA 1f. Checkedness [chk]

checked/non-checked

checked/plain

[+ chk] / [- chk]

Checked sounds are produced with a secondary articulation which stops pulmonic air by means of glottal closure.

The glottal closure is complementary to and simultaneous with a primary closure in the mouth.

Twelve of the 13 interrupted consonants participate in the feature of checkedness. The stop for which checked/plain is but a redundant feature is /r/. The positive value of the feature marks the glottalized consonants which are characteristic of Mayan phonology. The glottal closure, released a fraction of a second after the primary oral closure is responsible for a slight suction in the oral cavity. This suction and the subsequent expulsion of pressure built up behind the glottis gives Mayan languages the popping, stopping-and-starting sound which many casual observers notice. The negative value of the feature marks the plain counterparts to the glottalized stops and affricates. The glottal stop /ʔ/ is plain, i. e., non-checked.

At first it may seem contradictory and inconsistent that glottalized consonants be considered checked and the glottal stop non-checked. However, it must be remembered that the feature of checkedness marks a secondary articulation. Stops with but a single, primary articulation, no matter what the point of articulation, are to be considered plain. Production of the glottal stop is such a simple, single articulation. By this same reasoning the morphophoneme /b/ is marked [+chk] because of pre-glottalization, even though it has no unglottalized counterpart.

IIA 1g. Flatness [flt]

flat/non-flat

flat/sharp

[+ flt] / [- flt]

Flat sounds are characterized by a low-frequency first formant.¹

The feature of flatness is an acoustic or musical feature. "Low frequency" only has meaning in relation to a higher frequency, and is senseless in absolute terms. For vowels flatness distinguishes the lower formant of the rounded vowels /o/ and /u/, as opposed to /i/ and /e/, and distinguishes the low formant of the open and slightly back major allophone of /a/, as opposed to the sharper formant of /ʌ/, which can be considered a vowel with inherent high tone. For consonants, the relatively lower first formant of the rounded /w/ is characterized by flatness, as opposed to /m/ and /h/ which are non-flat (though not particularly sharp). Following the suggestion of Harms (1968, p. 32), flatness is utilized to indicate relative degree of peripheralness, and gives further subcategorization to the central/peripheral dimension [cen]. In effect, it segregates the glottal stop from the back stops /k/ and /k'/ and motivates the grouping of the glottal stop with the labial stops to form the complex of non-high peripheral stops [IIC 2b ia]. Apart from the

¹It has been pointed out by Paul Friedrich that flatness is the only feature given an acoustically-motivated definition in a phonology which is otherwise based on articulatory criteria. This feature is admissible on theoretical rather than empirical grounds, and seems to fit both the vocalic and consonantal systems of Chol.

methodological usefulness and parsimony of employing a single feature to specify a feature of both vowels and consonants, the specification of the glottal stop as flat is phonologically corroborated by the fact that lower allophones of vowels habitually follow the glottal stop.

/teʔ/ "tree," /teʔel/ → [teʔɛl] "forest"

The acoustic lowness of /b/ and /ʔ/ are characterized as flat, as opposed to /p/ and /p'/ which, like all the other stops, are non-flat (cf. Marking Convention 7, Holes; [IIIA 2]).

IIA lh. Nasality [nas]

nasal/non-nasal

nasal/oral

[+ nas] / [- nas]

Nasal sounds are produced by lowering the velum, with the result that the pulmonic airflow is partially or completely re-routed through the nasal passages.

The positive value of nasality distinguishes but two morphophonemes /m/ and /n/. Distinctively non-nasal are /h/ and /y/ in opposition to them.

IIA li. Length [lng]

long/non-long

long/short

[+ lng] / [- lng]

Long sounds are those which are held for two morae, or twice the duration of non-long segments.

TABLE 4

DISTINCTIVE FEATURE MATRICES--VOWELS

	i	i:	e	e:	ɪ	ɪ:	a	a:	o	o:	u	u:
Syllabicity	+	+	+	+	+	+	+	+	+	+	+	+
Interruption	-	-	-	-	-	-	-	-	-	-	-	-
Centrality	-	-	-	-	+	+	+	+	-	-	-	-
Height	+	+	-	-					-	-	+	+
Stridency												
Checkedness												
Flatness	-	-	-	-	-	-	+	+	+	+	+	+
Nasality												
Length	-	+	-	+	-	+	-	+	-	+	-	+

TABLE 5

DISTINCTIVE FEATURE MATRICES--CONSONANTS

	m	n	s	š	l	w	y	h	p	t	k	ʔ	b	p'	t'	k'	ɸ	č	ɸ'	č'	r	
Syllabicity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interruption	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Centrality	-	+	+	+	+	-	+	-	-	+	-	-	-	-	+	-	+	+	+	+	+	+
Height		+	-	+	-	+			-	+	+	-	-	-	+	+			-	+	-	+
Stridency			-	+	+														+	+	+	+
Checkedness									-	-	-	-	+	+	+	+			-	-	+	+
Flatness						+		-	-				+	+	-							
Nasality	+	+						-	-													
Length																						

In Chol, only vowels are marked for length. This vowel lengthening is most regularly devoiced, often deleted and only seldom fully vocalic. The feature of length results in 12 vowel morphophonemes, derived from the doubling of the five cardinal vowel positions and of the "sixth" vowel /ʌ/. Long vowels are treated in the Lexicon [IV] within the vowel hierarchies of their respective articulatory positions.

In Mayan, as in Nez Perce, Tonkawa and Proto-Indo-European, vowel length is related to surface phonemic instances of /h/ by phenomena of devoicing, desyllabication and pharyngeal or oral constriction.

Distinctive feature matrices for the 33 morphophonemes are given in the columns of Tables 4 and 5. It should be noted that none of the morphophonemes requires more than six features for distinctive specification. Two require six (/n/, /y/), but most require five. It is instructive to note that five features is the number of features that strict binarity would require to minimally distinguish 32 elements (2^5), and that Chol contains 33 morphophonemes.

IIA 2. Redundancy

Although the eight features are sufficient and necessary to distinguish the entire system, not all eight are necessary for every systematic morphophoneme. Some features are redundant for certain morphophonemes and phonological classes. For example, all vowels are continuants. This generalization is captured in Marking Convention 1, below.

Other features do not apply; for example, the dimension checked/plain does not apply to continuants. Marking conventions make explicit that most important instances of redundancy and non-application of features. The term "marking convention" enjoys wide usage (Chomsky and Halle: 1968), but is perhaps misleading. Many marking conventions are not so much conventional as implicational, arising from the logical consequences of the phonological system of Chol, or from wider phonological universals. However, since they are used to abbreviate phonological matrices and to readily supply redundant features, the term "marking convention" remains of use.

IIA 2a. Marking Conventions

MC1: [+ syl] → $\begin{bmatrix} - \text{str} \\ - \text{chk} \\ - \text{nas} \end{bmatrix}$

Read: Vowels are redundantly mellow, plan and oral.

The normal case for syllabic elements follows this convention. In cases of emotional speech, there is a special foregrounded effect in the nasalization of vowels. In emphatic speech or onomatopoeia, glottal rasp or creaky voice [+ chk] characterizes the articulation.

MC2: $\begin{bmatrix} + \text{syl} \\ + \text{cen} \end{bmatrix}$ → [- hi]

Read: Central vowels are redundantly non-high.

The central vowels are saved one feature of specification by this convention. In addition to this economy, the mid-high central /A/ is specified as less high than the high vowels /i/ and /u/.

MC3: [+ int] → [- syl]

Read: Stops are consonantal

This convention seems to be a near universal on logical grounds alone. The negative converse of the statement: "syllabic units are continuous" defines a logically necessary condition for syllables.

MC4: [- cen] → [- str]

Read: Peripheral elements are non-strident.

The negative converse of this proposition, [+ str] → [+ cen], is tautologically true and yields another way to state this convention: Only central elements can participate in the feature of stridency.

MC5: [- syl] → [- chk] [- flt]

Read: Continuant are neither checked nor flat.

MC6: [+ int] → [- nas]

Read: Stops are non-nasal.

MC7: [+ int] → [- flt] [+ cen]

Read: Central stopped elements are non-flat.

MC8: [- syl] → [- hi] [- int] [- cen]

Read: Peripheral continuants are non-high.

MC9: [+ lng] → [+ syl]

Read: Only vowels are marked for length.

IIA 2b. Application of the Marking Conventions

The applications of the marking conventions is given in Tables 6 and 7. This table is prepared by the insertion

TABLE 6.

PHONOLOGICAL MATRICES • DISTINCTIVE AND REDUNDANT--VOWELS

	i	i:	e	e:	ɛ	ɛ:	a	a:	o	o:	u	u:
[syl]	+	+	+	+	+	+	+	+	+	+	+	+
[int]	-	-	-	-	-	-	-	-	-	-	-	-
[cen]	-	-	-	-	+	+	+	+	-	-	-	-
[hi]	+	+	-	-	2	2	2	2	-	-	+	+
[str]	1	1	1	1	1	1	1	1	1	1	1	1
[chk]	1	1	1	1	1	1	1	1	1	1	1	1
[flt]	-	-	-	-	-	-	+	+	+	+	+	+
[nas]	1	1	1	1	1	1	1	1	1	1	1	1
[lng]	-	+	-	+	-	+	-	+	-	+	-	+

TABLE 7.

PHONOLOGICAL MATRICES • DISTINCTIVE AND REDUNDANT--CONSONANTS

	m	n	s	š	l	w	y	h	p	t	k	ʔ	b	p'	t'	k'	ç	č	ǰ	č'	r	
[syl]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[int]	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+
[cen]	-	+	+	+	+	-	+	-	-	+	-	-	-	-	+	-	+	+	+	+	+	+
[hi]	8	+	-	+	-	8	+	8	-	+	+	-	-	-	+	+	-	+	-	+	-	
[str]	4	-	+	+	-	4	-	4	4	-	4	4	4	4	-	4	+	+	+	+	-	
[chk]	5	5	5	5	5	5	5	5	-	-	-	-	+	+	+	+	-	-	+	+	0	
[flt]	-	5	5	5	5	+	5	-	-	7	0	+	+	-	7	0	7	7	7	7	7	
[nas]	+	+	0	0	0	0	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	
[lng]	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	

of marking convention numbers where they apply, and the superimposition of redundant features onto the distinctive features as they appear in Tables 4 and 5.

All feature values supplied by the marking conventions are negative. The flatness of /m/ and /h/ is distinctively negative, and redundantly marked as negative by MC5.

There are seven 0's on the table. One indicates the marginality of /r/ to the phonological system: /r/ is the only stop not marked for checkedness. Two apply to the matrices of /k/ and /k' with regard to flatness. Four indicate that the continuants /s/, /š/, /l/ and /w/ are not distinctively marked for nasality. Just as all the values covered in the marking conventions are negative, all the values left unindicated in the system are negative also. These "zeros" are unstable in terms of distinctive features, and may be considered sub-featural redundancy rules. As such, they form another gradation in the continuum of phonological features: the highest, most systematic step in the gradient is composed of the distinctive features which are sufficient and necessary to define the systematic morphophonemes. The second is composed of the conventionally redundant features; the third by the zeros in the redundant feature matrices; the next by non-distinctive phonetic features, discussed below; and the lowest by phonetic features which carry stylistic, sociolinguistic or dialectal import. This continuum, or cline, in the system of phonological features finds counterparts in the derivational

morphology of the lexical root [Derivation III B 4], in the system of numeral classifiers, and in syntax as well. Rewriting all non-plus markings as negative, however, does some violence to theoretical problems of phonology. Some of these problems can be posed in the following ways:

1) Is it possible that some features do not apply as dimensions of contrast to certain morphophonemes in the system? Should it not be necessary to specify every feature for every element in the system?

2) Should there be a qualitative difference between features of true redundancy, and features which are specified merely to fill gaps in the scheme? Is it legitimate to mix true redundancy features within system fillers in the same marking convention (as in MC5), or should they be kept separate (as in MC3, MC6)?

3) How are non-distinctive phonetic features to be presented? How are distributional constraints to be presented to corroborate or modify the distinctive feature matrices and analyses?

The first set of questions is theoretical, and concerns the kind of binarity that exists in phonology. It has been argued that phonology exhibits only a modified kind of binarity, yet in this analysis strict application of every feature to every morphophoneme has been adhered to. The second set of questions concerns the status of features within the phonology. The phonological rules operate using only distinctive features for the most part. However, many

morphophonemic, allophonic and sociolinguistic rules utilize redundant features as well, including features not yet introduced, as well as redundant values for the distinctive features. The following section introduces some of these redundant features. In the section on allophonic variation, distributional constraints are given to approximate the systematic schemata of the matrices to the phonetic reality of speech.

IIA 2c. Non-Distinctive Phonetic Features

The feature of VOICEDNESS is one of the most basic features of the articulatory repertory. Many phones in Chol are produced with vibration of the cartiliginous bands known as the vocal cords. CORONALITY is a feature of tongue articulation which also figures in the articulation of many phones. The feature of TENSION, with the oppositions fortis/lenis, and that of RELEASE, with the oppositions abrupt-release/ smooth-release, become useful in characterizing the redundant information which often signals the distinction of the phonological system when distinctive features are lost in context or inaudible through interference in the channel between speaker and hearer.

IIA 2c i. Voicedness [voi]

All syllabic morphophonemes are voiced. The continuants /m/, /n/, /l/, /y/, and /w/ are usually voiced, as are the stops /b/ and /r/. Therefore the omission of voicedness from the list of distinctive features requires justification.

Despite the widespread appearance of the articulatory feature of voicing in many rules of stylistics and phonology, there is no structural opposition between voicing [+ voi] and voicelessness [- voi] in any morphophoneme, or pair of morphophonemes. To distinguish the entire set of 27 morphophonemes, there is no necessity to posit the feature of voicing as distinctive. The only possible pair which might be considered minimally distinguished by the feature of voicedness are /p/ and /b/, or perhaps /p'/ and /b/.

Examination of phonetic detail shows that /b/ is frequently pre-glottalized, therefore /p/ is not the correct counterpart of /b/ in the minimal pair. However, the de-voicing of word-final /b/ does not yield /p'/, but either [p] or [ʔ]. It would seem that /p'/ does not contrast minimally, either. The solution most sensible was to make the four peripheral, non-high stops contrast in a four-term opposition using the two binary features of checkedness and flatness (cf. Non-high Peripheral Stops [IIC 2b ia]). Voicedness, then, was demoted in status to phonetic, rather than distinctive feature.

Other phenomena of the language, both internal and external confirmed this decision. Certain lexical items are specially marked for de-voicing, with apparently no systematic, or distinctive change of morphophoneme:

√ɬ'i·n	→	[ɬ'i:ŋ]	<u>yucca</u> (root food)
√tan	→	[tʰaŋ]	"chest, open surface"
√p'uy	→	[p'uɣ]	"snail"

-p'e·l	→	[p'e:ɔ]	Unmarked Numeral Classifier
√u·	→	[ʔuɔ]	"month, moon [ed]"
√ʔip'	→	[ʔip'y]	"armadillo"

The release of certain consonants is usually a de-voiced echo vowel [i̥] or [ɔ̥].

Long vowels which can be traced to long-vowel cognates in other Mayan languages are realized with de-voiced length most frequently, with true vocalic and voiced length less frequently and with no length, i.e., as simple vowels often in casual and rapid speech.

√ma:l /ɔa-iš ma:l-i/ [taš.ma:.li], [taš.ma·.li], [taš.ma.li]

In loan words voicing is usually screened out, indicating that voicing is not a relevant discrimination for the mono-lingual Chol.

póte	"glass" (<Sp. ^h <u>bote</u>)
ko.mpo.nen.tu	for componiendo, "repairing"

and with hypercorrection, i.e., voicing loan phonemes which are voiceless:

s ^y em.bre	for <u>siempre</u> , " <u>always</u> <u>still</u> "
-----------------------	--

The inference from all these usages is that the discrimination voiced/non-voiced does not have distinctive psychological reality, but is operative at another, more automatic, phonological level

IIA 2c ii. Coronality [cor]

Articulation performed by the crown (or prae-dorsum) of the tongue is said to be coronal. The crown of the

tongue is the area just behind the tip (or apex). The following morphophonemes are redundantly marked for coronality:

[+ cor]	[- cor]
∅	č
∅'	č'
s	š
l	
r	

IIA 2c iii. Abrupt Release [abr]

Abrupt and non-abrupt release are features which apply only to phones articulated with firm contact of the speech organs. Thus all stops and affricated stops participate in this feature, as do continuants with firm oral closure and airflow re-routing, such as the nasals and the lateral /l/. The affricates are smoothly released [- abr] as are most cases of /t/, /t'/ and /n/.

Morphophonemic /t/ and /n/, both palatalized, are non-coronal and non-abruptly released except when followed by the high, non-flat vowel /i/. The phonetic consequence of this articulation is the y-like offglide after instances of /t/ and /n/. The complete matrices for these morphophonemes are :

/n/	/t/, /t'/
- syl	3 syl
- int	+ int
+ cen	+ cen
+ hi	+ hi
- str	- str
5 chk	+ chk
5 flt	7 flt
+ nas	6 nas
+ voi	- voi
- abr	- abr
- cor	- cor

All marking convention numbers are to be re-written as redundant negative values. The following distributional rule of allophony applies to these morphophonemes:

APR·COR

$$\begin{bmatrix} - & \text{cor} \\ - & \text{abr} \end{bmatrix} \rightarrow \begin{bmatrix} + & \text{cor} \\ + & \text{abr} \end{bmatrix} / - \begin{bmatrix} + & \text{syl} \\ + & \text{hi} \\ - & \text{flt} \end{bmatrix}$$

Read: Before /i/, these phones are coronal and abruptly released.

IIA 2c iv. Fortis [for]

Relatively greater muscle tension in the articulation of a sound results in stronger or louder phones. Fortis/lenis is an important co-occurrence phenomenon which gives redundant marking to the minimal pairs distinguished only by glottalization. The central stops and affricates, /t/, /t̥/, and /ṭ/ are more lenis when plain, more fortis when checked. As for the peripheral stops /p/, /p'/, /k/ and /k'/, the checked member of the pair is lenis and the plain, unflottalized articulation is more fortis. For the sake of completeness, it must be said that /b/ is more fortis than /b̥/. Except for this last fact, the following alpha-type convention applies.

APR·FOR

$$\begin{bmatrix} - & \text{syl} \\ + & \text{chk} \\ \alpha & \text{cen} \end{bmatrix} \rightarrow [\alpha \text{ for}]$$

Read: Central checked consonants are fortis, peripheral checked consonants are lenis (exception: /b/ is fortis).

IIB. Syllabic Structures

Syllable types for morphemes include:

CVC	CV:C
CV	CV:
VC	V:C
V	V:

The most frequent and most preferred syllable structure is the CVC-type. One important generalization concerning the prosody of all syllabic structures is the consonant-initial preference: Syllables tend to be consonant initial even at the cost of separating morphemes internally (cf. examples with /bon/, /ma:l/ and /č'a:/, below).

Most lexical roots are consonant-initial, e.g.:

woč'	"toasted corn cake" <u>tostada</u>
ha?	"water, river"
tat	"father, (older) man"
k'uš	"bite, chew, eat, hurt, feel"
mal	"inner area, inside, floor"
ma:l	"going"

Vowel-initial syllables of the VC and V: type are generally infrequent as lexical morphemes. On the other hand, the three "strong" verbs [IIIF 8], e.g., 1-3), certain frequent lexical items (e.g., 4), and many grammatical particles, notably the clitics, certain pronouns and verb stem suffixes are of the form VC:

(1)	om	"want"
(2)	u:	"know by nature, be able"
(3)	ub	"feel, sense, know, seem"
(4)	uč'	"eat"

- | | | |
|-----|----------|------------------|
| (5) | iš, ač | CLITIC |
| (6) | -on, -et | ERGATIVE PRONOUN |
| (7) | -en, -an | VERB STEM |

Morphemes composed of but a single vowel are extremely rare. Example (2) above is a root composed of a long vowel. Certain pronouns and the past stem endings for verbs are other instances:

- | | |
|---------|----------------|
| a, i | BOUND PRONOUN |
| ʌ, u, i | VERB PAST STEM |

Though difficult to draw with hard-edged certainty, the distinction between grammatical and lexical meaning [IIIA 2] is corroborated by the morphology of syllable types. Vowel initial morphemes, many of which are distributionally post-clitic or otherwise suffixing, are for the most part grammatical. When grammatical morphemes of the vowel-initial syllable type are affixed to lexical root morphemes, (and this is the most common morphotactic process), the operation of the consonant-initial preference can be most clearly seen.

To maintain a prosody of consonant-initial syllabic structure syllable boundaries encroach upon the integrity of morphemes, resulting in a morpheme structure that is not immediately perceivable in the phonological structure and vice-versa. For example, the CVC structure of $\sqrt{\text{bon}}$ "painting" is preserved in the addition of the CV-type morpheme /la/, but broken in the addition of the VC-type morpheme /ol/. The same process can be seen in the addition of the clitic /iš/:

	√bon		"painting"
		→ mik.bon.la	
(1)	mi-k-bon-la	→ mi.kbon.la	"we paint"
(2)	bon-ol	→ bo.nol	"it is painted"
(3)	bon-ol-iš	→ bo.no.liš	"it is indeed painted"

When this preference applies to long vowels, de-voiced length can be syllable final (e.g., l, below), or become the initial consonant in the syllable following the root:

	√ma:l		"going"
(1)	mi-k-ma:l-el	→ mik.ma: .lɛl	"I go"
	√č'a:		"bark used for tying"
(2)	č'a:-an	→ č'a.han	"bark used for tying"
(3)	č'a:-nal	→ č'a: .nal	"strips of bark"

IIB 1. Phonological Clusters

IIB 1a. Vowel Clusters

Many phonological patterns not covered by the more abstract rules nevertheless operate in a regular way and should be treated as part of the language system. Even at the phonetic level, however, vowel clusters and diphthongs are extremely rare. A few occur as alternative phonetic renderings of certain nouns with word-final glides.

- (1) /lew/ → [leu], [lewy], [lewⁱ], [levⁱ], [lɛϕ]
 "grease, fat, manteca"
- (2) /čay/ → [čai], [čayç] "fish"

Morphophonematic vowel clusters are always changed to di-syllabic structures by the interposition of a non-syllabic non-interrupted glide [IIC 2a iv, v], and in one instance by elimination of the vowel.

- (1) mi-a → [ma] UNMARKED TENSE/ASPECT [IIIF 2b i]
 (2) a-ikot → [a.wi.kot] BOUND PRONOUN "with you" [IIIC 1]
 (3) i-alobil → [i.ya.lo.bil] BOUND PRONOUN "his son"
 [IIIC 1]
 (4) haǰ'-Λ-on → [ha.ǰ'Λ.yon] ERGATIVE PRONOUN "he hit me"
 [IIIC 1b]
 (5) obispo-ob → [o.bis.po.hoʔ] LOAN WORD "bishops" [IIC 2a v]
 (6) č'u-an-e → [č'u.wa.ɲe] DERIVATIONAL "mayordomo" [IIIB 4]
 (7) ǰa-iš → [ǰa.ʔiš] COMPLETIVE TENSE/ASPECT [IIIF 2c ii]

The numerous contractions possible in the morpheme sequence of example (7) can yield phonetic diphthongs of the form [taiš] and [ǰaiš] at the phonetic level [IIIF 2c ii].

IIB 1b. Consonant Clusters

Initial consonant clusters are limited in occurrence.

The following instances are exceptions, and merit mention:

- a. The morphophonology of the bound series speaker pronoun /k/ [IIIC 2]:

- (1) /mi-k-lǰ/ → [mi.klǰ] "I stack (it)"
 (2) /mi-k-man/ → [mik.man], [mi.kman] "I buy"
 (3) /mi-k-bon-la/ → [mi.kbon.la], [mik.bon.la] "we paint"
 (4) /k-rukal/ → [kru.kal] → kə.ru.kal/ "my place" (<Sp. lugar)

- b. The morphophonology of the "female" animate prefix /š/

[IIID 1a]:

- (1) škel "bird" [es]
 (2) štok "lizard" [es]
 (3) špeč "duck"
 (4) šte.bu.ʔul "tree bean" [es]
 (5) šča.ma.ka. "marriageable girl" (<Sp. chamaca)
 (6) šba: "mole, tusa" [es]

In these examples the lexical item consists of everything except the /š/, and every example except (4) and (5) is

monosyllabic. The last example /ba:/ is an unusual lexical item in the sense that it can be prefixed by either the masculine /a:/ animate prefix or the feminine /š/, as above.

When /a:/ prefixes /ba:/, an [m] is often interposed. Devoiced vowel length /:/ is non-interrupted; /b/ is non-central and non-high. At the interface of these elements the three features $\begin{bmatrix} - \text{int} \\ - \text{cen} \\ - \text{hi} \end{bmatrix}$ concatenate. These features are nearly sufficient to specify the distinctive matrix of /m/ ($\begin{matrix} - \text{flt} \\ + \text{nas} \end{matrix}$ are lacking). The assimilation-alternation relationship between /b/ and /m/ occurs in other areas of the phonology as well [IIC [b ia]:

(7) a:-ba: → a:.mba: , a:m.ba: , a:m̄.ba:

c. Phonologically aberrant, and unique in status as a quasi-loan word in only one major dialect area is the western dialect noun for "work" /t̄ronel/.¹ Medial consonant clusters are the phonological result of de-voiced vowel length. The second element may be any non-syllabic morphophoneme, the first element is always the realization of de-voiced vowel length [h], [w], [y] ([ç]).

(1) ʒa-iš u:t-i → ʒaš.u.çti, ʒaš.uç.ti "it is finished"

(2) i-bo:p-haʔas → i.bowp.ha.ʔas "the point of the banana cluster, the banana flower"

¹The symbol t̄ indicates a "fronted" or non-palatalized t: $\begin{bmatrix} - \text{hi} \\ + \text{cor} \\ + \text{abr} \end{bmatrix}$. This lexical item is perhaps a combination of (underlined) elements from Spanish trabajo, "work" and Chol /eʔtel/ "work [ed], authority, service, office."

(3) p'a:č' → p'ahč' "steamed corndough"

Word-final consonant clusters are the result of de-voiced vowel length as above (3) or the desyllabication of echo vowels. Clusters involving glides:

/lew/ → [lewy] "grease"

/p'uy/ → [p'uyç] "snail"

account for the small number of word-final clusters of consonantal morphophonemes. Otherwise consonant clusters are the results of conversion rules which yield surface phones.

IIC. Allophonic Variation

Syllabic structures account for the physical relations of syllabic and consonantal elements. Distinctive features account for the systematic relations which form a phonological network and relate the morphophonemes among themselves at the abstract level of the morphophonematic structure of the language. The distinctive features also provide functional minimal units of phonological change allowing rules to be written with clarity and accuracy. With regard to the precise degree of specification along the continua of the features, with regard to articulatory and acoustical characteristics not specified by feature matrices and feature definitions, and most importantly, with regard to the phonetic variations due to distributional phenomena (or at least best seen as distributionally-related), a sketch of each morphophoneme is given below. Characteristics of natural classes, such as the vowels, the affricates, the

glottalized consonants, or the labials precede sketches of individual morphophonemes subsumed under those natural classes. In some instances the discussion is brief, due to the relative simplicity of the variation of the morphophoneme; in other cases the discussion is extended, because it is felt that the complexity of the allophonic variation, or the confusion which might confront the reader unaccustomed to Chol, merits extended treatment.

Metalinguistically, phonological rules can be advanced to state the conditions for allophonic variation, e.g., the nasal assimilations, or the final /b/ phenomena. However, for the native speaker-hearer, there is no conscious recognition of the interpretation of a certain allophone as an instance of a particular morphophoneme of the language. This phenomenon strongly supports the argument advanced by Sapir (1949), and recently supported by Schane (1971), that the phoneme can be said to function as a psychological reality.

It is incorrect to assume that the interpretation of an allophone as an instance of a certain morphophoneme implies that the speaker or competent hearer is insensitive to speech variations. Familiarity with a language varies directly with sensitivity to variations of accent, dialect, family idiolect and style. The explicit description of such variation is difficult for trained linguists, although the intuitive recognition of such variation is a common occurrence in one's native language. Rules for these kinds

of variations are in general more frequently optional and later in the ordered sequence of phonological rules, i.e., closer to the surface structure of the language, than phonological rules for variation of "psychologically real" morphophonemes.

There is also indeterminacy with regard to morphophonemic cuts, especially for the morphophoneme /h/. Extended treatment in these instances offers justification for the present solutions and supplies ample exemplary evidence to allow re-analysis at a future date. Without the distinction of these types of allophonic variation, the phonological component of a grammar falls short both of describing the system of the language, and of approximating the speaker-hearer's competence.

IIC 1. The Vowels

The vowels, which are the habitual nuclei of syllables, are either simple [V], or long [V:]. In the Lexicon [IVA] vowels are characterized as closed [V?] and broken [V?V] as well. These latter two classifications are relevant for the grouping of similar semantic themes in roots and less relevant in the structural morphology and phonology of the language. In isolated, elicited and generally more formal and less natural utterance, long vowels are given with devoiced length, which in the previous works on Chol has been transcribed by "h." The phonetic character of this so-called "jota," however, varies greatly, being open after /a/, labialized after /o/, rather fronted after /e/, and close after

/i/ and /u/ with optional fronting after /i/ and labialization after /u/. In casual speech, as has been mentioned, phenomena of length can vary from full vowel length to total absence. In general, a breathy quality is noticeable in a syllable whose nucleus is a long vowel. This breathiness can be present as aspiration preceding or following a consonant, as in e.g. (1), or can spirantize an interrupted stop consonant, as in the second example where final /b/ undergoes the following change:

/b/	/ɸ/	
$\left[\begin{array}{l} 3 \text{ syl} \\ + \text{ int} \\ - \text{ cen} \\ - \text{ hi} \\ 4 \text{ str} \\ + \text{ chk} \\ + \text{ flt} \\ 6 \text{ nas} \end{array} \right]$	$\rightarrow \left[\begin{array}{l} - \text{ int} \\ - \text{ chk} \\ - \text{ flt} \end{array} \right]$	
(1) a:k	[a:k] , [ak ^h]	"turtle"
(2) ta:b	[t̃a:p] , [t̃ap ^h] , [t̃a:ɸ]	"bark for tying, carrying"

/a/

$\left[\begin{array}{l} + \text{ syl} \\ + \text{ cen} \\ + \text{ flt} \end{array} \right]$

Major allophone [a]. This vowel is rather open and quite back, especially after stops.

The relative backness of Chol /a/ is emphasized by Spanish speakers in their imitation of Chol Spanish bastante [ba.'st̃a.n.te] "much, many, mucho" /kabal/. The relative frontness and highness of the Spanish a is ridiculed by purists of Chol pronunciation, e.g., for "fox":

"No es [wæš] , pero [waš]."

Distribution:

Initial:	am	"spider"	a:ç'o?	"tom turkey"
Medial:	k'am	"grave, ill"	√p'a:l	"prepare"
Final:	la	OMNIPERSON PRONOUN	wa:	"corncake, <u>tortilla</u> "

/Λ/

[+ syl
	+ cen
	- flt

Major allophone [ə]. This vowel is slightly higher than mid-high, slightly backer than central. Its non-flatness exhibits true

musical sharpness, to the extent that syllables with /Λ/ as nuclei are noticeably higher in tone. This may be an artifact of the tenseness ([+ for] redundantly) of /Λ/ which no other Chol vowel shares. In contrast to Tarascan [i], Russian [u] and Turkish [i], the Chol /a/ is less high and less tense. In comparison with English [ə], the Chol /Λ/ is slightly higher, backer and tenser. The morphophoneme /Λ/ is semantically, phonologically and comparatively related to /a/, even to the point of phonetically intersecting with [a] semantically, historically and phonologically:

Semantically:

(1)	/k'a:k/	"fire"	/k'Λ:k/	"firefly"
(2)	/ma:k/	"top, cover"	/mΛ:k/	"covering"
		(cf. also /mu:k/		"bury, hide")
(3)	/k'ay/	"singing"	/k'Λy/	"chanting"
(4)	/p'ak'/	"seed"	/p'Λk'/	"planting"

Historically:

	<u>Other Mayan</u>	<u>Chol</u>
(1)	Tzeltal: yaš "blue-green"	/yaš/ "blue-green"
(2)	Tamactun: čak "red"	/čak/ "red"

Phonologically:

In word-initial position the allophone of /ʌ/ is [a].

- (1) [ak'] "vine" [i.yʌ.k'il] "its vine,
the vine of
a plant"
from √ʌk'/ "vine"
/i-ʌk'-il/ BOUND-"vine"-NOMINALIZER
- (2) [aʔ.kʰɛn] "give it!" [mi.kʌ.kʰɛ.ɸetⁱ] "I give it
to you"
from √ʌk'/ "give"
/ʌk'-ɛn/ "give" IMPERATIVE
/mi-k-ʌk'-ɛn-et/ UNMARKED T/A-BOUND-"give"-
VERBSTEM-ERGATIVE

In these two examples the two homonymous roots are √ʌk'/ but the following rule of allophony holds:

APR.6TH

$$\begin{bmatrix} + \text{ syl} \\ + \text{ cen} \\ - \text{ flt} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ flt} \end{bmatrix} / \# _$$

Read: The central sixth vowel /ʌ/ becomes [a] word initially.

A second phonological alternation involving [ʌ] and [a] concerns the lexical item "to search for" which is documented as:

[sʌk.lan] , [sa:.kan] and [sʌ.kə.lɛn]

These variations are most possibly dialectal within the region of the western dialects.

A third phonological alternation motivates the positing of a schwa [ə] as a vocalic allophone in Chol. In casual, natural utterance, and in allegro speech, many vowels are centralized, resulting in the apparent alternation of every vowel with /ʌ/. These alternations are less high, less tense and not as long in duration nor as high in tone as the

morphophonemic sixth vowel. Without attention to such phonetic detail there would be no way of distinguishing these low-level alternations from derivationally functional alternations such as those given above for the concepts for "fire," "seed," "sing" and "cover." Still finer phonetic analysis might distinguish even these variants. In lieu of that ultimate analysis the following sociophonological rule is offered:

SPR•SCHWA

$V \rightarrow [ə] / \text{casual, allegro speech}$

Read: Any vowel may become the schwa [ə] in casual speech.

A fourth variation in the phonology of /ʌ/ is encountered in acculturated speech, i.e., the speech of Ladinos and that of those young people who speak Chol as a second language. Interference from the phonology of Spanish, which is the first language of these speakers exhibits itself in the systematic replacement of /ʌ/ by [u].

Other variations in the vowel /ʌ/ are best regarded as co-occurring redundancies. These are features of high tone and y-like heightening of the vowel in the off-glide. The feature designation [-flt] for /ʌ/ positively marks a certain tonal sharpness which is optionally realized as high tone, e.g.:

$/k'ʌb/ \rightarrow [k'ʌ?] , [k'ʌp] \quad \text{"hand"}$

In the environment of high central consonants, a y-like off-glide has been documented for /ʌ/, e.g.:

/kʌl-i-on/	→ [kʌ ^y .li.yon]	"(they) left me (behind)"
/mʌn/	→ [mʌ ^y n]	"(he) buys"
/p'ʌta/	→ [p'ʌ ^y .t̃a]	"guava"

Distribution:

Initial: cf. APR•6TH

Medial: /k'ʌn/ "yellow" /mʌ:k-il/ "top, cap, lid"

Final: /k'uš-ʌ/ "bite"-PAST

Distributionally, long /ʌ:/ is infrequent.

/i/

+ syl
- cen
+ hi
- flt

Major allophone [i]. The vowel /i/ is pure, in the sense that it is like the cardinal [i] of the IPA. Infrequently an allophone similar

to the vowel of English "hit" [ɪ] is encountered as an allophone. De-voiced length is close and fricative like German ich-laut [ç].

Distribution:

Initial:	/ič/	"chile pepper"	/i:ϕ'in/	"younger sibling"
Medial:	/kisin/	"bashfulness, shame, <u>verguenza</u> "	/ϕi:t/	"long" NUMERAL CLASSIFIER
Final:	/ti/	"mouth, door, orifice"	/či:/	<u>histe</u> , "fiber for making twine"

/e/

+ syl
- cen
- hi
- flt

Major allophone [E]. The primary allophone for /e/ is slightly higher than open "e" of the IPA [ɛ]. The following rule specifies

instances in which the allophone is the cardinal [e]:

APR•PURE

/e/ → [e] /__.-

Read: The morphophoneme /e/ is realized as phonetic [e] mandatorily when syllable final and morpheme final.

APR•OPE

/e/ → [ɛ] /__ [- syll]

Read: The morphophoneme /e/ is realized as open "e" [ɛ], before any consonant.

√čon/		"selling"
/čon-el/	→ [čo.ɲel] , [čo.ɲe]	"salesmanship"
√teʔ/		"tree"
/teʔel/	→ [t̃e.ʔɛl]	"forest"

Distribution

Initial:	/eʔteɭ/	"word [ed], authority"	/e:meč/	"animal [es]"
Medial:	/mel/	"make, do"	/p'e:l/	Unmarked Classi- fier Numeral
Final:	/ke/	"something"	/še:/	"vomit"

Extremely rare in distribution are medial /e:/ and final /e/.

/o/

$\left[\begin{array}{l} + \text{ syl} \\ - \text{ cen} \\ - \text{ hi} \\ + \text{ flt} \end{array} \right]$	[ɔ] is the primary allophone. It is lower than the cardinal [o], but higher than open o [ɔ]. Long /o:/, on the other hand, is often realized as [ɔ:], and is often very open in its phonetic realization, e.g.:
---	---

/bo:p/	→ [bɔ:p]	"point"
but /ko:t/	→ [ko:t]	"animal" NUMERAL CLASSIFIER

Distribution:

Initial:	/oni/	"a great number, amount of time, long ago"
Medial:	/ikot/	"with" √p'o:p/ "roasting"
Final:	/to/	"still" /čo:/ "cheek"

The data show no instances of initial /o:/.

/u/

$$\begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ + \text{ hi} \\ + \text{ flt} \end{bmatrix}$$

Primary allophone [u]. Initial long /u:/ can be realized phonetically in several ways:

[u:], [uç], [uw], [wu] and [uo]. Phonetic [u]

can be a realization of morphophonemic /o/, by virtue of a stylistic vowel raising rule. Parallel to this raising is the stylistic shift which yields a realization of [i] for /e/. An alpha-rule accounts for these two kinds of vowel raising.

SPR·VHI

$$\begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ \alpha \text{ flt} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ hi} \\ \alpha \text{ flt} \end{bmatrix} / \begin{array}{l} \text{familiar, allegro} \\ \text{style} \end{array}$$

Read: Peripheral non-high vowels can become high as a socio-phonological variation.

Distribution:

Initial:	/uma?/	"mute, a deaf mute"	/u:t/	"do"
Medial:	/k'un/	"soft, resilient, slow, quiet"	/t'u:l/	"rabbit"
Final:	/ku/	CLITIC	/ku:/	"owl"

IIC 1a. Initial Vowels and Echo Vowels.

General phenomena applicable to all vowels at the beginning of words, and to the phonetic appearance of vowels at the end of words are statable in rules.

APR·GLOT

$$[+ \text{ syl}] \rightarrow [?] [+ \text{ syl}] / \left(\begin{array}{l} \# \text{---} (\text{opt } +) \\ \text{---} (\text{opt}) \end{array} \right)$$

Read: Initial vowels are frequently but optionally preceded by a glottal stop when word initial. This same phenomenon is less frequent when the vowel is syllable and morpheme initial.

Echo vowels may be full vowels, de-voiced vowels, non-syllabic vowels, or de-voiced non-syllabic vowels in ascending order of frequency:

PR·ECHO

$$V_1C \rightarrow V_1C^{V_1} / \text{---}\#$$

Read: Echo vowels which are vowel harmonic are optionally articulated word finally.

IIC 2. The Consonants

IIC 2a. The Continuants

IIC 2a i. The Nasals: /m/ , /n/

/m/

-	syl
-	int
-	cen
-	flt
+	nas

Principal allophone [m]. The rules of allophony for /m/ are presented in a separate section on nasal assimilation, since both nasals participate in the same rules and alternate

mutually (and with [ŋ]). The phone [m] appears infrequently at morpheme boundaries before /b/ [IIB 1b., e.g., 7].

Distribution:

Initial: /mi/
 /me?/
 /mam/
 /man/
 /mo?na/
 /mu/

UNMARKED T/A
 "deer"
 KINTERM "grandchild"
 "buying"
 "edible green" [es]
 IMMEDIATE T/A

Intervocalic:
 /hamil/

"grassland, San Cristobal de las Casas" (< /ham/ "grass")

/uma?/

"mute"

Final: /č'um/

"squash" [eg]

/n/

-	syl
-	int
+	cen
+	hi
-	str
+	nas

Major allophone [ŋ]. The /n/ of Chol is most regularly formed by raising a rather long portion of the blade of the tongue to the palate, lowering the velum and releasing a voiced breath flow through the nasal passages. The apex does not contact the teeth or gingival area, but is free of articulatory contact. The release of the articulation is non-abrupt, giving a soft "y"-like offglide, characteristic of palatalized sounds. Hence the redundant features of

+	voi
-	cor
-	abr

. Before /i/ and word finally, articulation is coronal and the release becomes more abrupt, although not completely so. The medio-dorsum still articulates against a distributed portion of the palate. Thus neither the abruptly released nor the smoothly released allophones of /n/ are like the Spanish n and ɲ.¹

The allophony of /n/ is given in the following rule:

APR•CORN

-	syl
-	int
+	cen
+	hi
-	str
5	chk
+	nas
5	flt
+	voi
-	cor
-	abr

 \rightarrow

+	cor
+	abr

 / # , —

+	syl
+	hi
-	flt

 , (#—(opt))

¹The smoothly released palatal ɲ of Spanish is more tense and less distributed, i.e., the tongue muscle constricts more tightly and over a smaller area of the palate than in the articulation of the lenis Chol [ŋ] with its rather long dorsum contact. Spanish n utilizes the apex of the tongue against the teeth and much less of the prae-dorsum in contact against the gingival and alveolar area.

Read: /n/ is realized as coronal abruptly released [n], word-finally, before /i/ and optionally at the beginning of any word, e.g.:

___# /k'in/ → [k'in] "day" but /bon-ol/ → [bo.ŋol] "painted"
 ___i /ni:/ → [ni:] "nose" but /ne:/ → /ŋe:] "tail"
 #___ /nupun-el/ → [ŋu.pu.ŋel] or [nu.pu.ŋel] "wedding"

Distribution:

Initial:	/ničim/	"paraffin, candle, flower"
	/ne:/	"tail"
	/na?/	"mother"
	/nʌk'/	"stomach, belly"
	/no:/	"great, large, very, very much [wd]"
	/nop'/	"learn, attempt"
	/num/	"walking, passing by, spending time, getting along, getting accustomed"
Medial:	/oni/	"a great number, quantity, time, long ago"
Final:	/tan/	"cooking lime, ashes"

Wordfinal /n/ can be realized as a full palatal [ɲ] without release, but with an optional echo vowel, or as a de-voiced [n̥], as nasalization of a final vowel, or not at all. This characteristic of words to have seemingly numberless alternatives phonetic realizations has been called the "per omnia saecula saeculorum" trait, or in translation, the "words without end" phenomenon.

/ç'i:n/ → [ç'i] , [ç'i̥] , [ç'i:] , [ç'i̥:]
 [ç'i:ŋ] , [ç'i:ŋⁱ] , [ç'i'n] , [ç'i'n̥]

Gloss: "yucca," a root food

IIC 2a i^α. Nasal Assimilation.-- The nasals /m/ and /n/ are distinct canonical morphophonemes. They both appear

word-finally in unbound occurrences of morphemes, e.g., /k-om/ "I want," /an/ EXISTENTIAL [IIIF 8a]. By this distributional criterion they are not to be considered as a single underlying nasal. In other instances, notably in the roots of the numerical system, the nasals behave as a single underlying nasal morphophoneme with the alternative phonetic realizations [n], [m], [ŋ], given by means of the nasal assimilation rule. Here, too, there is a relationship of markedness, with [n] being the unmarked form, more basic and used as the substratum for the rule, and the other alternates, [m] and [ŋ], being more marked. For these morphemes, then, the canonical form is given with final /n/:

/hun/	"one"	[hum.p'e]	"one" (residual category)
/čan/	"four"	[čan.k'al]	"eighty"
/lan/	"ten"	[lan.tek]	"ten stalks"

The following nasal assimilation rule operates regularly at morpheme boundaries and optionally at word boundaries:

PR·NASASS

$$[+ \text{nas}] \rightarrow \begin{bmatrix} - \text{cen} \\ \alpha \text{ hi} \end{bmatrix} / \text{---} \cdot \begin{bmatrix} + \text{int} \\ - \text{cen} \\ \alpha \text{ hi} \end{bmatrix}$$

Read: A nasal morphophoneme becomes [m] when followed by a syllable beginning with a peripheral non-high stop, and [ŋ] when followed by a syllable beginning with a peripheral high stop.¹

¹The feature matrix for [ŋ] is similar to that for /m/ except that the former is [+ hi] and the latter [- hi]. The

The nasal assimilation rule only applies when the final nasal of the morpheme is the final segment in the syllable; therefore it appears that the ordering of phonological rules demands that rules for syllabic structures precede the nasal assimilation rule.

Examples:

√k'in/		"day, sun, heat, dryness, festival, time"
/k'in-il/	[k'i.nil]	"in time"
/k'in-tun/	[k'in.tun]	"dry rock, dry season"
/k'in-ku/	[k'in.ku]	"a <u>fiesta</u> indeed"
/k'in-bΛ-i/	[kim.bΛ-yi]	"indeed a <u>fiesta</u> "
/k'in-ʔΛč/	[k.in.ʔΛč]	" a <u>fiesta</u> indeed"
√hun/		"one"
/hun-p'e:l/	[hum.p'e]	"one" (UNMARKED)
/hun-k'e:/	[hun.k'e:]	"one flat object"
/hun-ča:p/	[hun.ča:p]	"one type (of)"
/hun-mu:č/	[hum.mu:č]	"one mound"
√čol/ , √č'ol/		"Chol people" /on/ ERGATIVE PRONOUN- SPEAKER
/čol-on-la/	[čo.lon.la]	"we are Chol" [wd]
/č'ol-on-bΛ-la/	[č'o.lom.bΛ.la]	"indeed we are really all Chol" [ed]
√om/		"want"
/k-om-ʔΛč/	[kom.ʔΛč]	"I really want"
/k-om-ku/	[kon.ku]	"I do want"
/k-om-la/	[kon.la]	"we all want"

eight features of the distinctive feature matrices, since they are not efficient ($2^8 = 256$, but only 33 morphophonemes are created by the phonological system), can easily generate non-canonical phones.

The rule generates an assimilation of nasals to [m] before /ʔ/. Data with morphophonemic /m/ have been collected to substantiate this analysis, namely the root √om/ "want." However, instances of /n/ before morphophonemic /ʔ/ show no assimilation: /k'in-ʔΛč/ "it is indeed a fiesta."

/p'un-p'un-on/	[p'um.p'u.ŋon]	"I am very sad"
/ničim-ha?/	[ni.čín.ha]	PLACE NAME

From the extent of application of the nasal assimilation rule it must be inferred that nasality is a strong feature of the phonological component of Chol, despite its being most limited in distribution. The power of nasality as a distinctive feature is but two (/m/ vs. /h/, and /n/ vs. /y/). The importance to the phonological system, which is the same criterion that motivated an exclusion of the feature of voicing from the matrix of distinctive features, motivates the inclusion of nasality despite its limited distribution. The strong position of the feature of nasality in the phonology may be summarized thusly: when bound, the nasal morphophonemes act as a single underlying nasal, even generating the same non-canonical phone [ŋ]. In terminal isolation, and before vowels (this latter environment includes all instances of initial nasals), the distinction between nasal morphophonemes remains.

An optional voicing rule operates infrequently.

PR·NVOI

$$\left[\begin{array}{l} - \text{ syl} \\ (- \text{ voi}) \end{array} \right] \rightarrow [+ \text{ voi}] \quad / \quad \left(\begin{array}{l} \underline{\text{ n}} \text{ (opt)} \\ \underline{\text{ n}} \text{ (- opt)} \end{array} \right)$$

Read: Consonants which are redundantly voiceless may be voiced in the environment of /n/. This sometimes occurs after /n/ and less frequently before /n/.

š-nek	→ [ž̃nek]	"black troll"
wan-te?	→ [wan.ðe]	"bow and arrow"
<u>siempre</u>	→ [s ^y em.bre]	"always, still, nevertheless" Chol Spanish

but

<u>componiendo</u>	→	[kõ.mpo.ñen.tu]	"repairing" Chol.Sp.
an-to	→	[ʔan.to]	"there is still more"

IIC 2a ii. The Sibilants

/s/

[- syl - int + cen - hi + str]	Principal allophone [s]. This sibilant is articulated with the blade of the tongue placed close to the upper gingival area [+ cor], resulting in a hissing stridency in the pulmonic airstream.
--	---

Distribution:

Initial:	siʔim	KINTERM:	MM, MBW, MBSow
	se:øʔ	"small bowl"	
	sa:	"small"	
	sAøʔ	"stretch"	
	sotoøʔel	"coral snake"	
	sum	"truth"	

Medial: kisin "bashful, shame"

Final: tʔis "flatus, fart"

/š/

[- syl - int + cen + hi + str]	Principal allophone [š]. This sibilant, more properly called a shibilant, is articulated with the dorsum of the tongue high in the mouth and the tongue apex free of contact.
--	---

The blade of the tongue is grooved and as air passes through the groove, the characteristic noisy "shushiness" is produced.

In the eastern dialects the major allophone of /š/ is [š̄]. This allophone is tenser and higher in vibratory pitch

due to a longer area of tongue contact with the sides of the roof of the mouth. A longer, narrower central resonating groove results. The allophone [š] appears before all vowels except the non-central, non-flat /i/ and /e/. It also appears word-finally.¹ The redundant features for these phones are schematized in Table 8.

TABLE 8.
SIBILANT ALLOPHONY

Morphophonemes		Allophones		
/s/	/š/	Both Dialects	Eastern	Western
		[s]	[š]	[š]
5 chk	5 chk		-flt	+flt
5 flt	5 flt			
0 nas	0 nas	+cor	-dist	+cor -dist

Distribution:

Initial:	šin-kin-il	"midday, noon"
	še:	"vomit"
	šan	" <u>gano</u> palm" (for hats, raincoats)
	šam-bal	"walking"
	šot	"circle"
	šuk'ul	"slowly"
Medial:	pišol	"hat"
Final:	weš	"pants"

¹The allophonic rules for the sibilants in the eastern dialects are given with those for the strident high affricates: /č/ and /č'/, below.

IIC 2a iii. The Liquid

The Mayan "liquid" sound is [r] in certain languages such as Chorti and Lacandon of Naja, and [l] in others, such as Chol. Chol /r/ is a central flapped interruptant, which in many ways is marginal to the phonological system.

/l/

-	syl
-	int
+	cen
-	hi
-	str

The principal allophone of /l/ is a lightly articulated clear [l]. The tongue apex is pointed, providing rather reduced contact with the base of the upper incisors. Before the flat non-central vowels /o/ and /u/, a "darker," more retroflexed allophone [ɭ] has been documented. Voicing is a redundant feature of /l/ and often is initiated after articulation is made and the airstream is flowing. In some instances, /l/ is de-voiced finally. Schumann reports this de-voicing as mandatory. The data show a gradient of de-voicing regularity:

-p'e:l	UNMARKED NUMERAL CLASSIFIER
č'u:l	DERIVATION: "SACRED"
kač-il	"handkerchief"
t'u:l	"rabbit"
hil	"finish"
-pa:l	"cluster" NUMERAL CLASSIFIER

The first pair of examples above are nearly always realized phonetically with de-voiced [ɭ]. The second pair with both de-voiced and voiced [l], and the third with voiced [l] exclusively.

Distribution:

Initial:	limete:	"bottle"
	lem	"shining"
	la:čín	"scratch"
	lA:n	"ten"
	lo?	"wound"
	lum	"land, earth, soil, country"
Medial:	alob	"child, son"
Final:	čol , čol-el	"cornfield" <u>milpa</u>

IIC 2a iv. The Semi-Vowels

/w/

-	syl
-	int
+	cen
+	flt

Principal allophone [w]. The most common allophone of /w/ is a labialized voiced glide. Before front vowels, the most frequent

allophone is [u], a "y"-like variant produced with the dorsum of the tongue in a higher-than-neutral position, with the lips slightly tensed and spread. The sound is not unlike French /y/, as in lui. This variation is expressed in the rule:

APR·WI

-	syl
-	int
+	cen
8	hi
4	str
5	chk
+	flt
0	nas
+	voi
-	spr
-	for

→

+	hi
+	spr
+	for

 / —

+	syl
-	cen
-	flt

Read: /w/ becomes high, spread and, tense [u] before /i/ and /e/.

As a morphophonemic reflex the phone [w] appears as the glide between the BOUND pronoun /a/ and vowel-initial stems:

MPR•GLW

$$\emptyset \rightarrow \begin{bmatrix} - & \text{syl} \\ - & \text{int} \\ - & \text{cen} \\ + & \text{flt} \end{bmatrix} / \begin{bmatrix} /a/ \\ \text{BOUND} \end{bmatrix} \text{ - } \underline{\quad} \text{ - } [+ \text{syl}]$$

Read: A glide /w/ is inserted between the bound hearer pronoun /a/ and vowel-initial morphemes.

As an element in loan words, especially those deeply-incorporated into the language, /w/ corresponds to orthographic b and v of Spanish. The continuance and labiality of the Spanish allophone [β] is reinterpreted as [w] in Chol. Aside from these cases of equivocal morphophonemic status, there are few, if any, instances of intervocalic "w." The /w/ of /ɣʌwan/, below, may be a result of derivational or morphological rules as are the following examples:

/a-ok/	→	[a.wok]	"your foot"
/lawuš/	→	[la.wuš]	"nail" (<Sp. <u>clavo</u>)

In word-final position, as in /lew/, /w/ can be devoiced optionally [IIB]. As the phonetic rendering of devoiced length in peripheral flat vowels (/o:/, /u:/, the phone [w̥] is also encountered. The phone [v] has also been observed as an allophone of /w/ in rare instances, mostly word initially and word finally.

Distribution:

Initial:	wi?	"root"
	weš	"pants"

	waš	"fox"
	wΛ	"here"
	woč'	"toasted <u>tortilla</u> , <u>tostada</u> "
	wut	"eye, fruit"
Medial:	∅Λwan	"cold" ADJ
Final:	halaw	" <u>tepescuintle</u> ," a wild porcine [es]

/y/

-	syl
-	int
+	cen
+	hi
-	str
-	nas

The major allophone* of /y/ is the classical yod [y], the high palatal glide. In addition to its appearance as a morphophoneme, this phone appears as a morphophonological glide

between vowels which are separated only by a morpheme boundary, especially if one of the vowels is /i/:

i-ok	→	[i.yok]	"its foot"
če?-ku-i	→	[čɛʔ.ku.yi]	"yes indeed"
bΛ-i	→	[bΛ.yi]	REFLEXIVE
k'uš-Λ-on	→	[ku.šΛ.yon]	"(it) bit me"
ma:l-i-et	→	[ma:.li.yet]	"you went"

Many instances of initial /y/ are instances of the morphophonological [y] from frozen derivational forms:

om	"want"	i-yom	"he wants"	yom	"good"
ok	"foot"	i-yok	"its foot"	yoket	"three-stone hearth"

These forms are derived from two rules of morphophonology which are ordered with respect to each other in the sequence given below:.

MPR·GLY

∅	→	<table> <tr><td>-</td><td>syl</td></tr> <tr><td>-</td><td>int</td></tr> <tr><td>+</td><td>cen</td></tr> <tr><td>+</td><td>hi</td></tr> <tr><td>-</td><td>str</td></tr> <tr><td>-</td><td>nas</td></tr> </table>	-	syl	-	int	+	cen	+	hi	-	str	-	nas	/	[+ syl]-__-[+ syl]
-	syl															
-	int															
+	cen															
+	hi															
-	str															
-	nas															

Read: A glide [y] is interposed between vowels at morpheme boundaries.¹

MPR·IDEL (opt)

$$i \rightarrow \emptyset \quad / \# \left[\frac{\text{BOUND}}{\text{BOUND}} \right] - \left[\frac{y}{\text{GLY}} \right] - [+ \text{syll}]$$

Read: BOUND pronoun /i/ can be deleted optionally when followed by [y] which has been interposed by the morphophonemic rule MPR·GLY.

De-voiced [y] is tenser and more strident than its voiced counterpart. This phone [ç] appears regularly as the realization of de-voiced vowel length in /i:/ and occasionally as the realization of de-voiced vowel length in /u:/.

Distribution:

Initial:	*yi	does not appear
	yebal	"below, underneath"
	yan	"other"
	yap'	"close, shut off"
	yopom	"leaf"
	yuk	"spread, smooth out"
Medial:	?uyu	<u>mico</u> , an animal [es]
Final:	čay	"fish" [eg]

IIC 2a ivα. Morphophonemic glide.-- Generalizing the three glide rules MPR·GLW, MPR·GLH and MPR·GLY into a single complex, the following tendency is noted:

¹A corollary to this rule has the feature matrix of the glide read somewhat differently ([- cen, 8:hi, - flt]) to specify an [h] for loan words and certain special lexical items [IIC 2a v].

GLIDE

$$\emptyset \rightarrow \begin{bmatrix} - & \text{syl} \\ - & \text{int} \\ + & \text{cen} \\ - & \text{hi} \end{bmatrix} \rightarrow [+ \text{syl}] - \text{_____} [+ \text{syl}]$$

Read: A glide of unspecified centrality and height is interposed between vowels at morpheme boundaries.

The specific values of height and centrality:

w	y	h
$\begin{bmatrix} - & \text{cen} \\ + & \text{hi} \end{bmatrix}$	$\begin{bmatrix} + & \text{cen} \\ + & \text{hi} \end{bmatrix}$	$\begin{bmatrix} - & \text{cen} \\ - & \text{hi} \end{bmatrix}$

are given by the specific glide rules according to the specific morpheme types encountered.

The most specific case is the [h]-glide which occurs only in special lexical items such as loan words.

$\begin{bmatrix} - & \text{cen} \\ - & \text{hi} \end{bmatrix}$	loan special lexical
---	-------------------------

The next most specific case is that of the [w]-glides which always occur after the Bound Pronoun /a/ "you," and sometimes occur in the purely phonological environment of any instance of /a/, (e.g., /č'u:-wa-nel/ "mayordomo," APR·KCEŃ [IIC 2b. iβ], /çΛ-w-an/ "cold":

$\begin{bmatrix} - & \text{cen} \\ + & \text{hi} \end{bmatrix}$	$\left(\begin{bmatrix} /a/ \\ \text{BOUND} \\ /a/ \end{bmatrix} \right)$	(cblig.) (opt.)
---	---	--------------------

The most general case of the glide complex is that of the [y]-glides. These glides occur in instances where the glide environment ($[+ \text{syl}] - \text{_____} [+ \text{syl}]$) is satisfied but no further rule requires a specific [h]- or [w]-glide:

$\begin{bmatrix} + & \text{cen} \\ + & \text{hi} \end{bmatrix}$	Imperson P Stems of Verbs etc.
---	--------------------------------------

IIC 2a v. The "h"

/h/

-	syl
-	int
-	cen
-	hi
-	flt
-	nas

The phone symbolized [h] is articulated with the tongue and mouth in neutral position, and the vocal chords open and relaxed so that there is no vibration. In speech, the smooth and nearly constant movements of the speech apparatus make the occurrence of this phone extremely rare. Instead of a single phone, the neutral [h], many variations of this voiceless vowel are produced. They are phonetically characterized by slight modifications of tongue height and backness, varying degrees of mouth closure, labialization, tension and pressure. McQuown (1967) does not include [h] in his phonetics, but characterizes [h]-like phenomena more specifically, using de-syllabication and de-voicing of vowels as the basis and the modifications noted in the previous sentence for additional specification. These notational procedures yield a more accurate phonetic description of speech production.

To assign morphophonemic status to the occurrences of the complex of [h]-like phones is to confront numerous phonological problems. It must be determined (1) whether distributional criteria are to depend on structural analysis or the reverse; (2) whether vowel length, which is only sporadically phonetically realized is to be assigned structural (i.e., morphophonemic) status; (3) whether final [h]-like phenomena are to be attributed to the morphophonemics

of post-root morphology, to the morphology of certain lexical items, to utterance-terminal phenomena, to paralinguistic vocal modification, or to phonetic conversion rules of low-level alternation; and (4) whether, and by what theoretical justification the above three processes are to be generalized by a single type of notation. While such problems remain unresolved, the structure of roots and morphemes, the nature, power, and form of phonological rules must remain indeterminate.

The relationship of distributional and structural criteria (like so many linguistic relationships such as form and meaning, paradigm and syntax, grammar and lexicon) is one of mutual interdependence. The repeated phonetic occurrence of [h]-like phenomena after vowels motivates the decision to group these phones with the vowel nuclei into "long" syllables. This structural decision, once made, requires that many such [h] phenomena, especially in open syllables (i.e., syllables with no consonant after the vowel nucleus) be assigned phonetic status as the realization of de-voiced vowel length $[.Vh:] \rightarrow [XV:]$, rather than structural status as morphophonemic /h/. In closed syllables this decision was rather unequivocal due to the limited distribution and anomalous nature of consonant clusters within syllables.

The complementary distribution and similar semantics of /Vl/ forms and [Vh] facilitate the decision to interpret some cases of phonetic [Vh] to morphemic /Vl/, and more widely, to relegate numerous occurrences of [h]-like

phenomena to the phonetic alternative of certain derivational morphemes. Although the phonetic shape of certain of these alternatives can often be most accurately transcribed as devoiced vowel length, the underlying morphophonemic representation is /l/:

	/Vl/	→ [V:] , [Vl]
MPR•EL	/el/	→ [ɛl] , [ɛ:] , [e:] , [e]

A number of loan words from Spanish end in vowels, especially a, o, and e. Statistically frequent in loan words, and in other words with open final syllables are [h]-like phenomena following final vowels. To posit morphophonemic /h/ at the end of every loan word would account for this occurrence of [h] and also for the [h] which is a glide between vowels at the end of roots and stems of loans and special lexical items and the vowels of such vowel-initial morphemes as /ob/ HUMAN PLURAL. However, it would require a special phonetic realization rule to remove many of these [h]'s in unbound utterance, and a duplication of the glide rule MPR•GLY already stated, which can account for loan and specially marked lexical items with a change of only three features.

In sum, it seems more economical and consistent to explain the instances of [h] at the end of open syllables as phonetic realization or as a reflex of the corollary to the Y-glide rule, rather than positing a structurally morphophonemic /h/ which appends to special lexical items as they are processed into the Chol lexicon.

MPR • GLH

$$\emptyset \rightarrow \begin{bmatrix} - \text{ syl} \\ - \text{ int} \\ - \text{ cen} \\ 8 \text{ hi} \\ - \text{ flt} \\ - \text{ nas} \end{bmatrix} / \begin{bmatrix} + \text{ syl} \\ \text{ LOAN} \\ \text{ SP. LEX} \end{bmatrix} - \# ___ - ([+ \text{ syl}])$$

Read: An [h] is interposed at the word boundary of loans and special lexical items optionally when word final and mandatorily when a vowel-initial morpheme follows.

Intervocalic /h/ derives from open syllable roots with long vowel nuclei. The /h/ is the result of de-voiced syllable length which becomes fully consonantal and initiates a second syllable according to the prosodic preference for consonant-initial syllables.

č'a:-an	→ /č'ahan/	[č'a.han]	"tying bark"
ke:-el	→ /kehel/	[ke.hɛl]	"beginning"

Other instances of intervocalic /h/ derive from the reduplication of /h/-initial roots.

√hos/	/hohosin/	[ho.ho.sin]	"bark used for stanching blood"
-------	-----------	-------------	---------------------------------

The canonical occurrences of the morphophoneme /h/ are thus limited to word initial distribution.

Distribution:

Initial:	hi?	"sand"
	hek'	"answering"
	ha?	"water"
	ho?	"five"
	huč	"grinding"

IIC 2b. The Interruptants

Stopped and affricated consonants comprise 13 of the 33 morphophonemes of Chol. Of the nine stops, four are

linked in a nexus of non-high peripheral stops, four are paired into two sets of stops separated only by the feature of glottalization, and one is marginal to the system. The four affricated stops are paired in the same way as the high stops, i.e., into pairs of glottalized and non-glottalized counterparts. For the purposes of clarity and maximum distinction, these sub-sets are presented together, with examples placed parallel to show minimal or near minimal pairs.

IIC 2b i. The Stops

IIC 2b iα. Non-high Peripheral Stops.--

/b/	/p/	/p'/	/?/
$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ - \text{ hi} \\ + \text{ chk} \\ + \text{ flt} \end{bmatrix}$	$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ - \text{ hi} \\ - \text{ chk} \\ - \text{ flt} \end{bmatrix}$	$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ - \text{ hi} \\ + \text{ chk} \\ - \text{ flt} \end{bmatrix}$	$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ - \text{ hi} \\ - \text{ chk} \\ + \text{ flt} \end{bmatrix}$

The morphophoneme /b/ is a strongly pre-glottalized and redundantly voiced bilabial stop. The pre-glottalization, vocal cord vibration and bilabial closure together cause noticeably low-pitched laryngeal vibration; hence the feature [+flt]. The glottal closure precedes the articulation of the oral stop for /b/ as for the other glottalized interruptants. However, the inception of vocal vibration necessitates glottal release before the oral release of the primary articulation. Even when the release of the two articulations is nearly simultaneous, glottal release is just prior to oral release in the case of /b/ and oral release is just

prior to the glottal release in the case of the other glottalized consonants.

The glottal articulation for /b/ is often so far in advance of the oral articulation that a segmental glottal stop is often phonetically present before the bilabial segment. This is most marked at syllable junctures in which an open syllable precedes a /b/-initial syllable. For example:

kabal	[kaʔ.bal]	"much, many"
abi	[aʔ.bi]	"yesterday" ¹
hubel	[huʔ.bel]	"lowering, swallowing"

However, when /b/ is preceded by a long vowel, the continuance of the vowel and the labial closure of /b/ trigger a re-routing of the breath through the nasal passages. This results in an audible segmental [m]. The related process,

¹The phonetic realization of this item and the related item glossed "night" indicates an area requiring further dialectal investigation. In the municipio of Sabanilla, where another of the western dialects is spoken, the form for "yesterday" is the same as that in the eastern dialect of Tumbalá, but the form for "night" is a synthesis of the Tila and Tumbalá forms:

	Sabanilla	Tila	Tumbalá
"yesterday"	[ak'.bi]	[aʔ.bi]	[ak'.bi]
"night"	[ak'.bA.lɛl]	[aʔ.bA.lɛl]	[aʔ.k'A.lɛl]

Professor Norman McQuown has suggested proto-forms which account not only for the dialect variations in these items, but also relate the two items to one another, and by extension to a number of other lexical items which are semantically similar [cf. Lexicon: √ab]. In addition, these forms are substantiated by data from other Mayan languages:

Proto-Root	√ʔak'-Vb'
"night"	ʔak'-Vb'-əl-el
"yesterday"	ʔak'-Vb'i

the production of an audible segmental [b], obtains at word boundaries. In this case, the bilabial closure of /m/ and the interruption of pulmonic breath flow to create a syllabic juncture combine to cause a segmentally transcribable stop, especially when the second syllable in question is vowel-initial.¹ For example:

a:-ba:	[a:m.ba:]	"mole"
kol-em i-čikin	[ko.lɛm.bi.č̣i.kin]	"it has large ears"

The following prosodic and phonological statements clarify the points of the preceding paragraphs:

V.b	→	[V?.b]
V:.b	→	[V:m.b]
m.#V	→	[m.bV]

Word-final /b/ is phonetically realized as [p'], [ʔ] or [p].

k'Λb	[k'Λp'] , [k'Λʔ] , [k'Λp]	"hand"
but		
i-k'Λb-i	[i.k'Λ.bi]	"this hand"

These alternations motivate the nexus of flatness and checkedness which in their exhaustive logical combinations yield the four non-high peripheral stops under discussion in this section. Final /b/ becomes [p'] when its flatness value changes from positive to negative, becomes [ʔ] when

¹Saussure (1916: 45): "Nasal [m], [n] and [ŋ] are really voiced nasal occlusives¹⁸; in pronouncing *amba*, (Chol /a:ba:/ → [am.ba]), one raises the uvula to close to the nasal fossae in shifting from [m] to [p]."

its checkedness value changes from positive to negative, and becomes [p] when the values of both these features become negative. This complex situation for final /b/ was also one of the chief reasons for scrapping voicedness from the phonological system, since it could not distinguish the phones related to /b/ with adequate power.

Distribution:

Initial: biϕ'	"edible fruit" [es]
bek	"throwing (away)"
ba:ϕ'	"howler monkey"
bak'en	"fright, spirit, <u>espanto</u> "
bon	"painting"
buš	"bottle, gourd bottle"

The other bilabial stops, /p/ and /p'/ are often difficult to distinguish due to the redundantly lenis [- for] feature of the glottalized member of the pair. Often the characteristic secondary articulation of glottalization is extremely weak, yet frequent occurrences of aspiration for both the glottalized and plain "p" make difficult any exceptionless identification of realizations of the plain morphophoneme. Only repeated elicitation aids in assuring the canonical form. For the items:

pa:	"sour"
pe:pem	"butterfly" [eg]
peč	"duck"

both glottalized and plain "p" were recorded, but frequency alone determined that the canonical form be plain /p/. In a similar way, frequency determined that the canonical form for the following items be /p'/:

p'e:l	UNMARKED NUM. CLASS.
p'ʌs	"teaching, showing"
p'ʌta	"guava"

Word-finally, /p'/ is relatively more fortis in its co-occurrence phenomena and thus more easily recognized. The phone [p] is frequently documented as the Chol realization of Spanish f:

trúm̄po	(<Sp. el Triunfo)	the name of a plantation in Tumbalá mpo.
póto	(<Sp. foto)	"photograph"

Distribution

Initial:

piš	"knee"	p'is	"cup, drink" NUM. CLASS.
pe:k	"speaking to"	p'ek	"small, low"
pat	"back, convex surface, outer surface"	p'a:ø'	"steamed corn dough"
pʌk	"double over cornstalks, repair"	p'ʌk'	"sowing"
pok	"washing"	p'ok	"gourd"
pul	"burning"	p'un	"sad"

Medial:

yopom	"leaf"	nup'ol	"the act of closing"
-------	--------	--------	----------------------

Final:

hap	"drinking"	nup'	"closing, receiving, sucking"
-----	------------	------	-------------------------------

/?/

+ int
- cen
- hi
- chk
+ flt

Principal allophone [ʔ]. The glottal stop is produced by a simple interruption of breath at the glottis. In some phonologies (Harms: 1968,

Chomsky and Halle: 1968), the glottal stop is considered a "glide," i.e., neither consonantal nor vocalic. In Chol, however, the glottal stop is a true consonant, an interruptant, but its distributional status is somewhat different from that of the other stops. Together with the morphophonemes /b/ and /h/, /ʔ/ comprises one of the most difficult problems in Chol phonology. Particularly crucial to these distributional problems are the linguistic environments of word boundaries, /#___/ and /___#/ , and pre- and post-vocalic position, /___V/ and /V___/.

There is a longstanding problem in Mayan linguistics concerning initial and final vowels, i.e., vowels which follow and those which precede word boundaries. Some solutions posit a glottal stop before every initial vowel and an "h" after every otherwise terminal vowel, eliminating, in effect the concatenation of vowels with word boundaries. Phonetically, these phenomena may appear at the initiation and termination of vowels, and be observed and remarked in the environments of silence called junctures and word boundaries, but the elevation of these articulatory artifacts to the status of structural phonemes or morphophonemes in the language requires justification at higher levels of analysis, levels of morphology and semantics. In careful or formal speech, the nature of the spontaneous glottal vibration which normally accompanies vowels may frequently yield these phenomena. In casual speech clear phonetic evidence of these phenomena would signal an essential morphological

status, or the presence of such phenomena as co-occurring with other structurally important articulatory phenomena such as tone. Since evidence for tone in Chol is sporadic and analysis inchoate, morphological status has been chosen as the means to note the importance of these phenomena. This morphological status takes the form of word-final de-voiced vowel length in the case of "h"-like phenomena which are not otherwise explainable (as by the corollary to the glide rule of the morphophonology [IIC 2a iv_o]), and initial morpho-phonemic glottal stop in a handful of lexical items. In these items, the initial glottal stop is strong and unequivocal:

ʔip'	"armadillo"	ič	"chile pepper"
ʔik'	"black"	ik'	"wind"
ʔek'	"star"	e:	"tooth, nail, claw"
ʔal	"heavy"	al	"child, offspring"
ʔač'	"wet"	an	EXISTENTIAL
ʔok'ol	"mud"	očen	"enter"
ʔul	"fresh corn gruel"	uč'	"louse"
ʔΛč	CLITIC	Λk'	"give"

In the medial position, sequences of vowel-glottal stop-vowel are frequently broken syllables, i.e., the same vowel occurs before and after the glottal stop [VʔV]. Often such broken syllables are the result of the affixation of a derivational V1 morpheme to a root which is glottal stop final. For example:

√buʔ	"bean"	buʔul	"beans (general or in quantity)"
		but buʔ-lel	"bean stalk, patch, field" (?< /buʔ-ul-el/)

√ha?	"water"	ha?-al	"rain"
		but' ha?-lel	"severe rainstorm" (?< /ha?-al-el/)

However, not all broken syllables are derivational forms, nor are all instances of medial /ʔ/ broken syllables with the same vowel on either side of the glottal stop:

ho?oš	" <u>achiote</u> food colorant"
he?el [wd], ha?el [ed]	"also"
šuwa?an	"leaf for wrapping <u>pozol</u> "

Examples of the glottal stop in final positions are as follows:

lu?	"all, completely" DERIV. PART.
te?	"tree, stick, wood"

IIC 2b iβ. The High Stops.--Major allophones [t̃] , [t̃'].

/t/	/t̃'/
[+ int + cen + hi - str - chk]	[+ int + cen + hi - str + chk]

The major allophone of /t/ is a palatalized stop articulated with a long contact of nearly the entire tongue dorsum to the roof of the mouth from the back of the upper teeth to the end of the hard palate.

At times the tip of the tongue is noticeably below and in front of the upper incisors. In the articulation of vowels following /t/ release of this contact is gradual [-abr], and y-like. This offglide can optionally become a fully syllabic [i] except before /i/. Before /i/ articulatory contact is more limited. The medio-dorsum of the tongue is not in contact with the hard palate. Only the blade and prae-dorsum contacts the back of the upper teeth and the alveolar ridge [+cor]. Optionally, but in limited

frequency, articulatory contact is distributed, including post-dorsum contact with the hard palate even before /i/.

The following distributional rule generalizes this allophony for both palatal /n/ and palatal /t/ and /t'/.

APR·TINI

$$\begin{bmatrix} - \text{ syl} \\ + \text{ cen} \\ + \text{ hi} \\ - \text{ str} \\ - \text{ cor} \\ + \text{ dist} \\ - \text{ abr} \end{bmatrix} \rightarrow \begin{bmatrix} - \text{ cor} \\ - \text{ dist} \\ + \text{ abr} \end{bmatrix} / \text{---} \begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ flt} \end{bmatrix}$$

Read: Palatalized /t/ and /n/ which are redundantly non-coronal, distributed and non-abruptly released become coronal, non-distributed and abruptly released before /i/

Articulation of /t'/ is similar to that of /t/, with the exception that the tenseness of the glottalization causes a somewhat larger resonating area to be formed by a thickening of the tongue muscle, resulting in a somewhat more abrupt release of articulation. Often the y-like offglide is absent from instances of the articulation of /t'/, and although the glottalization of /t'/ is stronger than the glottalization of /p'/ or that of /k'/, it is often only the co-occurrence phenomenon of the absence of "y"-like offglide which serves to distinguish the two morphophonemes /t/ and /t'/.

In the examples of non-distributed, abruptly released, coronal [t] given below, the first example is an instance of /t/ before an underlying /i/, the second and third examples are reflexes from underlying /e/ which is non-high and

coronal, the fourth and fifth examples are from underlying /t'/, the sixth and seventh examples are frozen forms which may derive from underlying /ti/:

- | | | | |
|-----|----------------------|---------------|--|
| (1) | [t̃ɛl] | "come" | contracted from /tilel/ |
| | but [t̃ɛl] | | Gerund from /vntel/ [IIIF 7f]
/tu:k'-vntel/ "pulling" →
[tu:k'un.t̃ɛl] |
| (2) | [taš] | " <u>ya</u> " | contracted from /ɕa-iš/ COM-
PLETIVE-CLITIC |
| | but [ta:] | "finding" | |
| (3) | [tač] | " <u>ya</u> " | contracted from /ɕa-ʔáč/
COMPLETIVE-CLITIC |
| (4) | [to.kop'] | Tocop | (place name) probably from
/t'ok-ob/ |
| (5) | [t'u:ɓ] | "rabbit" | /t'u:l/ also [t'u:l] |
| (6) | [wɔ.kəš.to.ʔa.wi.lɔ] | | "thank you" |
| (7) | [taʔ] | CLITIC | used post-utterance, mostly
in narrative, only in Limar
dialect |

In Chol Spanish and in loanwords, instances of Spanish t are seldom reinterpreted as [t̃], but nearly all Spanish n instances are reinterpreted as [ɱ]. This indicates a status of mental or perceptual reality which [t] enjoys, a status above that of the automatically produced allophone, yet below the status of the systematic morphophoneme, the minimal unit in the phonological deep structure. The above examples also indicate a special perceptual status belonging exclusively to non-palatalized [t].

Distribution:

Initial:

ti	"mouth, door, orifice"	t'inalel	"to be going to"
----	---------------------------	----------	------------------

te?	"tree, stick, wood"	t'ep	"wrapping"
ta?	"waste, excrement"	t'an	"speaking"
tak	"cook, heat"	*t'Λ	(does not occur)
tokal	"cloud"	t'omel	"strike, thunder, resound"
tun	"stone, egg"	t'un	"follow, chase, pursue"

Medial:

otot	"house"	*Vt'V
------	---------	-------

Final:

mut	"bird, chicken"	sit'	"swelling"
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The distribution of /t'/ is more limited than that of any other morphophoneme except /r/.

/k/	/k'/
[+ int]	[+ int]
[- cen]	[- cen]
[+ hi]	[+ hi]
[- chk]	[+ chk]

Primary allophones [k] , [k']. The primary allophone of /k/ is a velar stop. Before front vowels it is more palatal in articulation, and aspirated release is also more frequent in the environment of front vowels. Before /e/ the palatal articulation is often distributed, resulting in a palatalized articulation and a noticeable [y]-like offglide which is optional with certain lexical items and never documented with the most common lexical items.¹ Before the high back vowel /u/, /k/ is optionally labialized. Of these three optional rules, the first occurs most frequently and the third least frequently.

¹Schumann (MS) thought this palatalization of /k/ before /e/ to be obligatory.

APR•KI

/k/ → [k[<]] / _i

Read: /k/ becomes more fronted before /i/.

APR•KE

/k/ → [k̃] / _e

Read: /k/ becomes palatalized before /e/.

APR•KU

/k/ → [k^w] / _u

Read : /k/ becomes labialized before /u/.

APR•KCEŃ

/k/ → [k^w] / ___ + syl (opt)
+ cen

Read : /k/ is labialized optionally before central vowels.

APR•Kʹ

/kʹ/ → [ʔ] / (opt)

-	hi
+	flt
-	chk

Read: Glottalized /kʹ/ alternates optionally with the glottal stop [ʔ].

Examples:

/ki/	[k ^{<} i]	QUESTION
/k'in/	[k ^{<} 'in]	"day, sun, <u>fiesta</u> "
/kel/	[k ^y ɛl]	"bird" [es]
/kelob/	[k̃ɛlop ^h]	"shoulder"
/kehel/	[ke,hɛl]	MODAL
/k'el/	[k'ɛl]	"seeing"
/kun-el	[k ^w u,ɲɛl]	"hoeing"
/k'uš/	[k ^w 'uš]	"biting, eating, hurting"
/kun/	[kun]	"soft, slow"
/čuk-an/	[čũ.k ^w an]	"take, hold, grab"

/lok'-i/	[lo.k'i]~[lo.ʔi]	"went out, left"
/ok'-lel	[ʔok'.lel]~[ʔoʔ.lel]	"mud"
/ak'-in/	[ʔa.k'in]~[ʔa.ʔin] or [ʔaʔ.ʃan]	"clean, trim, weed"

As the examples show, these rules hold about as frequently for /k/ and /k'/ equally. The morphophoneme /k'/ is articulated in a manner similar to /k/, with the exception that /k'/, like /p'/ in relation to /p/, is more lenis in articulation than /k/.

Distribution:

Initial:

kin	[IIIF 7c iiV]	k'in	"day, sun, <u>fiesta</u> "
keb	"belch"	k'eš	"exchange"
ke	"something"	k'e	"flat" NUM. CLASS.
ka:t	"asking"	k'a:k	"fire"
kan	"knowing, learning"	k'an	"yellow, serving"
kol	"growing"	k'ol	<u>avellano</u> tree [es]
kuč	"carrying"	k'uš	"eating, biting, hurting"
kun	"soft, slow"	k'un	"weak, easily fatigued"

Medial:

wokol	"bother, trouble"	bak'en	"fright, ghost, <u>espanto</u> "
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Final:

ča:k	"lightning"	ʔek'	"star, <u>chaya</u> greens"
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IIC 2b ii. The Affricates

/č/ /č'/

[+ int	[+ int
	+ cen		+ cen
	+ hi		+ hi
	+ str		+ str
	- chk		+ chk

The palatal affricates are articulated before front vowels, /i/ , /e/ , with the tongue praedorsum in contact with

the alveolar ridge. The articulation is distributed over much of the back of the tongue, but the tongue apex remains free of articulatory contact, often visibly below the upper teeth. Before other vowels the strongest point of articulatory contact is slightly further back, the medio-dorsum contacting with most tension at the hard palate. In eastern dialects the articulation of /č/ is noticeably spread and distributed before all but the front vowels. This variation is similar to the variations of /š/ in the eastern dialects (cf. Table 8 [IIC 2a ii]), and also seemingly coincident with a more fricative off-glide for the palatalized /t/. All these consonants /č/ , /š/ and /t/ are central and high. It seems logical that the dialectal variations of spreadness, greater relative distribution and noisiness form a nexus that changes as a unit. It remains for further dialect investigation at this phonological detail to verify that hypothesis.

The following dialectal rule states the hypothesis in an overly-powerful form:

DPR-CENC

$$\begin{bmatrix} - \text{ syl} \\ + \text{ cen} \\ + \text{ hi} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ for} \\ ++ \text{ dist} \\ ++ \text{ str} \end{bmatrix} / \text{---} \begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ - \text{ flt} \end{bmatrix} \quad [\text{ed}]$$

Read: High central consonants are tense, overly distributed and overly strident before all vowels but non-flat peripheral vowels in the eastern dialects.

The rule is overly-powerful because /y/ and /n/ which do not participate in this dialectal nexus are sorted by the left-most feature matrix.

The glottalized member of this affricate pair is articulated in a manner similar to the plain /č/, with the difference of preglottalization and strong pressure of articulation as a redundant feature. The morphophoneme /č'/ is probably the most fortis phone in Chol phonology.

Although glottalization is often difficult to distinguish perceptually, alternation between glottalized and non-glottalized consonants in underlying forms is unusual. It appears that except for a few phonological rules at a rather low level (phonetic conversion rules), the distinction between checked and non-checked consonants is strictly adhered to, being semantically differential, and often exclusive within morphemes, i.e., it is less frequent to have a checked and a plain consonant in the same morpheme than to have either all checked or all plain consonants. However, before the glottal stop, either a morphophonemic glottal stop from a root or a phonetic glottal stop phonetically realized before vowels, a plain consonant can become glottalized. This is known as glottal advance. This rule is necessarily ordered after APR·GLOT [IIC i], which provides the substratum for its operation.

PR·GLADV

$$\begin{bmatrix} + \text{ int} \\ - \text{ chk} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ chk} \end{bmatrix} / _ - [ʔ]$$

Read: A plain interruptant is glottalized when followed by a phonetic glottal stop across a morpheme boundary.

mač-an	→	[mač.ʔan]	→	[ma.č'an]	"there is not"
mač-ubi	→	[mač.ʔu.bi]	→	[ma.č'u.bi]	"it isn't possible"

De-interruption of the affricates can take place for the plain and checked forms of both the high affricate /č/ and the non-high /ǰ/. The environments vary greatly, but the general rule may be stated:

PR·DEINT

$$\begin{bmatrix} + \text{ int} \\ + \text{ str} \end{bmatrix} \rightarrow [- \text{ int}]$$

Read: Affricates become homorganic spirants.

From the examples it can be seen that the environments are varied for the operation of this rule. The rule appears to operate only at morpheme-initial positions and optionally for /ǰ/ and /ǰ'/. For /č/, however, it appears to operate at morpheme-final positions, and to obligatory before /t/ and optional before /k/.

Examples:

ǰ'imbal	→	[s'im.bal]	"embroidery" ¹
ǰuǰ	→	[suǰ]	"mouse"
mač-to	→	[maš.t̃o]	"not yet, not now"
buč-tal	→	[buš.t̃al]	"seat" NOUN
mač-ki	→	[maš.ki] , [mač.ki]	"who?"
mač-k-u;-il-la	→	[maš.ku...] , [mač.ku.hi.la]	"it is not known"

¹Checked [s] , [s'] in the transcription, as a realization of /ǰ' / is infrequent, but worth mention because of its seeming aberrance. The sequence is perhaps more clearly expressed as glottal closure which remains firm well into the initiation of the articulation of [s].

ǰ'a'an	→	[ʔsa'an]	"strong drink, liquor"
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Distribution:

Initial:

ča?	"two"	č'a:	"bitter"
čim	"net bag"	č'iš	"thorn"
če?	CLITIC	č'en	"cave"
čan	"four"	č'am	"gather, harvest"
čon	"sell"	č'oš	"parasitic worms"
ču	"what" RELATIVE	č'u:	DERIVATION "sacred"

Medial:

buči	"sit" IMPERATIVE	beč'ol	"rolled, twisted"
------	------------------	--------	-------------------

Final:

buč	"sitting"	woč'	<u>"tortilla tostada"</u>
-----	-----------	------	---------------------------

/t̪/

/t̪' /

+ int
+ cen
- hi
+ str
- chk

+ int
+ cen
- hi
+ str
+ chk

The dental or non-high affricates are produced with the blade of the tongue tensed and articulated against the

alveolar ridge resulting in a stoppage of breath flow (similar to the coronal [t] but more tense). The release is non-abrupt and stridently [s]-like. In contractions the release can reduce to zero, leaving the coronal [t]'optionally, in initial position the stop can reduce to zero, leaving only the release [s].

Structurally somewhat different from these alternations is the alternation between the affricates. Retaining the same value of checkedness, the non-high affricate occasionally alternates with the high affricate without apparent semantic change:

č'al-oni-ba → [t̪'ʌ.lo.ni.ba] "flower"

This alternation does not occur with the same frequency as the other consonant alternations.

Distribution:

Initial:

çima	"gourd bowl"	ç'iʔ	"dog"
çeʔnal	"laugh"	ç'ehuntel	"writing"
ça:	"sweet"	ç'a:k'	"medicine"
çʌ	"cold"	ç'ʌç	"strong, rough"
ço:k-em	"crazy"	ç'oto	"twisted, scrolled, scribbled, mottled"
çuʔum	"moss"	ç'uç'un	"suck"

Medial:

çuçel	"hair"	ç'uç'unčap	"honey-sucking mammal" [es]
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Final:

buç	"sprout, regrowth"	buç'	"smoke"
-----	--------------------	------	---------

IIC 2b iii. The Marginal Morphophoneme "r"
and Other Non-Phonemes

/r/

[+ int
	+ cen
	- hi
	- str

Principal allophone [D]. The status of the alveolar flap is entirely marginal to the system of the phonology of Chol. It is not

the counterpart of the Mayan Liquid responsible for the final consonant in:

Lacandon: /kor/ Chorti: /čor/ Chol: /čol/ "milpa"

nor does it participate in the mutual self-definition paradigm of phonological features as fully as do the other morphophonemes. Its distribution, however, is wider than that of /t'/ and several other motivations argue for its legitimacy within

the canon of the morphophonemes, albeit at the margin between the phonemes and non-phonemes. These motivating reasons are:

(1) The presence of "r" in several non-loan words:

ϕ'iϕ'iri čuč	"a small rodent" [es] possibly related to /ϕ'iϕ'i/ the onomatopoeic word for the screech of a rat or mouse
puruwok	"a bird" [es]
weruš	"a kind of onion, <u>cebollín</u> "

It is possible that these words are loans from other indigenous languages, or archaic forms of Spanish, e.g., 16th century /ʃebó λaʃ/ "onion."

(2) The presence of "r" as a reflex of non-phonemes of Chol as they are incorporated into the system:

Sp. <u>educación</u>	→	[?e.Du.ka.sʏon]	"education"
		[?e.lu.ka.sʏon]	

In these instances the dentality of Spanish [ð] is reinterpreted as /r/ [D], or the continuance of the same [ð] is reinterpreted as /l/.

(3) The presence of "r" in many deep-seated loan or loan-based words in the Chol linguistic competence, even that of the purest monolingual speaker:

mero	['mE.Do]	"almost"	(<Sp. <u>mero</u> "real, true, indeed)
compadre	[kom.'pa.De]	"ritual kin"	
orolet	[o.Do.lɛl]	, [o.Do.le]	"season, time" (<Sp. <u>hora</u> , "hour")
simaronel	[si.ma.Do.ɲɛl]	"evil, wickedness"	(<Sp. cimarrón, "evil, savage")
sinoretíla	[si.ɲo.De.'ti.la]	"Señor de Tila, The Black Christ of Tila"	
but	šinloa	[šin.lo.a]	"Ladina" (<Sp. <u>señora</u>)
	č'uruha?	[č'u.Du.ha?]	"flute" (? <Sp. <u>chirimía</u>)

IIC 2c. Non-Phonemes

Other phones share the marginal status which has been described above for /r/, but to an even lesser extent. These fall into three classes. Members of the first class have been mentioned already in the treatment of the morphophonemes; these are the allophones which are perhaps automatically or unwittingly, but never consciously produced. They are never heard in a conscious way, except by those sensitive to metalinguistics, dialect variations or the nuances necessary for imitation. These include [ø] , [k̃] , [l̃] , [ç] , and perhaps a few other phones which are heard rarely. The second class is comprised of regular phone types which are the reflexes of phonological processes, including [ŋ] , [d] and [t]. The third class of non-phonemes are the true non-phonemes, present in the deep structure of the phonology, but in a way more marginal than /r/. These are the phonemes from Spanish loanwords [d] , [g] , [f]:

domingo	[do.miŋ.ko] [lo.miŋ.gu]	"Sunday"
iglesia	[gle.s ^y a] [kle.s ^y a]	"church"
cafe	[ka.fe] [ka:.pe]	"coffee"

CHAPTER III

MORPHOLOGY

IIIA. The Morphological System of Chol

Morphological systems consist of grammatical and lexical morphemes, and are structured by the grammatical oppositions these morphemes mark. Morpho-syntax (different from syntax only after a definition of the "word" as a formal unit can be established for a language) concerns the rules of combination of morphemes. These rules take the form of (1) selectional rules in paradigms which define semantically-related elements (Figure 7), and (2) concatenational rules in formulas for necessary, possible, and prohibited kinds of linear strings (Table 20).

IIIA 1. Grammatical Determinism

In a wider sense, morphology must deal with all grammatical categories, the manner in which and the degree to which sets of categories define the extra-linguistic world in linguistic terms. A structural approach assumes that the object of its study is systematic, i.e., that there is some way of dealing with every possible extra-linguistic experience. The stronger versions of the Sapir-Whorf hypothesis state that the speaker's perceptual and conceptual reality

is determined by the categories of his language and by the psychological patterns into which the flux of sensation and action are stabilized and clustered.¹ Weaker versions state that grammatical categories are the channels into which perception flows most readily, or that they constitute the patterns according to which experience is stored as remembrance.

Linguistic determinism is most convincing at a conscious level, as can be seen in the relatively rigid Greco-Latin framework of most logic and metalanguage. Paul Friedrich states that linguistic competence "grows through interaction between the individual cognitive system and social and linguistic experience." This interaction is apart from conscious reflection, and occurs in the aftermath of study or contact. When thought relaxes, the system of categories loosens its strictures. Little by little it is possible to think automatically in another language, to perceive and generate speech which utilizes categories that are largely untranslatable. With time and repetition these categories become well defined, even when implicit, and are often

¹The strong version of this theory makes discussion impossible. If all humanity does not share the same categories and a universal set of perceptual and conceptual frameworks, then the differences are hermetic, esoteric and hopelessly inaccessible to any but native speakers of a language. These native speakers share a concord made possible by their grammar which is homogeneous and mythical. The consequence of this is the impossibility of cross-cultural penetration. If a speaker of English is bound by the categories of English, it is impossible that he could ever perceive the "totally other" system of Chol, or any parts of it which are beyond the ken of English grammar-logic.

explicitly clear enough to present to a public which has no knowledge of the alien system.

Analyses of the grammatical systems of Hopi and Takelma by Whorf and Sapir, and more recent analyses of the Tarascan suffixes of space by Friedrich (1969), of Hunanóo pronominal and color terminology by Conklin (1955, 1962), and of Navajo categories of objects at rest by Witherspoon (1971), have attested to the usefulness of the systematic assumption. None of these contemporary scholars brandishes the Sapir-Whorf hypothesis, yet each attests to a unique set of perceptions signalled by a linguistic system.

Currently fashionable studies of the syntax and semantics of English and other ultra-investigated languages indicate that, like the physical universe, the linguistic universe is of indeterminate systematicity: either it is a closed system of indefinitely vast size, or it is an open structure, truly infinite, but with practical limits due to the rarity of material as mathematical infinity is asymptotically approached (Lyons: 1968, 152; Ross: 1967; Lakoff: 1971). Recent studies in the special syntax associated with certain lexical items like "respectively," "fuck," "please" by McCawley, Saddock and others (Reibel and Schane: 1969), substantiate the indeterminate systematicity of grammar. For American Indian linguistics, and Mayan linguistics in particular, the question of limits is less crucial. Even as a pedagogical aid (and functionally it is much more), Chol grammar can be viewed as a system, in which nominal

and pronominal categories relate to certain kinds of grammatical perceptions and conceptions, and in which prediction and relation are expressed by the manipulation of a system of grammatical categories and morphemes.

IIIA 2. Lexical Meaning and Grammatical Meaning

Chol morphology is made up of lexical roots and grammatical morphemes. Grammatical morphemes consist of noun phrase particles, verb phrase particles, pronouns and clitics. These latter two types of morphemes are used in both noun and verb phrases. Lexical roots, defined by semantic features from within the culture, are vocabulary items which give substance to speech by referring to specific topics, and by serving as the linguistically formal base for the affixation of grammatical morphemes.

The distinction between lexical meaning and grammatical meaning is neither randomly unpatterned, nor completely unequivocal. Several theories of grammatical meaning have been advanced throughout the history of linguistics to account for the strongly felt distinction between grammar and lexicon.

1) The Aristotelian Distinction: Fries (1957), following the Aristotelian distinction between matter and form, proposes that lexical items are those which signify concepts which are the material of the discourse. Grammatical elements are the more formal elements, those which specify the relationships which exist between the various material concepts. The implication here is that lexical

items are universal kinds of concepts which need only be listed, and that only grammatical relations are language-specific. Further senses of a lexical concept and the relations which obtain between the senses of a lexical item and among various similar lexical items are not mentioned in this definition. Yet the delineation of general sense, through hierarchies and patterns of semantic features is as necessary in the lexicon as in the grammar, as has been shown in recent lexicographical ethnolinguistics (Tyler: 1969; Berlin: 1969).

2) The Structuralist Distinction: Martinet, Halliday and Lyons distinguish grammatical elements from lexical elements according to the nature of the set to which they belong. Lexical items belong to relatively open sets of a large number of elements. Grammatical elements belong to more closed sets, which, because of the limitation in the number of members of the set, exhibit tighter relationships of sense. That is to say, grammatical items are defined more by other members in the set to which they belong, than by any definition supplied from reference, material analysis or relationship to the extra-linguistic world.

3) The Formalist Distinction: The formalists, who share a basic orientation more than any set body of theory or interests, analyze language in purely distributional, i.e., formal, terms, with no recourse to meaning. Implicit in Z. Harris's morphology (1951: 197ff, 362) is the distinction between grammar and lexicon on purely distributional

grounds. Morphemes which substitute freely with one another are lexical, and those which are in complementary distribution are grammatical. Similarly, Bazell (in Hamp: 1966) analyzes the distinction in terms of distributional flexibility. He states that lexical morphemes are more freely commutable than grammatical items. This commutability may be viewed as a consequence of the size and openness of the sets to which the elements belong. In this case there is but a shift of emphasis between the formalist and structuralist approaches.

4) The Functionalist Distinction: Kuryłowicz (in Hamp: 1966) speaks of lexical value as opposed to syntactic function as semantic primitives which underly both referential meanings and the possibilities of linguistic concatenation (the two sides of the Aristotelian distinction). Two kinds of derivation are possible according to which emphasis is utilized by the speaker: lexical and syntactic. According to this view, lexical items have both lexical "value" and syntactic "function," while grammatical items only have syntactic function. Although the theory of lexical items having both value and function illuminates the concept of lexical meaning, the deprivation of all value from grammatical items seems erroneous. Only certain limiting cases, like "be" and the clitics are completely devoid of lexical value. On the other hand, the lexical root, in many instances, approaches the limiting case at the opposite extreme, having only lexical value with no functional marking.

Lyons generalizes that grammatical "choices":

have to do with the general notions of spatial and temporal reference, causation, process, individuation However, we cannot assume in advance that such notions, even if they are clearly identifiable, will necessarily be 'grammaticalized,' rather than 'lexicalized' in the structure of any particular language.

(1968, 438).

A relationship of time between a narrated event and the speech event may thus be considered a relationship of grammatical meaning, whether it is encoded by a lexical item, such as an adverb of time /abi/ "yesterday," /wahali/ "long ago," or a grammatical morph, such as a tense marker /ti/ UNMARKED PAST.

After a specification of the nature and role of the lexical root, the grammatical morphs and their morphotactics are presented in this chapter. Sequencing of forms is partially inherent in the morphotactics and partially a function of longer syntactic strings. Lexical derivation is treated under the morphological headings which treat the morphemes responsible for the final lexical and functional specification of the lexical root.

IIIB. The Lexical Root

The lexical root serves as the semantic and formal nucleus of the Chol utterance. In form it is monosyllabic for the most part, and of the CVC syllabic canon.¹ The

¹There are a few CVCC forms, such as /ɕ'i:pt/ "writing," and /ča?l/ "making," but it is possible that the roots could be /ɕ'i:b/ "writing," and /ca?/ "making."

vowel nucleus can be long /V:/ or short /V/ or broken /V?V/. Other roots are of the form CV or CV:, and a very few are of the form VC and V.

IIIB 1. Stability of Form in the Root

Most roots are monoreferential, having a single primary reference, or an abstract signification which is specified as a particular referent by linguistic environment and extra-linguistic context. A few roots are best analyzed as two homonymous roots. The reference of a root may be concrete, abstract, general, or concerned with specific sensual perceptions:

There are some CV?VC forms, but there is evidence that they should be treated in some cases as CVC roots with the final consonant as /?/ and a VC suffix appended to this root, and in other cases as having a vowel nucleus which is a long broken vowel /V?V/:

√bu?/	bu?ul	"beans"
	bu?-lel	"bean stalk, patch"
√ha?as/	ha?as-il	"banana"
		"banana tree, grove"

Some CVCVC forms may well be instances of limited and rather unproductive VC suffixes affixed to CVC roots. The number of such items is so small in the present data that it seems equally acceptable to consider them as a limited number of forms from a different canonical form /CVCVC/, or to consider them CVC roots with appended nominalizing suffixes /-oc/ and /um/. The only productive feature of these suffixes is the vowel harmony which both share, and which is an important device in the morphology and in the surface phonetics of longer syntactic strings as well. The decision is then stalemated between alternatives of a trade-off situation: whether to posit another canonical form for syllables of very limited distribution, or to posit a number of nominalizing suffixes of very limited productivity in the morphology.

Type	Root	Gloss
monoreferential	haç'	"hitting"
abstract signification	k'uš	"sharp action" > "bite, chew, eat, physical pain, emotional concern"
homonymous	č'a:	"bitter" "bark used for tying" "fumigate with incense" ¹
	ta:	"pine tree" "find, reach, encounter"
	ha?	"water, river, rain, year" ²
concrete	bi:	"road, path"
general	lok'	"motion away from center of reference"
sensual	šin	"midpoint, middle"

The lexical root does not belong to one part of speech.

The root:

k'in "sun, day, fiesta"

is perhaps most frequently thought of as a substantive, but the concatenation of the bare root with the verbal morphology

/mi-kehe-k'in/ "there is going to be celebrating"

(in this case the UNMARKED T/A and the MODAL) exhibits reference best thought rendered as a verbal notion:

¹Perhaps a bitter bark used whole for tying and burnt for fumigation.

²Perhaps the root for year is /hab/, thus explaining /habil/ "year viewed as abstract, as a unit, in the past." The phonology of final /b/ would account for the rendering [ha?] from /hab/. It seems strange that none of the other terminal possibilities for final /b/ was ever encountered for this item.

"there is going to be
celebrating"

"it will be celebrated"

"celebrating begins"

With loan words this grammatical flexibility may also
be seen:

yos	(<Sp. <u>diós</u>)	"god, saint, praying, worshipping"
kera	(<Sp. <u>guerra</u>)	"war, fighting,
son	(Sp. <u>son</u>)	"song, dance, dancing, playing music"

It is best, then, not to class lexical roots not as any one part of speech, and not to class certain notions or concepts as intrinsically and a priori nominal, verbal, or adjectival. As with the distinction between lexical and grammatical meaning, the criterion of function in utterances is to be taken as the main determinant for the part or speech (and proper gloss) of any lexical item. As much as possible, the reference of the lexical root should be considered truly infinitive, belonging to no specific form class, such as "noun." For the definition of a root no limitation need be imposed on the most general concept of the topic encoded in the phonological sequence which is the root.

Unfortunately, the referential system of the lexical root is not always as philosophically straightforward as the above characterization would pretend. Roots which name objects from the physical world, such as plant and animal names, the names of social roles and cultural objects are in some sense primarily nominal roots. Some roots seem

primarily adjectival and not only verbal morphology but also derivational suffixes are necessary for these to be used as verbs. Some roots cannot be used as verbs but must rely on dummy verbs and special syntax to carry information in a verbal sense. Some roots seem inherently verbal and take special nominalizers to act as nouns, while others begin as nominal in some way and are verbalized. Many roots are of the kind sketched above, inherently infinitive, and of these some require no derivational morphology for the specification of function, while others require derivational morphemes to specify both nominal and verbal functions.

Most roots are stable forms, having no allomorphic variants. In this respect, they may be thought of as atomic kernels of the morphology, which may appear as bare roots, sufficient to form an entire utterance:

√k'am	"grave, ill, sick"
[k'ám]	"because he is sick (he cannot go)"

Exceptions to the invariant root are encountered in (1) certain reduplicated forms which exhibit modifications in the consonants [cf. rules given below], (2) certain forms of lexical derivation which exhibit vocalic lengthening and vocalic shift, and (3) other variants, derivational or stylistic, which exhibit the infixing of syllables. This last group of variants is composed of a very small number of roots, which are realized most frequently as intransitive verbs.

III B 1a. Reduplication of Roots $\sqrt{-\sqrt{}}$

The most frequent forms of root reduplication are simple doublets of the canonical form of the root:

$\sqrt{k' \Delta n/}$	"yellow, ripe"
$/k' \Delta n-k' \Delta n/$	"yellow" (as free word)
$\sqrt{k' uš/}$	"bite, eat"
$/k' uš-k' uš/$	"talk evilly, backbite"

The following optional rule accounts for the loss of glottalization in the second form, yielding for example:

$[k' uš-kuš]$	"talk evilly"
---------------	---------------

MPR·?DEL

$$[+chk]_1 \rightarrow [-chk]_1 \quad / \quad [+chk]_1 X_1 - \text{---} X_1$$

Read: A reduplicated glottalized consonant may become simple optionally.

Other forms of reduplication involve the reduction of a root of the CVC canonical formula to CV in the initial occurrence of the root:

MPR·C#DEL

$$\sqrt{CVC} \rightarrow /CV-CVC/$$

Read: The final consonant of a root may optionally delete in the first form of a reduplicated root.

This form of reduplication is called initial reduplication:

$\sqrt{y \Delta š/}$	"turquoise, green"
$/y \Delta -y \Delta š/$	"turquoise, green" (free word form)
$\sqrt{\check{c} \Delta k/}$	"red, reddish"
$/\check{c} \Delta -\check{c} \Delta k/$	"red, reddish" (free word form)

In some cases the reduced form of the root occurs in the second form of the reduplicated root:

MPR·#CDEL

$$\sqrt{\text{CVC}}/ \rightarrow / \text{CVC-VC}/$$

Read: The initial consonant of a root may optionally delete in the second form of a reduplicated root.

$\sqrt{\text{man}}/$	"buying"
$/\text{man-an-el}/$	"purchases"
$\sqrt{\text{ha}^?}/$	"water"
$/\text{ha}^?-a^?/$	"aquatic, of the water"

Some reduplications involve devoiced vowel lengthening in the initial form of the root. In these instances, the final consonant of the root is deleted:

MPR·VLONG

$$\sqrt{\text{CVC}}/ \rightarrow / \text{CV:}-\text{CVC}/$$

Read: A vowel nucleus may become long in the first form of a reduplicated root, with deletion of the final consonant of the root.

$\sqrt{\text{pon}}/$	*"roasting"
$/\text{po:}-\text{pon}/$	"roasting"
$\sqrt{\check{\text{c}}\text{il}}/$	"vegetation"
$/\check{\text{c}}\text{i:}-\check{\text{c}}\text{il}/$	*"adornment leaves for the dead"

Certain roots never appear as bare roots or in single (i.e., non-reduplicated) form, rather they must be accompanied by noun-phrase or verb-phrase morphology, or must appear in a reduplicated form. All roots, however, must be considered part of the deep structure of the language. Thus

some notation must distinguish roots which appear at the surface only after morphological modification from those which may surface unchanged. An asterisk precedes the gloss of those roots which are unable to appear in utterances without modification.

√ik/	*"person"
/win-ik/	"man"
/iš-ik/	"woman"

IIIB 1b. Vocalic Length

Certain few roots exhibit internal vowel lengthening as part of the process of lexical derivation. Thus a root which appears as a simple CVC form when affixed with verbal morphology, may appear as /CV:C/ in noun phrase morphology:

√kuč/	"carry"
/mi-kuč/	"he carries"
/ku:č-il/	"sash used for carrying"

IIIB 1c. Vocalic Shift

There are four kinds of vocalic shifts which occur in roots: (1) Allophonic variation, such as /ʌ/ → [a] initially, and the shift of vowels to [ə]; (2) Acculturation, such as the rendering /ʌ/ → [u]; (3) Vowel Harmony, usually a retroactive assimilation:

PR·VHARM

$$XV_1XV_1X \rightarrow XV_2XV_2X$$

Read: Earlier vowels assimilate to later vowels.

$$\check{c}u-b\Lambda \rightarrow \check{c}\Lambda.b\Lambda \quad \text{"whatever"}$$

(4) Derivational vocalic shift. Derivational vocalic shift occurs in a limited number of cases, none of which is

strongly productive. The shift /a~/Λ/ seems more frequent than others and is relatable to the allophonic variation and historical-comparative relation of /Λ/ to /a/. The variations of this alternation are given in examples 1-7 below. In some instances, such as the eighth and ninth examples, /i/ and /e/ alternate. For many stylistic purposes non-high peripheral vowels can become high, according to the rule given below. Apparently, though with less frequency, high vowels can become non-high in derivation.

SPR·VHI

$$\begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ \alpha \text{ flt} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ hi} \\ \alpha \text{ flt} \end{bmatrix}$$

Read: Non-high peripheral vowels become high with retention of the same value of flatness [IIC 1].

Examples 10 and 11 show an alternation which may be an instance of the fourth or of the second kinds of vocalic shift outlined above. In this example the absolute form of the verb exhibits one form of the root, and the factive another.

Examples:

- | | |
|----------------------|-------------------------------|
| 1) šak'-ul | "beans mixed with corn dough" |
| 2) šΛk'-Λl wa: | "tortillas made of /šak'ul/" |
| 3) ø'a:k' | "medicine" |
| 4) ø'Λk'-en | "curing" |
| 5) šiba: | "curer, <u>brujo</u> " |
| 6) šibΛ:-lel | "arts of the <u>brújo</u> " |
| 7) ma:k-il , ma:k-il | "cover, lid, top" |
| 8) šin | "midpoint, middle" |

- 9) e-š^hen-il "half, in half"
 10) mi-l^ha-k-šik "we demand"
 11) øi-i-š^hak-ben-on-lohon "he demanded of us"¹

The tabulation of the vocalic alternations presented in Table indicates that the sixth vowel /ʌ/ figures strongly in the processes of alternation. Since the schwa [ə], a central phone slightly lower than /ʌ/ may alternate with many vowels in unstressed position, it becomes evident that the phenomenon of centralization of vowels does not permit an easy distinction between derivational and phonological alternations on the one hand, and stylistic and sociolinguistic vowel variation on the other.

TABLE 9
 MODIFICATIONS IN THE ROOT

Vowel Alternations	Infixed Elements
a ~ ʌ	a
a: ~ ʌ	e e:
a: ~ ʌ:	i i: hi:
i ~ e	ʌ ʌb bʌ
i ~ ə	la:

¹Examples (1) and (2) may be related to the root √šʌb/ "mix" either as a lexical derivation via the glottal stop which alternates with both /b/ and /k'/, or via a proto-root, the existence of which is not totally established as yet. The last two examples (10-11) are from the eastern dialects.

IIIB 2. Unstable Roots

IIIB 2a. Infixing of Syllables within Roots

In the majority of examples in the text and interview material, and also in the folk metalinguistics of the Chol, the following generalizations hold true for the lexical root: roots are autonomous, atomic and stable. However, a few instances in the data show that there are exceptions to these generalizations and that they indicate derivational possibilities as yet unexplored. Regular patterns documented in this study show that indivisible roots are reduplicated, prefixed, suffixed and subject to vocalic change, but the root remains integral. A number of roots are presented with infixes of vowels or CV sequences. It should be mentioned that the majority of these instances come from observation and not from elicitation. Many of the examples reveal the rich morphological possibilities for derivation and nuancing.

Phonetics	Morphophonemics	Usual form	Gloss
to.kə.yi.ləl	/tok--a-yi-l--al/	tokal	"clouds"
ma.hə.ləl	/ma:--a--l-el/	ma:ləl	"going"
ma.hə.le.həl	/ma:--a--l-e:-el/	ma:ləl	"going"
ya.hə.li	/ya:--a--l-i/	ya:li	"fell"
č'a.hən	/č'a:--a--n/	č'a:n c'a:n-al	"bark for tying"
č'Λ.hi.yən	/č'Λ:--i--en/	č'Λ:yən	"sad"
č'Λ.la:..fəl	/č'Λ:--la:--n-al/	č'Λ:	"quiet"
ši.ʔap ^h	/šib/ /ši--Λ--b/	šiʔΛb	"comb"
ši.ba.bi	/ši--bΛ--b-i/	šibi	"combed"
eʔ.ti.hi.ba	/εʔt--i;-ib ^Λ /	eʔt-al	"authority, sceptre of authority"

e?.ti.hip	/e?t--i:--ib/	e?t-al	"authority"
ε:.ti.hil	/e?t--i:--il/	e?t-el	"government office"
ε:.ta.bi.hil	/e?t--Ab--i:--il/	e?t-el	"government office"

IIIB 2b. A Discontinuous Root

The formal unity of the root is broken by a small set of exceptions, which allow no other explanation other than the positing of a discontinuous root.

[ma.kə.ʔa.wo:]	"you are resting"
[ka.la.ko:]	"let us rest"
[wen.kə.ʔo:.ti.čə.ʔe*]	"resting well in the bed"

The only possible morphemic sequence which could explain these data is one which posits a frozen root composed of a modal /ka/ (derived from /kehe/ which in the eastern dialects is /kahe/) and a verb of the unusual shape V: /o:/.¹ This results in a sequence which can legitimately take the BOUND pronoun as an apparent infix, since the BOUND position occurs after MODAL and before ROOT in the morphotactics. The morphemic positions for the data above are shown in Table 10 below.

IIIB 2c. Proto-Roots and Root Depth

How close to the surface structure of the language the lexical root lies is a question which has no single answer.

¹The only other roots of this shape are:

/u:/ "know, be able"

which is always followed by an /-il/ sequence yielding the shape [u.hil]

/ui/ , /uy/ "make"

a rare form.

TABLE 10
MORPHOLOGY AND PHONETICS FOR A DISCONTINUOUS ROOT

POSITION:	1	3	4	5	6	8	
STRUCTURE:	T/A	MODAL	BOUND	DERIVATIONAL	ROOT	PLURAL	PHONETICS
	mi	ka	a		o:		ma, ka, ?a, wo:
		ka	k		o:	la	ka, la, ko: ¹
		ka		wen	o:		wen, ka, ?o:

¹Phonetic conversion rules and the transformation of the adverbial derivational particle are explicated in other sections of this dissertation [cf. MPR·PIADV, APR·GLOT, IIIB 4].

Many roots, especially the names of natural objects, are largely of the same form in the phonetic output as they are in the root lexicon. Others require modifications according to phonological, morphophonemic and phonetic conversion rules which result in some divergence between the morphological deep structure and the phonetic line. A few roots, however, seem considerably deeply seated in the structure of the language, and give rise to several morphs which according to their structure and behavior qualify as autonomous roots. The following data gives an instance of the nexus which is more than coincidental, yet not as broad as sound symbolism:

čol	"cornfield, <u>milpa</u> , (in [wd] 'Chol Mayan')
čol.ləl	"cornfield, <u>milpa</u> "
čol.bəl	"slashing, clearing fields"
č'ol	"Chol Mayan" [ed]
č'o:	"grasslike growth, to spring up like <u>milpa</u> "
č'o.:	"chopping" onomatopoeic sound
čol.bəl.ləl	"the slashed area, a <u>milpa</u> before planting"

If there is a proto-root responsible in some way for all these lexical items, it appears that there is no distinction of glottalization at the proto-root level. This implies that checkedness is a minor feature in the phonology, as did the discussion of the labials,¹ and furthermore that the abstract signification of this proto-root is a reference to a generalized slashing or chopping motion. An argument could also be

¹The discussion of the labials (non-high peripheral stops [IIC 2b iα]) and of vowel alternations indicates that flatness and length as well are minor features of the phonology.

made that the abstract signification of the proto-root is the most concrete and basic unit of work in the Chol culture and economy, the clearing of land for planting, and that all other references are metaphorically and metonymically related to that.

IIIB 3. Words

IIIB 3a. Multiple Roots in Words

Many morphological sequences contain more than one lexical root. This is true, in the case of lexical derivation by means of the Derivational morphemes [IIIB 4] which precede lexical roots, in the case of the numeral classifiers, and in the case of compound words, like the following:

wi	"root"	te?	"tree, wood"	→	wite?	"woody root"
č'ič'	"blood"	ta?	"excrement"	→	č'ič'ta?	"diarrhea"
e:	"tooth"	čak	"naked"	→	e:čak	"claw, nail"
ča?	"two, again"	ak'	"give"	→	ča'ak'	"give back, give again, return"

The process of compounding roots is akin to the double root (especially double verb) syntactic sequences. In many ways the decision to assign a particular sequence to the morphology of roots or to the syntax of words in an arbitrary choice, dependent more on semantic than on formal considerations. The question of what exactly constitutes the boundary called "word-boundary" must be resolved more fully to distinguish clearly, formally between morphology and syntax.

IIIB 3b. Word Boundaries

One of the clearest determiners of the structural entity known as the word boundary is the morphophoneme /ʌ/. Word initially /ʌ/ is realized as [a]:

#ma-w-ʌk'-en-on	"you give it to me"
#ak'-en-on	"give it to me!"

However, when the derivational /čaʔ/ "again" is prefixed to the root, there is a reversal to the word-initial allophone [a], indicating that the derivational morphemes impose a word boundary, even though the lack of juncture and of accent indicate that no word boundary is interposed between the derivational prefix and the root.

#ma-a-čaʔ#ak'	"you return it"
---------------	-----------------

The simplest working definition of a word is: a word is a morpheme or sequence of morphemes which can stand in isolation. Since many of the derivational particles can stand alone, such as /čaʔ/ "two," it is logical to place a word boundary after such a derivational particle despite the illogic with regard to stress and juncture. However, two or more criteria need be offered for the definition of the word boundary, namely those of stress and juncture just mentioned. Open juncture, a brief pause in speech, a place for hesitation, breath inhalation or speech editing (restarts, hesitation phenomena, alternate wording), may be interpreted as a structural word boundary. As for accent, the normal rule, subject to modification by sentence intonation transformations, is that a word boundary is placed after every accented syllable.

In sum, there are four criteria for the definition of the word and the placement of word boundaries:

- 1) Word-initial allophony
- 2) The independence of the unbound morpheme
- 3) Open juncture
- 4) The word-final accent of Mayan words.

These criteria are not mutually exclusive, but may intersect in certain examples. The more of these criteria there are, the stronger the case for the positing of a word boundary.

IIIB 4. Derivational Particles

Derivational particles are morphemes which are prefixed to roots and directly extend, modify, or "color" the lexical value of the root. Derivational semantics indicates that these particles are bound to the root in the deep structure of the semantic component, before grammatical function is assigned to the lexical root, for they are seen in concatenation with roots of many grammatical functions:

- | | |
|------------------|--|
| (1) šin-k'in-il | "midday, noon" (◀middle-day-Nominalizer) |
| (2) bití-pe:-pém | "small butterflies" [eg](◀small-butterfly) |
| (3) lu?-boy | "fatigued"(◀completely-tired) |
| (4) p'o:-mél | "go through the motions" (◀perfunctory-make) |

More evidence for the tight ligature of Derivational and ROOT comes from the fact that of the 20 color particles documented in the corpus of data, 13 morphemes and forms of two others do not appear anywhere in unbound form. Puzzlement and non-responses from informants when the signification of even the simplest of the concepts of color is elicited

TABLE 11

LIST OF DERIVATIONAL PARTICLES

Derivational Particles	Signification or Gloss
(1) lu?	"completely, all, . . .up"
(2) kum	"a little"
(3) niki	"a little"
(4) bele	"from time to time (an hour or a day's interval), continuously"
(5) č'očon	"over and over" ITERATIVE (rapid succession), "in little dots, points"
(6) biti , bikit	"small, in pieces, in parts, gradually"
(7) ø'uk	"to a point"
(8) po:	"perfunctorily, without heart"
(9) kwa , wa	"rapidly"
(10) øut	"a small amount and rapidly"
(11) se:	"soon"
(12) ø'a	"with spite, malice, hate, ill-intent"
(13) č'u:l , č'u	"sacred"
(14) šuk'o , šuk'ul	"slowly"
(15) ši: , šin	"in the middle, in half"
(16) šan	"thoroughly, step-by-step" (< √šan/ "walking")
(17) tuk	"in half" (< √tuk/ "pulling, cutting")
(18) ča?	"again, a second time" (< √ča/ "two")
(19) k'AlA	"to such an extent, all the way, far, to the extremities"
(20) wen	"much, many, thoroughly, well" (< Sp. <u>bien</u>)

presents further evidence that these particles are bound at least as "tightly" as the English derivational prefixes "a-," "re-," "dis-" and "trans-."

However, the accentual system of the derivational particles presents phonological evidence which runs contrary to the tightness of the semantic bond between derivational particle and root. Color particles receive secondary stress on the first syllable. (If the particle is monosyllabic, the "first syllable" condition is vacuous; the particle receives the stress.) This stress is strong enough to activate the allophonic rule for "initial" /ʌ/ to be realized as [a]. This evidence leads to the inference that COLOR particles are "words," an analysis untenable on semantic grounds. Yet four of the documented color particles are related to, or have alternate forms that are lexical roots able to take noun phrase or verb phrase morphology (Table 11, 14-17). Three documented examples (Table 11, 18-20) are fully autonomous lexical items in the same form in which they appear as derivational particles.

These latter three examples illustrate a cline between grammatical and lexical items which is present elsewhere in Chol as well. That derivation is a grammatical function and category is substantiated by the paradigm of a small and relatively closed set of particles encoding general spatial and orientational concepts, and which appear nowhere else in the language. This is the set composed of the first 13 (or perhaps 15) derivational particles. The cline or "squish"

is a gradient at the extremities of this set which violates increasingly more principles of the grammatical paradigm. This cline is represented by the last three, or five, or seven color particles listed. Further attestation of this cline comes from another quasi-closed set of grammatical particles in a paradigm which is similar: the numeral classifiers. These particles, too, are in some ways grammatical according to the criteria discussed above, but at the extremities of the set numerous lexical items may serve the grammatical function heretofore reserved to a limited number of morphemes (Berlin: 1968).

Examples (16-17) indicate that the cline may be multi-dimensional, passing not only from grammar/morphology into the lexicon, but also from morphology into syntax. The cline of the derivational particles may also pass from the process of lexical derivation by means of the prefixation of a derivational particle into syntactic compounding of verbs into double-verb sequences which connect two events in a single narrator utterance. Thus the form /šʌn-numel/ of (16) is on the continuum between /šʌn/ analyzed as a derivational particle "thoroughly, by step-by-step examination" and /šʌn/ analyzed as the lexical root that yields /šʌm-bal/ "walking," through affixation of a nominalizer of the form X_0^3 -V1 [IIID 2a], and subsequent nasal assimilation. This continuum forms the cline between the unequivocal derivation of the closed set of bound particles (1-13) and the purely syntactic form of root compounding in double-verb sentences such as:

øa-bi-č' am-Λ-ma:l-el-li-lasso "lo llevó su lasso"
 COMPLETIVE-NARRATIVE-"grab" -PAST-"going"-USTEM-DEMON-
 STRATIVE-"rope"

which can be translated into the unidiomatic "He took-went the lasso" or into the Bengali-speaker-like English, "He took his lasso and went."

Although the semantics of the derivational particles in Table 11 is not yet thoroughly analyzed, neither with respect to the abstract signification of such items as (4), (10) and (19), nor with respect to the mutual self-defining properties of the derivational morphemes which form the innermost, most closed subset, it nevertheless appears that the semantic range of the derivational patterns which these particles create is vast. These patterns include temporal relations of both objective and subjective natures, spatio-textural relations, notions of completion and extent, and cathectic, or modal notions of both positive and negative affect.

IIIC. Pronouns

A systematic approach to language regards grammar as a set of categories which are available to speakers for linguistic expression, and which are in turn utilized by hearers for linguistic interpretation. Language concerns a structurally bounded sphere of thought and perception; thought and perception are themselves limited renderings of the flux of existence. It follows that the grammatical categories of language are selections of various aspects of experience, primarily for communication, but also for expressive,

directive, matelinguistic and poetic purposes, and for purposes of social, or phatic, communion as well.

Categories are meaningless if viewed in isolation. It is only the internal structure: the number, nature and contrast of oppositions within the category which give grammatical meaning, and in turn provide the link between the sense, or comprehension of the grammatical system, and the extensional reference to extra-linguistic reality. To assign labels such as PRESENT to verbal morphemes without the explanation of the oppositions involved in the category of the encoding of time (TENSE), is an error. Serge Karcevsky expressed it in 1929 as follows:

Un morphème n'est qu'une marque sur la ligne phonique d'un croisement de rapports, et rien d'autre.

(Hamp, et al.: 1966, p. 5)

The category SINGULAR in Chol has a much different meaning from the category of the same name in languages where singular and plural are equally marked oppositions, for in Chol the singular form is unmarked with regard to number. In still other languages (such as Navajo, Tagalog) singular is opposed to DUAL and to PLURAL in a three-way opposition. The basis of these differences is the structuralist notion that a grammatical category has meaning only in terms of the contrasts between its constituent oppositions.

A consequence of the structural theory of oppositions is the problem of the motivation for discriminations of categories and oppositions within categories. Saussure viewed

the grammatical system as an isolable set of internally established relations, similar to the display and capability of movement of chessmen at any given instant in a game. He also viewed the symbols that comprise language as arbitrary. Both these views share arbitrariness as their chief characteristic; but each differs in the way motivation is deleted from the system. In the former instance, motivation is admittedly disregarded to give investigatory power to the analysis. The grammar is assumed to be a closed system in order to explore the way a limited number of morphological elements and syntactic procedures account for the practically unlimited number of and referential power of utterances. In the latter instance, arbitrariness is a point of view concerning the origin of the linguistic symbol. This question has remained intriguing, and largely undecidable since the time of Plato's Cratylus (Jakobson: 1965, Benveniste: 1966).

Since mid-century, wider scope of structural investigation has resulted in greater numbers of less easily defined categories and oppositions. More complex categories in art and social relations have been analyzed. But rather than utilizing networks of multi-opposition categories, there has been a predilection limiting oppositions to strictly binary functions.¹

¹The predilection for binarity may be a postulate of the culture of the investigator, or an artifact of his technology, more than a characteristic of the object of investigation.

In the treatment of the Chol pronouns that follows, a three-dimensional model will be used to illustrate the structure of the oppositions which intersect to characterize the meaning of the pronoun morphemes. Whether the categories have perceptual and cognitive reality to the speaker of Chol is a legitimate and interesting question, though no attempt at its verification is included.

IIIC 1. The Three Dimensions

The dichotomies, langue/parole, code/message and competence/performance, are roughly equivalent ways of noting the distinction between the abstract repertory of language ability (in the case of langue, socially-possessed, in the case of competence, individually-possessed) and the actual production of linguistic utterances. The utterance, or SPEECH EVENT, is a finite string of audible speech. The speech event contains participants and a topic, or reference. The participants may be the same as the reference, or different from it. From these aspects of the speech event are derived the categories of contrast in the pronominal system.

The three dimensions of pronoun contrast are the following:

ADDRESS: the relationship between speaker and hearer. (Alternate terms of this relationship are: encoder/decoder, producer/receiver, transducer/interpretant, first-person/second-person, addresser/addressee.)

CLUSION: the relationship between the participants of the speech event (speaker and hearer) and

non-participant referents (IMPERSON, erroneously called "third-person" in traditional grammar).

NUMBER: the relationship between marked plurality and the absence of plural marking.

TABLE 12
PRONOMINAL MORPHEMES

NUMBER	CLUSION		
	+		-
	ADDRESS		
	+	-	
	SPEAKER	HEARER	IMPERSON
-PLURAL	k hon on	a hat et	i (y , 0) hin [IIID 1c]
+PLURAL	lo:	la	ob [o?]

Table 12 shows the pronominal morphemes which concatenate to form the intersection points of these three dimensions. This information deserves to be treated in more detail.

IIIC 1a. Address

The grammatical category of ADDRESS is essential to any theory of language because all speech originates from a source of production, the addresser, and is interpreted by a receiver, the addressee. It is possible that the interpretant

receiver be the same as the addresser (talking to oneself), or that there be no visible, but only an intended receiver (writing, cries into the darkness), or that the addressee be at a different social or conceptual level of reality (prayer, ritual, dreamspeech). But these clearly are cases marginal to the majority of speech events that originate from a speaker and are received by a hearer. The speaker and hearer and the PERSONS of the speech event reference and constitute the marked half of the opposition CLUSION. This marked category itself required a dichotomous marking since speech event reference can include either participant. The category of address distinguishes these two participants in a one-dimensional, linear way:

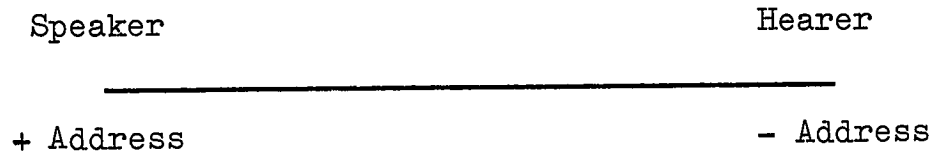


Fig. 3.--The Pronominal Dimension of Address

IIIC 1b. Clusion

The dimension of CLUSION, with its terms: inclusion/exclusion, is implicit in the definition of the category of Address and intersects with it. The speaker and hearer are included in the speech event. When they are referred to by the speech event the reference is personal. When no reference to the participants is made, the reference of the speech event is impersonal (even if the referent be human).

The marked term of the opposition contains a further distinction, address, and is marked by a full set of pronoun morphemes used exclusively for this purpose. In contrast, the unmarked term, IMPERSON, is more limited in that it contains no opposition of address, and seems to be restricted formally as well. There is no full, fixed and exclusive paradigm of morphemes that marks the paradigmatic slots formed by the intersection of the contrasts. Instead there are numerous alternatives roughly paralleling the demonstratives and topicalizers [IIID 1c], and "zero" positions often filled by clitics for prosodic continuity. The morpheme /hin-i/ is listed with the Imperson Free pronoun to retain symmetry with /hono/ and /hatet/. However, in the corpus of data /hini/, iliyi/, išiši/, eba:nel/ and variants of these appear with equal frequency. Similarly, /hin-ob/ is listed as the Imperson Plural Free pronoun, though neither this nor any other markedly pluralized form is frequent. The most frequent is the derived demonstrative /e-ba:n-ob/ (< √ba:n/ "alone, single, sole"). If these various forms are semantically differentiated demonstratives, it is not certain according to which criteria discriminations are made. Nor is it yet clear in which environments no imperson pronouns (zero forms) appear. The following rule for such pronoun deletion in the imperson is tentative and optional:

MPR·ZIMP

$$\left[\begin{array}{c} i \\ \text{IMPERSON} \end{array} \right] \rightarrow \emptyset / \left[\begin{array}{c} \text{NEGATIVE} \\ \text{OF} \\ \text{MODAL} \end{array} \right] \text{ ———}$$

Read: The /i/ of the Imperson pronoun is deleted optionally in negative sentences and after modals.

Ordered prior to the deletion rule is the glide rule, MPR·GLY [IIC 2a iv]. These two rules account for the following phonetic renderings:

/mač-i-om/	MPR·GLY MPR·ZIMP →	[mac,yom]	"he doesn't want to, no good"
/mač-i-kuč/	MPR·ZIMP →	[mač,kuč]	"one can't support it, impossible"
/mi-kehe-i-kuč/	no rule operation →	[mi,ke,he,?i,kuč]	"he begins to carry it"
	MPR·ZIMP →	[mi,ke,e,kuč]	"he begins to carry it"

An alternative or corollary to the above solutions may be that there is a semantically medio-passive conjugation allowable with nearly every verb, formed by the omission of all pronouns. If this were so, the qualitative difference between Person and Imperson would only be more emphatically drawn.

The display of the two dimensions treated so far creates a plane, with the dimension of clusion perpendicular to the linear dimension of address. Figure 4, below, illustrates this display.

IIIC 1c. Number

A third dimension is added to the paradigm by the category of number. The marked half of the opposition encodes

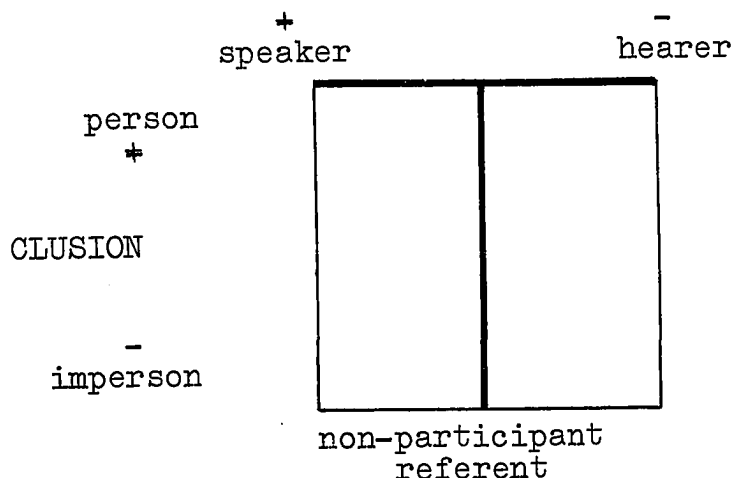


Fig. 4.--The Pronominal Dimensions
of Address and Clusion

plurality. The unmarked half encodes no special information with regard to number. Both the Persons and the Imperson participate in the category of number. The defective form, of the Imperson is again manifest in this category. The persons utilize special morphemes: /la/ for hearer plural and omniperson [IIIC id], and /lo:/ → /lohon/ for speaker plural. But the Imperson has no special morpheme. Instead it makes use of the usual pluralizer for human referents /ob/, [o?] [IIID 2b i]. In many instances the Imperson marks no plural, leaving plurality unmarked.

IIIC 1d. Beyond Distinctions: The Omniperson

These three binary oppositions yield six intersecting points which are the personal and imperson pronouns, in both non-plural and plural form. A seventh pronoun class exists in Chol, the OMNIPERSON which does not participate in the

either/or oppositions of the pronominal dimensions. Rather it neutralizes the distinctions, encompassing all the dichotomies like a dialectical synthesis. Its position is thus a point in the center of the three-dimensional display of the pronominal categories (Fig. 5, below). Formally, this pronoun class is a combination of the non-plural speaker morphemes, and the position 10 hearer plural morpheme /la/:

FREE	honor-la
BOUND	k . . . -la
ERGATIVE	-on-la

This formal relationship is mirrored by the reference of the Omniperson which is primarily that of an inclusive plural: "speaker plus hearers" (as opposed to the exclusive plural /honor-lohon/ "speaker and speaker's group"). However the reference is wider than that signalled by the morphemes.

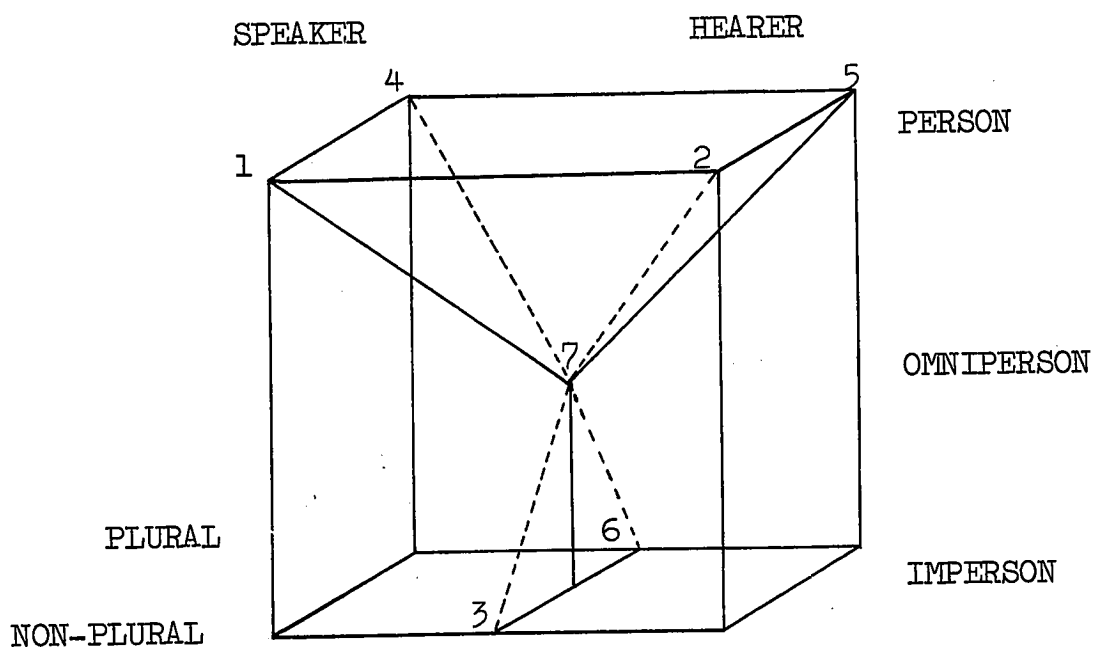


Fig. 5.--Chol Pronoun Box

Although the morphemes /k/ and /la/ do not indicate it, the speaker's group, and a singular hearer may also be referenced by the Omniperson. The extension of the reference of this form is also applicable to non-participants of the speech event (Imperson), justifying the position of the Omniperson as beyond all distinctions in the three-dimensional system of pronouns. The Omniperson can also be used as a general pronoun to refer to no special person. This form appears frequently in general reference to nouns habitually possessed (body parts, kinterms) and in general metalinguistic language use (informant interviews). This pronoun is glossed in Spanish by an infinitive or a reflexive verb form:

mi k-p'ak'-la	" <u>sembrar, se siembre</u> , to plant, it is planted"; literally, "we-all plant" ¹
---------------	---

It would appear that the Omniperson passes beyond all distinctions, those of clusion and number as well as that of address. Figure 5, above, is a three-dimensional paradigm, illustrating the relationship of the pronominal categories to one another.

IIIC 2. The Three Pronoun Series

The pronominal morphemes concatenate to form three sets of pronouns, each with syntactic properties special to the series.

¹In this general use the Omniperson is as near to a truly infinite form as is overtly possible to the Chol. (The production of bare roots is not always possible.) The more frequent phonetic form [mi.lak.p'ak'] is derivable by rule MPR·PLADV [IIIC 2b].

IIIIC 2a. The Free Pronoun Series

The free series of pronouns does not require any particular concatenational formula. These pronouns are composed of a radical element (which itself seems to be formed from /h/ and a characteristic sign of the person or imperson) and a characteristic morpheme. This analysis is at a much deeper morphological level than any other analysis, since no productive mutability of the component morphemes is possible. These pronouns are thus treated elsewhere as stable morphemes, even though by the present analysis, and by a consideration of their syllabic form, they may be considered multi-morphemic words.

TABLE 13

THE FREE PRONOUNS

1) h-on-on	→ honon	"I"
2) h-at-et	→ hatet	"you"
3) h-in-i	→ hini	"he, she, it" IMPERSON
4) h-on-on-lo;-on	→ honon-lohon	"we" (exclusive)
5) h-at-et-la	→ hatet-la	"you-all"
6) h-in-∅ -b	→ hin-o?	"they" IMPERSON PL.
7) h-on-on-la	→ honon-la	"we-all" OMNIPERSON

IIIIC 2b. The Bound Pronoun Series

The bound pronoun set is used for the pronominal referencing of roots. This includes possession of nominals and the referencing of the subject of verbs (except the past

forms of intransitives). The non-plural forms of this series are prefixed to the root, or to the derivational-plus-root sequence, filling position 4 of the verb phrase morphotactics [Table 20, and IIIIF 6]. The suffix portion of this series fills post-root position 10, occasionally preceded by a clitic in position 9.

TABLE 14
THE BOUND PRONOUNS

Position 4	Position 10	Gloss
1) k		"I, my"
2) a		"you, your"
3) i ([y], ∅)		"he, his; she, her; it, its; IMPERSON"
4) k	lohon	"we, our" (exclusive)
5) a	la	"you-all, you-all's"
6) i ([y], ∅)	ob	"they, their"
7) k	la	"we, our" OMNIPERSON

When the BOUND OMNIPERSON is used for noun possessives, and in verb phrases that are utterance-final, the following rule operates to advance the plural suffix /la/ to a position preceding the prefix part of the discontinuous morpheme /k . . . la/:

MPR•PLADV

k - X √ Y - la → la-k X √ Y / NP, ___utterance final

Read: The plural morpheme /la/ of the discontinuous Omni-person Bound Pronoun /k . . .a/ advances, becoming /la-k/. This rule is obligatory for nominals, frequent utterances finally, and optional at other times.

This rule may also apply in the case of the discontinuous Speaker Plural Bound pronoun. The instances of this are rare in the data, and occur only with nominals. The plural advance rule might be modified, or better, another rule be written:

MPR•EXPLADV

$$\left[\begin{array}{c} k- \\ \text{BOUND} \end{array} \right] X \checkmark Y - \left[\begin{array}{c} \text{lohon} \\ \text{PLURAL} \end{array} \right] \rightarrow \text{lohon}k X \checkmark Y / \text{NP}$$

Read: The plural of the exclusive plural /k . . .lohon/ advances, becoming /lohon-k/ in nominal forms.

A rule concerning the bound pronoun /k/ operates when a root begins with /h/:

MPR•HK

$$\left[\begin{array}{c} - \text{ syl} \\ - \text{ int} \\ - \text{ cen} \\ - \text{ hi} \\ - \text{ flt} \\ - \text{ nas} \end{array} \right] \rightarrow \left[\begin{array}{c} + \text{ int} \\ + \text{ hi} \\ + \text{ chk} \end{array} \right] / \left[\begin{array}{c} + \text{ int} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ chk} \\ \text{BOUND} \end{array} \right] \text{ —}$$

Read: /h/ becomes [k] following the bound pronoun /k/.

This rule may be thought of as feeding obligatorily into the geminate segment rule, or into one of the paired /k/ rules, which themselves are derived from the more powerful and widespread geminate segment rule.

PR•GEM

$$\begin{array}{c} [\alpha \text{ ---}] \\ \vdots \\ \cdot \end{array} \rightarrow \emptyset / \text{---} \begin{array}{c} [\alpha \text{ ---}] \\ \vdots \\ \cdot \end{array}$$

Read: Any segment can delete if followed by a segment like itself. More simply, geminate segments may become simple.

Ordered following the HK rule is a pair of morphophonemic rules that account for the behavior of the bound pronoun /k/ before many interruptants.

MPR•KDEL

$$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ chk} \end{bmatrix} \rightarrow \emptyset / \left[\text{BOUND} \right] \begin{bmatrix} + \text{ int} \\ + \text{ hi} \end{bmatrix}$$

Read: Before certain high stops, the bound pronoun /k/ deletes.

MPR•KDEINT

$$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ chk} \end{bmatrix} \rightarrow \begin{bmatrix} - \text{ int} \\ - \text{ hi} \\ - \text{ flt} \end{bmatrix} / \left[\text{BOUND} \right] \begin{bmatrix} + \text{ int} \\ + \text{ hi} \end{bmatrix}$$

Read: Before certain high stops, the bound pronoun /k/ becomes de-interrupted to [h] (or [X]).

The application of these rules must be stated in prose. The k-deletion rule is more frequent in the western dialects, and the k-de-interruption rule is more frequent in the eastern dialects. If the stop is either /k/ or /k'/ following the bound pronoun, the rule almost always operates, probably always in the eastern dialects. Before any other high stops the rules operate optionally in the eastern dialects and do not operate in the western dialects.

TABLE 15
 RULE OPERATION ON BOUND PRONOUN FORMS

MORPHOPHONEMIC CANON	PLADV	HK	KDEL	RULES KDEINT	GEM	PHONETIC OUTPUT
1) k-hol-la	la-k-hol					→ [lak, hol]
2) k-hol-la	la-k-hol	la-k-kol			la-kol	→ [la, kol]
3) k-hol-la	la-k-hol	la-k-kol		lah-kol		→ [la:, kol]
4) k-hol-la	la-k-hol	la-k-kol	la-kol			→ [la, kol]
5) k-káč-la	la-k-káč		la-káč			→ [la, káč]
6) k-káč-la	la-k-káč			lah-káč		→ [la:-káč]
7) k-káč-la			káč-la			→ [káč, la]
8) k-k' aš-el-la	la-k-k' aš-el		la-k' aš-el			→ [la, ka, šel]
9) k-k' aš-el-la	la-k-k' aš-el			la-h-k' ašel		→ [la:, k' a, šel]
10) k-k' aš-el-la			k' aš-el-la		k' aš-e-la	→ [k' a, še, la]

The rules just presented are ordered in the following way:

MPR·PLADV > MPR·HK > MPR·DKEL or MPR·DKEIN > PR·GEM

The output of these rules can be seen with three examples:
 /k-hol-la/ "head" (literally "our-all's head") /k-káč-la/
 "we-all tie" and /k-k'aš-el-la/ "we-all pass through."
 These are shown in Table 15.

IIIC 2c. The Ergative Pronoun Series

Ergative systems utilize the same pronouns for the grammatical patient in transitive sentences and the grammatical argument in intransitive sentences. True ergativity requires that the primary and obligatory argument in transitive sentences be the patient, and that encoding of the agent be optional, or secondary in some other way. Most ergative systems exhibit "split ergativity" (Silverstein: 1973), wherein the ergative function is shared with other morphemes.

The direct-object function of Chol Ergative series of pronouns is somewhat different from the true ergativity of languages like Georgian and Eskimo. In Chol transitive sentences, the agent is expressed primarily (using the Bound series pronouns), and the expression of the patient is always secondary. Never can a typically ergative sentence like "hit me" (i.e., "I am hit") occur, with no overt expression of the agent. But often sentences with implicit expression of the patient are encountered:

mi-k-ak'-en "I give (it [to you, him them])"

The argument-of-intransitive-sentence function of the Chol Ergative series of pronouns exhibits a split in ergativity along lines of Tense (Table 16). The argument of non-past intransitive sentences is expressed with the Bound series; the argument of such sentences in the Past tense is expressed by the Ergative series. In the following examples, the argument "you" of the event "going" is encoded by the ergative pronoun /et/ only in the Unmarked Past (3) and Comparative Past (4) sentences. In non-past sentences (1 and 2) the Bound pronoun /a/ encodes the argument.

(1) Bound	mu-iš-a-ma:l-el	"You will go now"
(2) Bound	mi-a-ma:l-el	"You go"
(3) Ergative	maʔan ti-ma:l-i-et	"You did not go"
(4) Ergative	ʔa-iš-ma:l-i-et	"You have gone" ¹

In the special Progressive aspect syntax [IIIF 2iii iv] the ergative pronoun encodes the argument in all sentences, transitive and intransitive. This syntactic form is similar to predicate complement syntax /ti + USTEM/ which utilizes only the Bound series of pronouns in the independent sentence.

The Ergative pronouns are also utilized in the existential predication of arguments with lexical roots:

(1) /wʌʔ-ʌč-an-on-la/	[wʌ,č'a,nɔn,'la]	"We are here"
(2) /č'u:-ana-on/	[č'u,wa.na,'hɔn]	"I am a Mayordomo"
(3) /k'išin-et/	[k'iš.ni,yet]	"You are drunk"

¹Phonetic renderings for these examples are : (1) [mu.ša.ma:.'lɛl], (2) [ma.ma:.'lɛl], (3) [ma.ʔan.ti.ma:.'li-'yet], (4) [ʔaš.ma:.'li.'yet].

This function may also be thought of as split. Predications with no roots attached, i.e., predications of specific arguments when the predicate is known through context or previous statement or question ("Who is a Mayordomo?"), are encoded using the Free series of pronouns. In complete predications containing both argument and predicate, such as in the above examples, the Ergative series of pronouns is utilized.

The various pronominal functions are tabulated below in Table 16.

TABLE 16
PRONOMINAL FUNCTIONS

Function	Free	Bound	Ergative
Existential without root	x		
Predication with root			x
Possessor of Object		x	
Possessor of Transitive Event (Agent)		x	
Recipient of Transitive Event (Patient)			x
Argument of Intransitive Event non-past		x	
past			x

Formally the ergative pronouns are suffixing. They occupy position (8) of the verb phrase morphotactics [IIIF], and the plural morphemes, identical to those of the other series in form and distribution, occupy position (10).¹

TABLE 17
ERGATIVE SERIES PRONOUNS

Position 8	Position 10	Gloss
1) on		"I, me, I am"
2) et		"you, you are"
3) \emptyset (clitic)		"he, she, it, him, her, he is, she is, it is"
4) on	lohon	"we, us, we are" (exclusive)
5) et	la	"you-all, you-all are"
6) \emptyset	ob	"they, them, they are"
7) on	la	"we-all, us-all, we-all are"

IIID. Noun Phrase Morphology

Noun phrases can serve as the arguments of verbal sentences, and as the predicates in verbless sentences. The

¹There may be a slightly different accent pattern in the Ergative series, which shifts accent from final to penultimate syllable when the plural is derived from the Ergative series, rather than the Bound series:

mi-k-sub-en-et-la	[mi.ksu.be.'tst.'la]
"we-all [BOUND] tell you [ERGATIVE, non-PLURAL]	
mi-k-sub-en-et-la	[mi.ksu.be.'tst.la]
"I [BOUND] tell you-all [ERGATIVE, HEARER PLURAL]	
mi-sub-en-on-la	[mi.su.be.'tton.la]
"He (they) [BOUND] speak to us-all [ERGATIVE, OMNI-PERSON]	

morphology of noun phrases can be described as consisting of one position before the root, either a "sex" designation or a "topicalizer" (neither term is precise), and three post-root positions. These three post-root positions are: (1) Nominalizer--a sequence which always has the form X_0^3 -V1 (and can best be described as a vowel-/l/ sequence preceded by up to three segments of a limited number of shapes); (2) Plural--one or both of the morphemes /tak/ or /ob/; and (3) Topicalizer Suffix--usually a front vowel, often with high tone, or the reflexive /bA/, or a CLITIC [IIIF 4].

IIID 1. Pre-Root

IIID 1a. Sex and Gender: /š/ and /a:/

Designations of biological sex and designations of grammatical gender are not everywhere isomorphic. The clearest understanding of the relationships between morphemes of gender and the linguistic encoding of sexual differences can be gained from an initial distinction of the two notions, and examination of the linguistic use at the level of grammatical form and referential meaning as separate investigations until the relationships between the two are clear enough to warrant combination.

Grammatical gender is morphologically marked by two morphemes which occur in complementary distribution:

/š/	feminine [FEM]
/a:/	masculine [MASC]

Statistically, /š/ is the more frequent. It occurs as the mandatory prefix to the root in many terms for ethnospecies of animals, and several of plants (especially edible plants) as well.

/š-ke1/	"chachalaca" bird [es]
/š-po:kam/	" <u>frijol de botil</u> , multi-colored, lima-bean-sized bean"

The relationships between the morphemes of gender and the biological sexes can best be seen in the examination of the three classes of nouns affected most by the morphemes: Human, Animal, Plant. Preliminary to this it may be seen that the "feminine" is semantically unmarked for general reference; in other words, the female is taken as token for the entire species and the male marked semantically for sex. (The female is marked formally by /š/, but is unmarked semantically.) In Chol, /mut/ "gallina" and /waš/ "zorra" are token names for the species, with no sex/gender prefixes. Here the feminine glosses in the contact language exhibit the semantic primacy of the female. In formally marked cases, /š-peč/ "pata," and /š-kok/ "tortuga chica," the marking is feminine, but the reference is general; either sex, or in a generic way, both, are implied.

IIID 1a i. Human Nouns

The human nouns which are affected by the gender morphemes are in some instances clearly distinguished along sex lines, with both morphemes carrying equal information:

š-tronel	"woman worker"	a:-tronel	"workman"
š- <u>Anita</u>	Name: <u>La</u> <u>Anita</u>	a:- <u>Sebastian</u>	Name: <u>El</u> <u>Sebastian</u>

In some instances the FEM marking is used for the token for both sexes as well as marker for the female:

š-wu:t	"curer" (in gen.), "female curer"	a:-wu:t	"male curer"
--------	--------------------------------------	---------	--------------

In other instances, notably for the female, the marking is redundant and has no counterpart in the opposite sex:

iš-ik	"woman"	win-ik	"man"
š-iš-ik	"woman"	*a:-win-ik	
š-k-al-əl	"daughter, girl"	al-ob	"son, boy"

The productive use of gender morphemes outside the affixation to proper names and the agent nominalization of roots denoting activities is rare. For classes of persons, Chol, Ladino, Tabasqueño and others, these gender morphemes are regularly not used. In the data there is a single case of /š-kašlan/ referring to Ladinos generally:

/ti-a-čono abu?ul š-kašlan/	"Did you sell your beans to Ladinos?"
-----------------------------	---------------------------------------

IIID 1a ii. Animals and Plants

Nearly all animal nouns are affected by the morpheme of gender, but in ways which seriously question the traditional notions of gender. The names of birds are most frequently preceded by gender morphemes, usually /š/, the names of mammals, reptiles and amphibians to which these morphemes are prefixed are fewer in number.

š-mis	"cat"
š-pok	"lizard"
š-mu;č	"frog"
š-kel	" <u>chachalaca</u> , boat-tailed grackle"
š-mukuy	"dove"
š-ku;	"owl"

Some animal names are never preceded by gender morphemes:

ø'i?	"dog"
mut	"chicken" (also "bird" [eg])

but

š-na-mut	"hen" (< FEM "mother" "chicken")
kawayu(?)	"horse" (loan)

Some animal names are preceded by either morpheme, not only for the specification of sex, but in the generic reference as well:

š-waš	a:-waš	"fox"
š-ba;	a:-ba:	" <u>tusa</u> , mole"
š-čuč	a:-čuč	" <u>ardilla</u> , squirrel"

These animals are all predators or cornfield raiders.

A few reptiles, with the exclusion of snakes, which receive no gender prefixes, are more regularly preceded by the MASC morpheme:

a:-ke?	"lizard"
a:-hin	"large lizard, crocodile"

The names of a few fishes and insects are preceded by the FEM morpheme:

š-ol	"large fish" [es]
š-mAlAl	"small minnow-like fish" [es]
š-čaš	"mosquito" [es]

š-u:s	"fly"
š-mana-bu?ul	"peanut"
š-peč	"kind of bean, duck bean" [es]
š-peč bu?ul	"duck bean" [es]
š-wa-biϕ'	"kind of fruit"[es]

but

biϕ'	generic name for pod fruit with edible flesh surrounding seeds [eg]; does not take gender marking
------	---

Many plant names are never preceded by the gender morphemes. "Corn" /išim/, the generic name for "beans" /bu?ul/, and the generic /biϕ'/ (above), do not take these morphemes.

TABLE 18

OCCURRENCES OF GENDER AND SEX

Noun Types	General Reference	Female	Male
Human	n/a (š)	š	a:
Animal	š (a:)	š	a:
Plant	š	n/a	n/a

IIID 1b. Liminal Usages

The most disturbing cases of the use of the SEX principles, however, is not the use with plants and game animals. Such use might still be explainable in terms of putative sex/gender by a peculiarity of ethno-classification, similar to the unmarkedness of the female/feminine already noted. Three other instances in the corpus of data are:

š-yos-t'an	"the divine counsels" (< "God talk")
š-ma-it	"the underworld" (in one myth, < "no anus")
š-čut-alob	"young boy"

The first two compound nouns are from a sacred-mythic context. The third instance is a topicalized NP consisting of a normal adjective-noun sequence. In the very next phrase of the narrative from which the example is taken, the MASC sex particle is used in reference to the same "young boy" when his name is given.

/š/	li š-čut-alob bA-i	"that very young boy"
/a:/	a:- <u>Juan</u> i-k'aba?	"John (was) his name"

These examples extend the use of the morpheme /š/ in a way which the grammatical category of SEX cannot support, pointing to another interpretation more linked with the discontinuous morphemes of reference; TOPICALIZERS.

IIID 1c. The Topicalizers

The topicalizers are morphemes which serve to place noun phrases in relief from the rest of the utterance. The purpose of topicalization appears to be one of the following: (1) making a particular noun phrase as a reference point for utterances to follow (or those which immediately precede); (2) making a noun phrase adverbial or in some other way subordinate; (3) referencing a noun phrase in a demonstrative way.

In the following examples, the noun phrases are bracketed by double dashes /X--NP--X/:

li--winik--i	"that man"
li-š--čut-alob--bΛ-i	"now, concerning that very little boy"
iš-ku--wahali--	"long ago. . ."
ili--škalΛl--i	"that girl"
e--ba;n--e	"that one"
iš-ku-hini-š--č'abΛ-otot--i	"concerning that witch-craft cave"

The parallels between the list of Topicalizer morphemes in Table 19 and the Pronoun morphemes for non-participants in the speech event (Imperson [IIIIC 1b]) are striking. The diversity is so wide and the occurrence of these particles is so frequent that the impression that the only stable

TABLE 19
TOPICALIZERS

Pre-Root	Post-Root
i	
ili	
li	
iliyi	
hin iliyi	i
hini	e
š	bΛ
iši	bΛyi
išiši	
is ku	
iš ku hini	

element in, and a true sign of the IMPERSON/TOPICALIZER is the morphophoneme /i/.¹

The suffixing vowels of the Post-Root part of the TOPICALIZER are the non-flat peripheral vowels /i/ and /e/. Both carry strong accent and often high tone. They occur in discourse frequently, often with no pre-root topicalizer. No rules have been established for the use of these morphemes. The frequency of /i/ is greater than that of /e/. The REFLEXIVE/CLITIC /ba/ is included because similarity of function and distribution indicates its being classed as a TOPICALIZER. The sequence /ba-i/ undergoes the glide rule MPR·GLY and becomes [ba.yi].

IIID 2. Post-Root

IIID 2a. Nominalizing Suffixes $X_0^3V_1$

The most frequent form of the nominalizing suffix can be generalized in the formula: $X_0^3V_1$, where X_0^3 stands for any phonological sequence of from zero to three segments. The vowel-/l/ sequence then follows. This most general case has numerous concrete realizations, though not as many as could be generated by the mathematical exploitation of all the possible 3,2,1 and \emptyset phoneme sequences, the six vowels and

¹In a less strong sense, /o/ is the sign of the SPEAKER, /e/ the sign of the HEARER and /a/ the sign of the OMNIPERSON. This deeper signalling is not so important in the PERSONS because there is not the multiplicity and diversity of forms within the same category.

/l/. Closer investigation of the specifications of this formula will most likely reveal many formal and semantic subsets for nominal forms. For instance the GERUND [IIIF 7c iv], clearly nominal in usage, is prefixed by a pre-root /i/, and is suffixed by one of two realizations of the $X_0^3V_1$ formula:

X is \emptyset , V is /o/ → /-ol/
 X is /Vnt/ , V is /e/ → /Vntel/

The following are examples of this process:

√čuk/	"grab"	i-čuk-ol	"the act of grabbing"
√čol/	"slash"	i-čol-ontel	"the act of slashing"
√kot/	"arrive"	kot-antel	"arriving, arrival, communication"

The most frequent of all nominalizations is the specification:

X is \emptyset , V is /e/ → /-el/

As in other cases where /e/ precedes a consonant, the phonetic value of /e/ is [ɛ]: /-el/ → [ɛl]. When word-final, due to the operation of MPR·EL, the /e/ raises in phonetic value to [e]. This is the case in many instances of /-el/ suffixes, especially when utterance-final.

√čam/	"die"	čam-el	"disease"
		[čΛ.mɛl] , [čΛ. me] [čΛ.me:??] ¹	
√č'ič'/	"blood"	č'ič'el	"specific blood"
√čol/	" <u>milpa</u> "	čolel	" <u>milpalands</u> "
√çuç/	"hair"	çuçel	"hair"
√bi:	"path"	bi:lɛl	"journey, going, pathway"
bi:lɛçanal	"the Milky Way"		(< "path of the cold")

¹High tone, creakiness, and length are part of the emphasis-sadness-compassion repertory of Chol paralinguistics.

A phonological rule accounts for the morphophonemic alternation between /-el/ and /-lel/ in the above examples:

MPR·VLEL

/∅/ → /l/ / [+syll]___ / -el/

Read: After vowels the NOMINALIZER /-el/ is /-lel/.

This rule precedes the phonetic realization rule for the dropping of final /l/ and raising of /e/. Certain examples offer exceptions to this rule:

sum	[sum]	[sum]	[sup]	/sum-lel/	"the truth"
ok'	[ok']	[oʔ]		/ok'-lel/	"expanse of mud"

For these examples /lel/ may be considered another related derivational suffix rather than a reflex of the VLEL rule.

The semantics of the /-el/ nominalizations are not simple. In some ways the suffix generalizes, and in some ways it makes the reference of the root more evidential or specific. The ending /-al/ is more specifically particularizing or evidential:

č'iš	"thorn"	č'iš-al	"a particular thorn"
------	---------	---------	----------------------

IIID 2a i. Ordinal Numbers

The ordinal numbers are best considered part of this same generalizing tendency for two reasons: they use the same nominalization formula, habitually /-el/ after the NUMERAL CLASSIFIER; secondly, the same process is used with dates and with Spanish loans, even those which are not numerals:

hoʔ-ϕ'i:t-le k'ʌb	"fifth finger, baby finger"
ti čʌm-p'e:l-el	"in the fourth place"
hum-p'e:l-e <u>Enero</u>	"January first"
<u>cinco-le Mayo</u>	"May 5 (national holiday)"
i-oro-lel	"season" (<Sp. <u>ora</u> "hour")

IIID 2a ii. V1 when V Is Not /e/

While most forms of the simple V1 suffix utilize /e/, a few utilize other vowels:

yum	"chief, lord, owner, yumʌl KINTERM.FF"	"the most important thing"
ka:pe	"coffee"	ka:pe-lol [wd] ka:pe-lel [ed] "coffee grove"
ok'	"mud"	ok'-ol "mud"
pis	"clothing"	pis-il "cloth" pis-lel "clothing"
k'in	"day, time, sun"	kin-il "the right time, the nick of time"
haʔas	"banana"	haʔas-il "banana tree"

IIID 2a iii. Root Modifications

Some X_0^3 V1 forms require modification of the roots before affixation of the nominalization morph. In some cases, the modification is a vocalic alternation, in others a vocalic lengthening:

tan	"lime, ash"	tan-il	"ashes, lime"
a:ϕ'am	"salt"	i-ʌϕ'am-il	"salt, saltiness"
kAč	"tie"	kA:č-il	"cloth for tying"
kuku	"roof beam"	kuku:-lel	"beaming"

In some instances a vowel may be reduced. These instances point to the possibility of an underlying double V1 form which becomes reduced.

bu? → bu?ul → bu?ulel → bu?lel "bean patch"
 ok' → ok'ol → ok'olel → ok'lel "mud, expanse of mud"
 pis → pisil → pisilel → pislel "clothing"
 č'a: → č'a:an → č'a:anal → č'a:nal "tying bark"
 pe:t → pe:tel → pe:telel "all"

In some instances there is a semantic differentiation depending on which vowel is used for the V of the -Vl ending:

tič'	"stretch"	tič'-il	"stretched" PASSIVE
		tič'-ol	"act of stretching" GERUND

The VERB STEM ending form for many intransitive verbs is /-el/. Many nouns which cannot appear as bare roots require a /Vl/ nominalization and can optionally take another /Vl/ form. These instances are rare, as are instances within this set for syllabic infixes.

IIID 2a iv. X^3Vl Where X is /b/, /ib/

The most frequent form of Xvl sequences where X or part of the sequence of X is /b/ is /-bal/. Semantically the reference in such items is abstract or generalized, or verbalized like the GERUND in some other cases.

na:t	"understanding"	na:t-ibal	"intelligence, thought"
lem	"shine"	lem-bal	"strong drink"
čo	"slash"	čo-bal	"the job of slashing"
ø'i:b	"writing"	ø'i:-bal	"writing, design, decoration"
ak'	"give"	i-ak'-ibal	"delivery"
mu:	"bury"	mu:k-ibal	"sepulchre"

IIID 2b. The Plurals /ob/ and /tak/

The plural of nouns is often unexpressed or expressed in words which precede the stem, such as numerals or the adjunct word /kabal/ "many, much." Only infrequently in the western dialects, and slightly more frequently in the eastern dialects are the plural morphemes encountered.

IIID 2b i. The Human Plural /ob/

The habitual plural for human categories is /ob/ [oʔ] , [op^h] , [opʼ]. Neither animals nor plants nor inanimate referent nouns may receive this morpheme:

*otot-ob	"houses"
*tun-ob	"stones"
*ba:lɔm-ob	"tigers" (unless mythical personified jaguars or tigers are referred to)

For verbs this same morpheme is used in the IMPERSON, when the subject is animate, not necessarily human, and the distribution seems statistically more frequent with verbs than with nouns.

mi hoč-el-ob	"they break out of their shells" (said of baby chicks)
--------------	--

Non-occurrence of the plural morpheme, however, is still high, because of several facts: 1) Sentences in which the plurality of the subject is encoded elsewhere makes pluralization of the verb optionally redundant:

hay-tikil-ob mi kot-el-ob	"how many will arrive"
kabal mi kot-el	"many arrive"

2) The PERSONS require separate plural subjects:

taš ma:l-i-on-lohon	"we have left"
taš ma:l-i-ob	"they have left"

3) PERSONAL plural objects usurp the post-VERB STEM position of the IMPERSONAL plural subject suffix:

mi kot-an-ob la-k tala	"they help the priest"
mi kot-an-on-la	"they help us-all"
ti haø'-i-ob	"they hit (him)"
ti haø'-i-et	"they hit you, he hit you"

There are very few instances of /ob/ suffixing inanimate nouns. The latter example is a frozen derivation, as evidenced by the non-plural reference and the glottal stop rendering of the /b/:

ču	"hole, inside"	ču-y-ob	"stomach, innards"
pič	"urine"	čuyo?pič	"bladder"

IIID 2b ii. The Repletive /tak/

The morpheme /tak/ occurs rarely in the western dialects and more frequently in the eastern dialects. Some analyses (Helfrich, SIL) view /tak/ as a plural morpheme in complementary distribution with /ob/ and used for non-animate or non-human referents. However, the data show examples wherein /tak/ is clearly used with human referents.

winik-tak	"men" (12.10)
an-tak y-u:-il-áč	"there are some who know" (17.13)

The alternative form would be:

winik-ob	"men"
an y-u:-il-ob	"there are those who know"

Other examples show /tak/ concatenated with /ob/ and not in strict complementary distribution as true classificatory morphemes such as the NUMERAL CLASSIFIERS are. The

order for the concatenation of the two morphemes appears to be without rule:

<u>brujo</u> -h-o?-tak	" <u>brujos</u> , sorcerers"
<u>frayles</u> -tak-ob	"missionaries, friars, Franciscans"

Plant and animal referents are also suffixed by /tak/:

č'oš	"intestinal worms"	č'oš-tak	"intestinal worms"
yan	"other"	yan-tak	"the others"

Interrogative and adjectival pronouns can also be suffixed by /tak/:

ču-ki	"what?"	ču-k-tak	"whatever"
yambΛ	"another"	yambΛ-tak	"the others"

The semantics of /tak/ indicate that the morpheme marks not only plurality but some sort of completeness of reference as well. It is assumed that the addition of /tak/ to a generalized, collective root like /č'oš/ is not merely redundant. With the loan word municipio, /municipio-tak/ referred to all the municipalities where Chol is spoken in the discourse in which it was embedded. These references plus the concatenation with the plural /ob/ strongly motivate the analysis toward positing a separate grammatical category of REPLETIVE for which /tak/ is the morpheme.

IIIE. Adjuncts: Adjectives and Modifying Particles

An adjunct is a grammatical unit which modifies a noun or a verb. Chol adjuncts precede the element which they modify. The most usual case for such modification is the ADJECTIVE:

nuki	"large"	nuki išik	"large woman"
pe;t-el	"all"	pe;t-el alal	"every child" ¹

POSSESSIVES and NOUN-NOUN compounds are also best treated as adjuncts which precede the main element:

bo:p ha?as	"point-banana"	"the point of the banana (cluster)"
yum <u>Abram</u>	"FF-Abraham"	"grandfather of Abram, Abram's grandfather"
tinA-me?	"cotton-deer"	"sheep"

DERIVATIONAL particles are best considered adjuncts to roots before any specific grammatical function is assigned to the root, in other words, modal or lexical adjuncts to the purely lexical value of the root. Many lexical items can act as DERIVATIONAL particles simply by their morphotactics in the pre-root position 5:

ča?	"two"	ča?-alA	"say it again" IMPERATIVE
leko	"lie"	leko-mel	"do (it) deceptively"
šin	"middle"	šin-øep	"cut in half"
wen	"well"	(cf. <u>infra</u>)	

Aside from the DERIVATIONAL particles, there is no special class of adverbs, and no special marking for adverbial function (cf. /hač/, below).

¹With certain syntactic changes that are not unlike the raising of T/A or MODAL morphemes in status to full lexical positions, a greater emotional emphasis can be given to adjuncts by placing the relational morpheme /ti/ between the adjunct and the element it modifies:

pe;t-el ti alA-tak-to-bA	"all the children"
--------------------------	--------------------

In the above example the adjunct /pe;t-el/ is given quasi-nominal status, adding emphasis to its lexical value "all, every." The repletive /tak/, the reflexive/clitic /bA/, and the unanalyzed /to/ add to the richness of emotion in this phrase. A better gloss might be "each and every child."

There are several particles which can serve as adjuncts and frequently serve as adjuncts to adjuncts. These deserve special treatment.

IIIE 1. Preposed Adjuncts:

/no:/, /mero/ and /wen/

/no:/ Intensifier. In the eastern dialects this morpheme does not occur. The morpheme /wen/ serves the eastern dialects in many of the collocations wherein /no:/ is utilized in the western dialects.

- | | |
|---------------------------------------|--|
| no: wiç | "large mountain south of Tila" (also called /noš wiç/) |
| no: meba? | "very much alone, widowed, orphaned" |
| no: kabal | "very much, very many" |
| no mero <u>brujo</u> -h-o?-tak-bΛ-y-i | "all of them extremely expert sorcerers" |
| no yom | "very good" |

/mero/ ['mε.Do]. This morpheme is obviously derived from Spanish mero "pure, simple, unmixed." The Mexican meanings are stronger still: "same, principal, authentic, exact." In Chol, the meanings of veridicity, /no: mero/ "very authentic" are less frequent than the meanings "almost, nearly."

- | | |
|-----------------------------|--|
| mero k'am | "rather sick" |
| mero lahal pe mač wen lahal | "nearly equal, but not completely equal" |
| mero k'uš | "it hurts a little" |

/wen/ [weñ], [weŋ]. This intensifier is most likely a derivative of Spanish bien "well, very." The cardinal [e] corroborates this etymology. Chol /lem/, /weč'/ and /č'en/ all have vowels realized as [ε]. Similar in meaning

to /no:/ , /wen/ has a greater statistical frequency and a wider distribution, serving as the first element in ADJUNCT-ADJUNCT sequences, as a DERIVATIONAL particle for roots, and as the main adjunct intensifier in the eastern dialects.

ti-k wen-čom-be-yet	"I have sold you much"
wen uc-at	"very good" [ed], "beautiful"
alas-hač wen muk'	"he's only playing"
wen a;tron-el	"(he is a) good worker"
wen y-u:-il	"he knows much, is very skilled"

IIIE 2. Post-Posed Adjunct Particles: /na/ and /hač/

Certain evidence in the corpus of data runs counter to the generalization that pre-position is equivalent to the grammatical function of ADJUNCT. The data can be grouped into two categories, one which utilizes the adjunct particle /na/¹, often in concatenation with a /Vk/ sequence, and another, the adjunct postposition /hač/.

/(Vk)na/ The morpheme /na/, often preceded by a /Vk/ combination, is most likely more productive than the few instances in the data indicate.

či:-ik-na	"noisy"
šotok-na	"circular" (cf. /šot/ "circle, ring, to encircle")
sel-ek-na	"circular, spinning"

Such adjuncts can become predicates in verbless existential sentences:

¹Otto Schumann records /nal/ rather consistently.

sel-ek-na mulawil	"the world is spinning" (a formula for expressing the euphoric high that precedes the stupor of drunkenness)
ma:k-mak-na -i-t'an	"stutter, he stutters"
če?i ti wa?-wa?-na iš ba:če iši	"walked around like this" (said of a limping man)

/hač/ The obvious parallel with post-posed morphemes in European languages which indicate the purely grammatical adverbial function (Eng. "-ly" /liy/ , Sp. -mente) is a pitfall in the analysis of Chol /hač/. As indicated above, adverbial function is an undifferentiated part of the ADJUNCT pre-positioning, and so special marker is needed for this function. Thus /hač/ though it contrasts with no other morpheme in its distributional position and frequency, appears to be more than a purely grammatical marker, and carries some lexical value. The lack of direct contrast with other morphemes makes the definition of the lexical value of the particle extremely difficult. In the examples below, nuances of limitation, pejorativity and undesirability are shared features of the utterances. The gloss "only" is clearly of limited explanatory value. If there is a further semantic unification at a greater level of abstraction for /hač/, it will be along the lines indicated by these nuances that the various senses will be fused into a single concept.

mi-la-k-k'el uč-at-hač	[mi,la:,k'el,ʔu,ʃa,taš]	"it looks beautiful"
<u>sólo</u> k'in-hač		"only on fiesta days"
alas-hač wen muk'		"he's only playing"

leko-haš	"they are liars"
lolom-hač	"in vain"
hini-hač ti-k-il-Λ	"I saw only this"

IIIF. Verb Phrase Morphology

IIIF 1. Grammatical Categories of the Verb Phrase

The analysis of grammatical categories depends on formal and semantic considerations. The repeated occurrence of a phoneme (/k/), a syllable (/ka/), or polysyllabic string (/mu-bi-ke/) in a similar environment such as before a lexical root (/__√) justifies the analysis of such elements as being related in a single paradigm representing grammatical oppositions. Each grammatical opposition expresses one relation in the set of relations which makes up the grammatical category. If two formal units are dissimilar in form but equivalent in meaning, they are to be tested to determine whether more superficial processes in the language, such as rules of phonology, style of contraction, are not responsible for the formal disparities. On the other hand, if there is a similarity of form, or near similarity, the criteria for separation or unification in the grammatical function of the elements is determined by semantic criteria. The nature of the grammatical categories for the language, and the specificity or flexibility of the oppositions which constitute the categories are the kinds of semantic criteria upon which formal considerations depend and by which decisions of a grammatical nature are reached.

TABLE 20
VERB PHRASE MORPHOTACTIC POSITIONS

1	2	3	4	5	6	7	8	9	10
TENSE/ ASPECT	CLITIC	MODAL	BOUND	DERIVATIONAL	ROOT	VERB STEM	ERGATIVE	CLITIC	PLURAL
mi	iš	kehe	k	lu?	√	an	on	iš	lohon
mu	?Λč	male	a	wa	√-√	tan	et	ku	la
ti/ϕi	ku	kole	i	p'o:	[IV]	san		bΛ	ob
ϕa	bi			kum		isan		?Λč	
muk'				bele		tisan			
čonkol/ woli				k'ΛΛ		man			
				biti		ϕan			
				[IIIB 4]		en			
				č' oč'on		ben			
				č?		Vl			
				wen		Vntel			
				leko		em			
				šin					

IIIF 2. Tense and Aspect

Temporal categories relate the narrated event (E^n) to the speech event (E^S) in terms of time sequencing. Aspect notes the quality of the narrated event with no reference to the speech event or its participants (E^n). Mood characterizes the relationship between the narrated events and its participants with reference to the speaker and/or hearer (P^nE^n/P^S). Tense and mood are thus among the shifters, i.e., they are verbal categories which "characterize the narrated event and/or its participants with reference to the speech event" (Jakobson; 1957).

The main problem in the categorization and characterization of tenses, moods and aspects (as well as other grammatical categories) is that premature labeling according to known linguistic systems may obscure relations which are fundamental and powerful, which account for language usage more exceptionlessly, and which in the end are more particular than universal.

For Chol, the diverse glosses given by informants and the senses inferred from utterances indicate the outlines of the grammatical system, but do not avoid the problem of categorization sketched in the previous paragraph. The solution of this problem rests on two assumptions:

- 1) Grammatical morphemes can be characterized as having one central meaning;
- 2) The same specific relationship may be derived from and encoded by more than one process or morpheme.

In the first assumption, "central meaning" is called the Gesamptbedeutung, and is a powerfully abstract meaning which often no native speaker would intuitively recognize [IV. Lexicon: $\sqrt{\text{bak'}}$]. Nonetheless, this single concept contains all the relationships which the corresponding morpheme encodes. The notion of Gesamptbedeutung is fruitful as an abstractive unifier of the several senses and diverse references of complex symbols. Many concepts encoded in natural language, however, are vague, i.e., there are no fixed boundaries or criteria for their application. For these, as for shifters, the general signification is a concept abstracted by a secondary process (i.e., abstracted from abstractions concerning "use"; Alston: 1964: 84, Wittgenstein: 1953, Wegener: 1885, Burks: 1949).

The second assumption specifies that a grammar may allow two distinct means to encode the same specific meaning relationships in utterances. But if meaning relations obtain which are outside the domain of the definitions of morpheme or category meanings, then the grammar is perforce faulty. An examination of the glosses and senses of a wide sampling of texts and the subsequent collocation of similar formal units should lead to the induction of synthetic abstractions powerful enough to characterize the meaning of the grammatical categories which the morphemes mark.

IIIF 2a. Distribution

The distribution of the TENSE/ASPECT (T/A) markers is complementary, forming a paradigm for position 1 of the verb

phrase morphotactics:

mi	Unmarked
mu	Immediate
ti [wǎ] / ɕi [ed]	Unmarked Past
ɕa	Completive
muk'	Progressive
čonkol [wǎ] / woli [ed]	Present Progressive

In the sections that follow, an examination of the concrete distribution of these morphemes in verb phrases is presented. Information concerning the use and reference of such verb phrases supplements the distributional material. Finally, an analysis of the grammatical categories is given, deriving the morphemes, their distribution and use, from abstract principles arranged by hierarchy and opposition.

Not every TENSE/ASPECT marker concatenates with every other verb phrase position. The most habitual morphotactic formulas regarding possible strings in the first four verb phrase positions are given in the sections concerning the individual morphemes. Morphotactic formulas are formal rules of grammar which order the sequence or taxis of morphemes. Only the first four positions

1	2	3	4
TENSE/ASPECT	CLITIC	MODAL	BOUND

are treated in these formulas because these positions constitute the main pre-root grammatical information in the verb phrase. The fact that the second and third positions are largely determined by position 1 morphemes is a second reason for considering the four positions together. The

third reason is that morphophonemic rules range over the first four positions somewhat as a unit. The final reason is that fluent speaking and hearing, the encoding and decoding of the language, depend largely on mastery of the formulas of these four positions.

IIIF 2b. Non-Past Morphemes

IIIF 2b i. Unmarked T/A /mi/

The morphotactic formulas involving /mi/ are given below, using as an example, the root $\sqrt{\text{ma:}}$ "going" [IIIF 8c, IIIC 2]:

Pre-Root	Root and Stem	Phonetics	Gloss (Spanish)
mi-k	ma:l-el	mi.kma:.lɛl	voy a ir
mi-a	ma:l-el	ma.ma:.lɛl	vas a ir ¹
mi	ma:l-el	mi.ma:.lɛl	va a ir

¹An obligatory morphophonemic rule and an optional phonological rule account for the phonetic rendering:

MPR·MA

$$/mi/ \rightarrow [ma] / \left[\begin{array}{c} \text{---} \\ \text{T/A} \end{array} \text{ BOUND} \right] \left[\begin{array}{c} \text{---} \\ \text{T/A} \end{array} \text{ X BOUND} \right] \text{ (opt)}$$

Read: The TENSE/ASPECT morpheme /mi/ is obligatorily realized as [ma] before the BOUND pronoun /a/, and optionally realized as [ma] when other morphological elements fill positions between T/A and BOUND.

PR·VLONG (opt.)

$$V: \rightarrow V$$

Read: Any long vowel can become short optionally. This rule is a special case of PR·GEM [IIIC 2].

Pre-Root	Root and Stem	Phonetics	Gloss (Spanish)
mi-to-k	ma:l-el	mi.˜to.kma:.lɛl	voy a ir todavía
mi-kehe-a	ma:l-el	mi.ke·.a.ma:.lɛl ma.ke·.a.ma:.lɛl ¹	ya te vas a ir

Examples like the first three are by far the most frequent. They consist of /mi/ with no other morphemes before the root except the bound pronouns. Since /mi/ is used for the most general, unmarked and semantically neutral temporal and aspectual referencing of the narrated event, it is not surprising that there be no habitual morphotactic elaboration in the usual case. Unacceptable, or at least undocumented in all the data collected, is the use of clitics with /mi/:

*mi-š *mi-ku *mi-Λč *mi-bi

All these clitics are more or less emphatic, with little lexical value, except perhaps the narrative particle /bi/. Such emphasis is antithetical to the lack of specific emphasis enabled by the use of /mi/. The second and third examples involve the use of modals and are treated under that section.

IIIF 2b iα. The Reference of /mi/.--The habitual Spanish glosses for /mi/ in its various morphotactic formulas should not be taken as a congruent reflection of the reference of the TENSE/ASPECT particle without certain considerations. First, an inquiry into the meaning of the gloss within the contact code: rural Mexican Spanish, Chiapas Spanish, or as

¹Either option of the morphophonemic rule MPR·MA is possible.

I have termed it Chol Spanish. Chol Spanish refers to the way the phonology, syntax, semantics and even some lexical items of Chol interfere with the Spanish language to produce a dialect which is unique. Chol Spanish can be seen in contrast to Spanish Chol, which is the marginal part of the Chol speaker's competence affected by systematic interference from the Spanish language, mostly in the phonology and reference of lexical items (loan words). Secondly, the generality abstracted from all other Spanish glosses for sentences in which the morpheme appears. Thirdly, the meaning of these sentences inferred by means other than the gloss, such as sentence or discourse environment, extra-linguistic context and the rather amorphous concept of the "intention" of the speaker.

It is observed that /mi/ is glossed in the Chol (and Mexican generally) Spanish "future": ir a + INFINITIVE. In discourse concerning the past, /mi/ is employed and glossed as a simple past. In instructions, or descriptions not bound to time, such as the description of agricultural methods, /mi/ is also used. In metalinguistic responses, such as those which occur in vocabulary or paradigm eliciting sessions, responses are given using /mi/ (especially in the omni-person: /mi-k ... -la/ , /mi-la-k ... /). The T/A of subordinate embedded sentences is most frequently /mi/. (For the Gesamptbedeutung of /mi/, see [IIIF 3]).

IIIF 2b ii. Immediate T/A: /mu/

The morphotactics of /mu/ exhibits one important characteristic: /mu/ is always combined with a morpheme from

position 2 (CLITIC). Translation glosses for /mu/-initiated verb phrases are usually given the same "future" glosses as given for /mi/, with added immediacy or emphasis given by the adverbial ya "already, now." An element of volition is often associated with the use of /mu/.

Pre-Root	Root	Stem	Phonetics	Gloss (Spanish)
(1) mu-iš-k	ma:l-el		muš.kma:.lɛl	ya voy a ir ya quiero ir
(2) mu-ʌč-k	ma:l-el		muč.kma:-lɛl	"si, voy ir"
(3) mu-bi	ma:l-el		mu.bi.ma:.lɛl	dice que va a ir "se dice que se fue"
(4) mu-ku			mu.ku	si, pues PHATIC ECHO
(5) mu-iš-kehe-k	ma:l-el		muš.kek.ma:.lɛl	"ya me voy a ir"
(6) mu-to-k	ma:l-el		mu.tok.ma:.lɛl	voy a ir todavía
(7) mu-iš-i	kehe	ti t'an	muš.i.ke.he.ti.t'an	ya va a hablar

In examples (1) and (2) above, the clitics /iš/ and /ʌč/ reduce according to the clitic reduction rule [MPR·VZERO, IIIIF 4]. Once the vowel is reduced, the alternation is [muš ~ muč], an alternation which may be nearly non-semantic, since the clitics /iš/ and /ʌč/ are emphatics with perhaps only distributional distinctiveness. The documented data do not support a clear delineation of the semantic nuances in the various morphotactic formulas using /mu/; but I suspect that detailed analysis of the aspectual system will show that each morphotactic formula encodes a well-defined subpart of the total meaning of the IMMEDIATE category. In example (4), the distributional scheme of phatic echos [IIIIF 4h] appears. The clitic /ku/ is the only morpheme

which can occupy position (2) when the T/A marker is used as a pro-verb and affirms the previous sentence which utilized the same T/A marker. Here a distributional criterion differentiates the clitic /ku/ from the other purely emphatic clitics. Example (3) utilizes a clitic which is not purely emphatic. The morpheme /bi/ is distributed exactly as the clitics are, but semantically is an evidential particle, used frequently in narrative, and in other utterances which are hearsay to the speaker. In example (5) all four pre-root positions are filled, even though the gloss is seemingly equal to the gloss of example (1). Example (6) presents a distributional problem that is not easily resolved.

In example (6) only one position is filled between position 1 T/A, and position 4 BOUND. The distributional regularities for the T/A particle /mu/ demand that /mu/ always be concatenated with a clitic. However, /to/ is semantically more "lexical" in value than other clitics, expressing an INCOMPLETIVE modality to the lexical value of the root, and translated by the (at least locally) quasi-negative todavía "still, yet, not yet, just now." In addition, /to/ does not share many of the distributional positions of the other clitics. In fact, /to/ can be concatenated with other clitics as in the alternative rendering of example (6)

/mu-iš-to-k-ma:l-el/ → [muš.tok.ma:-lɛl]

From this evidence it seems clear that /to/ is a MODAL and that its use after /mu/ without the usual interposed clitic is a peculiarity which requires an ad hoc notation. Example

(7) notes the syntactic difference between the use of the MODAL /kehe/ as a true position 3 modal as in example (5) and its use as a main verb in position 6 (preceded by BOUND), and followed by a verb phrase complement, /ti/ + VERB STEM.

IIIF 2b iiα. The Reference of /mu/.--The various contexts in which /mu/ occurs, and the various glosses indicate that this tense/aspect particle can be used in the past ($E^n > E^s$) when the verb phrase it introduces is of proximate importance or sequence; in the present ($E^n = E^s$) when volition is expressed, and in the future ($E^n < E^s$) in most instances, especially if the verb phrase refers to some immediate or important event. Hence the IMMEDIATE label for the morpheme /mu/ is more modal than temporal, referring to the immediate or paramount importance to the speech-event or a narrated event, and only secondarily to any time relationships.

IIIF 2b iii. Present Progressive T/A
čonkol/woli

The morphemes /čonkol/ and /woli/ are used in precisely the same way, and are mutually exclusive in terms of geographic dialects. The former is a shibboleth for the western dialects (chiefly those of Tila and Sabanilla), and the latter is clearly the same kind of social signal for the speakers of the eastern dialects (Tumbalá, Salto de Agua, Palenque).

Phonological variation for the particles can be seen as the result of the following rules:

PR·LDEL (opt)

/l/ → ∅ / ___ -

Read: Morpheme-final /l/ can delete optionally. This occurs with greater frequency at word boundaries.

PR·NVOI which describes the voicing of morphophonemes in nasal environments [IIC 2a 1a].

SPR·VHIGH which describes the raising of non-high peripheral vowels in familiar and colloquial speech [IIIB 1c].

The nasal assimilation rule also holds [IIC 2a 1a].

According to the number of the above options employed, the morpheme /čonkol/ can assume a variety of phonetic shapes:

čonkol	čuŋ.gul
čonko	čuŋ.go
čuŋ.kol	čuŋ.gu

When followed by a CLITIC, most frequently /iš/, or by an Ergative series pronoun, as happens in verb phrase complement syntax, further reduction is possible, even to the phonetic elimination of all but the initial affricate [č] of /čonkol/:

/čonkol-iš/	/čonkol-on/
→ [čuŋ.ku.liš]	→ [čuŋ.kon]
→ [čuŋ.kiš]	→ [čuŋ.gon]
→ [čoš]	→ [čon]
	→ [čun]

The other clitics are encountered only infrequently after /čonkol/; /ku/ for instance, only occurs after /čonkol/ when the morpheme is used as a pro-verb in phatic echo.

Examples of morphotactic strings utilizing the root $\sqrt{u\check{c}'}$ / "eating" are found below:

Pre-Root	Root \notin Stem	Phonetics	Gloss (Spanish)
čonkol-k	uč'-el	čon.kol.ku.č'el	estoy comiendo
čonkol-iš-k	uč'-el	čon.ko.liš.ku.č'el	estoy comiendo ya estoy comiendo

When /čonkol/ takes a verb phrase complement consisting of the liason-word /ti/ and a VERB STEM (i.e., ROOT + VERB STEM ending, if any), the subject pronoun is from the Ergative series and is suffixed to /čonkol/:

čonkol-on ti uč'-el [čon.ko.lon.ti.ʔu.č'el]

The gloss for this construction is exactly the same as that for the previous examples, estoy comiendo.

Besides the rarity of occurrence with clitics other than /iš/ and the VP complement syntax sketched above, other distributional information regarding /čonkol/ includes the non-occurrence with MODALS.

IIIF 2b iiiα. The Reference of /čonkol/.-- The reference of verb phrases initiated by /čonkol/ is characterized by both temporal and aspectual information. The temporal information that the narrated event is occurring at the same time as the speech event ($\underline{t} E^n = \underline{t} E^S$) constitutes the PRESENT tense in the strictest logical sense. PROGRESSIVE aspect also characterizes this morpheme since the verb phrase which utilizes /čonkol/ encodes the ongoing, progressing occurrence of the narrated event. The positive marking for the categories PRESENT and PROGRESSIVE makes /čonkol/ as referentially

exclusive and as semantically strong a morpheme as the COM-
 PLETIVE /*pa*/. These two specialized, positively marked
 morphemes do not allow the wide flexibility of temporal
 reference documented for the other four position 1 morphemes.

IIIF 2b iv. Unmarked Progressive T/A /*muk'*/

Seemingly related to /*mu*/ is the particle /*muk'*/. This
 T/A particle appears suffixed by the clitic /*Λč*/ and by
 another clitic of limited distribution /*ač*/ which may be
 related to /*Λč*/ according to the phonological alternation of
 /*a*/ and /*Λ*/. In other morphotactic distributions, the form
 occurs with /*bi*/, the NARRATIVE clitic, but apparently only
 in the IMPERSON. In sentences in which the subject is one
 of the participants in the speech event (PERSON), the habi-
 tual syntactic form is that of the VP complement, as exempli-
 fied in (6) below, and in the example using /*čonkol*/ + Erga-
 tive Pronoun, above.¹

Examples (7) and (8), below, show a syntactic configu-
 ration special to the morpheme /*muk'*/ alone. The morphotactic
 positions are marked in the example to indicate the syntactic
 transformation. Tense/Aspect /*muk'*/, followed by the subject
 pronoun, Ergative and/or Plural, occurs after the ROOT-VERB
 STEM. The IMPERSON BOUND pronoun /*i*/ precedes the ROOT-VERB
 STEM mandatorily. It is difficult to say whether this

¹This VP complement syntax can occur not only with the
 Progressives, as illustrated here, but with the MODALS as
 well.

syntactic form is a variation of a simpler sentence type. The sequence /muk'/ + PRONOUN is similar to the syntax of sentences with VP complements (6), but the liaison word /ti/ does not appear. A variation from the standard morphotactic sequence can be seen in this syntactic form in the simple inversion of the taxis of pre-root and root and stem (2). However, the presence of the imperson pronoun /i/ makes this construction look like the morphotactics of the GERUND.

In general it may be said of the distribution of /muk'/ that the particle seldom appears without a syllable suffixed to it, whether low in information, such as a clitic, or information-laden, such as a pronoun. It would seem that the prosody demands that one syllable of some kind complete the pronunciation-feel of the morpheme.

IIIF 2b ivα. The Reference of /muk'/.-- The glosses for appearances of /muk'/ are usually in the progressive (Sp. estar + PARTICIPLE [... - ndol]); present and imperfect forms of estar occur with equal frequency. The reference for this particle is not related to criteria of time, but rather to the aspectual notion of the ongoing progression of the reference of the lexical root.

The following are examples for /muk'/:

Pre-Root	Root	Stem	Phonetics	Gloss (Spanish)
(1) muk'-ač-i	nΛč-	-tan	mu.k'a.č'i.nΛč.t̃an	estaba oyendo
(2) muk'-ač-bi-i	p'uč'-	-el	mu.k'ač.bi.ʔi.p'u.č'el	dice que estaban huyendo

- (3) muk'-iš-i tron-el mu.k'iš.i.tro.ñel
esta trabajando
- (4) muk'-áč-i tron-el mu.k'áč.i.tro.ñel
esta trabajando
- (5) muk'-áč mu.k'áč esta trabajando
si, pues¹

Verb Phrase Complement Syntax
Morphotactic Positions

- (6) 1 8 LIAISON ROOT VSTEM
muk'-on ti p'uǰ'-el mu.k'on.ti.p'u.ǰ'el
estaba yo huyendo

Special Syntax
Morphotactic Positions

- (7) 4 6 7 1 10
i-p'uǰ'-el muk'-ob i.p'u.ǰ'el.mu.k'o?
estaban huyendo
- (8) 4 5 6 7 1 8
i-ča?-tron-el muk'-on i.ča?.tro.ñel.mu.k'on
estoy trabajando
otra vez
voy a trabajar otra
vez

IIIF 2c. The PAST Morphemes

The PAST morphemes are two, and encode relationships of time such that reference is made to a narrated event which precedes the speech event in time ($\underline{t} E^n > \underline{t} E^S$). The VERB STEM morpheme differs for verb phrases in which the PAST morphemes are used. The PAST morphemes are:

¹The clitic /ku/ is not used in the Phatic Echo form of /muk'/, probably to avoid interference through homonymy with the Phatic Echo form of /mu/:

mu-ku [mu.ku]
*muk'-ku *[mu.k'u] , *[mu:.ku]

ti [wd]	/	ʧi [ed]	UNMARKED PAST
ʧa			COMPLETIVE

IIIF 2c i. Unmarked Past T/A /ti/ , /ʧi/

The western dialects of Chol employ a simple stop as the initial phonological segment of the UNMARKED PAST (hereafter U-PAST); the eastern dialects employ an affricated stop.¹ The morpheme /ti/ occurs in initial position and is never followed by clitics:

*ti-iš *ti-ku *ti-ʌč

Nor is /ti/ followed by modals except when in the syntax of VP complements, a modal is raised in status from auxiliary to main verb function. In these cases the reference of the modal is often closer to the reference of the root from which it is derived.

ti kehe ti t'an	"he was about to speak, he began to speak"
-----------------	---

The morpheme /ti/ can be used with either transitive or intransitive verbs. In the latter case, the Ergative pronoun series appears (Positions 8, 10) following the Root and Past Verb Stem of the verb.

¹The morphophonemics of the COMPLETIVE morpheme indicate that the alternation [t] ~ [ʧ] can frequently, if not freely, occur. This phonological fact would place the two dialects closer together for the U-PAST morpheme than for the PRESENT PROGRESSIVE, which exhibits the less easily reducible alternation /čonkol/ ~ /woli/. The pan-Chol U-PAST morpheme is most likely simple /ʧi/, with an alternation rule of de-affrication to account for the difference in the two major dialect areas. Since, however, this study deals mainly with the western dialects, especially the dialect of Tila Center, the two forms will be considered as separate, and the morphemic structure of the U-PAST morpheme for Tila will be given as /ti/.

Pre-Root	Root ϕ Stem	Phonetics	Gloss (Spanish)
ti-a	man- Λ	ti.a.ma.ŋ Λ	compraste
ti	way-i-on-lohon	ti.w Λ .yi.yon.lo.hon ti.w Λ .yon.lo.hon	durmimos

IIIF 2c ii. Completive T/A / ϕ a/

The more marked of the two PAST morphemes is the COMPLETIVE which not only encodes the temporal precedence of the narrated event, but expresses the aspectual relations of completion and/or immediacy as well. The completive morpheme concatenates with a clitic in every instance in the data. It can be followed thereafter by a MODAL optionally, and then by the BOUND pronoun set, in the case of the transitive verbs. DERIVATIONAL, ROOT and STEM then follow, and in the case of the intransitive verbs, the ERGATIVE pronouns. Because of the great number of alternative strings of clitics, modals and pronouns, and because of the number of contraction devices which de-affricate / ϕ / to [t] and reduce consonants and even syllables, the surface realizations of / ϕ a/ are the most diverse of any phonological patterns in the language.

In the examples below, the following roots are employed:

$\sqrt{\text{il/}}$	"see"	$\sqrt{\text{ma:l/}}$	"go"
$\sqrt{\text{a:n/}}$	"run"	$\sqrt{\text{kuč/}}$	"carry"
		$\sqrt{\text{si?/}}$	"firewood"

	Pre-Root	Root ϕ Stem	Phonetics	Gloss (Spanish)
(1)	ϕ a-iš-k	il- Λ	ϕ aš.ki.l Λ	ya lo ví
(2)	ϕ a-bi-i	il- Λ	ϕ a.bi.yi.l Λ	lo vío
(3)	ϕ a-ku-k	il- Λ	ϕ a.ku.ki.l Λ	ya lo ví

(4) ʃa-ku	ʃa.ku	si
(5) ʃa-ʌč	ʃʌč	ya
(6) ʃa-iš	ʃa.ʔiš	ya

The morphemic structures are capable of a great number of variations which yield many phonetic realizations. Examples (5) and (6) are often used as phatic echos and elliptical utterances as well as serving as the Pre-Root for full sentences. The following contractions are possible:

$/\text{ʃa-ʌč}/ \rightarrow [\text{ʃʌʔʌč}] , [\text{ʃʌč}] , [\text{tʌč}]$
 $/\text{ʃa-iš}/ \rightarrow [\text{ʃaʔiš}] , [\text{ʃaiš}] , [\text{ʃayš}] , [\text{caš}] , [\text{taš}]$

The [t] which is the reflex of de-affricated $/\text{ʃa}/$ is coronal, less distributed and has no palatal off-glide in any environment. In these respects it differs from morphophonemic $/\text{t}/$.

Further examples of $/\text{ʃa}/$:

Pre-Root	Root	ʃ Stem	Phonetics	Gloss (Spanish)
(7) ʃa-iš	ma:l-i-et		ʃaš.ma:.li.yet	ya fuiste
(8) ʃa-bi-male-i	kuč si?		$\text{ʃa.bi.ma.le.kuč.si?}$	$\text{se fue a buscar su leña}$
(9) ʃa-bi-kehe	a:n-el		$\text{ʃa.bi.ke.he.a:.fiel}$	empezó a correr

IIIF 3. Grammatical Categories of Tense, Aspect and Mood

The grammatical categories of tense, aspect and mood in Chol are five: PAST, COMPLETIVE, PROGRESSIVE, PRESENT, IMMEDIATE. Each category is marked with either a positive or negative value, the positive value being a marking of the presence of the category, and the negative value being a lack of any specially signalling of the category. This

TABLE 21
 FEATURE INTERSECTION AND HIERARCHY FOR VERBAL MORPHEMES

Morphotactic Position	1	1	1	1	1	1	1	3	5
Grammatical Categories	Morphemes /mi/ /ti/ /pa/ /čonkol/ /muk' / /mu/ MODAL DERIVATIONAL								
PRIME MODULUS									
ASPECT	u	u	+	-	u	u	u	u	u
PROGRESSIVE	u	u	u	+	+	+	+	u	u
TENSE	u	+	+	-	u	u	u	-	u
PAST	u	+	+	-	u	u	u	-	u
PRESENT	u	-	-	+	u	u	u	+	u
IMMEDIATE	+								
Pos. P	/kole/								
Neg. P									
MOOD	/kehe/								
INCHOATIVE									
SEPARATE ACTION	/male/								

convention follows the system of markedness as outlined by Hjemslev and Jakobson marking the opposition between a definite and an indefinite term. Thus any utterance utilizing a [+ PAST] morpheme encodes a past narrative event, but any utilizing a [- PAST] morpheme is non-committal concerning the past, and encodes an utterance which is not necessarily marked as a past event, but may in fact have occurred in time prior to the speech event. The negative value for a grammatical category is an unmarked value; unless some other positively marked category prevents it, a negatively marked element may or may not participate in the meaning of the positive marking. ([+ PRESENT] marking would logically exclude past reference, though [- PAST] by itself does not.

This marking system is unlike the phonological marking system in which the negative value of a feature was posited to carry as much information as the positive value, in ways analogous to strict binary information coding. In the Tense/Aspect system of grammatical categories great flexibility in the use of morphemes is accounted for by the theory of markedness (+) and negation-of-necessity (-) for grammatical categories. Conversely, the use of a morpheme especially underlines certain positive features of the grammar, making specific information unequivocal and relevant. This is true for one specific feature in three of the T/A morphemes, for two features in each of two morphemes, and for no specific feature in the UNMARKED morpheme. The desirability of having a morpheme which is completely unmarked to make general

statements is obvious, and in some ways this lack of grammatical specificity constitutes marked information concerning the grammatical system in the wider sense of its use in relation to real-world referents and situations.

PAST. The category of PAST Tense marks the most fundamental distinction in the Chol Verb Phrase. Two morphemes / ϕ a/ and /ti/ ϕ i/ are marked positively for the category [+ PAST], and necessarily encode past events. The PAST VERB STEM, formed from the lexical root and the PAST suffix [Position 7], is used in verb phrases initiated by these two morphemes. The other four T/A morphemes utilize the UNMARKED stem (even when they encode narrated events which precede the speech event). PAST morphemes cannot be used for encoding non-past events, but of the non-PAST morphemes, only the markedly PRESENT / \check{c} onkol/ cannot be used to refer optionally to events in the past.

COMPLETIVE. Within the positive value of the category of PAST, is the category of COMPLETIVE Aspect. It is the most specialized category of the grammatical system and logically excludes all reference to events which are not past.¹

¹The strong interpretation of this sentence must be modified by the use of / ϕ a/ in a subjunctive modality. In a few instances in the data, the use of / ϕ a/, often followed by the interrogative particle /ki/, signals a wish, an unlikely future event, or a qualification that is notably contrary-to-fact. How these uses of / ϕ a/ are related to the more powerful and overwhelmingly more frequent use of the morpheme as a signal of the category here under discussion, is only one of the problems of the verbal system demanding intensive analysis from a wider sampling of data.

The special emphasis which makes this category more of an aspect than a tense, however, is the notion of the fulfillment of an event or action, an underlining of the fact that there can be no further action referred to by the particular lexical root and predicated of the subjects (and objects) of that utterance, at least for a substantial interval of time. When this aspect of completion is not encoded in a marked way, the U-PAST is used, even in reference to the same fact. An example of this can be seen in the typical sequence:

- Q. ba-ki-an-a:-Juan "Where is (the) Juan?"
 A. ǰa-iš lok'-i "He left." COMPLETIVE
 Q. ha-la-ki "When?"
 A. ti lok'-i ti sabado "He left on Saturday." U-PAST

Another category optionally included in the COMPLETIVE morpheme is that of Immediate Mood. It is not necessary that an event encoded with /ǰa/ have been completed in the recent past, but is often the case that the recent completion of an event (acabo de terminar "I just now finished") is an aspect of Verb Phrases which are initiated with /ǰa/.

The negative or unmarked value of the category [- COMPLETIVE] is signalled by a simple UNMARKED PAST morpheme which can be used generally for past events wherein no specific mention of completion (or immediate pastness) is desired. The U-PAST enables the politeness and softness of interaction which lack of specificity in verbal morphology can be seen in the words of the father of a dead child. As mourners entered his house to offer candles and pay their respects, he greeted them with the non-completive form of

the past:

ti sa:t-i k-alob-il

[ti.sa:.tí.ka.lo.bí.·l]

"My child died."

Death is a single irreversible event, its completive character jars the sensibilities. In this case the death was in the recent immediate past. The morpheme /ti/, coupled with the euphemism /sa:t/ "pass, lose" for /čam/ "die" makes this statement appropriately indefinite and lessens the harshness of the fact. Statements employing negative particles are initiated by /ti/, never by /ča/.

PROGRESSIVE. At a hierarchical level equal to that of the completive aspect is the PROGRESSIVE Aspect. This aspect is marked only for non-PAST events, although as the examples above show, the progressive aspect may be applied to past events, with tense supplied by information outside the verb phrase. Of the two PROGRESSIVE morphemes the PRESENT PROGRESSIVE /čonkol/woli/ is statistically more frequent than the UNMARKED PROGRESSIVE /muk'/.

PRESENT. The PRESENT Tense is a grammatical category of tertiary hierarchical importance. In Chol, the distinction between PAST and non-PAST is of primary hierarchical importance. Although it is true that all grammatical categories are opposed to all others within a system, and defined by the others, not all are opposed at the same hierarchical level. It is in this sense that the PAST tense and the PRESENT tense, the only two real tenses in Chol, are

indirectly opposed (cf. Fig. 7 . Two-Dimensional Modified Friedrich Model of Tense, Aspect and Mood, infra, and Kay: 1971: 877). The unequivocal encoding of the temporal category of PRESENT can only be accomplished within the secondary category of PROGRESSIVE aspect. In all other cases of the simultaneous occurrence of the narrated event and the speech event, there is no way that this fact is grammatically encoded except through the context of the discourse and of situation.

IMMEDIATE. The positively marked value of the category IMMEDIATE Mood concatenates with unmarked values for PAST PROGRESSIVE, and PRESENT. The IMMEDIATE morpheme does not necessarily, but may encode events which are past, progressing, or in the present. The positive meaning of the category is a combination of future tense ($t E^n < t E^s$) and volitional mood. Volitional mood is the expression by the speaker of the desirability, inevitability of willingness for the narrated event to occur. These temporal and modal notions combine to give an immediate futurity to verbs initiated with /mu/ the IMMEDIATE T/A. On a time line, the immediacy of /mu/ places it just after the present moment, the time of the uttered speech event. Analogously, the immediate past, the time just prior to the speech event, is optionally indicated by /pa/.

The morphemes /mu/ and (optionally) /pa/ are the only position 1 morphemes which are marked for grammatical mood. Other modal categories are marked by position 3 MODAL [IIIF 5],

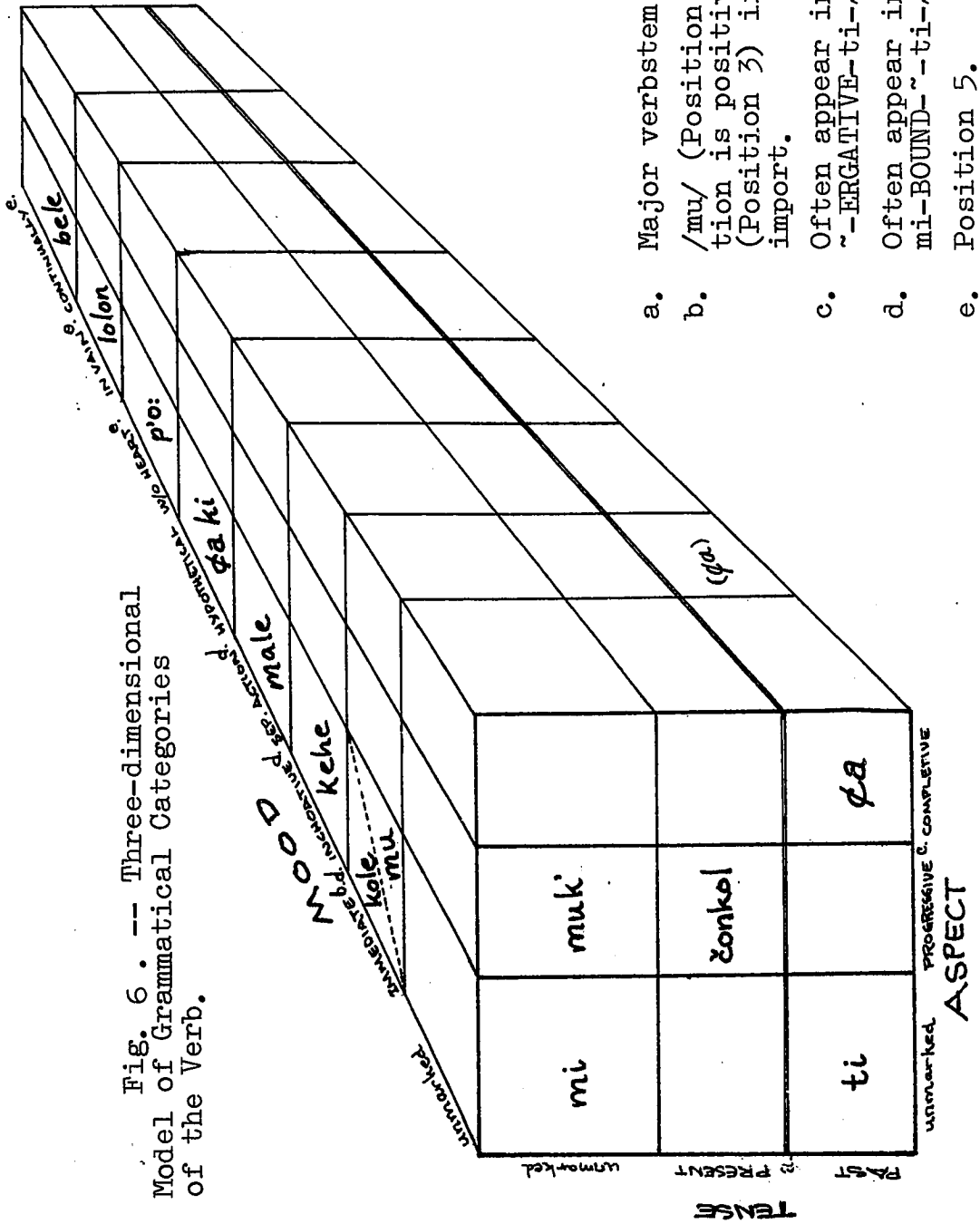
by several of the Derivational particles [IIIB 4], and by a hortatory-hypothetical usage of / ϕ a/ plus the interrogative particle /ki/

ϕ a-ki

Figure 6 , Three-dimensional Model of Grammatical Categories of the Verb, displays the relationships of intersection for the temporal aspectual and modal categoric. It suggests that mood is both the most semantically replete and the least formally fixed of the major categories. Semantically, it is represented in the figure by seven marked and one unmarked categories. Formally, it appears in positions 1, 3, 5 and in the unanalyzed syntax of phrase initiated by / ϕ a-ki/.

UNMARKED. The negative value results in a matrix of unmarked values for every grammatical category of TENSE/ASPECT. This unmarkedness is expressed in the morpheme /mi/. This UNMARKED morpheme which is statistically the most frequently used morpheme, serves a wide range of usages. It is general and is used for habitual events whether they occurred in the past or continue to occur in the present, for future events which may or may not come about, for events in progress without emphasis of the progressive aspect, and in a wide variety of imbedded subordinate sentences.

Figure 7 , Two-dimensional Modified Friedrich Model of Tense, Aspect and Mood, illustrates the opposition and hierarchy of the grammatical categories of TENSE, ASPECT and MOOD as they concatenate to form the morphological system for the initiation of verb phrases. [p. 194]. It must be noted that



categories of TENSE: PAST and PRESENT are opposed only via the ASPECT relation of PROGRESSIVE. Futurity is a temporal relation which is not explicitly opposed to other relationships of tense, but is encoded implicitly in the Modal category IMMEDIATE. In the statement of the morphological system, not only opposition of categories, but also hierarchy is of importance. This can be seen in the fundamental nature of the distinction PAST/non-PAST. The hierarchical primacy of this distinction is seen from the system-external corroborating fact that two of the principal parts of the verb, the PAST STEM and the UNMARKED STEM are used for the formation of verb phrases using the two PAST and the four non-PAST T/A morphemes respectively.

The categories COMPLETIVE and PROGRESSIVE are at equal levels in the hierarchy, and of somewhat exclusive reference. The redundancy implications for these categories are as follows:

+ PRES → + PROG /čonkol/

and by the logical implication of the negative converse:

- PROG → - PRES /mi/ , /mu/

IIIF 4. The Clitics

Position 2 of the verb phrase is filled by members of a small set of particles called CLITICS. In form they are somewhat anomalous, since they are unstressed, and since their syllabic structures, VC and CV for the most part, do not occur regularly as the basis of morphemes. The clitics form two sub-sets; one with only emphatic, the other with both emphatic and referential values.

The first subset is without specific lexical meaning, and its members serve as position fillers in the prosody of the language, in positions 2 and 9, and in many existential, elliptical and otherwise verbless predications. These clitics are:

iš

ač

ku

In Spanish, they are glossed ya or pues, and the widespread occurrence of these particles in Chol Spanish is more a direct reflection of the importance of clisis in Chol, than any indication of mastery of the Spanish language (or lack of it). In meaning they lend emphasis, either strongly or weakly depending on the paralanguage of the utterance.

IIIF 4a. /iš/

The clitic /iš/ occurs not only in positions 2 and 9, but can precede sentences and phrases as the initial element of the TOPICALIZER [IIID 1c] as well, as in examples (1-2) below. After utterances, /iš/ can also occur adding emphasis to declarative locutions and to the IMPERATIVE (e.g., 7-11). Examples (3-4) are standard position 2 usages; example (6) is a standard position 9 usage. Example (5) is an instance of a strong verb with utterance-final /iš/ according to one analysis, or position 9 /iš/ according to another. Vowel harmony accounts for the change of vowel in the clitic /iš/ → [oš]. The following rule of sandhi accounts for the realization of /iš/ as [š]. Note that when this is a rule of external sandhi, i.e., concerning word-level morphophonemics, the tendency for its operation is less than when the

environment specifies it as a rule or internal, i.e., morpheme-level sandhi. However, the rule is always optional, necessitating positive and negative marking to indicate the differential tendencies for its operation.

MPR·VZERO

$$[+ \text{ syl}] \rightarrow \emptyset \quad / \quad \begin{array}{l} [+ \text{ syl}] \text{ - } \underline{\quad} \text{ (opt. +)} \\ \# \underline{\quad} \text{ (opt. -)} \end{array}$$

Read: A morpheme-initial vowel can delete optionally, with greater frequency when following a morpheme-final vowel, and with lesser frequency when word-initial.

Examples:

- | | | | |
|------|--------------|------------------|-----------------------------|
| (1) | iš-ma:l-i | [šma:.li] | "he has left" |
| (2) | iš-ku-wahali | [iš.ku.wa.ha.li] | "long ago" |
| (3) | mu-iš | [muš] | IMMEDIATE T/A |
| (4) | ča-iš | [čaš] | COMPLETIVE T/A |
| (5) | k-om-iš | [kom.oš] | "I really want (it)" |
| (6) | čol-on-iš-la | [čo.lo.niš.la] | "we (all) are Chol" |
| (7) | ba:-a-iš | [ba.haš] | "nail it!" |
| (8) | čok-o-iš | [čo.koš] | "throw it out!" |
| (9) | la:-al-iš | [la.ha.liš] | "the same, equal, together" |
| (10) | an-iš | [ʔa.niš] | "there is (are), yes" |
| (11) | maʔ-an-iš | [ma.ʔan.iš] | "no, not, there is (are) |
| | | [ma.ʔa.niš] | not" ¹ |

¹Example (11) is the negation of example (10). This form is acceptable only in the western dialects of Chol. In the eastern dialects a special negative clitic /ik/ is used. This clitic does not take the place of the negative markers /maʔ/ and /mač/, but adds emphasis and redundant negative marking. Thus in the eastern dialects the negation of (10) is:

maʔ-an-ik [ma.ʔa.nik] , [maʔ.nik]

In the western dialects the negation of (10) can be (11) or simply /maʔ-an/. Similarly, the negation of (9) is:

mač.la:-al-ik [mač.la.ha.lik] [ed]

but mač.la:-al [mač.la.hal] or [mač.la.ha.liš] [wd].

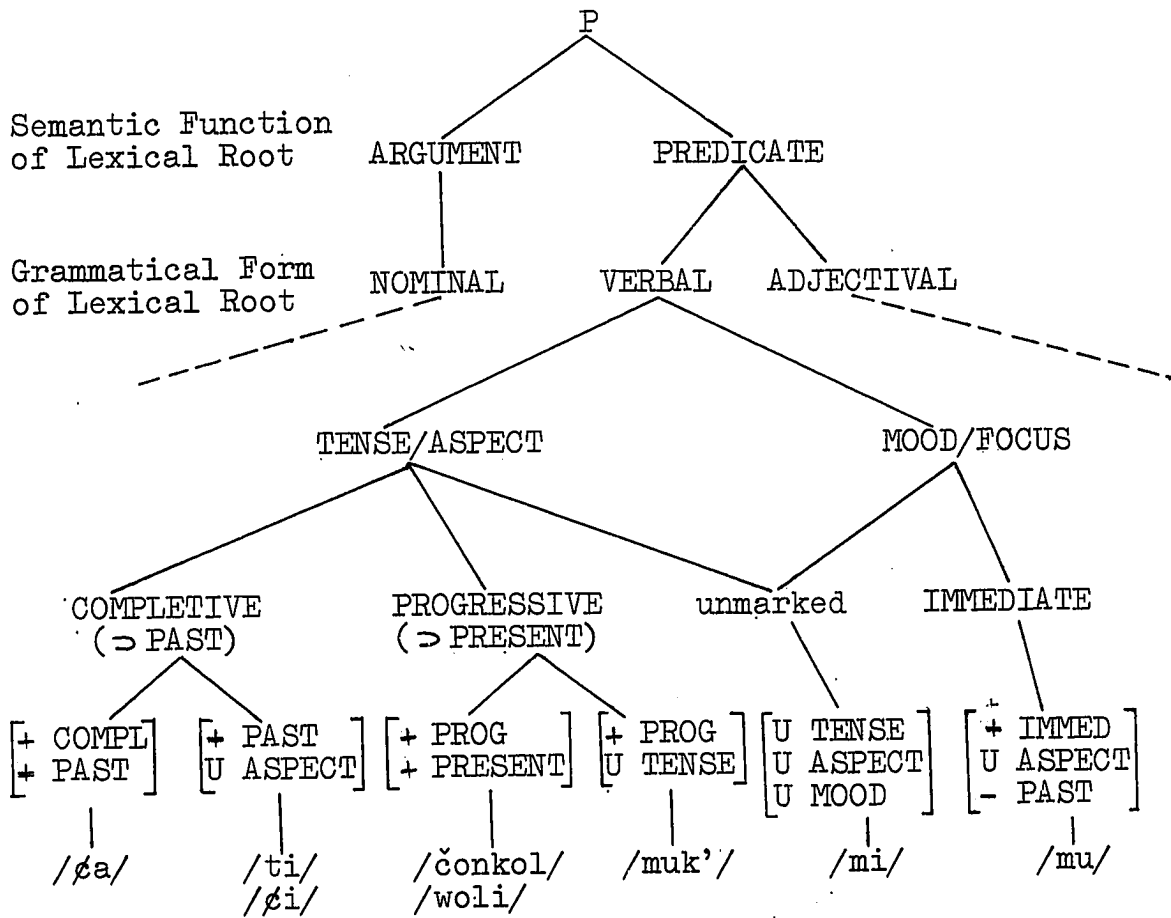


Fig. 7. -- Two-Dimensional Modified Friedrich Model of Tense, Aspect and Mood.

IIIF 4b. /ku/

The clitic /ku/ appears frequently in greeting forms, as the last morpheme (Position 9) in verb phrases, and as a phatic echo in concatenation with Tense/Aspect markers in isolation. In example (1) /ku/ occurs as an emphatic after the existential qualifier. In (2-4) it occurs after T/A morphemes, forming full utterances encountered frequently in Phatic Mantras [IIIF 4h]; in (5-7) unacceptable forms of this same formula are given. In (8-9), phatic utterances composed only of clitics are given. Imperatives which use /ku/

are included in (10-11). In (12) the position of the clitic between the suffixing Position 8 Ergative pronoun and the suffixing Position 10 Plural pronoun is exemplified.

Chol	Spanish Gloss	English Gloss
(1) an-ku	hay, pues	yes, there are indeed (emphatic)
(2) čonkol-ku	esta	doing it indeed
(3) mu-ku	pues, sí	indeed
(4) ča-ku	ya	did indeed
(5) *mi-ku		
(6) *ti-ku		
(7) *muk'-ku		but muk'-áč [IIIF 4c]
(8) če?-ku	pues, sí	yes
(9) če?-me?-ku	así es	yes
(10) la?-ku	ven	come
(11) ku-ku	vete, que le vaya bien, ándale, pues	go, go well, right on
(12) p um-p'un-on-ku-la	estamos lastima	we were indeed sad, unfortunate

IIIF 4c. /áč/

The clitic /áč/ carries emphatic value, and appears in position 2 (1-2), and in position 9 (4-5). In (3b) /ʌ/ alternates with /a/, probably due to the /k'/ of /muk'/ which precedes it. In this case the glottalization of /k'/ actuates the operation of the rule APR·6th [IIC 1a], which normally requires a word boundary for its operation. A loan word is the radical in the position 9 usage of /áč/ in (6); note the interposition of [h] via the rule MPR·GLH [cf. IIC 2a v]. The final example (7) is a compound clitic usage, treated more fully under /če?/ [IIIF 4g].

Chol	Spanish Gloss	English Gloss
(1) čonkol-Λč	está	doing it indeed
(2) ča-Λč	ya	completed it indeed
(3) muk'-Λč	está	doing it indeed
(3b) muk'-ač	está	doing it indeed
(4) k'in-Λč	porque es fiesta	it is a feast indeed
(5) mel-el-Λc	de veras	a fact, the truth
(6) <u>costumbre</u> -h-Λč	es constumbre	it is a tradition indeed
(7) če?-Λč	así	yes, indeed

IIIF 4d. /bΛ/

Another clitic which often adds general emphasis, but is more frequently REFLEXIVE in function, is /bΛ/. It does not occur in position 2, but only in position 9 of the VP. It can act as a root in some ways, taking the BOUND series of pronouns (usually without plural suffixes, e.g., 3-6). Related to /bΛ/ via the productive [a]~[Λ] alternation is the pronominal root /ba:n/, which is more frequent in the PERSONS. As an adjective /ba:nel/ means "alone, only." This meaning is reflected in the glosses for example (9), though these senses are possible for any of the occurrences of /ba:nel/ (as are the phonological variations). Similarly, /bΛ/ is more frequent in the PERSONS, and less so in the IMPERSON, though all occur (e.g., 7-10).

Chol	Spanish Gloss	English Gloss
(1) yan-tak-bΛ-y-i	los otros	the others
(2) ča:-bΛ-ha?	agua dulce, refresco	sweet water, soda pop
(3) k-bΛ	yo mismo	myself, outselves (excl.)
(4) a-bΛ	tu mismo	yourself, yourselves

(5) i-bΛ	el, ellos	him/herself, themselves
(6) la-k-bΛ	nosotros	ourselves (inclusive)
(7) k-ba:n-el	yo mismo	myself, ourselves (excl.)
(8) a-ba:n-el	tu mismo	yourself, yourselves
(9) i ba:n-el, [i ba:na , i ba: , i ba]	el mismo, el sólo,	him/herself, themselves, him/her/them only, the very one/ones
(10) k-ba:n-el-la	nosotros	ourselves alone, indeed (incl.)

IIIF 4e. /bi/

The second subset of clitics is more regular in form, having the shape CV, and the members of this subset are richer in grammatical meaning. These clitics are :

bi

to

The gloss of /bi/ is often dice or decía. This gloss, and the frequent appearance of /bi/ in narratives, indicate the nature of the particle as a marker of narrative speech, direct and indirect quotations, and hearsay for which the speaker has no direct evidence. In contrast to North American Indian morphologies in which the evidential particle encodes direct sense perception or lack of it (Boas' Kwakiutl, Whorf's Hopi, Haas' Tunica), the Chol NARRATIVE particle /bi/ signals an intellectual distancing, freeing the speaker from responsibility for the truth of the utterance in which the particle appears. This particle can appear in position 2 and utterance finally, but not in position 9. The first three examples present standard position 2 usages of /bi/; example (4) presents an utterance final example. Example (5) is somewhat anomalous, though frequent. It contains two clitics

in position 2 /iš/ and /bi/. Either a late rule inserts /bi/ after the morphotactic string is formed, or /muš/ is considered a single T/A morph due to its frequency and the exigencies of particle attraction particular to /mu/. Examples (6-8) present /bi/ in verbless predications after the existential particle /an/ in (6), after an adjunct (7), and after the shifter /yaʔ/ "there," and a clitic /iš/ in (8). In these examples /bi/ is the second syllable of the utterance, a preferred prosodic position for the use of this clitic, no matter what structural type, nor how many morphemes comprise the first syllable. Example (9) presents the same structural type as (7), i.e., /bi/ follows a predication based on an adjunct root, but in this case the root is intensified by /no:/. The root itself is anomalously di-syllabic, resulting in a prosody of fourth syllable placement for /bi/. Examples:

Morphemes	Phonetics	Spanish Gloss
(1) mu-bi-i-pe:k-an	ʧ'iʔ [mu.bi.pe:.kan.ʧ'iʔ]	habla con su perro
(2) ʧa-bi-ma:l-i ti ʧo-bal	[ʧa.bi.ma.li.ti.ʧo.bal]	se fue a su milpa (a rosar)
(3) ʧa-iš bi ma:l-i ti ʧol-el	[taš.bi.ma.li.ti.ʧo.lɛl]	dice que se fue a su milpa
(4) an-ič-bi	[ʔa.nič.bi]	había

- (5) mu-iš-bi-i-hap sa?
[muš.bi.ʔi.hap.saʔ]
iba a tomar su pozol
- (6) an-bi-i-ak'ač [ʔan.bi.yʌ.k'ač] tenía su gallina
- (7) k'am-bi-li-mama-h-i
[k'am.bi.li.ma.ma.hí]
dice que estaba enferma
su mama
- (8) yaʔ-iš-bi ti-i-kot-i ta:-a
[yaš.bi.ti.ko.ti.ta.ha]
allí se llegó a encon-
trat
- (9) no-meba-bi li-winik-i
[no.meʔ.ba.bi.li.wi.ni.kí]
esta muy huérfano el
hombre

IIIF 4f. /to/

The particle /to/ is classed as a Clitic because of its CV form, its habitual occurrence as the second syllable of an utterance, and its lack of word stress. Sometimes it behaves as a modal, since it can be concatenated with other position 2 clitics (2, below), in effect occupying position 3, or yielding two subpositions within position 2. Semantically, it is a strong marker, sometimes acting as an aspect particle, though it never occupies position 1. The aspectual meaning of /to/ in utterances is that of INCOMPLETEIVE, with temporal reference. As such it is markedly antithetical to the signification of the T/A particle /ʔa/. Its use marks the narrated event as incomplete (1-6), still in progress, (3, 7, 9, 10), or not yet having occurred (11, 12). It is often glossed as the Spanish adverb todavía, even in sentences where this

seems awkward (3). Two of the examples below (8, 9) deserve special mention since they encode time relations of events beginning in the past and continuing (without completion or termination) into the present. It is unusual that sentences of the "since when?" type and the "up until when?" type should utilize a particle glossed as the adverb "still, yet, todavía," but the concept of the INCOMPLETEIVE is powerful enough to account for even these usages.

This concept is not powerful enough, however, to account for the use of /to/ in special sacred utterances (13-16). These utterances are enhanced by the use of /to/, although outside sacred context all these examples would be grammatical without the use of /to/.

Morphemes	Phonetics	Spanish Gloss
(1) mu-to-k-pe:k-an la-k-bΛ	[mu.tok.pe:.kan.lak.bΛ]	áhi nos vamos a hablar
(2) mu-iš-to-k-pe:k-an-et	[muš.tō.kpe:.ka.ŋet]	ay te voy a hablar
(3) mi-k-ko:t-an to	[mi:.ko.t̃an.to]	estoy llegando todavía
(4) an to bΛ i-om	[ʔan.tō.bΛ.yom]	falta todavía
(5) an to i-om	[ʔan.tō.yom]	falta todavía
(6) hun-su:t-el-hač-to iča?l-e-y-ob alas <u>orioles</u>	[hun.suç.tel.hač.to.ʔi.ča?.le.yo?.ʔa.las.ʔa.las.ʔo.ri.'ʔo.les]	"So far the (Baltimore) Orioles have won only once"
(7) čut-on to	[ču.t̃on.t̃o]	estaba yo chiquito todavía

- (8) če? to ha?-le [če?.t̃o.ha?.le] hasta estas horas [estás afuera de la casa]?
- (9) ba-to-k-ora wΛ-Λč an-et
[ba.t̃o.ki.ʔo.Da.wΛ.č'a.ŋet]
desde cuando estas aquí?
- (10) ʔik'-to la-k-ma:l-el
[ʔik'.t̃o.lak.ma:lɛl]
temprano nos vamos¹
- (11) mač-to ma-a-hap kape: hatet
[maš.t̃o.ma.hap.ka.pe.ha.t̃ɛt]
no has tomado cafe
todavía, tú
- (12) k-om to ka-lok'-el ti šΛm-bal
[kon.t̃o.ka.lo.k'ɛl.ti.šΛm.bal]
quiero salir a pasear
todavía
- (13) yos-to-mi-i-Λk'-en-et yan
[yos.t̃o.mi.yΛ.k'ɛ.ŋet.yan]
Díos te do otro =
gracias
- (14) yos-to mi-i-k'el-et
[yos.t̃o.mi.k'ɛ.lɛt]
Díos te ve
- (15) mu-to-k-k'a:t-iben-et bendis^yon
[mu.t̃o:k'ɛ-ti.bɛ.ŋet.ben.di.s^yon]
te voy a pedir la
benedicción
- (16) to kisni-he-bi [t̃o.kis.ni.he.bi]
dice que tenía mucha
verguenza

¹The concept of "early" is "still night" ("black"--/to/) to the Chol. In this example and in (6) above, the first "word" serves as the T/A position for the sentence. Although the syntax of these examples is not fully analyzed, it is presented to exhibit the complexity of alternative forms even in the morphotactic formulas for single, or simple sentences. A sophisticated treatment of syntactic forms, which requires research and preparation, would deal with these less regular types of utterances.

IIIF 4g. /če?/ and /me?/

A third subset of clitics consists of two clitics which are of the canonical syllabic form CVC: /če?/, the most frequent of all the clitics, and /me?/ the least frequent and probably the most archaic.

The clitic /če?/ combines the flexibility and generality of the purely emphatic clitics /iš/, /ʌč/ and /ku/, with the specificity and frequent encoding of lexical value of /bi/ and /to/. In this way it is somewhat like the particle /bʌ/, which also can be specific (in its use as a reflexive) or generally emphatic. However, /če?/ is distinguished by five features which it possesses exclusively:

- 1) /če?/ never appears in position 2 of the morphotactic formula, nor as the second syllable in sentence prosody.
- 2) /če?/ can be used with lexical value in narratives, taking the NARRATIVE particle: /če?-bi/, and pronouns from the ERGATIVE series referencing the agent of the narrative: /če?-on/ for SPEAKER agent, and for the IMPERSON /če?-en/ instead of /če?-Ø/.
- 3) /če?/ can fill more language functions than any of the other clitics.
- 4) /če/ is the most frequent of all the clitics statistically.
- 5) /če?/ is of the form CVC. Even when the /?/ is reduced by morphophonemic rules, its underlying presence accounts for the allophone [ɛ] of /e/.

At the other end of the gradient of the frequency and use of the clitics is the clitic /me?/. It occupies position 2 in the morphotactics only in archaic sentences such as

those in the ritual prayer of the /k'ešonihel/ (Attinasi: 1971); it can occupy the second prosodic position in sentences. /meʔ/ is frequently concatenated with other clitics in phatic mantras.

Examples

Morphemes	Phonetics	Spanish Gloss	English Gloss
(1) čeʔ mi-i-ʌl	čɛ.mi.yʌl	así dice	"thus spake"
(2) mi-i-num-el	čeʔ mi-i-kʌt-el	alʌl-i	
	mi.ɲu.mɛl	čɛ.mi.kʌʲ.tɛl	ʔa.lʌ.lí
		pasa así cuando quedan los niños	
			"he comes when the children are left alone"
(3) čeʔ-on	čɛ.ʔon	así dije	"said I"
(4) čeʔ-en	čɛ.ʔɛn	dice, así dice, dijo, decia	
		NARRATIVE	"said, is said"
(5) ba:-čeʔ	ba:.čeʔ , ba.čɛ	cómo	"like, as, how, what"
(6) čeʔ-ba:-čeʔ	če.ba.če	así cómo	"similar to, as it were"
(7) ču-ki muk'-et čeʔ	ču.ki.mu.k'est.čɛʔ	qué estas haciendo, pueʔ	
		"what are you doing?"	
(8) ku-ku-čeʔ-ni	ku.ku.čɛ.ni	que le vaya bien	
		"go well"	
(9) čeʔ-ku	čɛ.ku		PHATIC MANTRA

These examples indicate the multiple language functions served by the clitic /čeʔ/. It serves as an emphatic like

other clitics, both in pre-sentence (1) and post-sentence position (7). It appears frequently in narratives, often with the force of "thus said . . ." (1, 3-4), even taking a pronoun from the Ergative series as a suffix (3), or a dummy syllable in place of the zero morpheme of the Ergative series in the IMPERSON (4). It is a key element in the process of comparison (5-6), and is frequently used as a conjunction to coordinate sentences. In this latter function it can be translated a number of ways: "when" (2), "since," "although," "because," "if." It is an integral part of the many greeting forms (8), expressions of agreement and assent, and other utterances called PHATIC MANTRAS.

IIIF 4h. Phatic Mantras

Phatic speech serves social rather than referential, expressive or communicative ends. Malinowski, to this end, coined the term "phatic communion" and considers it "a type of speech in which ties of union are created by a mere exchange of words" (1923: 315). Analysis of discourse demonstrates that the phatic exchanges which create and reinforce social solidarity are not "mere," but are rigorously prescribed as to form, prosody, intonation and sequencing.

Chol speakers frequently make use of phatic speech to affirm propositions, as hesitation phenomena between subjects in a conversation, to keep the conversational contact in lieu of eye contact,¹ and as an integral part of elaborate greeting

¹Roman Jakobson (1960) analyzes the aspects of the speech event, and considers this function, that of "keeping the

and leave-taking formulas. Although the phonetic diversity in phatic utterances is great, the formal elements out of which these utterances are constructed are limited to the EXISTENTIAL /an/, the NEGATIVE /mač/, the TOPICALIZER /i/, and the clitics:

če?	ku	iš
ba	me?	ač

including /en/ which appears only in concatenation with /če?/. Previously mentioned T/A particles and individual lexical items can be used phatically when followed by /ku/ or /iš/.

The prosody of phatic speech varies from two to four syllables, with five or more syllables considered extremely emphatic and foregrounded. Interlocutors keep to the same number of syllables in phatic exchanges, responding to a two-syllable /če?-ku/ [če?.ku] with a disyllabic /če?-ač-i/ [čā.čī], or even with the identical /če?.ku/. Variations are rare and only slight, consisting in the change of a single clitic or the addition of the Topicalizer /i/.

Likewise, the intonation patterns are complementary: a rising intonation by interlocutor A matched by a rising intonation by interlocutor B; or if matched by a falling by B, then A responds again with a falling intonation pattern.

channel open" the primary linguistic function of phatic communion. In this sense, every speech event has phatic aspects. In Malinowski's treatment, and here, not only linguistic aspects of the speech event are considered, but the use of speech in social context as well.

The sequencing of these phatic passages is elaborated more greatly in the western dialects than in the eastern. Often ten or 15 sequenced pairs of these phatic utterances are exchanges unhurriedly between more referential and communicative subjects of a conversation. The formal simplicity, intonation complementarity, antiphonal sequencing and tireless repetition of these phatic formulas recall the mantric chants of south Asian religions. Hence the name, "phatic mantras."

Examples:

- | | |
|---------------------------|--|
| (1) če?.ku | [če?.ku] , [čɛ.ku] |
| (2) če?-ku-i | [čɛ?.ku.ʔi] , [čɛ.ku.yi] ,
[čɛ.kwi] |
| (3) če?-ʌč | [čɛ.ʔʌ.ʔʌč] , [čʌč] , [tʌč] |
| (4) če?-ʌč-i | [čʌ.ʔ.či] , [čʌ.či] |
| (5) če?-ni | [če.ni] , [čɛ.ni] , [čɛn] |
| (6) ɕa-ku , ɕa-iš , ɕa-ʌč | [IIIF 2c ii] |

Used as affirmations of statements, these phatic mantras carry the meanings indicated by "yes," sí, and other such statement qualifiers which are said not to exist in Chol. In the negative, "no" is conveyed by the particles of negativity /maʔ/ and /mač/. The mantra is composed of the following three particles in the negative, often with paralinguistic length and high tone in the last syllable:

- | | |
|--------|-----------------------------------|
| maʔ-an | [ma.ʔan] , [ma.ʔá:n] |
| mač-ku | [mač.ku] |
| mač-ič | [mač.ʔič] , [ma.č'ič] , [ma.čí.č] |

The permutational possibilities in the affirmative mantra are practically limitless. Some documented combined

sequences include:

če?-Λč-bΛ-yi
 če?-ku-č(e?)-Λč-i
 če?-iš-bΛ-ku-y-i
 če?-me?-ku
 hin-iš-me?-ku

IIIF 5. Modal

MODALS occupy the third morphotactic position, following TENSE/ASPECT and CLITIC and preceding the BOUND pronoun. The modals are derived from lexical items and are habitually somewhat defective in form:

Root		Verb	Modal	Gloss
(1) /ke:	U	ke.'hɛl	"ke.he	begin to
	PAST	ke.'hi	"ke.hi	began to
(2) /ma:l	U	ma:.'lɛl	"ma.le	goes to/and
	PAST	ma:.'li	"ma.li	went to/and
(3) /kol	U	ko.'lɛl	"ko.le	be going to
	PAST	ko.'li	"ko.li	was going to

The first formal defect is that of stress. The verb forms in the above schema are marked redundantly with primary final syllable stress, in order to contrast them with the modal forms which have no final syllable accent, but only secondary accent on the initial syllable. The second formal defect is that of vowel length: modals have only simple vowels.

Modals are inflected for tense. When the verb phrase is initiated by /mi/ or /mu/ (modals do not appear with the PROGRESSIVE T/A morphemes), the unmarked /e/-stem form of

the modal is used and the main verb (positions 6 ROOT, and 7 VERBSTEM) appear in the unmarked form for tense. When the verb phrase is initiated by either of the PAST T/A morphemes (/ɕa/ to /ti/), the PAST /i/-stem form of the modal is used. When modals are used in the past, the unmarked form of the verbstem is used. (This is often preceded by /ti/, the LIAISON particle, in predicate complement syntactic form.) In some dialects, notably the /koki-ha?/ dialect of the Tila Municipality, the frequent use of modals, especially with past reference, seems aimed at the foregrounding and highlighting the lexical reference of the main verb by the morphological neutralization and the syntactic isolation that the usage of modals allows. This usage often appears apart from the encoding of modality proper to the use of these forms.

The roots $\sqrt{ma:l/}$, $\sqrt{ke:/}$, and $\sqrt{kol/}$ from which the modals are derived have as their lexical references "going," "beginning" and "growing" respectively. The references for the modalities encoded in verb phrases by the use of modals are semantically derived from these lexical values.

/male/ emphasizes the action of the verb phrase as being an event separate from other events in the discourse and requiring a special volition on the part of the actor.

- | | |
|--------------------------|---------------------------------|
| (1) ɕaš-i šot-i i-si? | "he bundled (tied up) his wood" |
| (2) ɕaš mali i šot i-si? | "he went and bundled his wood" |
| (3) ti i lok'-i | "he left" |
| (4) ti mali i lok'-el | "he up and left" |

/kehe/ acts as an inchoative, and often as a simple future.

- | | |
|------------------------|--|
| (1) mi kehe i ha'al | "it will (soon) rain" |
| | "it is beginning to rain" |
| (2) mu bi kehe ti t'an | "it (a dog in a myth) would soon begin to speak" |

/kole/ encodes an action that nearly occurred, but did not. Hence it establishes an IMMEDIATE mood for negative propositions.

- | | |
|---------------------|------------------|
| (1) mi kole ya:l-el | "he almost fell" |
| (2) ti koli sa:t-el | "he almost died" |

A combined example indicates the complexity of the modal system and the indeterminacy as to the distinction between morphotactics and syntax/

mi-kehe-male-k-hul-an-et vamos a visitarle

In this example there are two modals, /kehe/ and /male/. The root /hul/ when intransitive is glossed "arrive," when verbalized by /an/ is glossed "visit." The H→K rule and the KDEL or GEM rules account for the loss of the initial /h/ of the root in the phonetic output:

[mi.ke.he.ma.le.ku.la.ŋet]	"I am going to go to visit you"
----------------------------	---------------------------------

Note that no plurals appear in the Chol, but the gloss is given with a plural subject -mos. Chol plural morphemes are formally and semantically "marked" for the category of number [IIIC 1c].

The use of IMPERSON pronouns from the BOUND series /i/ [MPR·ZIMP] and all Plural pronoun morphemes with modals is rare.

IIIF 6. Positions 4, 5, and 6: Summary

Position 4 of the verb phrase is filled by the BOUND PRONOUN /k/, /a/ and /i/. This position completes the pre-root part of the verb phrase. Position 5 is filled by Derivational particles, which are best considered part of the root. The ROOT, whether simple, modified or reduplicated, forms position 6. All these structurally important elements, Root [IIIB], Derivational Particles [IIIB 4] and Pronouns [IIIC], are treated in earlier sections of the Morphology. Occurring immediately after the root (Position 7) are VERBSTEM suffixes for Verb Phrase morphology, and Noun Phrase particles [IIID] for Nominal forms.

IIIF 7. Post-Root: Position 7 Verbalizers

The grammatical categories of the verb phrase are encoded by many means. Tense/Aspect are encoded in Position 1, Modality in Positions 1, 3 and 5, Person in the pronoun Positions 4 and 8, and Number in the plural Position 10. Position 5, Derivational, can encode aspectual and modal notions within its specific function of positioning lexical derivation morphemes. The VERBSTEM Position (7) gives placement to VERBALIZERS which are necessary to transform many lexical roots into verbs, and in addition mark categories of TENSE, FACTIVE, TRANSITIVITY and VOICE.

In summary, the verbs seem to be grouped into three sets: intransitives, zero-stem transitives, and verbalized transitives. Table 22 schematizes these categories and the

typical morphological derivation of the lexical root to form verb stems. The indexing in the table corresponds to the subdivisions of section III F 7 of the text.

TABLE 22
CATEGORIES OF VERB FORMATION

	Unmarked Stem	Past Stem
<u>a. Intransitives</u>		
i.	√ - el	√ - i
ii.	√	√ - i
<u>b. Zero-Stem Transitives</u>		
i.	√	√ - Λ
ii.	√	√ - V
		(Vowel Harmony)
<u>c. Verbalized Transitives</u>		
i. Purely Grammatical Verbalization		
α.	√ - an	√ - Λ
	√ - man	√ - mΛ
	√ - tan	√ - tΛ
β.	√ - en	√ - e , Λ
γ.	√ - in	√ - i
ii. Portmanteau Verbalizers		
α.	√ - san	√ - sΛ
	√ - isan	√ - isΛ
	√ - tisan	√ - tisΛ
β.	√ - ben	√ - be , bΛ
	√ - iben	√ - ibΛ
γ.	√ - kin	√ - kiΛ

Many lexical roots take no verbalizing suffixes in the unmarked (i.e., non-PAST) tense. For convenience these inherently verbal roots will be called /Ø/-STEM VERBS.¹ For the most part these are transitive verbs. Other transitive verbs take a VERBALIZING suffix of the form /Vn/, where the Vowel is /a/, /e/, or /i/. Most intransitives are verbalized by a suffix of the form /el/. Semantically, the roots of zero-stem verbs have lexical references of a clearly verbal nature, such as terms for work and other events related to activity, behavior and the names of illocutions (speech acts). The formal criterion, that zero as a verbalizer implies inherent verbality, is exceptionless, whereas the converse, which is a semantic criterion, is not. Many semantically "active" roots, such as those below, require verbalizing morphemes:

Root	UNMARKED STEM	PAST STEM	Gloss
√wu:t	wu:t-an	wu:t-Λ	"to blow"
√ma:	ma:-tan	ma:-tΛ	"to give"
√Λk'	Λk'-en	Λk'-Λ	"to give"
√ča?l	ča?l-en	ča?l-e	"to make" ²

All verbs, whether or not they have a verbalizer suffix filling position 7 in the unmarked tense, have some form of

¹On the whole, I disagree with the concept of the "zero morpheme," on the grounds that a promiscuous use of zeros indicates that neutralizations of categories and relations of markedness are being neglected. Usually a zero implies that a conceptual hiatus is being bandaged by a fictional hypothesis of a formless morph, rather than being analyzed in terms related to grammatical and semantic deep structures.

²This item can be analyzed either as an anomalous root of the form CVCC, or as having an anomalous stem /l-en/.

tense-carrying verbalizer in the Past tense. This forms the PAST STEM of the verb. Intransitive verbs in /el/, take the past verbalizer /i/. Most transitive verbs form the past stem by the addition of /ʌ/ or an /ʌ/-based syllable (see summary, above). Other verbs, most of which are transitive, and all of which are zero-stem verbs in the unmarked tense, are marked in the lexicon for vowel harmony. This means that the PAST tense position 7 verbalizer for these lexical items is the same vowel as the vowel of the root.

IIIF 7a. -el/-i Intransitives

A large number of verbs which consist of the root plus the verbalizer /-el/ in the unmarked tense are intransitive verbs. This tendency is not without exception, since there are verbs in /el/ which can be either transitive or intransitive, or are best regarded as middle-transitive verbs (cf. indeterminacy, below). There are roots which can be the basis for transitive or intransitive verbs, both of the zero-stem, and of the morpheme-stem types:

Root	UNMARKED STEM	PAST STEM	Gloss
√top'	top'	top'-o	"to break (something)"
	top'	top'-i	"to break (as in "the glass broke")"
√leɕ	leɕ-an	leɕ-ʌ	"to raise, lift (something)"
	leɕ-el	leɕ-i	"to rise, climb, go up"

The only generalization that seems exceptionless is that intransitive verbs form the PAST VERBSTEM by the addition of /i/ to the root. The subject of this intransitive past

verbstem is then suffixed to the /i/ of the verbstem. This subject is chosen from the Ergative series of pronouns, and triggers the operation of the morphophonemic glide rule, which interposes a [y] in the phonetic realization between two vowels at a morpheme boundary. Zero-stem intransitives (1b) are formed with /i/ in the PAST,- ERGATIVE subject sequence after the root; /el/ stem transitives are formed with /i/ in the PAST, but the subject occupies the pre-root position 4, and is taken from the BOUND series of pronouns.

ROOT	UNMARKED STEM	PAST STEM	Gloss
el/i Intransitives			
la:m	la:m-el	la:m-i	"pass, go away, improve"
k'aš	k'aš-el	k'aš-i	"pass through (usually a narrow or difficult place; followed by /ti/ + OBJ)
p'o:l	p'o:l-el	p'o:l-i	"increase, multiply, flourish"
∅/i Intransitives			
hil	hil	hil-i	"finish, be finished"
ti:p'	ti:p'	ti:p-i	"jump up, bounce"
čam	čam	čam-i	"die"

IIIF 7b. ∅/Λ Transitives

Many transitive verbs are formed without a verbalizing suffix in the unmarked tense and by the addition of /Λ/ in the past tense.

ROOT	UNMARKED STEM	PAST STEM	Gloss
∅/Λ Transitive			
hak'	hak'	hak'-Λ	"answer, believe"
k'uš	k'uš	k'uš-Λ	"bite, chew, eat"
kan	kan	kan-Λ	"learn" in COMPLETIVE, "know"

For a number of roots which are marked for vowel harmony in the lexicon, the past tense morpheme /Λ/ is but an underlying form. The vowel of the root conditions the change of /Λ/ itself. Of course, when the vowel of the root is /Λ/ this vowel harmony past rule effects no change:

MPR.VHPAST

$$\sqrt{XV_1X} - \frac{/Λ/}{\text{PAST}} \rightarrow XV_1X-V_1 \quad / \sqrt{\text{VOWEL HARMONY}}$$

Read: Zero stem roots take /Λ/ to form the PASTSTEM. Vowel Harmony zero stem roots take the same vowel as in the root to form the past. For roots in which the vowel is /Λ/, this rule is redundant.

Further specification of the relations of transitivity must be made within the roots marked for vowel harmony. Roots marked for vowel harmony whose vowel nuclei are /a/ , /o/ and /u/ , i.e., $\begin{matrix} + \text{ syl} \\ + \text{ flt} \end{matrix}$, can be either transitive or intransitive, depending on context:

ROOT	UNMARKED STEM	PAST STEM	Gloss
Vowel Harmony Roots			
	∅/	Flat-Vowel	Transitive/Intransitive.
ba:	ba:	ba:-a	"nail, nail (something)" ¹
ta:	ta:	ta:-a	"reach, finish, find, meet, ² lie in wait, arrive"

¹The noun "nail" is /lawuš/, a deeply incorporated loan from Sp. clavo. (Note accent shift from penultimate to ultimate.)

²The benefactive /ta:-ben/ means "to finish up a task for someone, to reach someone." "Buzzard" in Chol is /tahol/, perhaps a derivation from this root /ta:-ol/. J. Eric

čoʔ	čoʔ	čoʔ-o	"peel, shuck"
čol	čol	čol-o	"slash, clear fields"
nop	nop	nop-o	"believe, learn"
čuk	čuk	čuk-u	"grab"
čub	čub	čub-u	"puncture, make holes"
hukʔ	hukʔ	hukʔ-u	"plane, sharpen, smoothe"

Among the non-flat vowels (/ʌ/ , /i/ , and /e/), /ʌ/ as a past verbalizer is the usual case, as in 2a, above. /i/ and /e/ are PAST verbalizers in a few anomalous cases. Only one root is marked for vowel harmony, forming a transitive verb with an \emptyset /i verbstem alternation: /hiʔ/. Roots which utilize /e/ as the vowel fall into three subclasses. The first is the normally expected class, that of transitive verbs with zero-stems for the unmarked and /e/-stems for the past tense. The second and third examples below exemplify this subclass. The next sub-grouping is represented by example (4) below, and is a purely intransitive verb with the stems \emptyset /e. The third subclass is similar to the vowel harmonic roots with flat vowels in that context determines whether the verb is transitive or intransitive.

ROOT	UNMARKED STEM	PAST STEM	Gloss
	\emptyset / Non-Flat Vowel		
(1)hiʔ	hiʔ	hiʔi	"hang, suspend, stretch (something)"

Thompson and Allen Turner are of the opinion (independently derived) that the buzzard derives its name from the roots /taʔ/ "excrement" and /hol/ "hol/ "head." My analysis is that the name comes from the buzzard's means of subsistence /ta: čenek/ "finding carrion."

(2)	k'eš	k'eš	k'eš-e	"trade" ¹
(3)	bek	bek	bek-e	"throw, discard" ²
(4)	teč	teč	teč-e	"get up, arise"
(5)	k'el	k'el	k'el-e	"see, look, look at"
(6)	p'el	p'el	p'el-e	"shut, close"

IIIF 7c. Verbalized Transitives

IIIF 7c i. /Vn/ Verbalizers: Purely Grammatical

Verbalizers with apparently no lexical, but only grammatical, function are of three types:

	Unmarked Verbalizer.	Past Verbalizer
(1)	an man tan	Λ mΛ tΛ
(2)	en	e , Λ
(3)	in	i

Examples of /Vn/ verbalized roots are given above [IIIF 7].

To these may be added the following, the first of which bears patent relationship to the lexical item /išim/ "corn, maize."

The second coincides with a vowel alternation /a: → /Λ/.

ROOT	UNMARKED STEM	PAST STEM	Gloss
iš	iš-man	iš-mΛ	"degrain"
č'a:k'	č'Λk'-an	č'Λk'-Λ	"cure"

¹/keš-tan/ with a verbalizer, is "change, exchange."

²/bek-ehel/ "to continue" may be derived from this root.

IIIF 7c ii. Portmanteau Verbalizers

Sometimes position 7 is filled by a verbalizer consisting of two parts, a semantic particle (CAUSATIVE or FACTIVE), and a verbalizer of the types mentioned above. There are two causative morphemes:

k	direct causative
s	indirect causative
is	
tis	

The direct causative is the less frequent. It is always concatenated with /in/ to form the portmanteau verbalizer /kin/. This verbalizer signals direct or transitive causation, i.e., the subject of the verb physically brings about the event of the verb. Opposed to this is the indirect causation of the portmanteau verbalizers /san/, /isan/ and /tisan/, which are obviously related and only appear with the vowel value /a/ in the /Vn/ termination of the verbalizer. This morpheme is used when the subject of the sentence brings it about that the object of the verb performs the action or is directly involved in the event referenced by the verb. This indirect causation is termed true causation because it involves the motivation of a second agent to perform an action rather than the direct performance of that action, which is more akin to a simple transitive action.

The Factive morpheme is /b/ or /ib/ and is only concatenated with the /en/ form of the verbalizer. It denotes the performance of the narrated event for or on behalf of the object of the sentence (usually personal, always animate).

Examples:

ROOT	UNMARKED STEM	PAST STEM	Gloss
Vn Verbalizers			
an/Λ			
ča:p	ča:p-an	ča:p-Λ	"prepare"
iš	iš-man	iš-mΛ	"degrain corn"
k'eš	k'eš-tan	k'eš-tΛ	"change, exchange"
en/e (Λ)			
ča?l	ča?l-en	ča?l-e	"make"
Λk'	Λk'-en	Λk'-a	"give"
in/i			
pa:l	pa:l-in	pa:l-i	"make a point, whittle or plane wood"

Portmanteau verbalizers

san/sΛ (∅ variations)			Indirect Causative
we?	we?-san	we?-sΛ	"feed, nourish" (cf. /we?el/ "meat, food")
tuk	tuk-isan	tuk-isΛ	"to dry, cause to dry"
kan	kan-tisan	kan-tisΛ	"to teach, cause to learn, know"

ben/be (bΛ) (∅ variation) Benefactive

čon	čom-ben	čom-bΛ (-be)	"sell (to somebody)"
čub	č'ub-iben	č'ub-ibĀ	"obey (someone)"

kin/kiΛ [ki.yΛ] Direct Causative

su:t	su:t-kin	su:t-kiΛ	"turn over, flip (something)"
mu:č	mu:č-kin	mu:č-kiΛ	"gather into a mound, mound up (something)"

IIIF 7d. Formal and Semantic Indeterminacy

Formal indeterminacy in verb conjugation has been documented in at least two forms:

(1) The unmarked stem can be bare or verbalized:

Gloss	Unmarked Stem	Past Stem
"pull, cut"	/tuk/ or /tuk-an/	tuk-Λ
"blow"	/wu:t/ or /wu:t-an	wu:t-Λ

(2) The unmarked stem can be formed by an /e/:

^a "stop, shut off"	/yap'/ or /yap'-e/	yap'-Λ
"hit, play music"	/haç'/ or /haç'-e/	haç'-Λ

Another formal indeterminacy has been that of the cutting of morphemes in the four lexical items:

mahan	"gift"
ma:nan	"lend"
ma:tan	"give a gift, present"
ma:çan	"lick"

If the root is $\sqrt{ma:}$, the semantic similarity of the first three items is reflected formally, but a verbal particle /nan/, unique to this lexical item alone /ma:-nan/ is necessitated. Other wise four separate roots are necessitated:

ma:	→	ma: -an	"gift"
ma:n	→	ma:n-an	"lend"
ma:t	→	ma:t-an	"give"
ma:ç	→	ma:ç-an	"lick"

Although somewhat unsatisfactory, the best solution is to consider these lexical items as deriving from three separate roots, the first and second of which are related in some derivational way which is no longer productive:

ma:	ma:-an	"gift"
	ma:-tan	"give"
ma:n	ma:n-an	"lend"
ma:∅	ma:∅-an	"lick"

The formal and semantic indeterminacy of the grammatical category TRANSITIVE/INTRANSITIVE merits some discussion. In Chol, the distinction between transitive and intransitive verbs, a distinction of a fundamental order for other Mayan languages, is not clearly delineated. The formal tendency seems to be that verbs with /el/-stems in the unmarked tense are intransitive, but a number of roots with this form of the unmarked stem are both transitive and intransitive with no formal marking of the distinction:

pul-el	"burn (something); burn (up)"
sa:t-el	"lose (something); lose (oneself), die"
num-el	"pass through, pass by (someplace; come, go, arrive"

This same kind of alternation between transitivity and intransitivity is also observed in roots marked for vowel harmony in which the vowel is [+flt]. Not only does the distinction of transitivity suffer from this apparent neutralization, it also suffers serious reversals of a formal nature in instances where transitives are marked by /i/ in the PAST, as in the case of /hi?/. Where intransitives are without verbalization in the unmarked stem, for example, /ti:p'/, and all the subclass III^F 7a ii, and where intransitives do not have the marking of the past stem by /i/, such as in /teč-e/, the formal convention for intransitives--UStem in /el/, PStem in /i/--is weakened. Far from a strong statement of the categorical

status and formal distinctiveness, all that can be asserted with regard to the category TRANSITIVE/INTRANSITIVE is that intransitive verbs are usually marked by /i/ in the PAST STEM.

It is left to the presence of the Ergative series pronouns in position 8 to unequivocally mark the intransitivity of verbs in the past tense/aspects. Since the grammatical structure and function of this series of pronouns has not been fully analyzed (and the name is witness that the role of these pronouns is arbitrarily sketched at present), any grammatical categories based on these pronouns as their strongest evidence, are that much less securely founded. It may be that many verbs are unmarked, or neutralized, with respect to transitivity.

Further exploration of the problem of transitivity waits upon a clear delineation of the function of the pronouns, and an understanding of the categories of VOICE, which are inextricably linked with transitivity relations. These categories deal with the grammatical status of the agent and the patient of the narrated event.

IIIF 7e. Voice and the Participles

The only instances of the functioning of categories of voice in the language (other than the poorly-understood Ergative and Intransitive usages) are found in the participles. No passivizing transformation for sentences has been discovered. These verb-based adjectives are of three types, formed by the affixation of the following morphemes to the root:

(1)	-bil	Unmarked Passive
(2)	-Vl /ʌ/ , /aɪ/ , /oɪ/	Completive Passive
(3)	-em	Completive Medio-Passive

The categories which they encode are those of COMPLETION and PATIENT. The category of completion has already been discussed with regard to the tense/aspect relations of the verb phrase. The first morpheme above is unmarked for completion, the other two are [+ COMPL], i.e., the reference of the lexical root is a completed event. The category of PATIENT marks the true passive category. The reference of the lexical root is attributed to a patient, with no mention of agent. The category of PATIENT is related to the category of transitivity, since only transitive notions in which agent and patient are distinguished, may logically be passives. It must be noted that the unmarked value of patient [- PATIENT] does not necessarily mean agentive or active voice, but only the lack of marking for passivity. Thus the non-passive completive participle, is not agentive, or in the active voice. It is better thought of as medio-passive, or neither active nor passive.

Unmarked Passive /bil/

- COMPLETIVE

+ PATIENT

The noun or noun phrase of which a root suffixed by /bil/ is predicated is the object, or patient, or the lexical value of the root with no reference to time or completion of the narrated event.

k'uš-bil	"able to be eaten, edible"
čon-bil	"able to be sold, for sale"
č'Λš-bil	"able to be boiled, requires boiling"
hap-bil	"drinkable, a drink"
čum-bil	"fruit [eg] (perhaps related to /č'Λm/ "harvest," /čuk/ "take, gather," or /čun/ "pole, stick"); "able to be picked"

Completive Passive /Vl/

- + COMPLETIVE
- + PASSIVE

This passive participle is marked for passivity, in that the agent/patient distinction is possible and the argument of the predication is the patient of the narrated event; the use of this morpheme also marks the narrated event in the past tense and completive aspect. This passive is formed from transitive verbal roots. Since an overwhelming number of these roots take /Λ/-verbalizers in the past tense, the realization /Λ/ of the /Vl/ formula is most frequent. The data show the grammatical subject (logical patient) of completive passive participles to be most frequently IMPERSONAL. The prosodic preference for a syllable following this participle is thus filled by the clitic /iš/, since the Ergative series has no pronoun for the imperson singular.

č'Λš-Λl-iš	"it is boiled"
čon-ol-iš	"it is sold"
ba:-al-iš	"it is nailed"

Completive Medio-Passive /em/

- + COMPLETIVE
- PATIENT

Like the completive passive, the completive medio-passive is used for narrative events which are in the past and completed. Since it is used with intransitive verbs, and presumably with the intransitive senses of those verbs which are either transitive or intransitive, there is no agent/patient distinction marked for this participle. Most examples refer to the Imperson.

ma:l-em	"gone, far"
kol-em	"grown, large" (this is the usual lexeme for "big, large")
p'o:l-em	"multiplied, abundant, having flourished"
pul-em	"burnt"
me:l-em	"able, possible, ready, made, finished" (? < /mel/ "make, do")
p'as-em	"having come, provenience, source"

The participles are verbals which can serve as sentences of existential predication. These sentences do not conform to the morphotactic formula for verb phrase positions, but appear in alternate syntactic concatenations [IIIF 8a]. Other syntactic functions served by verb related forms are Imperatives, the Hortatory and Gerunds.

IIIF 7 f. Imperatives, the Hortatory and Gerunds

Imperatives are formed from the PAST VERBSTEM. Most often the clitic /iř/, is full or partial form, [iř] or simply [ř], follows the stem. The plural of imperatives is formed by the affixation of the pronoun plural /la/ (position 10) to the Past stem. Exceptions include the intransitives

given below, and the verbs for "going" and "coming" [IIIF 8e]. There may be more irregularities in the imperatives of the intransitives.

UNMARKED STEM	PAST STEM	IMPERATIVE	Gloss
haǰ'	haǰ'-Λ	haǰ'-Λ	"hit"
čok	čok-o	čok-o-š	"throw away"
hak'	hak'-Λ	hak'-Λ-ku	"answer"
buč-el	buč-i	buč-i	"sit"

Exceptions

k'aš-el	k'aš-i	k'aš-e	"pass through"
num-el	num-i	num-en	"pass by"
oč-el	oč-i	oč-en	"enter"
Λk'	Λk'-Λ	ak'-en	"give"

The Hortatory is formed by the predicate complement syntactic form after the imperative of the verb "come," or by the Omni-person form of the pronouns affixed to the Unmarked verbstem with no T/A marker. The first of these processes is more productive. It takes the form:

IMPER. "COME"	VERB COMPLEMENT		Gloss
	LIAISON	USTEM	
laʔ	ti	uč'-el	"let's eat"
laʔ	ti	way-el	"let's go to sleep"
laʔ	ti	čon	"let's sell (it, them)"
laʔ	ti	čom-ben	"let's sell it to him"

The Omniperson form of the Hortatory is used only in certain frozen forms. The first example below can undergo the plural morpheme ascendancy rule, [MPR·PLADV], to yield the second and third forms. These two types are the usual semi-productive types of omniperson hortatories indistinguishable

from unmarked Omniperson forms except for the absence of the unmarked T/A marker /mi/.¹ Other hortatory constructions are related to the Omniperson forms of "going" [IIIF 8c].

Positions	Gloss
4 6 7 10 k-hul-an-la	"may we arrive, let's arrive early"
10 4 6 7 la-k-hul-an	"may we arrive"
la-k-čuk	"let's gather (e.g., snails)"

The Gerund refers to the lexical value of the root, viewed abstractly, with no reference to agents, patients, time or aspect. In these respects it is similar to the most general sense of the Omniperson forms of verbs with unmarked aspect. However, the grammatical function of the gerund tends more toward the nominal, whereas that of the unmarked Omniperson remains verbal. One of three morpheme types are used to form the gerund:

¹One anomalous type is the hortatory form of the discontinuous root "to rest" [IIIF 2b]. The underlying form for "let us rest" is:

ROOT	4 6 10
√o-ka:	k-o-ka:-la

The structure is altered by the plural advance rule and then by the discontinuity process special to this root:

MPR·PLADV

k-o-ka:-la	→	la-k-o-ka:
lak-o-ka:	→	ka:-lak-o

The Geminate rule reduces the vowel length, and the rules for syllabic structures yield the final surface output:

[ka.la.ko]	"let us rest"
------------	---------------

bal

Vl (usually /ol/)

Vntel (vowel given from root or stem)

The morpheme /bal/ marks intransitive gerunds most frequently:

Root	Gerund	Gloss
šam	šam-bal	"walking, traveling"
čol	čo-bal	"slashing, clearing" ¹

The /Vl/ marker is usually used with zero-stem inherently verbal roots:

hak'	hak'-ol	"answering"
man	man-ol	"buying" ²
čon	čon-el	"selling"

The most productive form of the gerund, however, is that composed of /ntel/ affixed to the Past stem of the verbal form. This ending is used with the greatest number of roots, those which are neither verbal nor nominal inherently, but only lexical.

Root	Past Stem	Gerund	Gloss
hil	hi-s-a	hi-s-antel	"finishing, bringing to an end"

¹A rule deletes root-final /l/

MPR·RTLDEL

$\sqrt{X}l \rightarrow /x/ / ___ - [-syl]$

Read: Root-final /l/ deletes before a consonant-initial morpheme.

This rule is a more specific case of PR·LDEL [IIIF 2b iii] and is responsible for $\sqrt{hil}/ \rightarrow /hi/$ and $\sqrt{kol}/ \rightarrow /kol/$, below.

²But note the derived form /man-an-ol/ "purchases," which affixes /ol/ after partial reduplication [MPR·#CDEL].

pa:l	pa:l-i	pa:l-intel	"make a point, whittling"
kol	ko-s-Λ	ko-s-antel	"raise (children, animals)"
p'o:p	p'o:p-o	p'o:p-o-ntel	"roasting"

IIIF 8. Special Verbs

IIIF 8a. The Existential /an/

The full treatment of syntax, which is not even broached in this study will necessarily distinguish the two major sentence types: existential predications and verb-phrase sentences. The latter sentence type has been dealt with in the seven sections of [IIIF, Verb Phrase Morphology]. Existential predications which in meaning and in many linguistic structures are qualitatively distinguishable from verb phrase sentences, require at least brief mention. Many existential statements in Chol are verbless, enabling a single word or two words to serve as a full utterance:

k'am	"He is sick"
<u>juez-on</u>	"I am a judge"
kolem iřik	"She was a big woman"
no: leç-em i-tohol	"It is very expensive" (< very raised its price)
tokal	"There are clouds; it is cloudy"

Some existential predications require a particle /an/, which is inconjugable: (1) To assert the existence of the topic of a fuller discourse, such as in the initial parts of a narrative:

an tokal	"There are clouds"
----------	--------------------

an bi meba winik "Once upon a time there was a man
with no family" (< Ex. Narrative
"orphan, man"

and (2) With negatives:

maʔan haʔ "There is no water"
mač an čΛ-bΛ an "There isn't anything" (< Neg. Ex.
"what" Ex.)

IIIF 8b. Three Stative Verbs

Three stative verbal roots are composed of the unusual forms CV and V: , and exhibit morphological irregularity.

√om	"wanting"
√ub	"sense, feel"
√u:	"knowing, knowing how, knowing by nature (as opposed to learning /kan/)"

To root /om/ does not take verbalizers, /u:/ takes the unusual verbalizer /il/, becoming /u:-il/ → [ʔu.hil].

Neither of these two are prefixed by Tense/Aspect particles, Modals or Derivational particles, but only by the bound series of pronouns. Neither appears in the past Tense/Aspects.

When /ub/ is verbalized by the /il/ verbalizer, it, too, is used without Tense/Aspect marking; its gloss is "be, seem, feel." It can be used in the unmarked past, and is employed as the past for "wanting" and "knowing." There is thus a neutralization of the three stative verbs in the past.

It must be mentioned that /ub/ when verbalized by the normal /in/ verbalizer is a regular verb which must be preceded by T/A markers. In summary:

√	Non-Past		Past		Gloss
	T/A	V-Stem	T/A	V-Stem	
om	-	om	-	-(ubi)	"wanting"
u:	-	uhil	-	-(ubi)	"knowing"
ub	-	ubil	ti	ubi	"seem, be, feel"
ub	<u>all</u>	ubin	<u>all</u>	ubi	"sense, feel, perceive"

IIIF 8c. Going and Coming

The verbs for "going" and "coming" are irregular.

"Coming" apparently has a single proto-root \sqrt{tVl} from which all variants but the imperative are derived. The paradigm in the unmarked Tense/Aspect may exhibit one of the three forms below, with no rules for the variation as yet established:

mi-k tal	mi-k til-el	mi-k $\overset{\curvearrowright}{t}el$
		"I come" or "I will come"

In the past Tense/Aspects, there is but one form of the past verbstem /tAl-i/:

ti-k tAl-i	"I came"
------------	----------

The third variant of the non-past stem contains a coronal (i.e., non-palatalized) [t] in the environment before /e/, which indicates contraction or other low-level phonological change, perhaps a reduction from /til-el/. The vowel alternations are thus:

Non-Past	Past
a/i	Λ

The alternation [a] ~ [Λ] is a usual one in Chol, though this verb is the only one in the system that exhibits a form of ablaut for the formation of the past stem. The a/i

irregularity is still to be explained, and the zero-stem/el-stem morphology alternation along with it. The imperative of "going" derives from another root $\sqrt{\text{la}^?}$. The usual form of the imperative utilizes the clitic /ku/:

la[?]-ku "come here"

"Coming" exhibits considerably less variation than "going." The analysis of the structure of forms glossed with "going" indicates that several distinct roots and much sociophonological variation are at play, as well as major dialectal variation.

The usual root for "going," a root found in all dialects is:

$\sqrt{\text{ma:l}}$

This root allows more infixing and derivational verbalization than any other root of the language. In positions 6 and 7, between the found prefix pronouns (position 4) and the plural pronouns (position 10), numerous variants are possible:

Frame:	mi-k_____ la	"We-all go"
Standard form:	ma:l-el	
Variants:	mal-el	
	ma:-a-l-el	[ma.ha.ləl]
	ma:-a	[ma.ha]
	ma:-a-le:-el	[ma.ha.le.həl]

The past stem is usually /ma:l-i/ → [ma:.li] , [ma.li].

When this form of "going" is used, it appears with T/A particles. In the eastern dialects, however, another root, with limited distribution, no T/A morphology, and Ergative pronoun subject paradigms is used:

√sami-ERGATIVE → [sa.mi.yon] , [sa.mi.yət] , [sa.mi]

Variants: [sa.yon] , [sa.yət]

Speakers who use /sami/ also use /ma:l/. All speakers are also able to use the irregular and defective root

√čan-i-ERGATIVE → [ča.ni.yon] , [ča.ni.yət] , [ča.ni]

Variants: [sa.ni.yon] , [sa.ni.yət] , [sa.ni]

These forms are used only in the past, with or without Tense/Aspect particles.

A fourth root is used for concepts of "going," this is special forms such as greetings and departures, imperatives, and a rare past participle. The root is of the form:

√kV or perhaps simply √k

Since forms in which it is used are irregular, analysis is not secure.

Greetings and departures, glossed "Adios" or "Vámonos" utilize the /k/ form of going, suffixed by ERGATIVE and usually one or more clitics:

k-on-iš	[ko.niš]	"I go, hello, goodbye"
k-on-iš-me?-če?-ni	[ko.niš.mə.čɛ.ni]	"hello, goodbye"
k-on-iš-la	[kon.la] , [koš.la] , [ko.niš.la]	"We go, let's go"
k-on-iš-la-ku-če-ni	[koš.la.ku.čɛ.ni]	"Let's go"

The variant [koš.la] is by far the most frequent; it figures prominently in hortatory constructions which utilize the verb-complement syntax of /ti/ + Unmarked Stem:

k-on-iš-la ti uč'-el

"Let's walk; Let's
get going"

The surface renderings of these are:

[koš.la.ti.ʔu.č'el]

"Let's eat"

[koš.la.ti.šam.bal]

"Let's walk"

The imperative of "going" is more of a hortatory, used as a response to /koniš/, as a word of approval for the initiative or wishes of another, and as a true imperative as well. Its form may be a reduplication of a /kV/ form, or the simple /kV/ with the frozen clitic /ku/:

ku-ku "go well, goodbye, right on, go, que le
vaya bien, ándale, vete"

Variants include the affixation of other clitics:

ku-ku-če-ni

and the plural imperative form /la/:

ku-ku-la

A rare and perhaps archaic past participle /koʔo/ may be related to this same complex of /k/-based forms for "going." It is glossed "gone, he is gone." A last form which may be related is the complex concept "free, for nothing, with nothing, bare, simple," which in every usage receives but one Spanish gloss:

ko-hač

así no más

In summary:

Root	Usage
√ma:l	Past and Non-Past (all dialects)
√sami-ERGATIVE	Non-Past (eastern dialects only)
√čan-i-ERGATIVE	Past (all dialects)
√k(K)	Greetings, Hortatory/Imperative, Special Forms (all dialects)

CHAPTER IV

LEXICON

The lexicon presents lexical and grammatical morphemes as well as many lexical items formed by the concatenation of roots and grammatical morphemes, or of roots and other roots. The left-most column of entries presents lexical roots (preceded by the symbol $\sqrt{\quad}$), and grammatical morphemes (followed by the letters GM). Individual lexical items are presented in the tabulated column in morphophonematic form.

IV A. The Alphabet

The alphabetical order followed in the lexicon, shown in Table 23, is based on the roman alphabet and modified by the exigencies of Chol.

TABLE 23
ALPHABETICAL ORDER FOR LEXICON

1) a	11) i	21) \bar{s}
2) Δ	12) k	22) t
3) b	13) k'	23) t'
4) \check{c}	14) l	24) u
5) \check{c}'	15) m	25) w
6) d	16) n	26) \check{s}
7) e	17) o	27) y
8) f	18) p	28) ϕ
9) g	19) p'	29) ϕ'
10) h	20) r	30) ?

For the preparation of texts or educational materials, the alphabet used in linguistics may be standardized to fit current usage in Mexico along the lines shown in Table 24.

TABLE 24
ALTERNATE PHONOLOGICAL SYMBOLS

Linguistic Symbol	Preferable Forms for Applied Work	Less Preferable Form
ʌ	ʌ or ɪ or ɐ	ɪ
č	č or c	ch
č'	č' or c'	ch'
š	x	sh
ʒ	z	ts
ʒ'	z'	ts'
ʔ	ʔ	,

The hierarchy within vowel classifications is as follows:

- V - simple vowel
- V: - long vowel (de-voiced length)
- V? - closed vowel
- V?V - broken vowel

IVB. Grammatical and Lexical Morpheme Dictionary

On the following 115 pages (237-351 inclusive), a Chol-English dictionary is presented. It consists of lexical roots, grammatical morphemes, multi-morphemic words and English glosses.

a

/a/ [IIC 1]

a (GM)	Bound Pronoun: Hearer. "you, your" [IIIC]
√a: (GM)	Sex Particle: Masculine. [IIID 1a] Also used with animal names.
a:-tronel	"workman, worker"
a:-k'anbal	"servant"
a:-ba:	"mole, gopher, tusa"
a:-hin	"lizard, crocodile"
a:-hΛ	"green iguana (edible)"
a:-waš	"fox, mountain cat"
a:-pompΛy	"transparent" (source questionable)
a:-ben	"hit" (someone)
√ab	"hammock"
√abi	"night" Many lexical items and phrases having to do with "night" and with the names of days with reference to the speech event are related to this root.
ab-i	"yesterday"
ak'-bi	"yesterday" [ed]
ab-Λ-lel	"night"
ak'-Λ-lel	"night" [ed]
abi ti abΛlel	"last night"
čabihi	"day before yesterday"
cabi	"day after tomorrow"
ab-Λk	"carbon, ashes, cinders, embers, charcoal"
a-čΛm-el	"pregnant" (cf. √čΛm/ "sickness, death")

√ač'	"wet" (cf. √ǰ'a:/ "soak, wetten")
ač'-i-on	"I am wet, I got wet"
ač'-Λ	PSTEM (alternate form)
ič'-an	"to wetten" (source questionable)
ahaʔan	KINTERM "spouse's sibling"
ahenko	"herb" [es] used for stomach medicine
a:kum	" <u>camote</u> , sweet potato"
akušan	"needle" (<Sp. <u>aguja</u>)
akušan čuy	"fish" [es] <u>pescado agujerón</u>
akušan hek'	"inject, injection"
a:k	"tortoise"
√ak'	
ak'-in	"trim brush, prune, weed, hoe"
aʔ-n-an	"weed, clean between cornstalks"
ak'	"vine, tongue, turkey" (cf. √Λk'/)
ak'	"give" (cf. √Λk'/)
ak'-Λl-el	"night" (cf. √ab/)
ak'-bi	"yesterday" [ed] (cf. √ab/)
ak'ač	"hen turkey" (vs. /a:-ǰo:/)
y-Λk'ač	"turkeys" collective noun)
√al	"offspring, child"
y-al-el	"birth"
y-al-e	"birth"
y-al-e <u>niño</u>	"Christmas"
y-al-oʔ <u>haʔ</u>	"streams, rivulets" (frozen plural, collective noun)
al-Λl	"daughter, young girl" (10-15 yrs.)
š-k-al-Λl	"young girl"
al-ob	"son, boy" (10-15 yrs.)
al-ob-il	"child"
al-Λb-š-k-al-Λl	"daughter"
noš-al	"husband"
niʔ-al	"son-in-law, child's spouse" (cf. /niʔ/)
Λl-ib	"daughter-in-law, child's spouse"

√al		"speak" (cf. √Δl/)
	al-el	"speak"
	al-en	"scold"
√alas		"play, plaything, toy"
	ales-il	"toy"
	alas	"plaything"
	alasaš	"fruit" [es] small, hard; also "orange"
	almis	"medicinal plant" [es] seed is crushed and taken with alcohol to combat fright, /bAk'-en/
	amAy	"woody grass, <u>carrizo</u> , flute" [ed], "penis" (slang [wǎ]), (cf. /hal-Δl/)
ame	(GM)	Conjunction, introduces negative or undesired statement. "lest, it would be bad if..., what would happen if..., in order that... not..."
	<u>amigo</u>	[am.'i.gu], [am.'i.ku] "friend" (Sp. loan)
an	(GM)	Existential qualifier. "be" [IIIF 8a]
an	(GM)	Verbalizer, UStem, /Vn/ form, forms past in /Δ/ [IIIF 7c]
	<u>angelito</u>	"principals, ancients of the Church" (Sp. loan, semantically skewed)
√a:n		"running"
	a:n-el	"to run" VI
	a:nibal	"place"
	<u>arco</u>	['ar.ku] "arch" cane arch as armature for palm and marigold decoration of graves (cf. /šot/)

arus	"rice" (<Sp. <u>arroz</u>)
asukal	"sugar, <u>panela</u> " (<Sp. <u>azúcar</u>)
aš-an-te	"edible green" [es]
aš-nal	"shade, shadow" (cf. /ʌš-nal/)
√at	"penis"
pʌči-at	"scrotum"
kaki-at	"insect" [es] two-inch, red stripe, bites
aʒisonel	"sewing"
√aɕ'	"salt"
aɕ'-am	"salt"
ʌɕ'-ʌm-il	"salt, salinity"
a:ɕoʔ	"tom turkey"
aʔ-iš	"rising" (found only in: /aʔ-iš la-k č'u:-naʔ/ "the moon is rising")

Λ

/Λ/ [IIC 1]

Λč (GM)

Clitic [cf. M 73]

√Λk'

"vine, tongue, giving, putting"

ak
ak-il
y-ak
ak'
ak'-il
y-ak'-il
ni-uk'

"vine"
"vine"
"vine"
"vine"
"vine"
"vine"
"chayote" [ed], "chayote vine"
[Sabanilla] (cf. /č'is-č'um/)
"give!" Imperative
"give, put, place"
"give, put, place"

ak'-en
Λk'-en
Λk'-in

√Λl

"speaking"

al-el
al-en

"speak"
"scold"

√Λs

"scattering"

Λs-el
Λs-Λs

"break, demolish, chingar"
"shoo, scat" used to animals

Λskun
askunal
uskun

"older brother"
"older brother"
"older brother"

Λš-nal

"shadow" (cf. /aš-nal/)

Λč'Λm-il

"salt, salinity"

b

/b/ [IIC 2b ia]

b (GM)

benefactive (cf. /ben/)

ba (GM)

interrogative, spatio-temporal position

ba-ki	"where"
ba-ki <u>hora</u>	"when"
ba-to-ki <u>hora</u>	"since when"
ba <u>hora</u>	"at some time"
bal	"where" indirect question
baʔan	"where" relative

ba-čeʔ	"how" (cf. /ba:-če/)
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√ba:

"nail" √VH (cf. /lawuš/)

√ba:

"mole, tusa"

a:-m-ba:	"mole"
š-ba:	"mole"

ba:če	"how"
ba:-če <u>hora</u>	"when"
baš	"how"
bače	"how"

√ba:č

"twisted"

ba:č-el	"twisted, something twisted, thread"
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√ba:k•

"twenty twenties, 400" Numeral Classifier

√ba:lΔm

"jaguar"

čáčak ba:lám	"red jaguar"
č'iba ba:lám	"spotted jaguar"
bole ba:lám	"jaguar" [es] another kind
ba:lante?	" <u>pataste</u> " a tree whose fruit is sometimes used in pozol gruel /sa?/
balte	['bal.t̥e] "bucket" (<Sp. <u>balde</u>)
ban	particle in negative and incomplete sentences (rel. to /maʔan/)
an to ban yom	"it is still incomplete"
maš to ban t̥akin	"it is not dry yet"
√ba:n	"sole, single, alone, one"
ba:n-el	"alone, unmarried; that one, this one; sole, single" Reflexive when preceded by Bound Series [IIIC 2]
ba:na	"alone, single"
banel	"alone, single"
bane	"alone, single"
√baš	"shiny rock"
bat	"perhaps" (related to Interrogative /ba/)
√baç'	"howler monkey"
bʌ (GM)	Clitic [cf. M 74) Reflexive (with Bound Pronoun)
bʌ	"fill, inhabit, live" (see/bʌl/)
√bʌ:	"disappear, darken"
bʌ:-l-el	"disappear, darken"
bʌ:k'-el	"disappear, darken"
√bʌk'	"interior, seed, spirit"
bʌk'	"swallow" VI ≠ VT
bʌk	"swallow"
buk'	"swallow"
bʌk'	"seed, pit, wart" (cf. /p'ʌk', /p'a:k'/ "plant")

bAk'-Al	"cob" (of corn, without kernels)
bAk'-lel	"cob"
bAk'-el	"bone, long pit of fruit (mango)"
bAk'-tal	"meat, flesh"
bAk-tal	"meat, flesh"
bA?-tal	"meat, flesh"
bAk'-en	"shock, fear, fall, ghost,, spirit which can possess, <u>espanto</u> "
bAk'-n-an	"frighten"
bA?-n-an	"frighten"
bAk'-n-el	"be afraid"
√bAl	"fill"
bAl	"fill, inhabit"
bA	"fill, inhabit"
bAl-lak-nAk	"food" (fill our stomach)
bAl-nAk	"food"
bA-nAk	"food"
bAk'-nAk'	"food"
bA?-nAk	"food"
bAl-Al	"rolled" (filled by itself?)
√bek	"throw away" √VH
bek-e-h-el	"continue"
bele (GM)	"continually, periodically" Derivational Particle [IIIB 4]
ben (GM)	Benefactive /b-en/, Verbalizer "for someone, to someone"
√bet	"debt"
bi (GM)	Clitic, Narrative, non-direct evidence conjecture. "It is said..."
√bi:	"road, trail"
bi:-lel	"path, journey, travel"
pileʒanal	"Milky Way" ("path of the cold")
sAk-bi:	"crossroads"
hum-bilel	"one side of" with /ti/
ca?-bilel	"along both sides of"

√bi		"dirty, soiled, spotted"
	bibi	"dirty"
	bibi-esan-iš	"spotted, it is spotted"
	bič'-il	"small"
biki	(GM)	"small" Derivational particle [IIIB 4]
bik'i	(GM)	"small" Derivational particle [IIIB 4]
	bik-ł-l-a-k-ok	"ankle"
	bike-øep	"cut into pieces"
	biki-te?	"small poles used horizontally for wattle in house-building"
	biki-te-le-?otot	"wattle and daub house"
√bik'		"neck"
	bik'ł?	"wrist" (< .bik'-k'łb/ "neck of the hand")
	bik'-ok	"ankle"
bil	(GM)	Unmarked Passive [IIIF 7e]
biti		"small" Derivational particle related to /biki/
	biti p'e:-pem	"small butterflies" [eg]
	bitislenkuk	"small, flying, swarming insects" [eg]
√biø'		"pod fruit" <u>Inga jinicuil</u> (SIL) several varieties varying from place to place (AT)
	asial biø'	no gloss
	bu?ul biø'	"bean" /biø'/'
	č'a biø'	no gloss
	čAmay biø'	"tselel" matures in October, seed, when boiled, also edible
	nuki biø'	no gloss
	šwa biø'	no gloss
	uyo biø'	"sloth" /biø'/'
	y-oke biø'	fruit ripens in May-June /k'in-a-w-il kun-a-w-il/ "when you see it sun, (i.e., hot), you see it ripe"

te biç'	"the tree which bears the /biç'/"
√bok'	"pull out" VT √VH
bok'-el	"pull out" VI
bo:k-el	"uproot"
bo	[bɔ] "knock" onomotopoeia
bobo	" <u>zapote</u> " tropical fruit
bobo-sem y-ok	"hip joint"
bobo-wa:	"tamale made of fresh corn, served with sugar or chile pepper"
bo:	"slippery"
boy	"slippery"
√bolon	"nine" +Num. Class.
√bon	"painting"
bon	"paint" VT √VH
b̄on-el	"paint" VI
bon-ol	Gerund "painting" and Completive Passive "painted"
č'oč'on-bon-ol	"painted in many points, polka-dotted"
bo:p	"point of fruiting stem of banana"
√boy	"fatigue"
boye?el	"to get tired"
bo?o-	"tired" (+ Ergative Series [IIIC 2])
lu?bu-	"tired"
lu?-bu-ben-	"tired"
lu?-pu-	"tired"
boselana	[bo.se.'la.na] "bowl" (<Sp. <u>porcelana</u>)
√boy	" <u>corcho</u> " (softwood tree)
bo te?	"board, plank"
boite?	"board, plank"
bo:	"board, plank"

bo:t	"air rifle toy" (also called /t'os/)
√boø'	"pull up, pull out"
bu ha?	"swimming animals" (cf. bAl/)
√bu?	"bean"
bu?lel	"bean stalk, patch"
bu?ul	"bean"
čAČAk bu?ul	"red bean"
ču bu?ul šču bu?ul	" <u>frijol de botil</u> "
i?ik bu?ul	"black bean"
i?lis bu?ul	no gloss
kašlan bu?ul	"foreigner's bean"
k'Ank'an bu?ul	"yellow bean"
k'Ank'an čenek	"yellow bean" [čikil dialect] (< Tzeltal /čenek'/ "bean")
maņa bu?ul maņaš bu?ul	"peanut"
peč bu?ul špeč bu?ul	"duck bean"
po:kAM špo:kAM	" <u>frijol de botil</u> "
sAsAk	"white bean"
te? bu?ul	"tree bean"
šte? bu?ul	"tree bean"
√buč	"seat, sitting"
buč-i	"sit!" Imperative
buštAl	"seat"
buč-ul	"seated"
√bu:k	"blouse, shirt"
buk'	"swallow" (cf. /bAk'/)
buk' la-k wut	"eyeball" (< seed of the eye) (cf. /bAk/)
√buluč	"eleven" (+ Num. Class.)
bural, burun	"red fruit" [es] non-edible; from plant whose leaves are used to wrap <u>pozol</u>
√buš	"plant, gourd"

bušite?	"small tree with large leaves" [es]
buš p'ok'	"gourd used as water-bottle" (cf. /p'ok'/)
√but	"fill, place in bag"
but-ul	"filled, crowded"
√buç	"regrowth, sprout"
√buç'	"smoke"
√buy	"smooth"
buy-ul	"smooth, planed"
buyuk-na	"smooth"

Č

/č/ [IIC 2b ii]

č	Contracted form of /ʌč/ Clitic, as in /mu-č/, Immediate T/A
√čab	"bee, honey"
čab	in [wd] "bee"
yale čab	"honey" (<ya?-lel "liquid")
čab	in [ed] "honey"
čʌn-il čab	"bee" (<čʌn-il "insect," cf. /čʌn/ "inhabit")
na? čab	"queen bee"
√čak	
čak-al	"naked"
čak-ʌl	"large light turquoise fish, 50 cm. [es], " <u>macabil</u> "
čahuk	"mustard greens" [es] edible
√ča:k	
ča:k	"lightning, spirit of lightning"
hača ča:k	"ax-like stones hurled by lightning, known to split a person longitudinally" (< Sp. <u>hacha</u> "ax")
<u>chal</u>	"scarf, shawl" usu. embroidered or colored (loan)
čan	"snake" (always bound, cf. /lukum/)
čan	"tall, high, deep"

čan	cf. /čaʔan/
√ča:p	"piece, kind, type" Num. Class.
√čas	"mosquito (<u>Anapholis</u>)" which carries <u>paludismo</u> , a form of malaria
čaʔintali	"extremely far away, thus appearing small in perspective"
√čaʔ	"two" + Num. Class. "again" Derivational particle [IIIB 4]
čaʔ-akʔ	"give back, return" (< čaʔ-akʔ/)
čaʔbi	"day after tomorrow" (< čaʔ-abi)
čabihi	"two days ago"
čaʔan (GM)	"for, belonging to, in order to"
hin čan	"for this reason, therefore"
√čaʔl	"make, do"
čaʔl-en	"make, do, become, be, give the appearance, seem"
čaʔl-e	Past Stem of /čaʔlen/
čač	cf. /čeʔ-Λč/
čΛʔΛč	cf. /čeʔ-Λč/
čΛhΛč	"it would be better if..." used in negative sentences
√čΛk	"red" Bound form
čΛ-čΛk	"red" Unbound form
čΛ-čΛk-cruz	Place name, a <u>colonia</u> in Mpo. of Tumbalá
čΛk-a	"red tree, strong wood" [es]
čΛk-teʔ	"red tree, strong wood" [es]
čΛk-hočoč	"centipede" [es]
čΛ-čΛk mukuy	"red dove" [es]
čΛ-čΛk mut	"redbird" [es]
√čΛk	"gather, hunt, capture" (cf. /čΛm/, /cuk/, /čʔΛm/)

	čak-čay	"kingfisher" [es] AT
	čak-puy	"gather snails"
	čak-čelem	"red-headed woodpecker" [es] AT
	čaklo	"edible mushroom" [es]
√čal		"dove"
	čal-lal	"dove" [es] (cf. /mukuy/)
√čam		"die"
	čam-el	"disease, die" (non-human in [wd])
	a-čam-el	"pregnant, <u>enferma</u> "
√čam		"take, bring, carry"
	čal,-o-tel	"bring in, transport, bring"
	čam-tel	"bring in, transport, bring"
√čan		"live, inhabit"
	čan-il	"animal, insect"
	čan-il-tak	"worms in fruit"
	čan-il ma?-te-el	"snakes" (inhabit the deep rain forest)
	čan-il pam-il	"insects" (inhabit the air)
	čan-il te?-el	"animals" (inhabit the forest)
	a:-čan-tel-ob	"human inhabitants"
√čan		"four" Num. Class.
	čal-pak	"fig tree"
	čal?-te?	" <u>mispero</u> ," edible fruit tree [es]
√čap		"distill"
	čap-on-el	"distill liquor" (cf. /yap sik'Ab/)
	čap-on-iba	"distillery, still"
√čalš		"boil, cook" √VH
√čay		[čayç] "fish"
	če	cf. /če?/ [IIIF 4g]
√če:p'		"bamboo"

če-mut	"small bird" [es]
čen-tun	"cave (cf. /č'en/)
čep	"cut" (cf. /čep/)
čet-el	"far" (cf. /na:t/)
√če?	Clitic [IIIF 4g] "thus, so, yes"; Relative "when, if"; Narrative "say"
če?-ac	"yes"
čΛ?-ac	"yes" (cf. Phatic Mantras) [IIIF 4h]
čAc	"yes"
tAc	"yes"
če ba:če	"like, similar to"
če ba:če hin-i	"just like that, right, sure, yes" Post-Sentence Tag (Limar area dialect) /ču-k a-k'aba? č'e/ Narrative "say, said" [+ Ergative Series]
če?-	Narrative "say, said" [+ Ergative Series]
če?-en	Narrative "say, said" [+ Ergative Series]
če? ha?-le	"since then, since when"
če to ha?-le	"since then, since when"
če hini	"thus it was, --and then..." Topic spacer, hesitation phenomenon
če k'a:k	"fresh corn for roasting"
če?-ku	"yes" (Phatic Mantras, IIIF 4h) ¹¹ f 4 h
če?-ku-i	"yes"
če?-ku-y-i	"yes"
če-ni	Clitic (< /če?-hin-i/)
√či:	"fiber cactus" <u>histe</u> [es]
či:-i	[či.hi] "blood vessel"
čim	"net bag"
čim-ol	"netting material"
lo? či:	"muscle cramp"
√čib	"palm" (cf. /č'ib/)
√čič	"older sister, paternal aunt" (only the eldest female)
čiči	"fruit" <u>jolote</u> [es]
čičil-lum	"red earth" (cf. /čak/ "red")

čihi	"blood vessel" (cf. /či:/)
čihikna	"happy" [ed]
čihi-te?	"herb" <u>saúco</u> [es] for bathing, disinfecting, for sickness when taken dissolved in liquor
čik-iš	"it's red" (of coffee beans when ready for picking)
√čik	"concave surface"
čik-ib	"basket"
čik-i	"basket"
čik-in	"ear"
ču-la-k-čik-in	"inner ear"
čimay čup	"caterpillar (cf. /čup/)"
činin	"edible fruit" [es]
čin-te?	"tree" [es] hard wood, used for house pillars
√čit	"porcine"
čit-am	"pig, pork"
mate čitam	"wild pig"
čitam čay	"fish" [es]
čit-on	"boy" [ed]
či-wo	"spider" [eg] (cf. /am/)"
√či?	"fruit" <u>nance</u> [es]
či?ite	"toothed leaf, tiny fruits, white clustered flowers"
√čo:	"cheek"
čo:-om, čohom	"tool for de-graining corn"
√čok	"throw away, discard"
čok ma:l-el	"send"
čok til-el	"bring"

čok'		"vegetation"
	buč čok'-el	"sprout of <u>chayote</u> " edible green [es]
√čol		"slashing, cornfield," etymon of "Chol"
	čol-el	"slashing, <u>milpaland</u> , fields"
	čol-o	Past Stem √VH
	čo-bal	"slashing" Gerund
	čol-ontel	"slashing" Alternate form of Gerund
√čon		"selling" √VH
	čon-el	"salesmanship"
	čom-bil	"for sale"
čonkol	(GM)	Tense/Aspect: Pres. Prog. [cf. IIIIF 2b iii]
√čo?		"peeling" √VH (cf. /pa:l/)
	čo?ol	Ger. and Pass.
	čo?oš	Imperative
	čo?bil	Non-comp. Pass.
√ču		"what" Relative and Interrogative
	ču-ki	"what?"
	ča, čaba	"what" relative "that, which"
	ču-ki-es	"what is this"
	ču-ki-tak	"what are these"
	čukiet-tak	"what are these"
	ču-ki-hač	"whatever"
	ču-ki-y-om mač-y-om	"whatever"
	ču-koč	"why"
	ču-kot	"why"
	ču-ki ča?an	"why, for what"
	ču-li	"what say, what do you think if..." Tag or Pre-Sentence
	ča-ba-an	"things, what there is"
	ma?an ču mi ča?l-en	"you're welcome" (lit. "no thing it makes")
	ču, š-ču	" <u>botil</u> " type of bean

√ču	"inner part, center hole" (cf. /č'ub/)
ču-y-ob	"innards, guts"
ču-la-k-čikin	"inner ear"
ču-y-o?-pič	"bladder"
ču-yi-pič	"bladder"
√čuč	"squirrel, <u>ardilla</u> " [eg]
ščuč	"black squirrel" [es]
a:čuč	"rodent" [es]
č'i'iri čuč	"rodent" [es]
s-cukočob	"reddish squirrel" [es]
√čuk	"capture, grab" (cf. /č'am, čak, č'am, č'ak/)
čum-bil	"fruit" [eg]
čumi-wa:	"tortilla made with squash" (cf. /č'um/)
√čun	
čun-te?	"cocoita" one of many trees used for fence posts. Cuttings take root; "roof beam of house, straight pole, <u>palos para cosas reglitas</u> "
√čup	"worm"
čup-il	"worm" particular
čimay čup	"caterpillar" [es] fuzzy lichenlike appendages, green or white
čuru-ha?	"type of flute played in water- filled gourd at Christmas (cf. /č'uru-ha?/, ? < Sp. <u>curumbela</u> , <u>chirimía</u>)
√čut	"small"
čut-alo?	"boy" (10-15 yrs.)
čut čim	"bird" [es] whistle: weee, weee, weee
čut ha?	"stream, creek" (cf. /y-al-ob-ha?/)

čut kalal
 čut Señor
 čute?

"girl" (10-15 yrs.)
 "small image of Christ (August 6)
 "chico zapote" chicle tree, inedible
 fruit

čuy-ob

"stomach" (cf. /ču/)

√ču?

"mammary, breast, milk" VI and VT
 "nurse, suck, suckle"

ču? wakaš

"cow's milk"

č'

/č' / [IIC 2b ii]

√č'a:	"bitter, bark, fumigate"
č'a:	" <u>pinol</u> , (coffee of toasted corn) bark used for tying"
č'a:-an	"tumpline, bark used for tying"
č'a:-nal	"tie, strip of bark, cord for bag"
č'a:-nic	"flower used in Holy Week"
č'a:-tan	"fumigate with incense, tie with /č'a:-an/
č'a:-ti	PStem
č'a:t-intel	Gerund
č'a:-tΛ-bil-iš	"it is roasted"
√č'Λl	"decorate"
č'Λl-ol	Gerund
č'Λl-on-ibΛ	"rose, flower, decoration"
č'Λl-a:nel	"silence" (cf. /č'Λy-en/)
√č'Λm	"take, grab, harvest" (cf. /č'Λm/, čuk/ /č'Λk/)
č'Λm ha?	"to baptize, be baptized"
č'Λm-Λl-iš ča'an	bendisyon "it is blessed"
mi-k-Λk' ti č'Λm ha? al-Λl	I take a child to be baptized"
č'Λm-i-ontel	"harvesting"
č'Λm-otel	"harvesting"
a-č'Λm-el	"pregnant" (cf. /č'Λm-el/ "ill")
√č'Λs	"boil, cook"
č'Λs-bil.	"cookable"
č'Λs-Λl-iš	"it is cooked, ready"

√č' ay	č' ay-en	"sad] often with /hač/ [haš]
	č' a:-i-yen	"sad"
	č'e	[č'ɛ] animal [es]
	č'ehew	"plate, dish"
	č'ek'ek'	"mountain turkey" [es]
√č'e:l		"energetic, intelligent, quick" (ant. /ø'ub ^w / "lazy, never finishes work")
	č'eku	"woodpecker" [es]
√č'en		"cave"
√č'ib		"palm [eg]
	čimin č'ib	"palm" [es]
	pa?le č'ib	"palm" [es]
√č'ič'		"blood"
	č'ič'-el	"particular blood"
	č'ič'-ip	" <u>jalandria</u> " small bird [es]
	č'ič'-ne	"shrub" [es]
	č'ič'-ta?	"severe diarrhea"
	č'ik	"flea" [es] (cf. /č'uk'/)
√č'il		"fry"
	č'il-el	UStem
	č'il-i	PStem
	č'il-ol	Gerund
	č'il-onel	Gerund
	č'il-il	CPassive [IIIF 7e]
	č'il-im	"small bird" [es]
	č'i-om	"moss" AT
√č'ip'		"open slightly" UStem and Imp.

č'ip'-i	PStem
√č'iš	"thorn," fern-like plant, edible green
č'iš-al	"thorn"
č'iš-č'um	"chayote" (<"thorn squash")
č'i-č'um	"chayote"
č'iš-čup	"spiny-worm" [es]
č'iš-uč	"porcupine-like animal" [es]
č'iš-ik-na	čup-el "hair stands on end"
√č'it	"shrub" [es]
č'it-on	"male, man" (non-standard) [wd] "boy" [ed]
√č'o	"crack!" onomatopoeic chopping sound
č'o	"chop"
č'o-čon	"repeatedly" Derivational particle
č'o-čon-čep	"cut in many places"
√č'oč'	"Adam's apple"
√č'ok	"give birth, be born, young, green immature" [ed] "girl"
č'ok-an	VT "give birth," VI "be born" (cf. /hoč-el/ "be born" [-human], "hatch")
č'ok išim	"de-grain corn"
č'o-hom	"tool for degrading corn"
č'ok-č'et	"shrub" [es]
č'ok-bu?ul	"fresh beans"
√č'ol	"Chol people and language [ed]
√č'oš	"intestinal worms"
č'oš ha?	"rainbow" (<worm of water) (cf. /šohob/)
√č'u:1	"sacred, holy" Derivational particle

č'u:	alternate form of /č'u:l/)
č'u:-el	"Mass"
č'u:l-el	"pulse, spirit"
č'u:-u-lel	"pulse, spirit"
č'u:-le-lal	"corpse, dead soul"
č'u:-u ha?	"holy water"
la-k č'u-na?	"moon" [wɔ] "Mary," (B.V.M)
la-k č'u-tat	"sun" [wɔ], "Señor de Tila, God, saint, image, statue"
č'u:-u tat	"God"
č'u-pibal	" <u>compadre</u> , <u>commadre</u> " (cf. /kompare/)
č'u-pi?lehel	" <u>compadre</u> , <u>commadre</u> "
č'u:-wa:-na	" <u>mayordomo</u> " (cf. /motoma:/)
č'u:-wa-nel	" <u>mayordomo</u> "
č'u-te?	"cedar"
č'u-čun-k'el	"stare"
√č'ub	"puncture, perforate, drive steel"
č'ub-ul	CPass.
č'ub-i	"be possible, agree, accept" (cf. /č'u:b/)
√č'u:b	"accept, agree, obey, be possible"
č'u•b-i	"possible," PStem
č'ub-i	"possible," PStem
č'ub-i-b-en	"obey someone"
č'u:b-intel	"obedience"
√č'uč'	"plant" [es] large leaf, red flowers, small pod protuberances
√č'uk'	"flea" (cf. /č'ik/)
√č'um	"squash" [eg]
č'iš-č'um	" <u>chayote</u> "
č'um-ak'	" <u>jaajo</u> " edible fruit [es]
√č'uy	"whistle"
č'uy-ub-an	"whistle"

$\sqrt{\text{č'u:}} \text{ y}$

č'u:y-el

"lift, raise" (cf. /leč'/, /teč/)

d

/d/ [IIC 2c]

Nearly all initial instances of /d/ may be deleted or re-interpreted as /l/. Accent may be as in Spanish or on the final syllable.

dios	[yos] "God, saint, statue, prayer, praying, worship"
dios-in	"praying"
domingo	[lo. 'miŋ.ko] [do. 'miŋ.ku] "Sunday, man's name"
duluy	"tree" [es] small compound leaflets, pink cambrium, cream heartwood

e

/e/	[IIC 1]	
e	(GM)	Prefix, topicalizer, or variant of Bound Imperson /i/; suffix, topicalizer [IIID 1c]
√e:		"tooth" hard body part, external
	e:-čak na-tun-e:	"nail, claw, hoof" "molar" (< " <u>metate</u> " "grinder" < "mother stone")
	ekukmal	"feather" (? < /e/ topicalizer, /ku-kum-al/ "feather")
√ek'		"star" [eg] <u>chaya</u> , star-shaped edible green [es]
	ek'ak'	edible green [es]
eI	(GM)	most common form of /Vl/ suffix
	čam-el	"disease] /el/ acts as nominalizer
	kol-el	"grow" /el/ acts as verbalizer for nearly all intransitives
	pe:t-el	"all" /el/ acts as adjunctiv- izer
-em	(GM)	Completive Medio-Passive verbalizer [IIIF 7e]
	e:meč	" <u>mapache</u> , racoon," a mammal which raids the cornfield
en	(GM)	verbalizer and adjunctivizer
	ča?l-en	"make" [IIIF 7]

	p'as-b-en čA-men	"demonstrate" (benefactive) "dead"
	eran	"brother" (<Sp. hermano, (h)er(m)an(o) "brother") "friend"
	erač	"green parrot [es]"
es	(GM)	archaic progressive tense/ aspect particle no longer productive (except perhaps in Sabanilla)
	ču-ki-es es-man es-on es-on k'a:k eson son	"what is it" [wd] "be doing something" "self-acting" "stove" (makes fire by itself) "radio" (makes sound by itself)
et	(GM)	Hearer Singular Ergative Pronoun
et	(GM)	rare Nominalizer
	y-ok-et	three-stone hearth (< /ok/ "foot")
√e?t		"work, authority"
	e?tal	"religious cargo, position of responsibility, authority, public office"
	e?tel	work [ed] (for [wd] cf. /tronel/)
	et-i-hi-bAl	"office"
	e:t-i-hil	"office"
	e: t-Λ-bi-hil	"office"
	et-ihib	"mayordomo's sceptre of author- ity, <u>bastón más milagroso</u> "

f

/f/ [IIC 2c]

finka

['fiŋ.ka], ['piŋ.ka], ['piŋ.ga]
 (<Sp. finca) "plantation"
 Choles once worked as near
 slaves on coffee plantations.
 Today, many work seasonally or
 year-round for plantations.

fotogafiyi
 foto

"photograph"
 ['po.to]]photograph"

g

/g/ [IIC 2c]

glesya

"church" (<Sp. iglesia, cf.
 /klesya/)

h

/h/ [IIC 2a v]

ha	"housefly" (cf. /u:s/)
ha:	"housefly"
√hab	"year, time" (cf. /hala/)
ha?-bil	"year" usu. in the past
ha?-lel	"time"
če?-ha?-lel	"since when, up till now, all this time"
če?-to-ha?-le	"since when, up till now, all this time"
hač	(GM) Postpositional Qualifier, Adverbial Adjunctivizer "only"
an hač	"there are times, there are some, sometimes"
ču-ki hač	"whatever"
ču-ki-ač	"whatever"
hun-la-hač	"all are equal" (< hun-la:-hač)
hum-p'e-ča?-p'e hač	to "only one or two still (i.e., "only a few remain")"
sa-hač-iš	"it is only a little"
č'ʌ:-i-y-en haš	"sad"
hača	"axe" (<Sp. <u>hacha</u>)
hača-ča:k	axe-like stone (hurled by lightning)
√ha:č	"young ears of corn, <u>jilote</u> " (/sumuk/)
√hak'	"answer, believe" √VH
hak'-ol	Gerund

√hal	hala	"time, when" (indirect question, Past often implied)
	hala-ki	"when?"
	hal-iš	"when?"
	hal-iš-ki	"when?"
	halau	"wild porcine, <u>tepescuintle</u> " [es]
	halabʌʔan	"spider's web" (cf. /am/)
	halobaʔan	"spider's web"
	halʌl	"woody grass, <u>carrizo</u> , flute, Colonia Carrizal (cf. /amay/)
	nič p'øš halʌ	"flowering tops of grasses (white)"
√ham		"open, clear"
	ham-ʌ	Past Stem
	ham-ʌl	Past Stem
	ham	"grass, <u>zacate</u> ; roof of house (cf. "grass")
	ham-il	"grass, grassland, San Cristobal de las Casas (also called /ho-bel/ "flatland")
√hap		"take in liquid or gas, "drink, breathe"
	hap-bil	"a drink"
	hap ʔikʔ	"breathe"
	hapo-ʔikʔ	"lung"
	hap	"criss-crossed minutely, pebbly-surfaced"
	hap-o-tik	"criss-crossed, pebbly"
√ha:p		"score, cut deeply but not through"
	hasʌl	"the end, finished, enough"
	haš	Adjunctivizer (cf. /hač/)
	uč-at-aš	"beautiful"

hatet	Hearer Free Pronoun "you"
√haɕ'	"hit, fight, strike (a bell), shell dried beans by hitting"
haɕ'	Num. Class. "call, bell"
√hay	"sharp"
hayu?	"yawn"
ha?	"time" (cf. /hab/)
√ha?	"water, river, rain"
čut ha?	"stream"
y-al-o?-ha?	"stream"
kol-em ha?	"ocean, lake, large river"
hu-ben ha?	"the river is low"
tam ha?	"the river is high"
ha?a	Adjunctive "aquatic"
ha? kawayu?	"water horse" lives in water, bothers people
ha?a mut	"heron"
ha?a ɕ'i	"water dog" (? otter) two kinds: yellow and white
ha?a uč	"water possum" lives in holes under water, girth: 30 cm, fine grey fur
ha'al	"rain"
ha?lel	"severe rainstorm"
tyempo de ha'al	"rainy season"
ha?as	banana (names and types vary)
ha?as-il	banana plant, banana grove
ca-cak ha?as	"red banana"
iči-ha?as	type of banana
k'an-k'an ha?as	"yellow banana"
muč ha?as	"eating banana" (<u>guineo</u>)
rubatən	" <u>guineo</u> " (loan)
yΛ-yas ha?as	"green banana"
halΛ-hač	"extended, spread out"
hal-el	"slippery"

√heb		"pour, serve"
	heč	"orchid"
√hek'		"prick, stab, cut"
	akušan hek' č'o-č'on-hek' u	"inject" (<Sp. <u>aguja</u> "needle") "cut into small pieces, chop up"
√hel		Kinterm "parallel kin"
	na-hel yum-hel	MS, MS-, MBW FB, FB-
	heʔ-el	"also" [wd] (in [ed] /haʔel/)
√hil		"finish"
	hil-el hi-san	"finish] "finish, cause to be finished"
√hin		"alligator"
	a:-hin	"alligator, lizard"
	hin-i	Imperson, Demonstrative Pronoun "he, she, it, that (one), this (one)"
	hin-i	['hi.ni] "Is that so?"
√hiʔ		"extended along a line, hung out, hung up" √VH
	hiʔ	"sand"
√hoč		"picking or po ing repeatedly"
	hoč-el hoč	"break out of shell" √VH "bite, sting" as insects do
	hoč-ol	"embroidered, sewn, picked out, empty"

hoč-i-te?	"shrub" [es]
hoč'	"eat by undermining" as termites do wood"
ho-ho-sin	"bark" [es] used for stopping or stanching blood
√hol	"top, head, head hair, cornsilk"
hol wič	"mountain west of Tila, cone-shaped mountains"
homa	"palm" used for adornment, also eaten
homa č'ib	alt. form for /homa/
homoč'	"corn husk"
honop, honow	"large yellowjacket-like insect"
√hop	"gather by hand"
hop	Num. Class. "handful"
hotet ha?	"tadpole"
hotot	"attic" (cf. /otot/ "house")
√ho?	"five"
holum	"fifteen"
ho-ka-y-uš-ba:k'	"nine hundred"
ho-ke-ca-ba:k'	"five hundred"
ho?-k'al	"one hundred" (5 score)
ho?oš	"red food colorant, <u>achiote</u> "
ho?b-el	"lowland" S. Cristobal I.C. cf. /ham-il/, /hub/)
ho?-may	"heron" [es] (kuktepa dialect)
√hub	"down," "lower, go down, swallow"

	hub-el hub-en-el	271	"bring down, go down, swallow" "file, take down"
√huč			"grinding"
	huč-bal huč-ol huč'o? ka:pe		"the work of grinding" Gerund alternate form of Gerund "de-coriating machine for coffee" (works like a grinder)
	huku		"dugout canoe"
	huk-pik		"bird" [es] hoots like owl
√huk'			"plane wood, gouge"
√hul			"arrive, visit, achieve an aim"
	hul hul-an hul-el hulan hula?ab hula?o? hul-onib ^Δ hul-onib		"arrive" "arrive" "arrive" "visit" "visitors" "visitors" "rifle" "rifle"
√hun			"one"
	hum-p'e hu-um-pe hun-k'al hum-ba:k' hum-bi:-l-el hun-we-lel humuk		"one" Unmarked Num. Class. "eacy, every" "one score" (20) "one score squared" (400) "along one side of" "in front of, on the other side of" "a while" (an hour or less)
√hun			"paper"
	hun		"kind of tree"
	hun-šiba:ž		"large butterfly" [es] (<u>brujo's</u> book")

√hus

"non-mammal" (cf. /u:s/)

hu-hus

"swarming ant-like insect"

hu-hus-lum

"small lizard" [es]

i

/i/	[IIC 1]	
i	(GM)	sign of the Imperson [IIIC 1b], Imperson Bound Pronoun, topicalizer
i	(GM)	Past ending for Intransitives [IIF 7a]
	ič	Clitic (poss. variant of /ič/ q.v. below)
	mač-ič	"no, indeed"
√ič		"chile pepper" several varieties
	bik-ič	"small chile"
	sak-ič	"white chile"
	tun-ič	"stone chile" (smallest variety)
	ičan	Kinterm, used reciprocally between MB and SSo, also across generations MBSO and FSSO, affectionate quasi-kin term between any males
	ič-te?	"tree whose sap is painful to touch"
	ič-to-pimel	"herb <u>albajaca</u> ," many varieties, referent varies from place to place (cf. /iš-to-pimel/)
	ihala?a	"godchild" (<Sp. <u>hijado/a</u>)
	i: -č'u-ben	"dark"

√ik		"human"
	wiŋ-ik	"man"
	iš-ik	"woman"
	tik-il	Num. Class. "human"
ik	(GM)	negative suffix, used more in [ed] [IIIF 4a]
	mač k-u:~il-ik	"I don't know" [ed]
	ame ya:~al-ik	"so that he does not fall" [wd]
	ikot	"with, and" Preceded by Bound and followed by Ergative Series (cf. /itok/)
	a-w-ikot-on	"you with me"
	ik'	"wind" (cf. /'ik'/)
√ik'		"black, dark, dire" (cf. /ik'/)
	?i-?ik'	"black, dark"
	ik'-an	"dark, night, early in the morning"
	ik'-an sak-an	"all the time, night and day"
	ik'-ta?	"fish, <u>mojarra</u> " (< "black excrement")
	ik'-to	"early, still dark"
	ik'-ton-el	"dark, night"
	i:k'-al	"black demigod" (cf. /nek/)
	i:k'-an	"get dark, become night"
	i:k'-Al	"tomorrow"
	ik'u:ø'	"edible finger-like fruit of plant whose leaves are used to wrap pozol"
il	(GM)	derivational suffix (part of V1 complex)
	k'in-il-ač	"right on time, just in time" (< "day, time, sun, etc.")

	pam-il	"air, the outdoors, the world" (< "above")
√il		"see"
	il-an	"see"
	il-Λ	"saw" Past Stem
	wokoš a-w-il-Λ	"thank you" (cf. /wokol/)
	il-a-yi	"here" (cf. /wΛ/)
	il-ek-aš	"beautiful" (cf. /kota-haš/, /uč-at/)
√ili		Demonstrative "this"
	ili...i	Demonstrative (discontinuous)
	ili-yi	Demonstrative
in	(GM)	verbalizer (part of Vn complex [IIIF 7c])
	yos-in	"pray" (<yos <diós "God)
	i:-am	"wife"
	ip	"armadillo" (cf. /?ip/)
i-s-an	(GM)	Causative (cf. /s-an/)
	to-isan	"repair" (< /to/ "straight")
	isim	"antenna" (of insect)
	is?u:k	"corner"
iš	(GM)	Clitic [IIIF 4 a], Female and Unmarked animate Gender [IIID 1a]

sa hač iš	"it is but a little, you're welcome"
ča-iš	Completive "completed" "ya"
iš-a:-ke:	"lizard" (note concatenation of both "gender particles"
iš-ku wahali	"long ago"
iš-ku-liyi	Demonstrative "this/that"
išiši.	[?iš. ?i. ši] Demonstrative "this/that"
√iř	"grain, maize"
iřim	"maize corn (several varieties), dried corn, husked cob with grains"
če?-k'a:k	"corn for roasting"
ha:c	"very young ears"
k'an-wa:	"yellow corn"
sa?	"pozol, gruel made from sour-dough of corn"
sasak iřim	"white corn"
wa:	" <u>tortilla</u> , cooking corn, ground corn dough"
wa:k-tan	"ear of corn"
wa:-tan	"ear of corn"
yašum	"black corn"
iř-man	"degrain corn"
iř-om	"degrain corn"
iř-to pim-el	"herb, leafy green"
√it	"bottom, end, rectum, anus, buttocks"
itok	"with, and" (cf. /ikot/)
√i:č'	Kinterm
i:č'-in	"younger sibling "either sex)"
iywo-iywo?	"bark of dog" (onomatopoetic)

k

/k/ [IIC 2b iβ]

k (GM)

Speaker Bound Pronoun

k

"going" Alternate root (cf. /kon/) [IIIF 8c]

√ka:

alternate form of /ke:/ "begin"

ka:-el
kaβ

"begin" Modal [ed]
"much, many" (<Sp. cabal)

kač-il

"handkerchief"

kakte?

"sandal" (<caite Nahuatl /kák i/)

ka:k-i-y-at

"insect, blue back, yellow wings, 2 i/2", stings

√ka?o

"resting" (cf. /o?ka/) [IIIB 2b]

ka:pe

"coffee" (< cafe)

kaβ
š-kaβ

"girl"
"girl"

kas
lo?-kas

"petroleum product, kerosene"
"petroleum worker (< takes out gas)

ka'sero

"visitor, pilgrim, Tabascan,"
word (casero, "with confidence")
spoken by pilgrims traveling
through Chol country

kastiyu	"Spanish language" (< <u>Castellano</u>)
√kaš	"pass" (cf. /k'aš/)
kaš-tan	"pass"
kaš-on	"pass"
kaša	"box" (< 16 c. Sp. <u>káza</u> , <u>caja</u> , "box")
kašlan	"ladino, white man, foreigner" (< <u>Castellano</u> ; cf. /kastiyu/)
kašlan	"miraculous, sacred"
kašlan iti'eba	"sceptre of the mayordomo"
√ka:t	"ask, beg, pass through" (cf. /k'a:t/)
ka:t-isan	"remember, pass through"
kawayu?	"horse" (< <u>caballo</u>)
√ka	"stay, remain"
kalel	"stay"
ka-tal	"stay, the place where one falls" (i.e., the spirit stays there)
√kač	"tie" √VH
kač-il	"knot"
kalač	"edible mushroom"
sasak kalač	"edible mushroom"
kalaš	"many, much, a great deal, intensely"
√kan	"learn" in the Completive "know"

kʌn-ol	"learning, knowledge"
a:-kʌn-obʌ	"wisemen, savants"
kʌn-tisan	"teach"
kʌʃ'aʃ	"fruit <u>anona</u> "
kʌy-i	"sung, chanted" (cf. /k'ay/, k'ʌy/)
√ke:	"begin," Modal [IIIF 5]
√keb	"belch"
kel	"wildfowl" "boat-tailed grackle" song signals rain " <u>chachalaca</u> " [es]
ke:l-ob	"shoulder"
keptʌl	"ravine, <u>barranca</u> "
keweš	"fruit <u>anona</u> " [es]
ke?	"lizard"
ke:	"lizard"
ki	(GM) Interrog. and Subjunctive
ba-ki	"where"
ba-to-ki-ora	"since when"
ču-ki	"what"
hala-ki	"when"
ki la:mi č'ubi	"if she allow it to pass; if she accept"
kin	(GM) Verbalizer [IIIF 7c]
muč-kin	"gather into clumps"

kisin	"shame, bashfulness"
kiřtanu	"human being, person" (< <u>Cris-</u> <u>tiano</u>)
√ko	"nothing, free, gratis, de- prived"
ko-hač	"for free, with nothing, <u>así</u> <u>nada más</u> "
√ko:	"face, cheek"
kok, škok	" <u>ponchitoque</u> , a small turtle used in curing," 3 kinds
√kol	"grow"
kol-el	"grow"
kol-e,	"big"
kolen-tun	"boulder"
ko-san	"raise, cause to grow"
√ko:m	"short"
kome	"because, since, whereas" (mostly in [ed], loan < <u>como</u>)
√kon	"going" alternate root [IIIF 8c]
kon, kon-iř	"I go, hello, goodbye, <u>adios</u> "
√kon	
kon-el	"growl, cry out"
koř	"wildfowl, turkeysized" [es]
√kot	"arrive, help, beautiful"
kot-an	"help"
kot-a-hař	"beautiful" (cf. /il-ekař/)

ko:t	Num. Class. "animal"
ko:t-ilel	"body" (inc. human)
ko:t-om	"fox" [es]
koya?	"tomato" small native variety [es]
koya?te	"sour fruit" [es] inedible, looks like cherry tomato
koyo?	"tree fruit" [es] inedible
√ko?	"woman, mother" Kintern MM MF (also M, FM)
ko'o	"gone" [IIIF 8c]
ko'o	Subjunctive particle "perhaps not"
ko'o mi talač	"perhaps he won't come"
hin ko'o	"if not...let me, then may I..." Pre-Sentence
krus	"cross" (<Sp. <u>cruz</u>)
√ku	"go" [IIIF 8c]
ku-ku	"go" Imperative, "go well, <u>ándale, pues</u> "
ku (GM)	Clitic [IIIF 4b]
če?-ku	"yes"
ku-ku	"roof beam"
kuku:-lel	"roof beam"
√ku:	"owl"
√kuč	"carry, support, copulate," Num. Class. "load"
mač kuč	"it's more than one can stand"
mač ku:č	"it's more than one can stand"

kuč-eh-el	"carry, bring in"
kuč-o-tun	"kidney"
kuč-yopom	"small white flower" "praying mantis-like insect"
ku:č-il	"shawl used to carry children"
kukmal	"feather"
kukum	"feather"
kuku	"cacao"
kukulunta	"horned beetle" [es]
kulanta	" <u>cilantro</u> , coriander green"
kuliš	"mustard greens"
kumante?	"shrub" [es] red flower
kun-el	"hoe, weed, clean, clear, trim"
kuš	"piece, part" (cf. /k'uš/)
kušttał	"life"
kutaranač	"tree" [es]
kuč-in	"kiss"
ku:č'	"tobacco"
kwa	"quickly, briefly, a little" (cf. /wa/) Derivational par- ticle

k'

/k'/	[IIC 2b iβ]	
	k'a:-ol	Petalcingo
	k'a:-te?	"bridge"
	k'a:-bal	"crop"
√k'ab		"name"
	k'aba?	"name"
	k'ačínΔk'Δl	"belt"
√k'a:k		"fire, fever"
√k'al		Num. Class. "twenty"
√k'am		"sick, ill, grave, severe"
√k'ay		"singing, song, sing, peep of birds" (cf. /kay/)
√k'a:t		"beg, bring to mind"
	k'a:t-in	"ask, remember, beg, petition for"
	k'a:t-is-an	"remember, think of"
	k'a:t-i-b-en	"ask on behalf of someone"
√k'Ab		"hand, forearm"
	k'Ab-Δl	"ring"

y-al-k' ʌb	"finger"
bʌk'-el-i-k' ʌb	"wrist"
naʔ-k' ʌb	"thumb"
pat-k' ʌb	"back of the hand"
sin-k' ʌb	"middle finger"
taŋ-i-k' ʌb	"palm of the hand"
tucon-i-k' ʌb	"index finger"
ʃut-la-k-k' ʌb	"baby finger"
k' ʌb-i-tun	" <u>mano</u> " of a <u>metate</u>
√k' ʌč	"mushroom"
k' ʌ-k' ʌč	"edible mushroom" [es]
√k' ʌn	"serve, guard"
k' ʌm-bal	"servant"
√k' ʌn	"soft, slowly, gently"
√k' ʌn	"yellow"
k' ʌn-k' ʌn	"the color yellow"
k' ʌn-čʌy	"yellow fish"
k' ʌn-k' ʌn čenek	"yellow beans " (< Tzeltal /cenek'/ "beans")
k' ʌn-čo:	" <u>nauia</u> ca rattlesnake, <u>cuatro-narices</u> "
k' ʌnšuš	"daisy-like yellow flower" [es] 2 varieties, large and small
k' ʌs-k' ʌs	"firefly"
k' ʌš	"put it" Imperative
√k' ʌy	"put, place, leave"
k' ʌyʌ	"leave it" Imperative
k' ʌy	"chant" (cf. /k' ay/)
k' ʌçæç	"fruit <u>anona</u> "

√k'e:		Num. Class. "flat things"
√k'eč		"carry on the head"
√k'el		"look, see, daydream, seem, read, study"
	k'el-hun	"read, study"
	č'u-č'un-k'el	"stare"
	wa-k'el	"glance"
	k'el-oni	"façade"
√k'eš		"exchange"
	k'eš	"trade"
	k'eš-ol	" <u>tocayo</u> , person with the same name" (Ntl. /tocayo/)
	k'eš-tan	"change"
√k'e?		"something"
	k'eb-iš	"you're welcome" [ed]
	k'eb-áč	"you're welcome" [wd]
	k'e?-to	"you're welcome" [wd]
√k'in		"sun, day, <u>fiesta</u> , celebrating, heat, light, sunshine"
	k'in-čanob	"lightning" (for those to whom /ca:k/ is taboo)
	k'in-il	"place in sun to dry"
	k'in-il-áč	"on time, in the nick of time"
	k'in-ih-el	"the person responsible for a <u>fiesta</u> , a great <u>fiesta</u> "
	k'in-tun-il	"dry season"
	k'in-y-ub-il	"place in sun"
	šin-k'in-il	"noon, midday"
	y-uš-k'in-i	"three days ago, day before the day before yesterday"
√k'iš		"warming, getting drunk"
	k'iš-k'in	"warm in the sun, by a fire"
	k'iš-in	"drunk"
	k'iš-ni-san	"drink, get drunk"

√k'o		Num. Class. "handfull," "face"
	k'o-k'ob	"canary, <u>lacandrilla</u> [es]"
	k'o:-če pay	"parasite plant on trees"
√k'ol		"dig out," " <u>avellano</u> " tree [es]
	k'ol-ol	"toy, a top made from nut of <u>avellano</u> , fruit [es]"
	k'o?-loč	"edible mushroom"
	k'o?-loč poy-te?	"mushroom that grows near <u>corcho</u> (/boy-te?/) tree"
	k'op	Tzeltal language
	k'un	"soft, weak, tires easily" (cf. /k'an/)
	k'un-el	"leafy green [es]"
√k'uš		"bite, eat, hurt, love"
	k'uš-bal	"eating"
	k'uš mi-la-k-ub-in	"to love" (< hurt we feel)
	k'uy-an	"bird, <u>pájaro cantador</u> " [es]
	k'u?	"nest"

1

/l/ [IIC 2a iii]

la	(GM)	Plural Pronoun Hearer and Omniperson
	lak	Omniperson form for nominals and utterance-final verb phrases
√la:	la:-al	"equal, the same"
	la:-čam	"twelve"
	la:-čin	"scratch"
	'lamina	"corrugated galvanized steel" (<Sp. <u>lámina</u>)
	lamita	"half" [ed] (<Sp. la <u>mitád</u>) (cf. /šin-t'op'-ol/)
√la:m	la:m-el	"pass, recede, diminish, improve, heal"
	la:m	Num. Class. "layers, storeys, levels"
	la:m la-k-e:	"gums of the teeth"
	lΛ	"fish, <u>bobo</u> [es]"
√lΛk'		"near"
	lΛk'-Δl	"near"
√lΛn		"ten"

	l ^{am} -p'e	"ten"
	l ^{am} -p'e-č̣aʔ-k'al	"thirty" (<ten--two-twenties)
	l ^{an} -k'e-č̣aʔ-ba:k'	"six hundred" (<ten-twenties, from two-four-hundreds)
	l ^{ap} '-on	"mountain hawk" [es]
√l ^Λ :t		"weigh (it)"
	l ^Λ :t- ^{al}	"weighing"
√l ^Λ ʔ		"take, get"
	l ^Λ ʔ-tol	"obtaining" Gerund
√l ^Λ ç		"stack"
	teʔ l ^Λ ç-ošim	"pole used to support stacks of dried corn ears"
le	(GM)	reduced form of /lel/ suffix, reduced form of demonstrative /ili/
	le...i	Demonstrative
	lek	"good, beautiful " (<Tzeltal /lek/ "good")
	leko	"evil, bad, lying, cheating" Derivational: "in vain, worthless"
√lem		"flashing, sparking, shining"
	lem-bal	"liquor, alcohol"
√leç		"upward movement"
	leç-an	"raise, lift"
	leç-el	"climb, go up, rise"
√lew		"fat, grease, lard"

	limahol	"Limar" Colonia in Mpo. Tila
	lime-te:	"bottle"
	li-yi	reduced form of demonstrative /ili-yi/
√lo		"obtain, take, pick up, guard, keep"
	lo:	"wound"
	lolon hač	"in vain".
	loko-loko	"gabbling of turkey" (onomotop.)
√lok'		"outward movement"
	lok'-el	"go out, appear, boil up"
	lo?-či:	"cramp" (? <veins protrude)
	lo?-kas	"petroleum worker"
√lot		"lie, liar, cheat"
√lot		"pick"
√lub		"fatigue, to tire"
	lub-ela	"it is tiring"
	lub-u-y-on	"I am tired"
	luben	"to be tired"
	lububen	"to be tired"
√luč-ol		"serve"
	lubik	"with effort, but no results"
	lukum	"snake"
	mΛ-mak'lukum	"earthworm"

√lum		"earth, land, soil, country"
	lum-al	"city, nation"
	la-k lumal	Tila"
	lum-seǵ'	"clay bowl, incense burner" (cf. /pul-oʔ-p'om/)
luʔ	(GM)	Derivational: "all, completely, everywhere"

m

/m/ [IIC 2a i]

√ma prefix for chief mayordomo of a saint, affixed to the name of the saint

ma-k-yun-la

Chief Mayordomo of Señor de Tila (< la-k-yum/ "the Lord")

ma-k-na?-la

Mayordomo of Our Lady

ma (GM)

Unmarked tense aspect /mi/ plus Hearer Bound pronoun /a/

ma:

"who" (cf. /ma:č/)

√ma:

"exchange of goods"

ma:-nan

"loan, borrow"

ma-ne-ben

"borrow"

ma:-tan

"give as gift"

ma:-an

"loan" N

√ma:b

"cocoyol, coconut palm" [es]

mač (GM)

Negative, "no, not"

mač

"who" (cf. /ma:č/)

mač-ki

"who?"

maču

"mule" (<Sp. macho)

√ma:č

"who" relative

mač

"who"

mas

"who"

mač-ki	"who?"
maš-ki	"who?"
ma:k-o?	"cockroach" (cf. /pewal/)
√mal	"interior, inside of house"
y-ol-mal	"liver"
√ma:l	"going"
ma:-a-la	"go, become, get high, get drunk"
male	Modal: discreet action, "go and do"
ma:l-el	"go"
ma:l-em	"far"
čok-ma:l-el	"send"
√mam	"grandchild"
mana bu?ul	"peanut"
š-mana-š bu?ul	"peanut"
mantikat	"large, butcher-ready pig, esp. male"
√maš	"spider monkey"
maš	Neg. (cf. /mač/) and alt. form of relative "who" (cf. /ma:č/)
maš to	"not yet"
mate čitam	"wild pig" [es]
matun	"tree, <u>rosima</u> " [es]
mača	"eyebrow"
√ma:č	"skirt"

√ma:ø	ma:ø-an	"lick, suck"
ma?	(GM)	Negative (cf. /mač/)
	ma?an	Strong Negative, "there is none, nothing, no"
	ma?iš	"definitely no"
	ma?-nik	"no" Contracted form of /ma?an-ik/ [ed]
	ma?-te?el	"forest" (cf. /te?el/)
√mΔk		"cover" (cf. /mΔ:k/)
	mΔk-Δl	"cloudy, covered"
	mΔk-Δč	"yes" (cf. /mu/)
	mΔk-tΔl	"fence"
√mΔ:k		"cover" (cf. /mu:k'/ "mound")
	mΔ:k-il	"top, cover"
	mΔ:k-il	"top, cover"
√mΔk'		"half"
	tuk mΔk'-Δl	"divided in half"
	mΔ-mΔk' lukum	"earthworm" (< half-snake)
	š-mΔl-Δl	" <u>topota</u> , minnow-like" [es]
√man		"buying"
	man-Δ	P Stem
	man-ol	Gerund
	man-Δn-el	"purchases"
√meb		"puncture, make holes"
	meba	"without family, orphaned, widowed"
√mel		"making"

mel	"make, do, build"
mel-el	"genuine, true"
mel-el-Λč	"it's a fact"
mi mel-i	"if it's true"
me:l-i	"possible, made"
me:l-em	"made, ready, finished, possible, able"
<u>mero</u>	"almost" (<Sp. <u>mero</u> "genuine")
<u>mesa</u>	"table"(loan)
√met	"nest"
√mep'	"crab"
√me?	"deer"
čuk me?	"smaller species of deer" [es]
tinama?	"sheep" (<cotton-deer)
mi (GM)	Unmarked Tense/Aspect [IIIF 2b i], conjunction for embedded sentences, "if, when, since"
√mič'	"angry"
mil	"thousand" (loan)
mil-ol	"several thousand"
mis	"cat"
misuhi?	"broom"
miç'it	"water snake" [es]
√mok	"step, walk on"
momoy	"fern" [es]
mo-te?	"tree, gives red beans, two varieties--edible and inedible" [es]

	mo-toy	"edible plant" [es]
	motoma:	"mayordomo" (loan) (cf. /č'u-wan-el/)
	moʒo	"green inchworm"
	moʔ-na	"edible green" [es]
mu	(GM)	Immediate T/A [IIIF 2i]
	muč, muš, mukač	variants of /mu/ with clitics
√muč		"group, clump cluster" (cf. /mu:k/ , /mu:l/)
	muč	Num. Class. "mound"
	muč	"toad, its urine burns the skin"
	muč-haʔas	"banana, <u>guineo</u> " [es]
	muč-kin	"gather together, place in mounds"
	mu-muč-ʔekʔ	"group of stars," the Pleiades
√mučʔ		Num. Class. "handful"
	muk-ne	"moo" of cow (onomotop.)
	mukuy	"dove"
√mu:k		"bury, mound, hide"
	mu:k	"tomb, mound, navel"
	mu:k-el	"bury, hide"
	mu:k-il	"top, cover" (cf. /mΛ:k-il/)
mukʔ	(GM)	Non-present Progressive T/A [IIIF 2b iv]
	<u>mula</u>	"mule" (loan)

√mul		"like"
	mul-an	"like, enjoy"
	mulawil	"world, existence"
	yamba mulawil	"death" (the other world)
√mu:l		"mound, pile, mole hole"
	mu:l šinič	"anthill"
√mut		"chicken, bird"
	y-al mut	"chicks"
	čak-mut	"redbird, edible wildfowl"
	čut-mut	"young rooster"
	č'ok-mut	"young hen"
	na-mut	"hen"
	tat-mut	"rooster"

n

/n/ [IIIC 2a]

√na		"full"
√na:		"mental function"
	na:-al	"dream"
	na:-len	"dream"
	na:-tan	"understand"
	nako, nakom	"bird" [es]
	nak-tal	"sit down" (cf. /buč/)
	našan	"first, in the beginning"
√na:t		"far"
√na?		"mother"
	na-hel	Kinterm MS
	na-k'ab	"thumb"
	na?-ok	"big toe"
	na-tun	"metate, grinder"
	na?-la-k-č'u-tat	"the mother of God"
	la-k-č'u-na?	"Mary, the moon, any woman saint"
√nAk'		"belly, stomach"
	bal-nAk'	"food" (< fill the stomach)
	baK-nAk'	"food"
	namal	"trained, accustomed" (cf. /num-e:-el/)

	nʌnʌte	"small bird" [es]
√nʌs		"hearing, listening"
	nʌš-tan	"listening"
	nʌč-tan	"listening"
√ne:		"tail"
	ne:-ʔekʔ	"comet" (<tail of star)
	nek, š-nek	"black troll"
√nič		"flower, candle"
	ničim	"flower, paraffin, candle"
	č'a:-nič	"flower" [es] used in Holy Week
	yʌš-nič	"green flower" [es]
	nič p'oʃ halʌ	"white grass flower"
	nič ti ham	"green grass flower"
√nihi		"in-law" (cf. /niʔi/)
	šnitenehep	"shrub"[es]
√niʔ		"point, nose"
	niʔaʔa	"it is full" (cf. /na/)
√niʔi		"in-law" AFFINAL KINTERM
	niʔal	D or So -in-law (cf. /ʌl-i/)
	niʔi naʔ	M-in-law
	niʔi tat	F-in-law
	niʔ-ukʔ	"chayote [ed]" (cf. /č'iš č'um/)
√no		"right-hand side"

√no:		"big, good, extremely, very"
	no: k-om	"I like" (< I want very much)
	no: teʔel	"rainforest"
	no: ʔekʔ	"biggest star" Saturn
	nočʔ-em, š-nočʔ-em	"burr, thistle-like" [es]
	nok-tʌl	"kneel, genuflect"
√nopʔ		"attempt, persuade, learn, believe, religion, philosophy"
	nopʔ-san	"teach, preach, show"
√noš		"old, old man"
	noš-al	"husband"
	noš-tat	"grandfather"
√nuk		"smoke"
	nuki	"large, great"
	nuki pʔe:-pem	"large butterflies" [eg]
√num		"pass, spend"
	num-el	"pass, pass by, walk"
	num-e:-el	"get along, become accustomed, be tamed"
	num-i-kʔin	"pass the day, spend time, life"
	num-isan	"train, tame"
√nup		"close, marry, receive, suck, smoke"
	nupu	"closed"
	nup-unel	"marry, wedding"
	nupunai	"marry, wedding"
	nusa-kʔin	"luck, art, charm," the sign of supernatural power"
√nuç		"light, fire, ignite"

O

/o/	[IIC 1]	
	obes	"fragrant white clustered flower"
√oč		"enter"
	oč-an oč-an k'in oč-en oč-i	"enter, set (sun)" "afternoon" "come in" Imper. PStem
	očite?	"plant" [es] red pods, black beans
√ok		"foot"
	ok-Λl y-ok-et ok-o wut-la-k-ok	"foot" "hearth" (made of three stones) "legs of an insect" "ankle" (< eye of the foot)
√ok'		"mud" (cf. √?ok'/)
	ok'-ol ok'-lel	"mud" "expanse of mud" (cf. /o?-lel/)
ol	(GM)	Nominalizer
	ol-mal	"liver"
√om		"want"
	y-om	"good, correct, to make right"

on	(GM)	Speaker Ergative Pronoun
√on		"howl"
	on-el	"howl"
	on-i	"quantity, much, a long time ago"
	ora	"time, season, nowadays" (<Sp. <u>hora</u>)
	ba-ki ora	"when?" (what time, what day)
	y-oro-lel	"season, time"
	orosyon-iš	"six p.m." (<u>oración</u> "Angelus prayer")
	orvinu ak'	"vine" [es] used for tying house posts
	oš	"fruit, edible when cooked"
	oš	variant of Clitic /iš/
	ote:š	"growl" of jaguar (onomatop., always with long high de-voiced vowel)
	otot	"house"
√oø		"put, enter"
	oø-an	"put, place"
	oø-an la-k ba	"interrupt, go into the middle"

p

/p/ [IIC 2b iα]

√pa:		"sour"
	pa:čak	"guava" (p'ata:/)
	pa?-uy	"skunk" (< makes sour)
	pa:č'	"pineapple"
√pa:k'		"straw, wall of house" Num. Class. "straw mats" (cf. /p'o:p'/)
√pa:l		"trim, peel, make a point, plane, lick" Num. Class. "clusters, bunches"
	pa:l-i-ben	"trim to a point"
	pa:l-in	"plane, lick"
√pam		"front, upper, top"
	pam	"forehead"
	pam-il	"outdoors, air, atmosphere, weather"
	pan-am-il	"world" [ed] (cf. /mula-w-il/)
	can-il pam-il	"insects" (< live in the air)
	a: pam-pay	"transparent, invisible"
	pan-can	"sky, heaven" (< above-tall)
	pan-otot	"patio" (< in front of the house)
	pan-te	"shelf, table made for dead at All Saints"
	pan-la-k-ya	"front muscle of thigh"
	pan-wiç	"summit of a mountain"
	ti pan	"on top of"

papa	"father" (loan /tat/ considered ugly for family father, man greeted in street: /kon-is tat/)
√pas	"come"
pas-el	"come, arrive, sprout"
pas-i	"shoot of plant"
pasa?	"bird" [es] " <u>chilera</u> "
√pat	"outer surface, back"
pat-i-k'ab	"back of the hand"
pat bu?ul	"bean pod"
pat otot	"patio"
we-pat	"towel, cloth, veil, shawl"
payu	"cloth, shawl" (< /paño/ <u>pañuelo</u> , pa(n)yu(elo))
pa?le č'ib	"riveredge palm" [es] edible
√pač	"skin, hide"
pač-i-lel	"skin, hide"
pač-i-lel ti	"lip"
pač-i at	"scrotum"
√pak	"bend down ripe corn stalks, repair"
čA-pak	"fig tree"
pak'-eš	"spotted, dirty, soiled"
paM	"toucan" [es]
panu	term of hatred
√pat	"make, prepare, make visible (cf. /paŷ/)"

pate ak'	"flower" [es] four-petaled, red
pAy	"make, build"
pagek	"toad" (cf. /muč/)
pehuk'	"herb to calm mad dogs" [es]
√pe:k	"speaking"
pe:k-an	"speak, talk, address"
tas pe:k-Λ lak-bΛ	" <u>ya platicamos</u> " (signal for the end of a conversation--"okay")
pensal	"thinking" (<Sp. <u>pensar</u>)
pepente	"taranta" small yellow flowers, pods at end of branches
pete:t	"spindle for making yarn"
pe:t-el	"all, every, together"
perito	"herb, <u>perejil</u> " (non-pal. /t/ [t̃])
pewal	"cockroach" (cf. /ma:k-o?/), beetle-like bugs"
peya?	"bird" [es] harsh call, large
√peʒ	"complete, fill"
peʒ-el	"complete, fill"
peʒ-i-bΛ	"become complete"
peʒ-el la-k č'u-na?	"the moon is full"
√pič	"urine"
ču-y-o? pič	"bladder"

pičik	"small toucan" [es]
pič'	"large blackbird" [es]
√pim	"vegetation"
pim-el	"greens, vegetation" [eg]
ičto-pimel	" <u>albajaca</u> , basil"
išto-pimel	" <u>basil</u> "
√pis	"cloth"
pis-il	"cloth, article of clothing"
pis-lel	"clothes"
pis-is-il-i-wut	"Sign of the Cross"
pis-wut, pis-kut	"Sign of the Cross"
piš	"knee"
piš-ol	"hat"
piʔʌl	"friend, companion, countryman"
piʔ	"bird" [es] call: /pi/
po:-kam	"type of bean, <u>botil</u> "
poč'	"tick, <u>chinche</u> "
poy-teʔ	"balsa, <u>corcho</u> " (cf. /boy-teʔ/)
√pok	"washing" (cf. /ɕ'ʌ/)
po-pok	"frog" [eg]
pok-i-tok	place-name
pok-o	" <u>macal</u> " a cultured tuber [es]

√pok'	"gourd for keeping tortillas" (cf. /p'ok'/)
buš pok'	"bottle" (made from gourd)
pok'	"lizard" [es]
pomoy	"tree used for house planks" [es]
ponte	"tree used for fence posts" [es]
po-po-čan	" <u>petate del rio</u> " kind of siren [es]
por-wok, puru-wok	"small dove" [es]
pote	"glass, cup" (<Sp. <u>bote</u>)
pota	"leaf for wrapping pozol and for thatch (cf. /p'oto/)"
poø'-el	"tear up, explode, become useless"
po'om	"crabapple-like fruit" [es]
prossyon	"procession" (loan)
√pul	"burning," VT "burn"
pul-el	VI "to burn, the burning of the fields"
pul-o	"burning, eclipse"
pul-o lak č'u-na?	"eclipse of the moon"
pul-o p'om	"thurible" (< /p'om/ "incense")
pul-ib	"measles, pimples, pebbly skin or surface, pocked"
punel	"marry" (cf. /nupunel/)

putun	"so much"
√puy	"make, take" (cf. /p ^h /)
puy-e ma:l-el	"take by force"

p'

/p'/	[IIC 2b ia]	
p'a:		"sour"
	p'a:č'	"pineapple"
√p'ak'		"planting"
	p'ak'	"to plant, seed"
	p'ak'-ohi-te?	"pole for planting, dibble stick"
	p'Λk'	"seed, plant"
	p'a:ç'	"unfilled steamed corn dough"
√p'Λs		"teach, show"
	p'Λs-ben	"teach, show"
√p'Λt		"power"
	p'Λt-Λl	"strong, powerful" (cf. /ç'Λç'/)
	p'Λt-el	"strong"
	p'Λt-i	"strong"
	p'Λ-ta	"guava"
	p'Λ-tal	"guava"
	p'eč	"duck"
	p'ek'	"small, low, short" (ant. /čan/ "tall")
√p'el		"close"
	pël-el	"closed"

√p'e:l		
	p'e, p'e:, p'e:l	Num. Class. unmarked, residual
√p'em		"fluttering animal"
	p'e:-pem	"butterfly" [eg] (many species differentiated)
	biti-p'e:-pem	"small butterfly"
	nuki-p'e:-pem	"large butterfly"
√p'e:t		"pottery, pot"
	p'e:t-el	"all, every"
	p'e:t-e-lel	"all, every"
√p'eǰ'		"kind of mole trap"
√p'ip'		"smart, active"
√p'is		"cup, measure" Num. Class. "cup, drink" —
	p'is-ol	"measure"
	p'is-k'ut	"Sign of the Cross"
p'o:	(GM)	Derivational "insincerely, perfunctorily"
	p'oč	"insect, chinch" [es]
√p'ok'		"gourd" Num. Class. "gourd, bowl"
√p'o:l		"increase, produce, multiply"
	p'o:l-el	"increase, produce, populate"
	p'o:l-em-iš	"it has become abundant, multiplied, populated"

√p'om		"incense"
√p'o:p		"roast"
	p'o:p'o-ntel	"roasting"
√p'o:p'		"straw matting, <u>petate</u> "
	wakaš p'o:p'	"straw bulls from Carnival"
	p'oø	"flower" [es] (cf. /nič/)
√p'un		"sad, unfortunate"
	p'um-p'un	"sad, unfortunate"
	p'us-ik'al	"life source, heart, mind, idea, wish"
√p'uy		"snail"
	čuk p'uy	"gather snails"
	tun p'uy	"petrified snail"
	p'uy	"thread, wick of candle"
√p'uø'		"flee"
	p'uø'-el	"flee"

r

/r/ [IIC 2b iii]

rosonte?	"plant, <u>labrel</u> " [es]
rubutan	"banana, <u>guineo</u> , <u>robatan</u> "
rukai	"place" (<Sp. <u>lugar</u>)
ruste?	"tree for fence posts" (<Sp. <u>cruz</u>)

S

/s/ [IIC 2a ii]

s	Causative (cf. /san/)
√sa:	"small"
sa: <u>animal</u>	"insect"
sa-hac	"small, little"
sa:-a-tun	"tree" [es] creamy sap, painful to touch
sa-ʔi:ø'-in	Kinterm S- "younger sister" (cf. /i:ø'-in/)
sa:-tun	"stone, pebble"
sak-lan	"look for" (cf. /sAk-lan/)
sakol	"wild dog" [es]
√sak'	"itch"
√sa:k'	"grasshopper, <u>chapulin</u> "
salvador čay	"whale" (< saviorfish, cf. Jonah)
√sɑ:m	
sa:m-əl	"today" (part already past, cf. /waʔ-li-yi/)
san, isan, tisan sA	Verbalizer, causative PStem of causative
saptebobo	"tree" [es] non-edible, coconut-like fruit

√sa:t

sa:t-el	"lose, die"
sa:t-a:	"ending" (moon, month)
sa:t-en	"gone" (moon, new moon)
sa:t-em i wut	"blind (< lost/dead his eye)

saø "small sardine"

√saʔ

	" <u>pozol</u> , cold corn gruel"
yopo-saʔ	"leaf for wrapping <u>pozol</u> "

√sAk

	"white, light, clear"
sA-sAk	"white, the color white"
çA-bal sA-sAk	"white, the color white"
sAk-sAk...bA	VI "disappear"
sAk-an	"morning, spray, whiten"
sAk-ʌ	"morning"
sAk-a-čan	"snake" [es]
sAk-e-la-k-wut	"white of the eye"
sAk-i-nok'	" <u>cascabel</u> rattlesnake"

√sAk

	"seek, look for"
sAk-ʌ-en	"seek, look for"
sAk-en	"seek, look for"
sAk-len	"seek, look for"
sAk-an	"seek, look for"
sAk-y-ok	"pincer, hook of insect"
sAl-um	"fern" [es] juniper scaled

√sAy

	"soft, supple"
sAy-ʌk	"tree" [es]

√sAç'

	"stretch" VI
sAç'-el	"stretch" VI
sAç'	"worm" [es] (eaten by Ladinós)

√se:ç'		"small ceramic bowl"
√sek'		"cut down" (bananas)
√sel		"circular motion or pattern"
	sel-ek-na	"circular, round, spinning"
	semet	" <u>comal</u> griddle for toasting <u>tortillas</u> "
	sihom	"crop planted without burning, second crop on same land"
	sikil	"appear" (cf. /çik/)
	sik-te	"fruits" [eg:]
√sik'		"sugar, sucrose"
	sik'Ab	"sugar cane"
	yAç' sik'Ab	"distill sugar cane, make liquor"
	si-hub	"below" (said of moon)
	silá	"tree" [es] large yellow fruit
	sip	"tick"
√sit'		"swollen"
	sit'-an	"swell"
	sit'-il	"swollen"
	si?-im	Kinterm, female, "mother of /ican/" MM , MS+ , MBW , MBSow"
	sok	"worm" [es] in ears of corn

sok	" <u>guabina</u> , fish" [es] (<Sp. <u>corvina</u> ?)
so-sok-či:	"kind of trap for moles"
son-č'iš	"leafy green" [es]
soto ɕ'el, šotočel	"coral snake" [es]
sow	"willow tree" [es]
soy-ta	"intestines"
su-hu	"plant gathered wild and fed to turkeys"
√sub	"speak, advise, give information"
sub-en	"tell, say"
suk-ri-čuy	"tree" [es] stings upon touching
suku:	"elbow"
√suk'	"ignite, begin"
suk -ul-iš	"ignited" (fire)
ɕuk-ul-iš	"out, dead" (fire)
sulup	"moth" [es]
sumuk	"delicious"
sun	"flowering plant" [es]
sup	"talk" (cf./sub/)

√su:t

"turn, return" Num. Class. "time
occurrence" N. "change, money
given in return"

su:t-el
ca²-su:t-el

"go back, return"
"go back again, return, go
home"

su:t-il
su:t-kin

"piece"
"turn over, flip"

√suø'

"bat" [eg] several species

t

/t/	[IIC 2b iβ]	
	ta	[t̥a] , [t̥aʔ] , post-sentence clitic (Limar dialect)
	kuk-ul-un-ta	"horned beetle"
√ta:		"find, meet, reach, complete" (VT , VI) √VH
	ta:-ben	"finish for someone"
	ta:-ol	"buzzard, vulture" (< finder)
	ta:	"pine"
√tab		"vine or bark used for carrying" <u>mecapal</u> [tap ^w] , [tao] (cf. /c'a:/)
	tab-al	" <u>mecate</u> material"
	tačΛ	"wax" (< /taʔ-čΛn-il-ča:b/ "excrete bee")
	tač'u	" <u>alegran</u> " (< <u>alacrán</u> , black, scorpion-like) [es]
	tahol	"vulture" (< excreta head, hieroglyph symbol, cf. √ta: , √ta')
	tak	Repletive, pluralizer [IIID 2b ii]

ta-k'in		"gold, silver, money" (< excrete sun, cf. √ta?)
ta-k'in-al		"coin, seed of <u>chayote</u> "
tal		"come" (cf. /til/ [IIIF 8c])
la-k tal-a		"priest"
√ta:l		"chest, breast" (cf. /ta:n/)
√tam		"high, deep" (cf. /čan/)
tam-ha?		"high waters in river"
tan	(GM)	Transitive verbalizer
k'eš-tan		"change (clothes)"
√ta:n		"chest, breast, lime"
tan		"lime for cooking corn"
tan-il		"lime for cooking corn"
taš-k'ab		"palm of the hand"
taš	(GM)	[<u>taš</u>] Completive "completed, <u>ya</u> "
√tat		"man, male, kinsman, (archaic) father"
koniš tat		"hello, man"
la-k-č'u-tat		"the sun, Señor de Tila, saint"
la-k tat-o?		"lightning" (when /ča:k/ is taboo)
t'o-mel-la-k-tat-o?		"it is lightning" (< the fathers are thundering")
√ta?		"excrete, excrement, left over, part not wanted, waste"

	ta-ʔekʔ	"shooting star"
	taʔ-hol-teʔ	"shrub" [es]
	taʔ-ok	"calf of leg"
√tak		Derivational: "in equal parts, in the center" (cf. /tuk/)
	tak-mak-i-šin-il	"cut in the center"
	tak-káč-il-i-šin-il	"tied in the center"
	tan-il	"ash, lime for corn-cooking" (cf. /tan/)
√tak		VT "heat, cook"
	tak-an-iš	"it is cooked, roasted"
	tak-in	VT "cook" ADJ "dried"
	tak-i-san	VT "cook"
	tehi ʔora	"the time came" (cf. /ta:/)
√teč		"begin, get up in the morning, stand up" (cf. /waʔ/)
	teč-el	"get up in the morning"
√tek		"step, step on"
	tek	Num. Class. "stalk"
	tek-lum	"town" Tumbalá
tel	(GM)	Gerund ending [IIIF 7f]
	Vn-tel	Gerund ending
	tel	[tel] contracted form of /til-el/ "come" [IIIF 8c]

ya?	tele	"look out!" (< there it comes)
√tem		"together, meeting, fireside stool"
	ten-keč	"bracket mushroom on log"
√te?		"plant, tree, wood, pole"
	te?-bu?ul	"cockroach bean"
	te?-el	"forest, <u>montaña</u> "
	ma?-te?-el	"not-so-deep forest"
	no:-te?-el	"deep forest"
	te?-išim	"cornstalk" but
	hun-tek-išim	"one stalk of corn"
	te?-lal	"animal" [eg]
	te?-lač-o-šim	"pole for supporting corn stacks"
	bo-te?	"board, plank"
	čan-i te?-el	"animals" [eg]
	čan-i ma?-te?-el	"snakes" [eg]
	ča-te	"fruit and tree, <u>mispero</u> " [es]
	čihi-te?	"herb, <u>sauco</u> " [es]
	cun-te	"straight poles"
	pa:k-ohi-te?	"dibble stick"
	pan-te	"shelf, All Saints' table"
	tak-in te?	"dry tree"
ti	(GM)	Unmarked Past Tense Aspect particle [wd] (cf. /ɕi/), relational element, directional "to, for, in, on, at, than, from," Predicate Complement connective.
	ti humuk	"in a while"
	ti hun-we:-lel	"on the other side of, in front of, across"
	ti ka-hi-bi k'ay	"on account of that song"
	ti nič	"in flower" ADJ
	ti num-i k'in	"for the whole day"
	ti šot-il-el	"around"
	ti <u>tiempo</u> oni	"a long time ago"
	ti pan	"on top of, above, down from above"
	ti ya:l-i-on ti pan tokal	" <u>me caí de la nube</u> "
	ti ye-bal	"under, over on the other side of"

	ču-ki-ti-k'in	"what day"
	ma:l-el ti čo-bal	"go to work in the <u>milpa</u> "
√ti		"mouth, opening, door"
	ti otot	"door"
	ti k'a:k	"hearth, fireplace"
	ti:-ik-na	"happy" (čΛ-čΛk-Cruz)
√tič		"extend, stretch along one edge" √VH (cf. /hi/)
	tič-il	Pass.
	tič-ol	Gerund
√tik		"trouble, bother, oppression" (cf. /ti?/)
	tik-lan	"oppress, do harm"
	tik-lan-tel	"oppression"
√tik		"heat, dry" (cf. /tΛk/)
	tik-Λw	"hot, bright, strong"
	tik-Λ-wa:.	"hot <u>tortilla</u> "
	tik-i-san	VT "dry, cause to dry, cook, heat up"
√tik		"untie"
	tik-i	UStem, PStem, Imper.
	tik-il	Num. Class. "person" (cf. /ik/)
	tikot	"with" (cf. /ikot/)
√ta:k'		"disappear"
	ti:k'-el	"disappear" (cf. /sΛk-sΛk/)

√til	"come" [IIIF 8c]
tal	UStem "come," Modal "should, is going to"
tal-o?-bi	"they say they are coming"
tal-i	PStem "came"
tel	[tel] contracted form of /til-el/
til-el	"come" Alternate UStem, Gerund
tAl-i	"came" PStem
til-i	Alt. PStem
ča?-tel	"return, come back" [č]
čuk-tel	"bring" [č]
č'Am-tel	"bring in, harvest" [č]
mu-to-k-tel-lohon	"we are still coming" [č]
tu-tel	"bring" (< cut-bring) [č]
√tin	"cotton"
tin-Am	"cotton, wick of candle"
tin-Am-me?	"sheep"
tiral	"slingshot" (<Sp. <u>tirador</u>)
baḵ'tiral	"stones"
pačilel	"leather ball holder"
puyik tiral	"thread, string of sling"
sak-tiy-ek tiral	"wooden body of slingshot"
y-ule-lek tiral	"rubber slings" (<Sp. <u>hule</u>)
√ti:p'	"bounce, jump up"
ti:p'-el	UStem and Gerund
√ti?	"bother, bad talk, problem" (cf. /tik/)
ma?an ti?	"everything is all right"
ti?-lan	"bother, molest" VT
√to	Clitic, Derivational Adjunct, Sacred Particle, "still, yet" [IIIF 4f]
ba-to-ki-?ora	"since when"
če?-to-ha?-lel	"till, up till now, until this time, all this time"

i:k'-Al to	"tomorrow" (emphatic)
is-to-pimel	"albajaca" herb [es]
perito	"perejil" herb [es] [t]
to	"bird" [es] eats snakes, call: /pu-?i'p pu-?i'p/
√to:	"straight, correct, pay"
to-an	"be, become straight"
to-nu-an	"be, become straight"
to-ben	VT "pay"
to:-ol	"price" Pass "paid"
to-san	"make right, straighten"
to-sΛ	PStem
to-san-tel	Gerund
√to:	"ignite, take fire"
√tok	
tok-al	"cloud"
tok-al-i-lal	"clouds"
√to:k	"frog" (cf. /t'ok/) (AT has [tok'] which is alter- nately called /ø'ik/; "cleaner than a frog, edible, calls /pik-tok/ in falsetto)
√tol	Num. Class. "gourd, bowl"
√tom	"thunder"
tom-el	"thunder" (cf. /t'o-mel/)
tom-el	"muscle"
tom-el-i-k'Ab	"bicep"
tom-i-k'Ab	"bicep"
√ton	"food"
ton-ton-wa:	"wrapped steamed food" (cf. /sa:-kun/)
ton-el	"dark"
ik'-ton-el	"dark, night"

√to:p'		VT/VI "break, uproot, dig"
	to:p'-i	VI PStem
	top-i'-i	"jumping insect" [es]
	top'-o	VT PStem
	top'-ol	Gerund
	torok	"lizard" [es] (<Sp. <u>tioroc</u>)
√toϕ'		"lie down"
	toϕ'-o	"lying"
	trincipal	"ancient of the Church, elder, old" (<Sp. <u>principal</u>)
	tron-el	"work" [wd] [IIB lb]
√tu:		Num. Class. "droplet" (cf. /t'u:l/)
	tuy	VI "drip"
	tuy-u	PStem
√tuč		"extend, hold extended" (cf. /tič/)
	tuč-kin	"praying mantis" [es]
	tuč-on	"indicate, point"
	tuč-on-i-k'Ab	"index finger"
	tuk-o-nič-im	"mountain west of Tila" in prayers candles (/ničim/) point there
√tuk		VI, VT "separate, tear, pull, cut"
	tuk-Δ	VT PStem
	tuk-i	VI PStem
	tuk-ol	Gerund
	tuk-mak-Δl	"divided in half"
√tuk		"dry" (cf. /tak/)
	tuk-isān	VT "dry, cause to dry"

tuk-i	"dried"
tuk-in	"dried"
tuk-uk	"white-breasted bird" [es]
√tu:k'	"pull" (cf. /tuk/)
tu:k'-w-an	UStem
tu:-k'-al	PStem
tu:k'-untel	Gerund
š-tul-uš	"animal that lives deep in the jungle" (? < /t'u:l/)
√tum	"egg"
tu-ak'ač	"turkey egg"
tu-myť	"chicken egg"
tum-š-peč	"duck egg"
tum-lukum	"snake egg"
√tun	"rock, stone" (cf. /ša:-lel/)
tun-čič	"small bird" [es]
tun-il	"rocky land, boulder"
tun-i-otot	"stone house"
tun-ok	"heel"
tun-te?	"moss"
tun-to?	"leaf for wrapping pozol"
tun-tun-wa:	"type of food" (to some <u>mame-lita</u> , bean taco to go, to others: steamed food like /ša:kun/ , cf. /ton/)
√tu:n	"pull, pluck"
tu:-tun kukmal	"pluck, defeather"
tu-tul'	"begin to form" (as buds or fruit)
tutuy	"bird" [es] call: /pa pa pa/
tuyu	"bird" [es] green parrot, eats corn

t'

/t'/	[IIC 2b iβ]	
√tan		"voice, talk, word, language"
	čaʔl-en t'an	"to talk"
	ti t'an	"to talk" Predicate Complement, Only
	la-k t'an	The Chol Language
√t'as		"Bam!, Pow!," (onomotopoeia)
√t'ep		"wrapping"
	t'ep-i	N "wrapper, package" Gerund
	t'ep-on-el	"wrapping" Gerund
√tan		"intention" usu. unrealized
	tal i t'an-i-lel	"he was going to come"
√t'ok		"frog" [es] "land snail" [es]
	t'ok-oʔ	[t'o.koʔ] "frog"
	t'okob	[t'o.kop'] Place-name: <u>Tocop</u>
√t'ol		"corrugated, cobbled, bumpy"
	t'ol-os-tik	"rough, bumpy"
	t'ol-os-tik-i-ha:p	"corrugated"
√t'om		"loud crash"
	t'omel	"crash, thunder, burst, explode"

√t'op		"half, split"
	šin-t'op'-ol	" a half"
	t'orok	"lizard" [es] (<Sp. <u>tioroc</u>)
	t'os	"air rifle toy" (cf. /bo:ɪ/)
	t'uk'	"thorny tree" [es]
√t'u:l		"rabbit"
	t'ul-us	"dragonfly"
√t'u:l		"drip, drop" Num. Class. "drop"
	t'u:-y-el	VI, VT "drip" (non-human agent)
	t'u:-isan	"drip, make droplets" VT (human agent)
√t'un		"pursue"
	t'un-ma:l-el	"pursue, chase, follow after"
√t'u:n		Num. Class. "strand, linear passes (of thread or rope)"

U

/u/ [IIC 1]

u Alternate form of /ʌ/ in many environments and in acculturated idiolects

u "here" (cf. /wʌʔ/)
u-an-et "you are here"

√u: u: [ʔu.hil] "know, be able, have as part of nature"

√u:/uy/u:t "make, do, happen" special verb [IIIB 2b]

uy "make, do"
uy-el "make, do"
u:t-i "finished, happened" (defective paradigm, only PStem appears)

y-u: "necklace"
uyaʔ "earring"
uyaʔ-ʌl "earring"

√ub "sense, feel" [IIIF 8b]

ub-il "seem, be, feel"
ub-in "sense, perceive, feel"
ub-i PStem, neutralization of /om/ , /u:-il/ , /ub-il/ and /ub-in/
"wanted, knew, was, seemed, sensed, perceived"
k'uš y-ub-in "love, respect"

√uč "animal" [eg] "lácuač"
(< tlacuache) several referents,
"badger, fox, possum, dog-size animal"

uč'-čan	"boa, man-eating snake" (guards the cornfield, killing it, jeopardizes the crop)
uč'-čan, uš'-čan	"boa"
uč-un-ṭe?	"tree" [es] papaya-like
ha?a uč	"water dog, otter"
wanta uč	"animal" [es] (? loan)
√uč'	"eating"
uč'-el	VI "eat"
uč'	"louse" [es]
uč'-i-bΔ	"shotglass, drinking cup"
√uk	"short period of time"
hum-uk	"while"
ti hum-uk	"in an hour, in a while"
uk-un	"water jug, <u>cántaro</u> "
√u:k	"bird"
u:k-uø	"bird, mountain dove" [es]
√uk'	"crying"
uk-el	VI "cry"
y-uk'-el	N "cry of animal, cat's meow, pig's screech, cow's moo"
√uk'	cane or vine of <u>chayote</u> (cf. /č'iš-č'um/)
ni?-uk'	" <u>chayote</u> " [ed] (< point of the vine)
uk'uøu	"dove" [es]
uk'-un šuš	"wasp" [es]
ule	"rubber" (<Sp. <u>hule</u>)
ule-pisil	"elastic" (< rubber cloth)

√uma?	"deaf, deafmute"
u'n-te?	"tree" [es] (questionable)
u'n-al	"grunt" pig's snort (cf. /nok'/)
usum	"edible mushroom" [es]
√u:s	"insect"
u*s	"housefly, a tiny insect that stings leaving a red spot (many of these in Tuxtla, and in hot Chol country, Limar)
u:s-čip	"animal, <u>sereque</u> " [es]
uskunte	"edible green" [es]
√uš	"three"
uš-i	"three days hence, day after the day after tomorrow"
y-uš-k'in-i	"three days ago, day before the day before yesterday"
√u:t	"make, happen" (cf. /u:/uy/u:t/)
u:t-i	"happened"
√uy	"make, prepare"
uyo	[?'u.yo] "sloth" (cf. /'uy/)
uyu	[?'uy.u] [?'uyç] <u>mico</u> (cf. /'uy/)
√uç	"good"
uç-at	"good, beautiful"
uç-il	"odor, good weather, fragrant, pleasant"

W

/w/ [IIC 2a iv]

w	morphophonemic glide after Bound pronoun /a/ [IIC 2a iva]
wa	Derivational "quickly, briefly, a little" (cf. /kwa/)
wa-čok-on	"stop it!"
wa-wa	"bird" [es]
wa-k'el	"glance"
wa	alt. form of /ba/ Interrogative
√wa:	<u>"tortilla, cooked corn, before and after grinding"</u>
wa:-al-i wahali	"before, long ago" "before, long ago"
wa:-k'Al	"leave"
wa:-šiba:	"large mushroom" [es] (<u>tortilla</u> of <u>brujos</u>)
wa:-tan	"ear of corn" (with husk)
wakaš	"cow" (<Sp. <u>vaca</u>)
wak-way	"bird" [es]
wale	"perhaps, probably, now" (cf. /wa?/)

wanku	"bench" (<Sp. <u>banca</u>)
waš	"fox" [es], "mountain cat" [es]
waš-ak	"eight"
wa-tel	"stand up" (cf. /wa?/)
way-ha?as	"fruit" [es] <u>mamey</u> , <u>zapote</u>
<u>√wa?</u>	"now, today, begin, stand"
wa?	"standing"
wa?-al	"standing"
wa?-lel	"begin, stand up"
wa?-li-e	"now, today (still to come)"
wa?-li-yi, wa-le-li	"now, today (still to come)"
wa-le	"now, perhaps"
<u>√wač'</u>	<u>"guapaque"</u> [es] tamarind-like fruit
<u>√wak'</u>	"six" (? [wak])
<u>√way</u>	"sleeping"
way-el	"to sleep" VI
way-Λ:-el	"to sleep" VI
way-i	PStem
way-el	"insect, bee-like" [es] stings, makes no honey
way-ba:	"art of a sorcerer, divination" (cf. /šib-Λ:-lel/)
<u>√wa?</u>	"here, now" (cf. /wa?/ , /il+a-yi/)
wΛ?-i	"here"
wΛ-wΛ?-i	"here"
wΛ?-iš	"here"
wáč	"here"
wáč-an-on-i	"I am here"
wΛ?-le-li	"now, soon, today" (cf. /wa?-li-e/)
<u>√we</u>	"flat, cloth"

we-pat, we-a-pat	"towel, veil, <u>rebozo</u> "
we-we-hun	"banner, flag, kite, cloth to scare birds from fields"
√we:	"front, surface"
hun-we:-lel	"in front, in front of, on the other side"
we:-li-bal-ha?	"waterfall"
weč	"animal"[es] (? armadillo, <u>tepesquintle</u>)
√we?	"food, meat"
we?-el	"food, meat"
we?-san	"feed, nourish"
wen	"very, rather" (<Sp. <u>bién</u>)
we, 'weno	"good" (<Sp. <u>bueno</u>)
weruš, weluš	"spring onion" [es] (? <Tzeltal loan)
√weš	"pants, trousers"
√wič'	"wing"
wi:-il-iš	"bird" [es] "swallow, <u>golindróna</u> (< ? <u>golondrina</u>)
√wiç	"mountain"
hol wiç	"peak," name of mt. west of Tila
no: wiç	"large mountain, range" name of mountain south of Tila
noš wiç	alternate name of /no: wiç/
pam wiç	"summit"
sak wiç	"slope, side of mountain"
√wi?	"root"
wi-te?	"woody root"

ɕi-wiʔ	"ground cover, spreading plant" [es]
wiʔ-nal	"hunger"
wiʔ-na	"hungry (+ Ergative Pronoun)"
wiʔ-ne	"hungry (+ Ergative Pronoun)"
√wo:	"round"
wo:-ol nAkʔ	"fat person"
√wočʔ	" <u>tostada</u> , toasted <u>tortilla</u> "
√wok	"difficulty"
wok-ol	"trouble, work, bother, difficulty"
wok-ol-iš ti-a-w-il-Λ	"thank you" (< a difficulty indeed you saw it)
wok-oš-a-w-il-a	Alternate form: "thank you"
woli (GM)	Pres. Progressive T/A [ed] (cf. /čonkol/)
won-koč	"large blue butterfly" [es]
√woš	"round"
woš-ol	"round, curved, spheroid" (cf. /wo:ʔ/)
√wočʔ	[ɣwoč] , [ɣwočʔ] "hairy, fluffy, resilient, spongelike"
√wuk	"seven"
wus	"insect" [es] (cf. /u:s/)
√wutʔ	"eye, fruit, grain, small solid"
wut-el	"give, bear fruit"
wut-on-el	"fruition, time of bearing fruit"

√wu:t

"breath, blow, curer (soplador)"

wu:t-an

"to blow" VT

√wue

VI, VT "carry"

V S

/š/ [IIC 2a ii]

š (GM)

Unmarked animate, female gender, used with animal names and many plants [IIID 1a]
Contracted form of /iš/ [IIIF 4a]

√ša:k'

"food"

ša:k'-ul
ša:k'-un

"corn dough mixed with beans"
"food /ša:k'-ul/ steamed in leaf wrapping /su-wa-ʔan/"

ša:-lel, ša:-o-lel

"stone" [ed], boulder, rocky ground"

√šan

"gano" palm used for raincoats and hats, "palm raincoat" (<Sp. guano)

šas-hin-i

contracted form of /čeʔ-ba:-če-hin-i/, "exactly, just like that" así no más

√šA

Derivational "thoroughly, completely, everywhere"

√šAb

"mixing"

šAb-al

"mixed, scrambled"

√šAk

"angle, intersection"

šAk-bi:
šAk-wiø

"crossroad"
"slope, side of mountain"

√šak'		"forced action"
	šak'-ben	"force, extort, demand, drive out"
√šam		"walk"
	šam-bal	"walking, traveling, promenading, hanging out"
√še:		N "vomit"
	ča?l-en še: tuk še:	V "to vomit" V "stop vomiting" (< cut vomit)
	šen	"half" (cf. /šin/)
√šib		VT, VI "comb"
	šib-Λ-bi ši-Λb.	"combed" "comb" N
	šib-ul	" <u>pozol</u> made with corn dough and chocolate (Limar)"
√šik'		"imposition of forced action, run out, drive out (cf. /šak'/)"
	šik'-ben	"demand, extort"
	šilip	"flower" [es] light blue, fuzzy
√šin		"half, middle"
	šin-il	"belt"
	šin-k'Λb	"middle finger"
	šin-k'in-il	"noon"
	šin-t'op'-ol	"a half"
	ti e-šen-il	"in half, in the middle"
	ti e-šin-il	"in half, in the middle"
	šin-ič	"small ant" [es]
	šin-ič-te?	"ant tree" [es]

šinloa	"Ladina, non-indian woman" (<u>< Señora</u>)
šinolo-h-ob	"Ladinos, non-indians" (<u>< Señoro</u> , cf. /kašlan/)
šinup	"a star"
šit-il	"upside-down"
šiy-e	"bird" [es] (? <u>zanate</u>)
ši?	"bird" [es] <u>zanate</u>
š-kal-ɫl	"girl" (marriageable age)
√šo:	"put on clothes, dress"
√šot	"circle, encircle, tie up, carry tied things, hoop"
šot-o-čel	"coral snake" (cf. /sot-o-č'el/)
šot-ok-na	"round, circular"
ti šot-il-e ti	"around"
ti šot-il-el ti	"around"
√šuč'	"stealing, steal"
šuk, šu:k	"corner"
šuk-pi	"bird" [es]
šuk-u-te?-el	"tree trunk"
√šuk'	"slow"
šuk'-ul	"slow, slowly"
šuk'-o-šuk'-u	"little by little, gradually"
√šul	"horn, antler"
šul-u?	"tree" [es]
šul-u-te?	"tree" [es]
šul-uk-te?	"tree" [es]

šun	"crayfish"
√šuš	"wasp"
ukun šuš	"wasp" [es]
usoka? šuš	"wasp" [es]
šut-la-k'Ab	"baby finger"
šutaš	"Judas" hence "effigy, scare-crow" (from custom of hanging a Judas effigy at Holy Week, < 16 c. Sp. /zúta[s])
šu-wa-?An	"leaf for wrapping pozol" plant which gives the leaf, inedible fruit
√šu?	"leaf-cutter ant, flying ant, <u>ariela</u> , flying ant <u>chacatán</u> . (edible)"

y

/y/ [IIC 2a iii]

y

contracted form of Imperson /i/,
glide between most vowel-final
and vowel-initial morphemes
[IIC 2a iiiia]

√ya:k

"collect, gather, trap"

yak
ya:k-an
yak-Λ
yΛk-Λntel

N. "trap"
"collect, gather"
PStem
Gerund

y-al

"small, young, offspring" (cf.
/al/)

√ya:l

ya:l-lel

"fall" VI

√yan

"other, another"

yam-bΛ

"other, another"

yaš-um

"black corn, tortilla made
from black corn (food of the
/nek/)"

√ya?

"liquid" (cf. /ha?/)

ya?-lel
ya?-le-ti

"juice, liquor, soup"
"saliva"

ya?

"thigh"

ya?	(GM)	"there"
	ya?-ya?-i	"there, then, thence"
	yak	"trap" (cf. /yak/)
	yal-ʌš k'aba?	"nickname"
√yap'		"stop, shut off" UStem"
	yap'-ʌ	PStem
	yap'-ol	Gerund
	yakp-el	Alternate form of Gerund
√yaš		"green, blue-green"
	yʌ-yʌš	"green"
	yʌš-a:-čan	"snake" [es]
	yʌš-nič	"green flower"
	yʌš-te?	"tree" [es], " <u>ceiba</u> "
√yat		"tight, tighten"
	yat-ʌl	"tight, hard, firm, strong"
	yʌç'	"eat"
√ye		"below"
	ti ye	"below, beneath"
	ti ye-bal	"below, beneath"
	ti ye-bal wiç	"under, on the other side of the mountain"
	ye-wiç	Place-name "below the mountain"
	y-et-i:-ib	"scepter" (cf. /e:t/)
	y-et-i-hi-bʌ	"scepter"
	yes	Progressive (cf. /es/)
	cu-ki-y-es	"what is this"
√yeç		"juice"
	yeç-el	"sap, juice of banana plant"

y-ik'-iṣ.	"it is dark" (cf. /ik'/)
yila	"corral" (cf. /il/)
mut ti-y-ila-ti-y-il	"birds of the corral, domestic birds"
yiš-ok-en-te?	"tree" [es]
y-ok-et	"three-stone hearth" (cf. /ok/)
yom	"want" (cf. /om/) "good, make good, repair"
yom-Λ	PStem
yom-ol	Gerund
yom-Λč	"it's good, thank you"
yon-ku	reply to /yom-Λč/
cu-ki-yom-máč-yom	"anything you wish"
yom-el	"many" (cf. /on-i/)
√yop	"leaf"
yop-ol	"leaf"
yop-om	"leaf"
yop-o-sa?	"leaf for wrapping pozol"
yopo-wa?-Λn	"leaf for wrapping pozol"
√yos	"divinity, God, spirit, saint, pray" (<Sp. <u>dios</u>)
yos-in	"worship, do a sacred act, respect"
√yuč'	"insect" [es]
√yuk	"spread"
y-uk'-el	"crying sound" (cf. /uk'/) "peep of turkey"
yuluk-na	"even, evenly spread, smooth" (cf. /buy-uk-na/, /yuk/)
√yum	Kinterm FF, less frequently MF, "lord, owner, master, God, governor"
yum-hel	Kinterm FB+, less frequently MB-

y-uš-i
y-uš-k'in-i

"three days ago" (cf. /uš/)
"three days hence"



/č/ [IIC ab ii]

ča (GM) Completive Tense/Aspect [IIIF 2c ii]

ča-iš "completed"
 ča-s "completed"
 ta-s [čaš], "completed"
 ča-ki Subjunctivizer, "if"

√ča: "sweet, salty"

ča-ba-ha? "soda pop" (< sweet water)

čar-i "went" [IIIF 8c] (?< /ča-an-i/)

čaon-el "sewing"

čak-a-tin "locust" chicharra (onomot.)
 [es]

čak-a-weš "cherry-sized fruit" [es]

√čan "cold"

čan-al N "cold"

bi:-le-čan-al "kill" (?< /čam/)

čan-san PStem

čan-sa "pork butcher"

čam-sa-čitam ADJ "cold" (?< /čan-an/)

čawan "herb" [es] good for the

čawan pimel heart, thick ivy-like leaf

ɕʌn-ɕʌn-a	"jingle-jangle" (onomot., guitar sound)
ɕʌʔʌm-le-te	"moss on tree" (cf. ɕuʔum/)
ɕʌɕ	"strong" (cf. /ɕʔʌɕʔ/)
ɕenekʔ	"shin" (body part)
√ɕep	"cutting" VI, VT, UStem
biti-ɕep	"cut in small chops"
č'o-č'on-ɕep	"cut in many places"
ɕ'uk-ɕep	"cut finely, deeply, <u>cortar puntiagudo</u> "
ɕep-el	Passive
ɕep-i	PStem
√ɕeʔ	"laughing"
ɕeʔ-nal	"laugh" N, VI
ɕi-buʔul	"small blackbird" [es] small tail
√ɕik	"visible"
ɕik-il	"appear, be found" Place name
√ɕil	VT, VI "tear, rip"
ɕil-i	PStem
ɕil-ol	Gerund, Passive
√ɕim	"plant"
ɕima	"gourd bowl, tree" (<Zoque /ɕima/)
ɕim-in	"tapir, <u>elefante</u> , vegetable" [es]
ɕim-in č'ib	"palm, mountain palm" [es]

√ <i>ɕip</i>		"scrape"
	<i>ɕip-el</i>	"chafe, scrape" VI
	<i>ɕi:p</i>	"fern" [es]
	<i>ɕis-lum</i>	" <u>comejan</u> " [es] insect which builds mud colonies, fed to young chickens as medicine"
	<i>ɕit</i>	Num. Class. "long" (cf. / <i>ɕ'i:t/</i>)
	<i>ɕiɕ'on-el</i>	"sewing" (cf. / <i>ɕaɕon-el/</i>)
	<i>ɕiwi?</i>	"ivy-like ground cover" [es]
√ <i>ɕo:k</i>		"insane"
	<i>ɕo:k-em i hol</i>	"crazy, insane"
	<i>ɕol-om</i>	Num. Class. "rows (of crops), segments (of insect's abdomen)"
√ <i>ɕum</i>		"moss"
	<i>ɕu?um</i>	"moss" [eg] "tree" [es] small red fruit, eaten by / <i>č'e/</i>
	<i>ɕum-le-te?</i>	"moss on tree"
√ <i>ɕuk</i>		"finished, old, passed"
	<i>ɕuk-ul-iš</i> <i>suk'-ul-iš</i>	"it is dead, out" (fire, [vs "it is ignited" (fire)]
√ <i>ɕuk</i>		"rat"
	<i>y-al-ɕuk</i>	"mouse"
√ <i>ɕuc</i>		"hair, wool, blanket"
	<i>ɕuc-el</i>	"hair" (particular)

øuø-el-i-wut
 ø'uk-ti
 øuø-te?

"eyelashes"
 "beard, mustache"
 "tiquilambra tree, wood" [es]

øu?

"hulls (of corn)" (in local
 Spanish /sis/)

ç'

/ç'/

√ç'a:

"soak, wetten" √VH (cf. /ç'Λ/, /ç'u/)

ç'aʔ-al

Passive

√ç'a:k'

"medicine"

çΛkʔ-an

"cure, heal"

ç'aʔan

ADJ "strong, spicy" N "liquor, alcohol"

√ç'Λ

"bathe"

ç'Λ-mel

"bathe, shower" VI

√ç'Λb

"ignite, light" VT, VI [c'ap']

ç'Λb-Λ
ç'Λb-olPStem
Gerund

√ç'Λk'

"arrive, complete" (cf. /suk'/, /çuk'/)

ç'Λkʔ-Λl

Passive

√ç'Λc'

"strong, hard"

√ç'e:

"left hand, left-hand side"
Num. Class. "hand"

√ç'i:

VT "split (firewood)" √VH
"new"

√ǰ'i:b	"writing" N, VI, VT
ǰ'i:b-al	"color, spot, decoration, logo"
ǰ'ikb-al	"coloration on trees" [ǰ'i:bal → ǰ'i?b-al → ǰ'ikb-al]
ǰ'imb-al bu:k	"decorated shirt" [ǰ'i:b-al → ǰ'imb-al]
ǰ'i:b-untel	Gerund
ǰ'e:-hun-tel	Alternate form of Gerund (? related to /hun/ "paper")
√ǰ'ik	"animal"
ǰ'ik	"frog" (cf. /to:k/)
ǰ'ik-way	"bird" [es] small ugly blackbird
ǰ'in-ǰik	"sideburns"
√ǰ'i:n	"yuca" plant and edible root (several types)
ǰ'ip-el	"scrape, chafe" (cf. /ǰip'/)
√ǰ'is	"intricate, tight"
ǰ'is-il	"sewn with small, tight stitches"
ǰ'ita	"small, a little"
ǰ'ita-hač	"it is but a little, you're welcome"
√ǰ'ip'	"screech"
ǰ'ip'i-na	"screech of rat" (onomot.)
ǰ'ip'-i-ri čuč	"rodent" [es] mouse-size squirrel
√ǰ'i:ǰ.	"vegetation"
ǰ'i:ǰ'-il	"leaf used for adornment at funerals"
√ǰ'i?	"dog"
ǰ'i?-čay	"dogfish, <u>robalo</u> " [es]

ɕ'ot-o	"filagreed, scrolled, inscribed"
ɕ'oɕ'ip	"bird" [es]
ɕ'u-nal	"washing clothes" (cf. /pok/, /ɕ'c:/, /ɕ'Λ/)
√ɕ'uk	Derivation "penetratingly, sharply, <u>puntiagudo</u> "
ɕ'uk-ti	"mustache, beard"
ɕ'un-un	"hummingbird" [eg]
√ɕ'u?	"suck" (cf. /č'u?/
ɕ'u-ɕ'un	VT "suck" UStem
ɕ'u?-u puy	"suck snails, eat snails" UStem
ɕ'u?-u	PStem
ɕ'u-ɕ'un-tel	Gerund
ɕ'un-un	"hummingbird"
ɕ'u-ɕ'ub	"animal" [es] <u>lacuach</u> (cf. /uč/)
ɕ'u-ɕ'un-čap	"animal" [es] honey-sucking mammal (< /ɕ'un-ča:b/)
ɕΛ-ɕΛn-čap	"animal" [es] <u>zorro chupamiel</u>
ɕ'Λ-č'a?	"animal" [es] <u>oso chupamiel</u>

(Note: The referent animals for the four ethnospecies above may be the same.)



/ʔ/ [IIC [b ia]

ʔ	Alternate form of word-final /b/, alternate of /k/, /k'/, phonetically present optionally before all vowels
√ʔač'	"wet"
ʔač'-i	"wet, got wet" (+ Ergative)
ʔAS-ʔAS	"get out, scram!"
ʔek'	"star" [general]
√ʔik'	"dark, black, evil, wind, wind-spirit"
ʔik'	"wind" (cf. /ik'/)
ʔi-ʔik'	"dark, black" (cf. /ik'/)
ʔip	"armadillo" [es]
√ʔok'	"mud"
ʔok'-lil	"expanse of mud"
ʔoʔ-lel	"expanse of mud"
ʔok'-ol	"mud" (particular)
√ʔuy	
ʔuy	[ʔuy. ^u], [ʔuyç] animal [es] " <u>mico</u> "
ʔuy-o	[ʔu.yo] "sloth"
kolen ʔuy-o	[es] five claws, edible
si;-in ʔuy-o	[es] four claws, inedible
kaşlan ʔuy-o	" <u>mico de noche</u> " [es]

APPENDIX

Summary of Phonological Rules

The following pages list the phonological rules treated in the text of this study, with references to their fuller treatment in the body of the work. Ordering is reflected both with regard to the power of rules within the phonological system, and with respect to the feeding relationships among subsets of rules which operate in strict sequence.

Rules have varying degrees of power, morphophonemic rules being the most powerful and usually the first to operate. They operate on the morphophonematic representation. Phonological rules are next in power, and dialectal rules are of the same level of power operating on the reflexes from the morphophonemic rules. Rules of allophony are relatively low level as are the marking conventions. Closest to the surface of phonetic outputs are the sociophonological rules which are responsible for contraction, paralanguage and many cases of minute allophony.

The rules are presented in four major and three minor subsets, several of which contain strict internal ordering patterns.

A. Vowel environment rules (1-19)

These rules are loosely ordered with strict ordering applying:

5 > 6 regarding glottal stops.

12 > 13 > 14 > 15 regarding reduplication of roots.

16 > 18 regarding the y-glides. Rules 16-19
concern the glides.

B. /k/ environment rules (21-30).

Ordering applies according to rule power, as outlined above,
with strict ordering applying to the feeding relationships:

21 > 23 > $\begin{matrix} 24 \\ 25 \end{matrix}$ regarding the bound pronoun /k/.

C. /l/ and /el/ environment rules (32-34).

Strict ordering applies to:

32 > 33 regarding the /el/ suffix, and
yielding the summary rule (34).

D. Palatalized consonant environemnt rules (35-39).

Of these (35) is the most general, and (36) the most context
specific.

E. Miscellaneous consonant rules (40-43).

F. The geminate rule (44).

A very powerful and frequent rule which requires further
investigation for the delimitation of the contexts of its
application.

G. Marking conventions (45).

These provide information regarding the feature matrices of
segments. Rules (41-42) are similar to the marking conventions.
Redundant features of dialect-specific phonology are provided
by (41), whereas (42) gives conventions for non-distinctive,
sub-phonemic features.

1. Morphophonemic Rule • Vowel Harmony Past [IIIF 7b]

MPR•VHPAST

$$X V_1 Y - \left[\begin{array}{c} \wedge \\ \text{PAST} \end{array} \right] \rightarrow X V_1 Y - V_1 / \sqrt{\text{VH}}$$

Read: Vowel harmony marked roots form the past with the same vowel as in the root. For roots in which the vowel is / \wedge /, the rule is redundant.

2. Phonological Rule • Vowel Harmony [IIIB 1c]

PR•VHARM

$$X V_1 Y V_2 Z \rightarrow X V_2 Y V_2 Z$$

Read: Earlier vowels assimilate to later vowels.

3. Morphophonemic Rule • Vowel becomes Zero [IIIF 4a]

MPR•VZERO

$$[+ \text{syll}] \rightarrow \emptyset / \left(\begin{array}{l} [+ \text{syll}] - \text{---} (\text{opt. } +) \\ \# \text{---} (\text{opt. } -) \end{array} \right)$$

Read: A morpheme initial vowel may delete optionally. This occurs with greater frequency after a vowel that is morpheme-final, and with lesser frequency when word-initial.

4. Allophonic Rule • Glottal Stop Insertion [IIC 1a]

APR•GLOT

$$[+ \text{syll}] \rightarrow [?] [+ \text{syll}] / \left(\begin{array}{l} \# \text{---} (\text{opt. } +) \\ . - \text{---} (\text{opt. } -) \end{array} \right)$$

Read: Initial vowels are frequently preceded by a glottal stop. This phenomenon is more frequent when word-initial, less when morpheme (and syllable-) initial.

5. Phonological Rule • Echo vowels [IIC 1a]

PR•ECHO

$$V_1C \rightarrow V_1C^V \ / \ __\#$$

Read: Vowel harmonic echo vowels are articulated optionally word-finally.

6. Phonological Rule • Glottalization Advance [IIC 2b ii]

PR•GLADV

$$\begin{bmatrix} + \text{ int} \\ - \text{ chk} \end{bmatrix} \rightarrow [+ \text{ chk}] \ / \ ___[?]$$

Read: A plain interruptant is glottalized when followed by a glottal stop.

7. Sociophonological Rule • Vowels become High [IIC 1]

SPR•VHI

$$\begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ \alpha \text{ flt} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ hi} \\ \alpha \text{ flt} \end{bmatrix} \ / \ \text{STYLE}$$

Read: Non-peripheral vowels may become high with retention of the same value of flatness.

8. Allophonic Rule • Sixth vowel [IIC 1]

APR•6th

$$\begin{bmatrix} + \text{ syl} \\ + \text{ cen} \\ - \text{ flt} \end{bmatrix} \rightarrow [+ \text{ flt}] \ / \ \# ______$$

Read: The central sixth vowel /ʌ/ becomes [a] word-initially.

9. Sociophonological Rule • Schwa variation [IIC 1]

SPR•SCHWA

$$V \rightarrow [ə] \ / \ \text{casual speech}$$

Read: Any vowel may become the schwa [ə] in casual speech.

10. Allophonic Rule • Pure /e/ [IIC 1]

APR•PURE

/e/ → [e] / ____ • -

Read: The morphophoneme /e/ is realized as phonetic [e] when syllable- and morpheme-final.

11. Allophonic Rule • Open /e/ [IIC 1]

APR•OPE

/e/ → [ɛ] / ____ [- syll]

Read: The morphophoneme /e/ is realized as open "e," [ɛ], before any consonant.

12. Morphophonemic Rule • Vowel becomes Long [IIIB 1a]

MPR•VLONG

√CVC → /CV:-CVC/ /Reduplication

Read: A vowel nucleus may become long in reduplicated roots, with the loss of the final consonant.

13. Morphophonemic Rule • Final Consonant Deletion [IIIb 1a]

MPR•C#DEL

√CVC → /CV-CVC/ /Reduplication

Read: The final consonant of a root may be optionally deleted in the first form of the reduplicated root.

14. Morphophonemic Rule • Initial Consonant Deletion, [IIIB 1a]

MPR•#CDEL

√CVC → /CVC-VC/ /Reduplication

Read: The initial consonant of a root may be deleted optionally in the second form of a reduplicated root.

15. Morphophonemic Rule • Glottalization Reduction [IIIB 1a]

MPR • ?DEL

$$[+ \text{chk}]_1 \rightarrow [- \text{chk}]_1 / [+ \text{chk}]_1 X_1 Y_1 \text{---} X_1 Y_1$$

Read: A reduplicated glottalized consonant may become simple optionally.

16. Morphophonemic Rule • Glide Insertion "H" [IIC 2a v]

MPR • GLH

$$\emptyset \rightarrow \begin{bmatrix} - \text{ syl} \\ - \text{ int} \\ - \text{ cen} \\ 8 \text{ hi} \\ - \text{ flt} \\ - \text{ nas} \end{bmatrix} / \begin{bmatrix} + \text{ syl} \\ \text{ LOAN} \\ \text{ SP/LEX} \end{bmatrix} \# \text{---} - ([+ \text{ syl}])$$

Read: An [h] is interposed at the word boundary of loans and Special lexical items, obligatory when followed by a vowel-initial morpheme, optionally when word-final.

17. Morphophonemic Rule • Glide Insertion "W" [IIC 2a iv]

MPR • GLW

$$\emptyset \rightarrow \begin{bmatrix} - \text{ syl} \\ - \text{ int} \\ - \text{ cen} \\ + \text{ flt} \end{bmatrix} / \begin{bmatrix} /a/ \\ \text{ BOUND} \end{bmatrix} \text{---} - [+ \text{ syl}]$$

Read: A glide /w/ is inserted between the bound hearer pronoun /a/ and vowel-initial morphemes.

18. Morphophonemic Rule • Glide Insertion "Y" [IIC 2a iv]

MPR • GLY

$$\emptyset \rightarrow \begin{bmatrix} - \text{ syl} \\ - \text{ int} \\ + \text{ cen} \\ + \text{ hi} \\ - \text{ str} \\ - \text{ nas} \end{bmatrix} / [+ \text{ syl}] \text{---} - [+ \text{ syl}]$$

Read: A glide [y] is interposed between vowels at morpheme boundaries.

19. Morphophonemic Rule • "I" Deletion [IIIC 2a iv]

MPR•IDEL

$$\begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ flt} \end{bmatrix} \rightarrow \emptyset \quad / \# \text{ ______ } - \begin{bmatrix} y \\ \text{GLY} \end{bmatrix} - [+ \text{ syl}]$$

Read: Bound pronoun /i/ can be deleted optionally when followed by [y] which has been inserted by the glide rule.

20. Morphophonemic Rule • Zero Imperson [IIIC 2b]

MPR•ZIMP

$$/i/ \rightarrow \emptyset \quad / \begin{bmatrix} \text{NEGATIVE} \\ \text{MODAL} \end{bmatrix}, \begin{bmatrix} \text{IMPERSON} \end{bmatrix}$$

Read: The /i/ of the Imperson Bound series is deleted optionally in negative sentences and after modals.¹

21. Morphophonemic Rule • Plural Advance [IIIC 2b]

MPR•PLADV

$$k - X \sqrt{Y} - la \rightarrow la-k X \sqrt{Y} / \text{NP, ______ utterance final}$$

Read: The plural morpheme /la/ of the discontinuous Omniperson Bound Pronoun /k...la/ advances, becoming /la-k/. This rule is obligatory for nominals, frequent utterance finally, and optional at other times.

22. Morphophonemic Rule • Exclusive Plural Advance [IIIC 2b]

MPR•EXPLADV

$$\begin{bmatrix} k- \\ \text{BOUND} \end{bmatrix} X \sqrt{Y} - \begin{bmatrix} \text{lohon} \\ \text{PLURAL} \end{bmatrix} \rightarrow \text{lohon}k X \sqrt{Y} / \text{NP}$$

Read: The plural of the exclusive plural /k...lohon/ advances in nominal forms, becoming /lohon-k/.

¹The rule MPR•YIMP [IIIC 1b] is a combination of the two rules GLY and IDEL.

The preceding rules pertain to vowels and vowel-based morphophonemic changes. The following rules concern the consonants.

23. Morphophonemic Rule • "H" becomes "K" [IIIC 2b]

MPR•HK

$$\begin{bmatrix} - \text{ syl} \\ - \text{ int} \\ - \text{ cen} \\ - \text{ hi} \\ - \text{ flt} \\ - \text{ nas} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ int} \\ + \text{ hi} \\ - \text{ chk} \end{bmatrix} / \begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ chk} \\ \text{BOUND} \end{bmatrix} \text{ ---}$$

Read: /h/ becomes [k] following the bound pronoun /k/.

24. Morphophonemic Rule • "K" Deletion [IIIC 2b]

MPR•KDEL

$$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ chk} \end{bmatrix} \rightarrow \emptyset / \begin{bmatrix} \text{---} \\ \text{BOUND} \end{bmatrix} \begin{bmatrix} + \text{ int} \\ + \text{ hi} \end{bmatrix}$$

Read: Before certain high stops the bound pronoun /k/ deletes.

25. Morphophonemic Rule • "K" De-Interruption [IIIC 2b]

MPR•KDEINT

$$\begin{bmatrix} + \text{ int} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ chk} \end{bmatrix} \rightarrow \begin{bmatrix} - \text{ int} \\ - \text{ hi} \\ - \text{ flt} \end{bmatrix} / \begin{bmatrix} \text{---} \\ \text{BOUND} \end{bmatrix} \begin{bmatrix} + \text{ int} \\ + \text{ hi} \end{bmatrix}$$

Read: Before certain high stops, the bound pronoun /k/ becomes de-interrupted to [h] (or [X]).

26. Allophonic Rule • "K" before "I" [IIC 2b iβ]

APR•KI

$$/k/ \rightarrow [k^{\leftarrow}] / \text{---} i$$

Read: The allophone of /k/ is more palatal before /i/.

27. Allophonic Rule • "K" before "E" [IIC 2b iβ]

APR•KE

$$/k/ \rightarrow [\tilde{k}] / \text{---} e \text{ (opt)}$$

Read: The allophone of /k/ before /e/ is optionally palatalized.

28. Allophonic Rule • "K" before "U" [IIC 2b iβ]

APR•KU

$$/k/ \rightarrow [k^w] / \text{---} u \text{ (opt)}$$

Read: The allophone of /k/ before /u/ is optionally labialized.

29. Allophonic Rule • "K" before Central vowels [IIC 2b iβ]

APR•CEN

$$/k/ \rightarrow [k^w] / \text{---} \left[\begin{array}{l} + \text{ syl} \\ + \text{ cen} \end{array} \right] \text{ (opt)}$$

Read: The allophone of /k/ before central vowels is optionally labialized.

30. Allophonic Rule • "K'" and Glottal Stop [IIC 2b iβ]

APR•K'

$$/k'/ \rightarrow [ʔ] / \text{ (opt)}$$

Read: Glottalized /k'/ optionally alternates with the glottal stop /ʔ/.

31. Morphophonemic Rule • Vowel plus /lel/ [IIID 2a]

MPR•VLEL

$$/e/ \rightarrow [lel] / \left(\begin{array}{l} [+ \text{ syl}] \text{---} \\ /ʔ/ \text{---} \text{ (opt)} \end{array} \right)$$

Read: After vowels (and the glottal stop) the /e/ suffix is /lel/.

32. Phonological Rule • "L" Deletion [IIIF 2b iii]

PR•LDEL

$$/l/ \rightarrow \emptyset / \left(\begin{array}{l} \text{---} \# \text{ (opt) } + \\ \text{---} - \text{ (opt)} \end{array} \right)$$

Read: Final /l/ can delete optionally, more frequently when word-final, but also when morpheme-final.

33. Morphophonemic Rule • Root-final "L" Deletion [IIIF 7f iv]
 MPR•RTLDEL

$$\sqrt{X} / l / \rightarrow X / ___ - [- \text{syl}]$$

Read: Root-final /l/ deletes before a consonant-initial morpheme.

34. Morphophonemic Rule • /el/ Variation [IIC 2a v]
 MPR•EL

$$/el/ \rightarrow \left(\begin{array}{c} [e] \\ [ɛ] \\ [ɛ:] \\ [e:] \\ [e] \end{array} \right) / ___ \#$$

Read: The /el/ morpheme takes various phonetic shapes word finally [cf. PR•LDEL and PR•GEM].

35. Allophonic Rule • "T" ≠ "N" Before "I" [IIC 2b iβ]
 APR•TINI

$$\left[\begin{array}{l} - \text{syl} \\ + \text{cen} \\ + \text{hi} \\ - \text{str} \\ - \text{cor} \\ + \text{dist} \\ - \text{abr} \end{array} \right] \rightarrow \left[\begin{array}{l} + \text{cor} \\ - \text{dist} \\ + \text{abr} \end{array} \right] / ___ \left[\begin{array}{l} + \text{syl} \\ - \text{cen} \\ + \text{hi} \\ - \text{flt} \end{array} \right]$$

Read: Palatalized /t/ and /n/ which are redundantly non-coronal, distributed and non-abruptly released, become coronal, non-distributed and abruptly-released before /i/.

36. Allophonic Rule • Coronality [IIA 2c iii]
 APR•COR

$$\left[\begin{array}{l} - \text{cor} \\ - \text{abr} \end{array} \right] \rightarrow \left[\begin{array}{l} + \text{cor} \\ + \text{abr} \end{array} \right] / ___ \left[\begin{array}{l} + \text{syl} \\ - \text{cen} \\ + \text{hi} \\ - \text{flt} \end{array} \right]$$

Read: Before /i/, these phones are coronal and abruptly released. This rule less explicit than APR•TINI (above).

37. Allophonic Rule • Coronal "N" [IIC 2a i]

APR•CORN

$$\begin{array}{l} /n/ \\ \left[\begin{array}{l} - \text{ syl} \\ - \text{ int} \\ + \text{ cen} \\ + \text{ hi} \\ - \text{ str} \\ 5 \text{ chk} \\ + \text{ nas} \\ 5 \text{ flt} \\ + \text{ voi} \\ - \text{ cor} \\ + \text{ dist} \\ - \text{ abr} \end{array} \right] \rightarrow \left[\begin{array}{l} + \text{ cor} \\ - \text{ dist} \\ + \text{ abr} \end{array} \right] / \left(\begin{array}{l} \# \\ + \text{ syl} \\ - \text{ cen} \\ + \text{ hi} \\ - \text{ flt} \\ \# \text{ (opt.)} \end{array} \right)$$

Read: Palatalized /n/ is released abruptly and is non-distributed and coronal in articulation word-finally, before /i/ and optionally at the beginning of words.

38. Phonological Rule • Nasal Assimilation [IIC 2a ic]

PR•NASAS

$$[+ \text{ nas}] \rightarrow \left[\begin{array}{l} - \text{ cen} \\ \alpha \text{ hi} \end{array} \right] / \text{ — } \cdot \left[\begin{array}{l} - \text{ syl} \\ - \text{ cen} \\ \alpha \text{ hi} \end{array} \right]$$

Read: A nasal morphophoneme is realized as [m] before a syllable beginning with a peripheral non-high consonant, and as [ŋ] before a syllable beginning with a peripheral high-stop.

39. Phonological Rule • Nasal and Voicedness [IIC 2a ic]

PR•NVOI

$$\left[\begin{array}{l} - \text{ syl} \\ - \text{ voi} \end{array} \right] \rightarrow [+ \text{ voi}] \left(\begin{array}{l} [+ \text{ nas}] \\ \text{ — } [+ \text{ nas}] \end{array} \begin{array}{l} \text{(opt.)} \\ \text{(opt. -)} \end{array} \right)$$

Read: Consonants which are redundantly voiceless may be voiced in the environment of nasals. This sometimes occurs after nasals, and less frequently before nasals.

40. Phonological Rule • De-Interruption [IIC 2b ii]

PR•DEINT

$$\begin{bmatrix} + \text{ int} \\ + \text{ str} \end{bmatrix} \rightarrow [- \text{ int}] / (\text{opt.})$$

Read: Affricates may become homorganic spirants.

41. Dialectal Phonological Rule • Central Consonants [IIC 2b ii]

DPR•CENC

$$\begin{bmatrix} - \text{ syl} \\ + \text{ cen} \\ + \text{ hi} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{ for} \\ ++ \text{ dist} \\ ++ \text{ str} \end{bmatrix} / \text{---} \begin{bmatrix} + \text{ syl} \\ + \text{ cen} \\ + \text{ syl} \\ + \text{ flt} \end{bmatrix} [\text{ed}]$$

Read: In the eastern dialects, high central consonants are tense, overly distributed and overly strident before all vowels but /e/ and /i/.

42. Allophonic Rule • Fortis [IIA 2c iv]

APR•FOR

$$\begin{bmatrix} + \text{ chk} \\ \alpha \text{ cen} \end{bmatrix} \rightarrow [\alpha \text{ for}]$$

Read: Central checked consonants are fortis, peripheral checked consonants are lenis.

43. Allophonic Rule • "W" Before "I" [IIC 2a iv]

APR•WI

$$/w/ \rightarrow \begin{bmatrix} + \text{ hi} \\ + \text{ spr} \\ + \text{ for} \end{bmatrix} / \text{---} \begin{bmatrix} + \text{ syl} \\ - \text{ cen} \\ - \text{ flt} \end{bmatrix}$$

Read: /W/ becomes high, spread and tense [ɥ], before /i/ and /e/.

44. Phonological Rule • Geminates

[IIIC 2b]

PR•GEM

$$\left[\begin{array}{c} \alpha \text{ ---} \\ \vdots \\ \vdots \end{array} \right] \rightarrow \emptyset \ / \text{ ---} \left[\begin{array}{c} \alpha \text{ ---} \\ \vdots \\ \vdots \end{array} \right] (\text{opt.})$$

Read: Geminate segments may become simply optional.

45. MARKING CONVENTIONS

[IIA 2a]

MC1•

$$[+ \text{ syl}] \rightarrow \left[\begin{array}{l} - \text{ str} \\ - \text{ chk} \\ - \text{ nas} \end{array} \right]$$

Read: Vowels are redundantly mellow, plain and oral.

MC2•

$$\left[\begin{array}{l} + \text{ syl} \\ + \text{ cen} \end{array} \right] \rightarrow [- \text{ hi}]$$

Read: Central vowels are redundantly non-high.

MC3•

$$[+ \text{ int}] \rightarrow [- \text{ syl}]$$

Read: Stops are consonantal.

MC4•

$$[- \text{ cen}] \rightarrow [- \text{ str}]$$

Read: Peripheral elements are non-strident.

MC5•

$$[- \text{ int}] \rightarrow \left[\begin{array}{l} - \text{ chk} \\ - \text{ flt} \end{array} \right]$$

Read: Continuants are neither checked nor flat.

MC6•

$$[+ \text{ int}] \rightarrow [- \text{ nas}]$$

Read: Stops are non-nasal.

MC7•

$$\begin{bmatrix} + \text{ int} \\ + \text{ cen} \end{bmatrix} \rightarrow [- \text{ flat}]$$

Read: Central stops are non-flat.

MC8•

$$\begin{bmatrix} - \text{ syl} \\ - \text{ int} \\ - \text{ cen} \end{bmatrix} \rightarrow [- \text{ hi}]$$

Read: Peripheral continuants are non-high.

MC9•

$$[\pm \text{ lng}] \rightarrow [+ \text{ syl}]$$

Read: Only vowels are marked for length.

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