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SIERRA NAHUAT WORD STRUCTURE

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SIERRA NAHUAT WORD STRUCTURE

by

Dow Frederick Robinson

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PREFACE

This grammar[1] describes the word structure of a Nahuat
dialect in use today within a radius of 20 miles of Zacapoaxtla,
Puebla, Mexico (see map on page viii). The Nahuat speaking
peoples of the Sierra de Puebla, numbering about 50,000, are
contained within a triangle having Cuetzalan on the north,
Chignahuapan on the west, and Tesiutlan on the east. This
grammar does not attempt to cover in detail the significant
variations in speech in the Cuetzalan and Chignahuapan areas.

Around Chignahuapan /tl/ replaces /t/ in many initial
positions but most speech forms are intelligible to speakers
from Zacapoaxtla. Further to the north, around Huauchinango,
there are about 10,000 speakers of a dialect of Nahuatl which
is unintelligible with that of Zacapoaxtla. See Brockway
(1963) for a discussion of the phonology.

North of Cuetzalan, past the Totonaco, Otomi, and Tepehua
speaking communities, another dialect of Nahuatl is spoken in
la Huasteca de Veracruz, a dialect of about 150,000 speakers.
The phonology and grammar of the western section of the
Huasteca dialect are found in the bibliography under Croft
(1953a, 1953b, 1954). The structure of the eastern section of
the dialect can be deduced from the literacy materials prepared
by Robinson and Robinson (1964). The dialect in la Huasteca
de Veracruz is unintelligible with that of Zacapoaxtla and
Huauchinango.

To the south of Tesiutlan, clustering about the volcano

Orizaba, are about 50,000 speakers of the Chilac dialect which is largely intelligible with that of Zacapoaxtla, even though /tl/ is used in place of /t/.

The peasant culture of the Nahuat speakers of the Sierra de Puebla is in rapid transition from its pre-revolutionary agricultural state to the present mestizo culture with its emphasis on education, earning money, and the possession of manufactured goods. A paved road links Puebla, the capital of the state of Puebla, with Zacapoaxtla and Tesiutlan; a spur road, now paved, links Cuetzalan and Zacapoaxtla. With the easy access provided by the roads comes the increasing activity of the Federal agencies of Education, Health, Highways, and Agriculture, together with truck farmers and the ubiquitous ambulatory salesmen.

See the various attempts to characterize rural Indian communities in Redfield (1929, 1934, 1947, 1950, 1953, 1955, 1956), Strickson (1965), Lewis (1962) (especially the chapter on "Pedro Martinez"), Beals (1946), Cline (1962), and Foster (1948, 1960). For a recent socio-economic study of the Sierra de Puebla, see Julio César Espínola (1965).

The thrust towards universal education and the impact of the merchants who come from every large city within 300 miles of Zacapoaxtla is affecting the peasant family which speaks Sierra Nahuat. (Unless otherwise specified, the term 'Sierra Nahuat' will be referred to as 'Nahuat'.) At least one of the older males of each family is now bilingual in Spanish; the women and girls tend to be monolingual in Nahuat. The figure of 50,000 speakers of Nahuat cited above refers to those who use Nahuat in the home but who know enough Spanish to buy and sell in the market. Many who use Spanish in the home find it necessary to learn and use Nahuat in order to pursue their economic activities among Nahuat speakers.

Although the Federal school system has had some measured
success in its literacy programs by teaching the children in
Spanish to read and speak Spanish, there is now an experimen-
tal program in progress for teaching the children who speak
only Nahuat to read and write in Nahuat. A slow transition is
made, by using the same alphabet, into the reading and writing
of Spanish. This latest literacy program assures an even more
accelerated rate of acculturation towards the mestizo culture
of rural Mexico. For a description of this type of literacy
program in rural Mexican communities, see Angélica Castro
de la Fuente (1961) and Elson (1965).

The source materials for this grammar are contained in a
morpheme file of approximately 72,000 entries which repre-
sents every occurrence of every morpheme in 132 pages of
transcribed text, each page containing 25 typewritten lines of
approximately 75 characters per line. The number of morpheme
types is about 2000. The texts include letters, narratives,
prayers, and verb paradigms - about 3,300 lines in all.

The source materials described above were collected by
the author during his residence in Xalacapan and his field
trips to the areas surrounding Zacapoaxtla between May, 1958,
and December, 1964, under the auspices of the Summer
Institute of Linguistics, Mexico Branch.

A. The letters, 1210 lines, 37 percent of the total corpus,
are from five male adults who have been friends of the author
for almost a decade and have corresponded with the author
while he was in Mexico City and the U.S. Each adult is a
native of the Zacapoaxtla area, and is between the ages of 35
and 50. All but one is bilingual in Spanish and Nahuat. They
are intelligent members of their community, interested in
commerce and education for their children. They write wist-
fully of the 'proper way' of doing things which was the practice

of their fathers and grandfathers; they lament the 'modern'
way that they and their children live, due to the profound in-
fluences of the revolution with its sweeping social and economic
changes. But each adult lives and acts in keeping with the
rapid acculturative process that pervades his daily life. The
old way, they say, with its all-encompassing reverential system
and sharing of possessions was really more difficult, more
complicated; today one must look to education and money.
Politics, religion, commerce, local gossip all find expression
in these letters. To these men of the Sierra de Puebla I owe
my speaking knowledge of Nahuat as well as an understanding
and appreciation for the Aztec world-view: Heraclio Oropeza
Valerio, Gaudencio Valerio, Ubenceslao Valerio - all of
Xalacapan, Rutilio Tacomol of Taijtic, and Severiano Mancilla
Lopez of Tatoscac.

B. The narratives, 1860 lines, 56 percent of the corpus,
come mainly from one source: Ubenceslao Valerio, male, about
38 years of age, of Xalacapan. The stories he dictated on the
tape recorder represent his attempt over a period of six years
to acquaint the author with the thought and practices of the
Xalacapan community today. He claims no knowledge of legend,
of myth, of the history of his ancestors; all that he dictates is
what he has seen. The activity of malevolent spirits, how to
plant and harvest corn, the curing of the townspeople (all of
whom are tokniwan 'our siblings'), the crises of birth, bride-
asking, marriage, death and the thirteen day novena - all this
he considers necessary knowledge for the foreigner to be able
to function meaningfully within the community.

About 100 lines of text were given to the author by a pre-
vious investigator under the Summer Institute of Linguistics,
Archibald MacKinlay, who lived in a different barrio of
Xalacapan and did his work during the early 1940's. There is

one short text included within the total corpus from the father
of Ubenceslao Valerio, a story about the activity of lightning.

C.   The remaining 230 lines, 7 percent of the corpus, con-
sist of paradigmatic sets elicited from various language helpers
and from prayers recorded on tape from church services of the
Nahuat speaking congregations of the National Methodist Church
of Mexico in the Zacapoaxtla area.

The author would like to acknowledge his debt to another
investigator of the Summer Institute of Linguistics, Dr. Harold
Key, who also lived and worked in Xalacapan, in a barrio about
2 miles to the west of the barrio where the author lived.   The
private and published materials of both Dr. Harold Key and
his wife, Dr. Mary Key, were an invaluable guide in learning
and analyzing the language of the community.

Further, the author wishes to express his gratitude to the
mayors of Zacapoaxtla who with courtesy and genuine concern
facilitated the difficult task of arranging for a foreigner to
reside among the Nahuat speaking peoples of the Sierra de
Puebla: los presidentes municipales Celerino Toral Jiménez,
Joaquin Varela Sosa, José Macip Cruz.   To the presidente of
the town of Xalacapan, Agustin Salazar S., I owe a special
debt; he has generously allowed me the use of one of his houses
during my entire stay in Xalacapan.   And to Joel Molina Félix
of Tatoscac I am indebted for his guidance in learning and
practicing cultural norms;   his is a rare facility, that of grasp-
ing objectively his own linguistic and cultural structure.   His
observations on his own language and culture as contrasted
with both the mestizo and American norms helped me immeasur-
ably in adjusting to the community.

To the Directors of the Mexican Branch of the Summer
Institute of Linguistics, Drs. Benjamin F. Elson and Frank
Robbins, and to Dr. Robert Longacre I owe a great debt for

the original impetus to prepare a grammar of Nahuat. Both Dr. Elson and Dr. Robbins graciously allowed me to be absent from my Mexican assignment for the graduate study necessary to prepare the grammar.

The organization and writing of the grammar was undertaken and completed at the Hartford Seminary Foundation with the generous support and guidance of Drs. Henry Allan Gleason, Jr., Howard W. Law and William J. Samarin. I wish to thank the Foundation for their financial support during the initial stages of writing. And I wish to thank the American Council of Learned Societies for their kindness in extending an Advanced Graduate Fellowship in Linguistics for the academic year 1965-1966.

To my wife I owe a great debt, not only for her encouragement while in the field situation, but also for her perseverance and patience during the long months of typing and proof-reading.

<div style="text-align: right">

April, 1966
Hartford, Conn.

</div>

CENTRAL MEXICO

TAMPICO

Matlapa Chicontepec

GUADALAJARA

Huauchinango

Sierra de Puebla*

MEXICO

MANZANILLO

Milpa Alta
Tetelcingo*

PUEBLA

VERA CRUZ

PUEBLA

Chilac   Los Tuxtlas

Coastal Michoacán*

Mecayapan*

Guerrero

ACAPULCO

OAXACA

Dialects of Nahuatl referred to
in the Preface

Pochutla
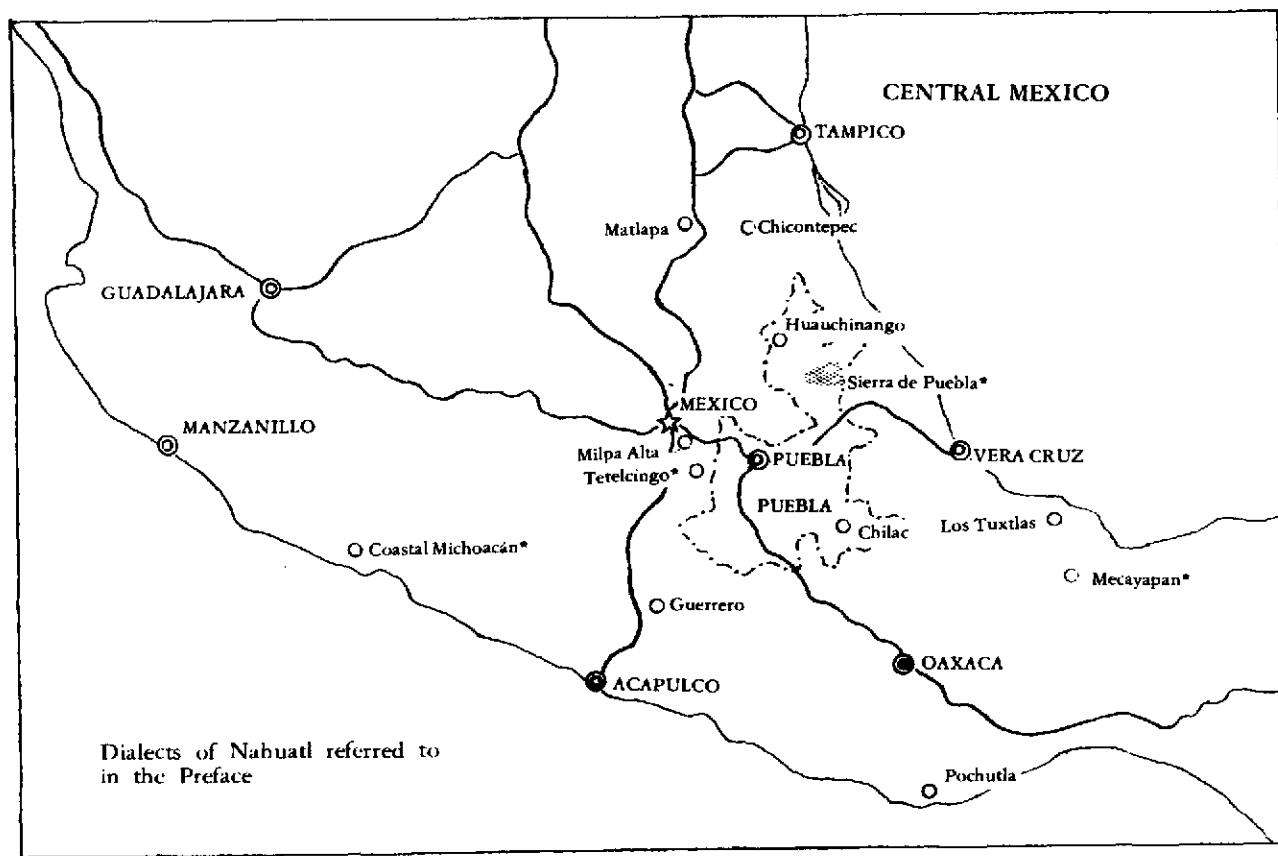
I. INTRODUCTION

1.1 <u>Phonologies</u> <u>of</u> <u>Nahuatlan</u> <u>Languages</u>. A statement of
the segmental phonemes of Nahuat is found in Key (1953 a). A
more comprehensive description of Nahuat phonology is being
prepared by the author under the title "Sierra Nahuat
Prosodies." The following description is a summary from the
latter.

The consonants of Nahuat are /p, t, k, q, g, c, č, s, š, h, l, m,
n, w, y/; Spanish loan words add to the inventory /b, d, f, ñ, ř,
ř̃/. The symbols used in the phonology have the values tradi-
tional to American structural linguistics; only the following
require comment: q is [kʷ], c is [ts], č is [tš], ř is flap, and
ř̃ is trilled. The phonological features of the 21 consonants,
other than the laryngeal /h/, are obstruent and sonorant
manners of articulation and labial, dental, alveopalatal, velar,
and labio-velar points of articulation. There is a voicing
contrast for stops. Obstruent consonants subdivide as to stop,
affricative, and fricative manners of articulation. Sonorant
consonants subdivide as to lateral, nasal, flap, trill, and
median manners of articulation.

The vowels are /i, ii, e, ee, o, oo, a, aa/. The eight vowels
form a symmetrical, three-dimensional system composed of the
following phonological constituents: front and back tongue
placement, high and low tongue height, and long and short
duration correlated with decentralized and centralized vowel
quality.

There are three emic stresses: primary, secondary, and
weak. Placement of primary stress is on the penultimate sylla-

1

ble of the word - except for a few patterns of ultimate and ante-
penultimate placement. Only non-penultimate stress is marked
in Nahuat word examples in this grammar. A word is defined
phonologically as ending with the syllable which follows the
primary stress. Secondary stress and weak stress, as well
as the phonological units of syllable, phonological-word,
phonological-phrase, phonological-clause, and phonological-
sentences are not germane to this grammar; their definition
can be found in the study referred to above.

Descriptive statements of the phonology of other Nahuatl
dialects are published for: Pochutla in Oaxaca, Boas (1917);
Ixcatepec in Guerrero, McQuown (1941); Sierra de Puebla,
McQuown (1942); Milpa Alta in the Valley of Mexico, Whorf
(1946); Matlapa in San Luis Potosí, Croft (1951); Sierra de
Puebla, Key (1953a); Mecayapan in the Isthmus of Veracruz,
Law (1955); Los Tuxtlas in southern Veracruz, Hasler (1961);
Huauchinango in northern Puebla, Brockway (1963); and
Tetelcingo in Morelos, Pittman (1961).

Popular descriptions of the phonology of Nahuatl dialects
are published for: Tepoztlan in Morelos, Rojas (1927);
Texcoco in the Valley of Mexico, Cortes (1951); Los Pipiles
of El Salvador, Todd (1953); the "classical" dialect of the
Valley of Mexico, Garibay (1961); and la Huasteca de Veracruz,
Robinson and Robinson (1964a).

1.2 Grammars of Nahuatlan Languages. Descriptive
statements of the grammatical structure of Nahuatl dialects are
published for: Pochutla in Oaxaca, Boas (1917); Milpa Alta in
the Valley of Mexico, Whorf (1946); Matlapa in San Luis
Potosí, Croft (1953b, 1954); Tetelcingo in Morelos, Pittman
(1954); the Isthmus of Veracruz, Law (1958, 1962); the Sierra
de Puebla, Key (1960); and a restatement of verb structure for
Tetelcingo in Morelos, Brewer (1962). See Garibay (1953) for

a discussion of books and articles, some dating from the 16th century, which deal with Nahuatl language and culture. It is beyond the scope of this grammar to take into account all grammatical descriptions of Nahuatl. The seven referred to in this paragraph are structural statements done within the past 50 years. See the listing of bibliographies in the Bibliography for other structural statements.

A preliminary statement of the grammar of Nahuatl of coastal Michoacan is being prepared under the title "Michoacan Nahual Clause Structure" by William Sischo and Dow F. Robinson. A popular statement of the grammar of the dialect in la Huasteca de Veracruz (by Dow F. Robinson) is in use in the teacher-training courses for the promotores culturales of the area, under the title, "Notas gramaticales sobre Mexica de la Huasteca de Veracruz." A similar set of notes for the Sierra Nahuat dialect is also in use by the promotores culturales in the Sierra de Puebla. The references cited under phonology for Rojas (1927), Cortes (1951), and Garibay (1940) include the grammatical structure as well. For more on the "classical" dialect see also Garibi (1935 and 1963).

Bibliographic materials for this grammar are from: (1) Croft's bibliography covering the 60 years before 1953, see Croft (1953a) and Gothenburg (1953); (2) Ripley's listing covering 1887-1962, see Ripley (1962); (3) see Historia de la literature Nahuatl, Garibay (1953); and (4) the (unpublished) private bibliography of Howard W. Law. The selections given in the bibliography include only those books and articles used in the preparation of this grammar.

1.3 The Model. To judge by the published polemics which express several theoretical positions within the field of linguistics, commitment to a given position involves the severing of most ties with former theories or practices in descriptive lin-

guistics. Exclusive commitment to a linguistic position is but
one choice open to the analyst as he approaches the task of
describing a language like Nahuat of Middle America. An alter-
nate choice is to draw upon a variety of linguistic positions and
to use a variety of linguistic models.

This grammar of the word structure of Nahuat is written
from the second viewpoint, i.e., an eclectic viewpoint. It is
based on the conviction that American structural linguistics
has been enriched and amplified, and has ultimately become more
efficient because of the successive break-throughs represented
by the Bloomfieldian, tagmemic, transformational, and stratifi-
cational linguistic schools of thought. Therefore, contributions
from several linguistic positions are used. The orientation of
this grammar is tagmemic, as a type of Bloomfieldianism, yet
it is not simply taxonomic. It is not, on the other hand, con-
cerned exclusively with a system of rules which describe the
speaker's intrinsic competence or knowledge of his language.
See Chomsky (1964, p. 3ff) for a discussion of competence ver-
sus performance. This grammar is concerned with linguistic
patterns, i.e., syntagmemes (constructions which are relevant
to the language system), and substitution points within patterns,
i.e., tagmemes (form classes defined by their functions). It
is concerned with the structural relationships that exist between
syntagmemes and that can be expressed by transforms.

It is undoubtedly my experience with a Mexican Indian
language that has been influential in guiding the choice among
available linguistic tools. Without acting either as an apolo-
gist or polemicist for competing schools of linguistic thought,
I have written this grammar as a contribution to the study of
Nahuatlan languages and the Uto-Aztecan family of languages.
The theoretical background is broader than that suggested by
the Bloomfieldian characteristics of tagmemics. Both the

transformational and stratificational developments in linguistics form part of the structure of this grammar.

It is, however, not a simple eclecticism that has guided the writing of this grammar. There are some things in language structure that lend themselves more easily to one type of linguistic description than to another. For instance, an 'item-and-arrangement' listing of five verb types of Nahuat and their allo types is but a surface reflection of the linguistic structure that is more clearly set forth in a detailed and efficient manner by various transforms - transforms which express inherent structural relationships.

The reason for the eclecticism of the model is to be found in the structure of Nahuat itself and in the desire to present in the most useful form possible the data of Nahuat structure for Uto-Aztecan studies. The model draws upon several theoretical contributions which have been developed by American linguists over the past thirty years. The following contributions are clearly discernible: the morphologic principles of Nida, Pike's tagmeme, transforms as delineated by Lees, the syntagmeme of Longacre, and the transformational relationships as specified by Gleason.

The goal of this grammar is to explicate the internal structuring of words by (1) specifying tagmemes, i.e., units which correlate form classes with their functions, (2) by specifying the relevant clusters of tagmemes, i.e., stating the tactics which guide the patterned clusterings of tagmemes as syntagmemes, and (3) by specifying the relationships between syntagmemes, i.e., formulating rules which objectify the relationships that obtain among syntagmemes. The descriptive devices used are formulae, sets of tagmemes and syntagmemes, and transforms.

The present description of the inventories of sets of mor-

phemes is based on Nida (1949) and Pike (1954). The segmen-
tation and classification of grammatical elements, i.e., the
smallest elements which are pertinent to the grammatical sys-
tem of the language, follow closely the principles that are in
the public domain of American structural linguistics; these
principles are most clearly formulated by Nida in the second
edition of his text on morphology (1949). His six principles
set forth the procedures for isolating and identifying in a
stretch of speech or text the recurrent partials which signal
the grammatical structure, i.e., the morphemes. The recur-
rent partials which have the same phonemic shape, the same
distribution in the grammatical structure, and the same mean-
ing are those most easily identified. Nida goes on to delineate
other principles which define as morphemes those recurrent
partials which have different phonemic shapes depending upon
the phonological environment or depending upon the distribution
in the total grammatical system. All illustrative material in
this grammar is followed by detailed segmentation and identifi-
cation of Nahuat speech forms into morphemes.

The publication of Harris' article "From Morpheme to
Utterance" (1946), Wells' article "Immediate Constituents"
(1947), Nida's text on morphology (1949), and Hockett's article
"Two Models of Grammatical Description" (1954) provided the
background, in American structuralism, for the immediate
constituent, or IC, approach. The goal was not merely to
segment and identify morphemes but to identify constructions
of morphemes by a successive binary cutting of layerings of
morphemes. By binary was meant that each putative morpheme
was to be isolated and identified in terms of another morpheme
or construction of morphemes which the putative morpheme
modified or with which it functioned. Hence, each morpheme
was an immediate constituent of some construction. Each

successive layer of segmentation yielded constructions which
eventually accounted for all the data within that sequence of
speech. Constructions were then labeled and described in
terms of sequences of form classes. Now, it is precisely at
this theoretical point, i.e., the linearly ordered sequence of
form classes or constructions of form classes, that Pike lodged
his protest and, thereby, formulated the tagmemic approach.
See Pike (1954, p. 152b).

For Pike the definition of word classes or constructions
of word classes was inadequate or incomplete unless the func-
tion of those word classes was specified; by function was
meant the place in the total language system where that form
class or construction fitted, i.e., the relationship which any
one grammatical element had to all other grammatical elements
in that language. His insistence on including the function of a
form class as part of the definition of the form class grew out
of his search for a unit of grammar which would resemble in
some way a unit of phonology. Pike relates in an article "On
Tagmemes, neé Gramemes" (1958, p. 274) that he wanted to do
for grammar what Sapir had done for phonology:

> I asked myself the question: whether there might possibly
> be some structural unit of high relevance to grammatical
> analysis comparable to the phoneme in the phonological
> sphere. . . . ?

He developed for grammar a structural unit of functional rele-
vance to the entire language system that would be comparable
to the phoneme. This unit he labeled the grameme; this is a
unit of grammar that brings together into one irreducible ele-
ment both form class and the function of the form class.

Bloomfield's treatment of function and form, by which he
meant the privilege of occurrence and the item selected for
occurrence, was expressed by his tagmemes of order and
selection. Pike took the factor of privilege of occurrence or

order as a positional spot (later slot) and correlated it with
the factor of selection, i.e., the form class or construction
that occurs in a given positional slot. Pike's tagmeme, then,
is a grammatical unit of high relevance to the overall gramma-
tical structure, i.e., it brings together a point (spot or slot)
in a pattern of structured relationships with a set of forms that
occur at that point, e.g., an object slot manifested by a class
of nouns. See Cook (1964, p. 8ff) for a detailed description of
this development. See Pittman (1954, p. 6) for use of valence to
express privilege of occurrence; see also his reference to
Hjelmslev's term 'syntagmatic relation'.

It is not, however, physical location that is crucial to the
definition of a tagmeme; it is, rather, function. Longacre
emphasizes the term function-set in place of the earlier term
spot-class or slot-class. This he does in order to make explicit
and central the functional point at which a set of items or
patterned clustering of items occur:

> Tagmemics makes grammatical functions focal, but associates
> such functions with sets of items and constructions. A
> function may be considered to be a defining property of a
> set while the set may be said to manifest a function: (1964a,
> p. 65)

In effect, this defines the use of the tagmeme in this grammar:
the form class is defined both by its membership and by its
function; the form class manifests a function.

The use of the term function encompasses the following:
(1) modification, i.e., the adjunction which is implicit in a
head-attribute construction, (2) the order of cutting of immediate
constituents as shown by a constituency tree, and (3) dependen-
cy in its widest sense, the relationship which an item has to its
most immediate environment up to and including its relationship
to a complete discourse. The naming of particular functions
represents in some way semantic units, but such a study is
beyond the scope of this grammar. Note, however, the corre-

lation with valences from the sememic stratum in the stratifica-
tional model now under development by Gleason and others.

The prototype of the tagmemic model is described in Pike
(1954, 1955, 1960). A modification in terminology appeared in
Pike (1958), i.e., the original term grameme was changed to
tagmeme. The scope of Pike's tagmemic thought, however, is
far wider than language itself; he sees language as only one
type of human behavior and language as set squarely in the con-
text of human culture. His terms etic and emic have been
applied to both linguistic and non-linguistic behavior; the recur-
rent patterns of behavior which are functionally relevant to the
system in which they occur refer either to units of phonology
and grammar or to units of behavior such as cultural roles
defined etically and emically. See Bock (1962) for cultural
roles defined etically and emically.

Language is hierarchically ordered; it is trimodally struc-
tured. For Pike no unit is well-defined until (1) its identifica-
tional and contrastive features are stated, (2) all variants of
an emic unit are accounted for, and (3) the distribution of an
emic unit is stated in terms of its place within a construction,
i.e., the slot it manifests on the next higher level of the
hierarchy. See Pike (1959, 1962) for a further description of
tagmemic thought. For an exhaustive listing of both theoretical
articles and actual language descriptions employing or influ-
enced by the tagmemic model of language, see Pike: "A Guide
to Publications Related to Tagmemic Theory", Current Trends
in Linguistics Vol. III, (T.A. Sebeok, Editor), pp. 365-394,
1966.

The syntagmeme, as used in this grammar, is a construc-
tion, but a construction that is a patterned clustering of tag-
memes, i.e., a construction which is not only a functional
unit in the total linguistic system but also is, in itself, a

characteristic clustering of tagmemes. The syntagmemes of Nahuat represent the recurrent and contrastive patterns of tagmeme clusters which pervade the grammatical structure and have traditionally been called words, e.g., verb, noun, etc.

The clustering of tagmemes cannot be adequately understood by practicing a dichotomous, binary cutting of constituents. The syntagmeme, as relevant clustering of constituent tagmemes, provides for the following: (1) A hierarchical arrangement of immediate constituents, i.e., the elements which constitute a word are viewed as a unit which, in turn, functions as but one element in a larger unit that is composed of words, e.g., a phrase. The phrase as a unit is but one element in a larger unit which is composed of phrases, etc.

(2) The syntagmeme provides for patterned arrangements which are maximally relevant to the language system, i.e., binary cutting of constituents is replaced by a cutting which follows the characteristic patterns of the language. A search for relevant patterns can be frustrated by over-segmentation of constructions, i.e., cutting mechanically by two's when the relevant pattern might allow three or four elements as mutual constituents. The search can also be frustrated by under-segmentation, i.e., a cutting which considers as immediate constituents and members of one form class two elements which, according to the emic pattern of the language, have radically different functions. For a detailed discussion of over-segmentation and under-segmentation, see Longacre's discussion of Jordan's description of Japanese (Longacre 1965, p. 68ff).

(3) The syntagmeme allows for the positing of the characteristic and regularly recurring clusters of tagmemes as contrastive (emic) syntagmemes. The constructions which are emically differentiated within the language system must differ

in two respects, one of which involves differences in nuclear
tagmemes. This means that not only the different word types,
e.g., verb or noun, are specified as contrastive, functional
units of grammar, but also any word type may be expressed by
a series of contrastive clusterings of constituent tagmemes,
e.g., the five emic verb syntagmemes in Nahuat. The syn-
tagmeme, then, as a functionally contrastive, patterned clus-
tering of tagmemes provides a detailed, efficient and
systemically relevant expression of the grammatical structure
of words.

The rules which guide the clustering of tagmemes are
expressed by formulae: the slot or function is represented by
upper case; the set or class of items is represented by lower
case. The colon between the two symbols is to be read: (1)
is manifested by, or (2) the preceding function defines the
following set. For instance, O:n means an object tagmeme is
manifested by a noun class. Obligatory tagmemes are preceded
by a plus sign (+); optional tagmemes are preceded by a plus-
minus sign (±).

A reading of a formula is obtained by retaining all items
following the plus sign, i.e., the upper case letters; where
the sign is ±, the item which follows the sign is retained only
if a plus manifestation is read. A reading presents but one
possible manifestation of the constituent tagmemes; there are
as many readings as there are co-occurrence possibilities
inherent in the members of the various sets of fillers. The
formula is a statement of grammatical contextuality; the set
of readings of one formula exhausts all possible instances of
grammatical contextuality. Semantic contextuality is inherent,
to some degree, in the specification of grammatical function;
no claim is made for an exhaustive definition of semantic con-
textuality by using formulae. See Elson and Pickett (1960) for

basic analytical procedures and descriptions using the tag-
memic model.

Three relations are specified in the description of word
structure in Nahuat; these relations are termed enation,
partial enation, and agnation. A syntagmatic formula is a
statement of the internal structuring of types of words; the
relationship between word types (or allos of a given word
type) is a kind of grammatical structure not explicated by the
formula. The systematic and regular relationships that stand
behind the different formulae of word types (or different read-
ings of a given formula) are explicated by these three terms:
enation, partial enation, and agnation.

A distinction is drawn between the relationships that ob-
tain between several grammatical structures and the process
that allows the converting of one grammatical structure into
another. The latter is a transform; transforms are possible
because of the systematic and regular relationships that exist
between syntagmatic structures. The three terms cited above
are defined and used by Gleason in reference to the structure
of sentences in English; in this grammar they are applied to
the internal structuring of words. Any extension of the mean-
ing or application of the terms as originally defined by Gleason
is the responsibility of the author.

The transforms that are used in this grammar are of the
type that Lees explicates in showing the relationships between
English verbs, nouns, and adjectives (Lees 1960). As men-
tioned at the beginning of this section, the model used in the
present grammar does not have at its base a set of rules
which reflect the linguistic intuition of the speaker; rather,
it has at its base the relevant patterns of the language struc-
ture viewed from the language system itself. Therefore, the
transformational component is fitted in at that point where the

Nahuat structure can be the most efficiently explicated by
using transforms.

The scope of the transformational theory and practice is
far too vast to attempt anything more than the briefest note on
how the transforms are employed in this grammar. For detail-
ed studies of transformational and transformational-generative
grammars, see Harris (1948), Chomsky (1957), Halle (1960),
Bach (1964), Katz and Postal (1964), Foder and Katz (1964),
and Chomsky (1965).

Harris is concerned with sentential transformations in
English; yet, his definition of the transformational idea is
helpful here.

> The definition of transformation can be refined to be a
> relation, not between forms, but among sets of sentences
> such that each set has a unique range of forms into which
> its sentences can be rearranged transformationally. (1964,
> p. 419)

By replacing 'sentences' with 'Nahuat syntagmemes', Harris'
statement explains the import of using transforms to explicate
Nahuat word structure. The relations among sets of syn-
tagmemes is such that there are only certain rearrangements
possible and the transforms express these possibilities.

It was Lees' delineation of nominalizer transformations
of English words that led to the application of transforms to
Nahuat syntagmemes. The use of transforms at this point does
not challenge Lees' use of phrase structure rules and strings
as standing behind the transformations used to explicate
English nominalizations. The structure of Nahuat could also
be formulated in the same manner; it would be an exacting
and profitable exercise. But the relevant patterns as dictated
by the expression of the language itself form the basis of this
description of Nahuat words.

The terms agnation, enation, and partial enation as used
in this grammar are here defined; see Gleason (1965, p.

1⁰5ff) for the original definitions. (1) Agnation is a statement
of the relationship between two types of syntagmemes, i.e.,
between two syntagmemes which have different structure
markers. The contrastive sets of markers referred to here
are those structure markers which signal the different word
types such as verb, noun, etc. The relationship between two
types of syntagmemes is statable in terms of generalized rules.
The transformation is a statement of the process of manipulat-
ing structure markers and converting one word type into
another word type. The word structure of Nahuat is such
that by the addition and/or deletion of constituent tagmemes
one word type is changed into another word type. Each of the
four types of words in Nahuat is agnate with each of the others.

(2) Enation refers to the relationship between allo syn-
tagmemes in which the members of one set of markers are sub-
stituted within the same constituent tagmeme, e.g., members of
the set of markers of intransitivity which manifest the Voice
tagmeme. This is analogous to the 'frame-and-substitution' list
wherein structure markers or vocabulary items which have the
same function are collocated one-by-one with the structural item
they modify. For instance, within the set of intransitive verb-
syntagmemes there are at least five different markers for in-
transitivity. The occurrence of a given marker with a given
stem class results in an intransitive verb-syntagmeme. This
relationship between individual members of the set of intransi-
tive verb-syntagmemes is enation. There is neither addition
nor deletion of tagmemes; there is no substitution of contras-
tive sets of markers as manifestants of the same tagmeme. A
transformational statement of the relationship would be trivial.
Therefore, the enation, or enate relationship, is not symbolized.

(3) Partial enation refers to relationships which are neither
agnate nor enate, i.e., their enateness extends to identity in

constituent tagmemes but the sets of markers which manifest
the constituent tagmemes have different functions. The sets
which manifest the Voice tagmeme are functionally contrastive
within the total grammatical system. This phenomenon is most
evident in the structuring of the different verb-syntagmemes;
the occurrence of contrastive sets of markers which manifest
the same constituent tagmeme gives rise to the contrastive verb-
syntagmemes, i.e., intransitive verb-syntagmeme, transitive
verb-syntagmeme, referential verb-syntagmeme, causative
verb-syntagmeme, and causative-referential verb-syntagmeme.
It is not the addition or deletion of constituent tagmemes that
accounts for the different structures of the five emic verb-
syntagmemes; it is not merely the substitution of members of
one set of markers within the same constituent tagmeme which
accounts for the five emic verb-symtagmemes; it is the mani-
festation of contrastive sets of markers within the same consti-
tuent tagmeme that accounts for the contrastive structuring of
the five emic verb-syntagmemes.

    In summary, the terms agnate and enate are polar
opposites, i.e., agnation is the relationship between syntagmemes
which have different constituent tagmemes; enation is the re-
lationship between syntagmemes which have the same constituent
tagmemes and whose Voice tagmeme is manifested by only one
set of markers. Partial enation represents the gradation be-
tween the poles; partial enation is the relationship between
syntagmemes which have the same constituent tagmemes and
whose Voice tagmeme is manifested by contrastive sets of
markers. For additonal discussion concerning the concepts
used in this model see section 2.6 in which the five emic verb-
syntagmemes are defined.

    See the final page of the Appendices for a summary chart
of the five sets of emic verb-sytagmemes and the sixty-six allo
verb-syntagmemes.

1.4 <u>Morphophonemics</u>. Morphophonemic (mphphm) rules covering replacement, reduction, apocopation, and loss of phonemes (the symbol —→ means, rewrite as; the symbol ⁼ means consists of, or, is equal to): Mphphm-la: CVCi + -ya —→ CVCiá, i.e., the semi-vowel /-y/ is lost when preceded by a vowel of the same quality. This rule is not uniformly applicable to Nahuat as spoken in all sections of the dialect; it varies among speakers within towns and within families. All illustrations given in this grammar are in the full form, i.e., CVCiya.

kičiá 'he awaits it' (ki- 3sg obj, čia 'await');

kičiya 'he awaits it' (ki-3sg obj, čiya 'await').

The first form shows the loss of the semi-vowel /-y/; the second form shows the verb in Nahuat as it will appear in illustrations.

Mphphm- lb: CVCi + -ya + -liya —→ CVCiliya, i.e., the voice marker - Y (-ya) when preceded by /-i/ is lost before the referential voice marker. The referential transform requires a high-front vowel before the referential voice marker -LY (-liya). CVCi + -ya + -liya —→ *CVCiyiliya —→ CVCiliya. Illustrations and reconstructed forms are from the verb-syntagmemes numbered -10a, -10b, and -11.

kipečiya + -liya —→ *kipečiyiliya —→ kipečiliya.

kikickiya + -liya —→ *kikickiyiliya —→ kikickiliya.

The asterisk shows a reconstructed form which would have had three high-front vowels in succession, i.e., *-iyi-.

Mphphm- lc: CVCi + -ya + -liya —→ CVCišiliya, i.e., the semi-vowel /-y/ from the voice marker -Y (-ya) is replaced by /-š/ before -LY. The referential transform requires a high-front vowel before -LY.

CVCi + -ya+-liya —→ *CVCiyiliya —→ CVCišiliya.

kiweeyiya + -liya —→ *kiweeyiyiliya —→ kiweeyišiliya.

The asterisk shows reconstructed forms which would have had

four high-front vowels in succession, i.e., *-yiyi- ---→ -yiši-.
There are only a few stems from stem class-10a that occur in
this form.

Mphphm- 1d: CVCi + -ya + -tiya ---→ CVCtiya, i.e., the
voice marker -Y (-ya) when preceded by high-front vowel /-i/ is
lost before the allomorph -tiya of the causative voice. The
allomorph -tiya occurs following the stem-final consonant or the
consonant of the voice vowel. In effect, the phonemic sequence
/-iyi/ is lost before -tiya.

CVCi + -ya + -tiya ---→ *CVCiytiya ---→ CVCtiya.

    kipečiya + -tiya ---→ *kipečiytiya ---→ kipečtiya.

    kitamiya + -tiya ---→ *kitamiytiya ---→ kitantiya.

Note the evidence in the second example for the mphphm-4.
Mphphm- 1e: CVCi + -ya + -ltiya ---→ CVCiltiya, i.e., the
voice marker -Y (-ya) when preceded by high-front vowel /-i/ is
lost before the allomorph -ltiya of the causative voice. The
allomorph -ltiya occurs following the stem-final vowel or the
voice vowel. In effect, the phonemic sequence /-ya/ is lost
before -ltiya.

CVCi + -ya + -ltiya ---→ *CVCiyaltiya ---→ CVCiltiya.

    kipečiya + -ltiya ---→ *kipečiyaltiya ---→ kipečiltiya.

    kitamiya + -ltiya ---→ *kitamiyaltiya ---→ kitamiltiya.

Mphphm- 1f: /-y/ is replaced by /-š/ before /-t/, or, stems
with final consonant /-y/ have an allomorph with final consonant
/-š/ which occurs before /-t/, i.e., CVyV + -t ---→ CVšt-.

    ahwiyaaya + -tok ---→ ahwiyaaštok.

    tayokoya + -tok ---→ tayokoštok.

Mphphm-2b: CVCo + -wa ---→ CVCoá, i.e., the semi-vowel
/-w/ is lost when preceded by a vowel of the same quality.
This rule is not uniformly applicable to Nahuat as spoken in all
sections of the dialiect; it varies among speakers within towns
and within families. All illustrations in this grammar are

given in full form, i.e., CVCowa.

>   čoloá 'he flees' (čolo- 'flee', -a voice);

>   čolowa 'he flees' (čolo- 'flee', -wa voice).

The first form shows the loss of the semi-vowel /-w/; the second form shows the verb in Nahuat as it will appear in illustrations.

Mphphm-2b: CVCo + -wa + -tiya ---→ CVCowtiya/CVCtiya, i.e., the voice marker - W (-wa) when preceded by high-back vowel is lost before the allomorph -tiya of the causative voice. The allomorph -tiya occurs following the stem-final consonant or the consonant of the voice marker. In addition, the vowel /-o/ is lost. In summary, it is the phonemic sequence /-owa/ that is lost in some situations, and in other situations only the voice vowel is lost.

>   kiqečowa + -tiya ---→ kiqečowtiya/kiqečtiya.

>   kitemowa + -tiya ---→ kitemowtiya/kitentiya.

The two resultant forms are synonymous semantically. Not all stems with this canonical shape occur in both forms.

Mphphm-2c: CVCo + -wa + -ltiya ---→ CVColtiya, i.e., the voice marker -W (-wa), when preceded by high-back vowel, is lost before the allomorph -ltiya of the causative voice. The allomorph -ltiya occurs following the stem-final vowel or the voice vowel.

>   kiqečowa + -ltiya ---→ kiqečoltiya.

>   kitemowa + -ltiya ---→ kitemoltiya.

Some stems occur with the full form, i.e., the voice marker -W does not apocopate. The rule given here covers most of the verb stems.

Mphphm-3: /s/ ---→ /-š/ before /-t/, or, stems with final consonant /-s/ have an allomorph with final consonant /-š/ which occurs before /-t/.

>   nesi + -tiya ---→ kinestiya.

kisa + -tiya ---→ kikištiya.

Mphphm-4: /-m/ ---→ /-n/ before alveolar consonants, or,
stems with final consonant /-m/ have an allomorph with final
consonant /-n/ which occurs before alveolar consonants /-t,
-d, -č, -c/.

tami 'it finishes' (tami 'finish'), kitankeh 'they finished it'

(ki- 3sg obj, tan- 'finish', -keh pret pl sbj).

Mphphm-5: Voiced consonants are voiceless before voiceless
segments.

qowit 'tree' [k^wo.wit], qowtah 'forest' [k^woW.tah].

Mphphm-6: ta- + i/oCVCV ---→ taCVCV, i.e., stems which
begin with /-i or -o/ lose the vowel when the marker ta- is
prefixed.

tikinočpana 'you sweep them', tačpana 'you sweep all over',

tikinihtowa 'you speak to them', titahtowa 'you speak'.

1.5 Abbreviations. When a technical term appears for
the first time it is spelled out in full and is followed immediately
by the symbol or abbreviation in parentheses. All other uses
of the term in the explanation of Nahuat words or in explanatory
charts are in the abbreviated form. Concerning the distinction
between the tagmeme slot and the fillers of the tagmeme slot, an
upper case letter or an abbreviation beginning with an upper
case letter refers to the slot; the lower case of the same
letter refers to the set of items which manifests the slot. The
upper case and lower case letters appear in the formulae.

comb	combinative	pret	preterite
cond	conditional	proc	processive
cs	causative voice	prn	pronoun
der	derivational	Pr	Predication tagmeme
dir	directional	r	root
fut	future	rem	remote-past tense
G	Goal tagmeme	rd	reduplication
gen obj	general object	rf	referential voice
H	Head tagmeme	s	stem
hon	honorific	sbj	subject
infl	inflectional	sc	stem class

impf	imperfect tense	sfx	suffix
impv	imperative	sg	singular number
ind	indicative	sytm	syntagmeme
intr	intransitive voice	T	Tense tagmeme
k	kernel	th	theme
l	locative	tm	tagmeme
.M	Modifier tagmeme	tml	timeless tense
mphphm	morphophonemic rule	tr	transitive voice
n	noun	v	verb
obj	object	v-sytm	verb-syntagmeme
pa	participle	vi	voice
pc	particle	1	first person
per	person	2	second person
perm	permissive	3	third person
pfx	prefix	B-1	Base type one
pl	plural number	B-2	Base type two
poss	possessive	B-3	Base type three

The following is a visual display of the syntagmatic structure of word syntagmemes in Sierra Nahuat:

Verb-syntagmeme

+Person:	+Predication:	+Voice:	±Modifier:	+Tense-Aspect:
person, number, honor.	B-1, B-2, B-3.	intransitive, transitive, referential, causative, causative-referential voices.	participles of manner and location.	tense, aspect, number.

Noun-syntagmeme

±Person:	+Nucleus:	+Voice:	+Aspect:
possessive pronouns.	B-1.	nominalizers	possession, honor, number.

Locative-syntagmeme

±Person:	+Nucleus:	+Aspect:	
possessive pronouns.	B-1.	locatives.	

Particle-syntagmeme

	+Nucleus:	±Aspect:	
	B-1	plural, honor.	

Abbreviations which require special explanation are:

d: refers to a verb-syntagmeme derived from outside its own
   set of v-sytms.

D: refers to a verb-syntagmeme derived from within its own set.

intr v-sytm: intransitive verb-syntagmeme.
tr v-sytm: transitive verb-syntagmeme.
rf v-sytm: referential verb-syntagmeme.
cs v-sytm: causative verb-syntagmeme.
cs-rf v-sytm: causative-referential verb-syntagmeme.
n-sytm: noun-syntagmeme.
l-sytm: locative-syntagmeme.
pc-sytm: particle-syntagmeme.

II. THE VERB-SYNTAGMEME

The verb-syntagmeme (v-sytm) is defined by the formula:
+Per:per-pfx +Pr:base +Vi:voice marker +M:pa +T:infl-sfx,
i.e., an obligatory Person tagmeme manifested by person pre-
fixes, an obligatory Predication tagmeme manifested by base
types B-1, B-2, B-3, an obligatory Voice tagmeme manifested
by derivational suffixes, an optional Modifier tagmeme mani-
fested by participles of manner and location, and an obligatory
Tense tagmeme manifested by tense, aspect, and number
inflection. Although the complete name of this latter tagmeme is
Tense-Aspect-Number, it is referred to as the Tense tagmeme.
In sections 2.1 - 2.5 the definition of each of the constituent
tagmemes is given; the explication of emic verb-syntagmemes
and the classes of allo verb-syntagmemes is given in section
2.6. The following chart is a visual display of the syntagmatic
structure of the verb-syntagmeme in Nahuat.

+PERSON:	+PREDICATION:	+VOICE:	±MODIFIER:	+TENSE:
Person,	B-1,	Intransitive,	Participles	Tense,
number,	B-2,	transitive,	of manner	aspect,
honor.	B-3.	referential,	and	number.
		causative,	location.	
		causative-		
		referential		
		voices.		

The definition of the verb-syntagmemes requires a discus-
sion of implicit categories. See Wonderly and Aschmann (1949).
There are four grammatical relationships implicit in a verb-
syntagmeme which occurs with no affixation, i.e., singular

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number, 3rd person subject, voice, and timeless tense. These
implicit categories are marked by ∅ in certain sections and
charts, but only to aid in the identification or definition of such
categories. Throughout most of the grammar these categories
will remain unidentified.

čoka 'he cries' (čoka 'cry'); koči 'he sleeps' (koči 'sleep').
Each of these verb-syntagmemes is identified as 3rd singular
subject, intransitive in voice, and timeless in tense.

kiteki 'he cuts it' (ki- 3sg obj, teki 'cut'),

kičiwa 'he does it' (ki- 3sg obj, 'čiwa 'do').
Each of these verb-syntagmemes is identified as 3rd singular
subject, transitive in voice, and timeless in tense. The transi-
tive voice is implicit in the derivational system; it is explicitly
marked in the prefix system. The verb-syntagmemes which are
explicitly marked for voice are 'themes', those which are
implicitly marked for voice are 'stems'.

2.1 The Person Tagmeme. The prefix system of the verb-
syntagmeme is divided into four subsystems: first order (i.e.,
closest to the verb stem), plural (pl) marker; second order,
honorific (hon) marker; third order, object (obj) marker; and
fourth order, subject (sbj) markers. The morphemes of the
prefix system specify the person and number of the subjects
and objects, as well as degree of honor. The occurrence of
the subject marker is obligatory for any verb-syntagmeme. The
markers -h and -kan denote plural subject. Although they are
suffixes, their occurrence is required when a prefix which
marks plural subject occurs. Therefore, the pluralizing
suffixes are included in this section; they are enclosed in
parentheses on the charts. The co-occurrence possibilities of
the prefix morphemes with those of the inflectional system will
be discussed in section 2.5. The sets of morphemes which
occur in each of the four orders of prefixes are summarized in

the following chart; an implicit category is marked with ∅.

	ORDER 4: SUBJECT	ORDER 3: OBJECT	ORDER 2: HONORIFIC	ORDER 1: PLURAL
1	ni-	neč	on-	in-
2 (sg)	ti-	mic-		
3	∅	k-/ki-		
1	ti-,..(-h)	teč-		
2 (pl)	nan-..(-h)	nameč-		
3	∅.....(-h)	kin-		
Impv sbj	ši-,...(-kan)	Rflx obj: mo-		
		Gen obj: ta-		
		te-		

2.11 The fourth order of prefixes consists of a closed set of morphemes which mark person and number of the subject. These are obligatory to the occurrence of any verb syntagmeme. The occurrence of fourth order prefixes without the third order object indicates an intransitive verb-syntagmeme. The occurrence of morphemes from the first and second orders (plural and honorific) with those from the fourth order is optional. The subject pronouns (sbj prns) encompass two sets, i.e., those occurring in the indicative mode and those occurring in the imperative mode. The following chart displays the fourth order prefixes: SUBJECT PRONOUNS.

INDICATIVE MODE   IMPERATIVE MODE

	1st	ni-			
Sg	2nd	ti-		Sg	ši-
	3rd	∅			
	1st	ti-,..(-h)			
Pl	2nd	nan-..(-h)		Pl	ši...(-kan)
	3rd	∅.....(-h)			

The subject pronouns of singular number in the fourth order are: ni- 1st person (1sg); ti- 2nd person (2sg); and ∅ 3rd person (3sg). The significant absence of a marker has been defined in terms of implicit categories; the 3rd person is an implicit category. The implicit categories are not identified in

explanations of illustrative Nahuat forms.

  nipewa 'I begin' (ni- lsg sbj, pewa 'begin'); tipewa 'you

  begin' (ti- 2sg sbj); pewa 'he begins'; nikoči 'I sleep' (ni-

  lsg sbj); tikoči 'you sleep' (ti- 2sg sbj); koči 'he sleeps'.

The grammar of Nahuat does not mark gender in the pronoun

system. Therefore, the convention is adopted that the 3sg

pronoun is glossed as 'he' and the 3pl pronoun is glossed as

'they'. The sememic or cultural context may allow or necessi-

tate the gender distinction.

  The subject pronouns of plural number are: ti-...(-h) lst

person (lpl); nan-...(-h) 2nd person (2pl); and ∅...(-h) 3rd

person (3pl). The 3rd person is marked implicitly; note the

obligatory occurrence of the suffix -h. The lpl and the 2sg are

distinguished only by the occurrence of the suffix -h.

  tipewah 'we begin' (ti-...[-h] lpl, pewa 'begin'); nanpewah

  'you-pl begin' (nan-...[-h] 2pl); pewah 'they begin'

  (∅...[h] 3pl); tikočih 'we sleep' (ti-...[h] lpl, koči 'sleep');

  nankočih 'you-pl sleep' (nan-...[h] 2pl); kočih 'they sleep'

  (∅...[-h] 3pl).

  The six subject pronouns described above form one set of

forms which contrasts with another set which has but one

member: the imperative (impv) subject morpheme, ši-. The

plural for the imperative is indicated by the suffix -kan; see

section 2.54 for a full description of plural suffixes, including

the plural markers -h and -kan.

  šikoči 'go to sleep' (koči 'sleep'); šikočikan 'go to sleep,

  you-pl';

  šiihsa 'wake up' (ihsa 'awake'); šiihsakan 'wake up, you-pl'.

  2.12 The third order of prefixes consists of a closed set

of morphemes which mark person and number of the object.

The occurrence of third order prefixes indicates the presence

of a transitive verb-syntagmeme. The third order prefixes are

obligatorily preceded by the fourth order prefixes; the occur-
rence of the first and second orders is optional. These third
order prefixes include three contrastive sets: objects, reflex-
ive object, and general objects. The following chart is a
display of the third order prefixes: OBJECTS.

SET I	SET II	SET III
OBJECTS	REFLEXIVE	GENERAL OBJECTS
1sg neč-	mo-	ta- non-humans
2sg mic-		te- humans
3sg k-/ki-		
1pl teč-		
2pl nameč-		
3pl kin-		

The object pronouns of singular number in the third order,
i.e., Set I, are: neč- 1sg, mic- 2sg, and k-/ki- 3sg (k- occurs
following vowels; ki- occurs word initially or following con-
sonants). Regarding first and second persons, a succession
of the subject and object pronouns occurs only if the person
number is different; if the person number of the subject and
object is the same, then the reflexive pronoun occurs.

nečkickiya 'he grabs me' (kicki 'grab, neč- 1 sg obj, -ya
vi);

mickickiya 'he grabs you' (mic- 2sg); kikickiya 'he grabs
him'

(ki- 3sg); tinečkickiya 'you grab me' (ti-2sg sbj, neč- 1sg
obj); tikkickiya 'you grab him' (ti- 2sg sbj, k- 3sg obj);
nimickickiya 'I grab you' (ni- 1sg sbj, mic- 2sg obj);
nikkickiya 'I grab him' (ni- 1sg sbj, k- 3sg obj); nečkickiliya
'he grabs it for me' (neč- 1sg obj); mickickiliya 'he grabs
it for you' (mic- 2sg obj); kikickiliya 'he grabs it for him'
(ki- 3sg obj); tinečkickiliya 'you grab it for me' (ti- 2sg
sbj, neč- 1sg obj); tikkickiliya 'you grab it for him' (ti-

2sg sbj, k- 3sg obj); nimickickiliya 'I grab it for you'
(ni- 1sg sbj, mic- 2sg obj); nikkickiliya 'I grab it for him'
(ni- 1sg sbj, k- 3sg obj).

The occurrence of the referential voice marker -liya correlates
with a shift in meaning of the object pronouns from direct ob-
jects to indirect objects.

The object pronouns of plural number in the third order
are: teč- 1pl, nameč- 2pl, and kin- 3pl. The marker for 3pl is
a form which consists of k- 3sg and in- plural. See section 2.14
for the description of pluralization of all object pronouns.

teckickiya 'he grabs us' (teč- 1pl obj); namečkickiya 'he
grabs you-pl' (nameč- 2pl obj); kinkickiya 'he grabs them'
(kin- 3sg obj); titeckickiya 'you grab us' (ti- 2sg sbj,
teč- 1pl obj); tikinkickiya 'you grab them' (ti- 2sg sbj, kin-
3pl obj); ninameckickiya 'I grab you-pl' (ni-1sg sbj,
nameč-2pl obj); nikinkickiya 'I grab them' (ni- 1sg sbj, kin-
3pl obj); teckickiliya he grabs it for us' (teč- 1pl obj);
namečkickiliya 'he grabs it for you-pl' (nameč- 2pl obj);
kinkickiliya 'he grabs it for them' (kin- 3pl obj);
titečkickiliya 'you grab it for us' (ti- 2sg sbj, teč- 1pl obj);
tikinkickiliya 'you grab it for them' (ti- 2sg sbj, kin- 3pl
obj); ninamečkickiliya 'I grab it for you-pl' (ni- 1sg sbj,
nameč- 2pl obj); nikinkickiliya 'I grab it for them' (ni-
1sg sbj, kin 3pl obj).

The reflexive pronoun (rflx prn) is the second of the three
sets which occur in the third order of prefixes. The reflexive
pronoun replaces the object pronoun when a subject-object
sequence of the same number would have occurred, e.g.,
*nineč- 'I - me' is rewritten nimo- 'I - myself'. The following
is an exhaustive list covering co-occurrences of 1st and 2nd
persons.

*nineč- 'I - me'   ---- nimo- 'I - myself'.

*timic- 'you - you'   ---- timo- 'you - yourself'.

*titeč-...(-h) 'we - us'   ---- timo-... (-h) 'we- ourselves'.

*nannameč- (-h) 'you-pl you- pl'   ----nanmo .. (-h) 'you-pl - yourselves'.

*niteč- 'I - us'   no occurrence.

*tinameč- 'you - you-pl'   no occurrence.

*tineč-... (-h) 'we - us'   no occurrence.

*nanmic ... (-h) 'you-pl you'   no occurrence.

Since the category of non- 1st and non-2nd person includes a third, a fourth, and possibly other persons, the reflexive pronoun in 3rd person has semantic limitations. The grammatical structure allows collocations which are semantically impossible: (1) When the subject and object are different 3rd persons, the reflexive pronoun cannot occur. (2) When the subject and object are the same 3rd person, it is semantically impossible to have a different number.

momagah 'they hit themselves' (mo- rflx, maga 'hit', -h pl sbj).

This would be impossible to gloss as *'he hit themselves' or *'they hit himself'. (3) When the subject and object are the same 3rd person and the same number, the reflexive pronoun mo- occurs.

momaga 'he hits himself' (mo-rflx, maga 'hit');

momagah 'they hit themselves' (-h pl sbj).

The following chart displays the co-occurrences of subject and object pronouns including the reflexive pronoun. The horizontal axis represents objects, singular and plural numbers, and 1st, 2nd, and 3rd persons. The vertical axis represents subjects, singular and plural number, and 1st, 2nd, and 3rd persons. At the intersection of a row with a column is the form which represents the co-occurrence of subject and object pronouns.

	1sg	2sg	3sg	1pl	2 pl	3pl
	1sg	2sg	3sg	1pl	2 pl	3pl
1sg	nimo-	nimic-	nik-	* * *	nameč-	nikin-
2sg	tineč-	timo-	tik-	titeč-	* * *	tikin-
3sg	neč-	mic-	ki- /mo-	teč-	nameč-	kin-/mo-
1pl	* * *	timic- (-h)	tik- (-h)	timo-. (-h)	tinameč- (-h)	tikin-. (-h)
2pl	nanneč-(-h)	* * *	nanki- (h)	nanteč-(-h)	nanmo-.. (-h)	nankin- (-h)
3pl	neč- (-h)	mic- (-h)	ki- (-h)	teč- (-h)	nameč-. (-h)	kin- (-h)
			mo- (-h)			mo-. (-h)

The two general objects (gen obj) constitute the third of the three sets which occur in the third order of prefixes: ta- which refers to events or things; te- which refers to humans. This set is mutually exclusive in occurrence with the set of object pronouns and the reflexive pronoun. The general objects replace object pronouns; the general objects are preceded by subject pronouns but are followed neither by the plural nor honorific morphemes.

There are two homophonous forms ta- : (1) one occurs as a replacive for specific object pronouns and functions as a general object; (2) the other functions as a derivational (der) prefix, i.e., the occurrence of ta- (der) as a root prefix changes the meaning of the root; this derived root may then be prefixed with ta- (gen obj). These two functions apply to the verb-syntagmemes; only the second function can be detected in the noun-syntagmemes. In the following paragraph only the first function of ta- /te- is defined; the derivational function is discussed in section 2.22.

The general object ta- occurs in place of specific object pronouns if the referent is a series of events or things. When the general object occurs, there is no manifestation of a free object elsewhere in the clause. The contrastive functions of the general object and specific objects are best shown by citing the following clauses taken from a text about the agricultural cycle. The first of the pairs of clauses makes use of the

general object; the second clause makes use of a bound,
specific object and a free object.

(1) wan okse tamoyawtiw 'and another will go along spread-
ing it everywhere' (wan 'and', okse 'another', ta- gen obj,
moyaw- 'spread', -tiw fut dir); (2) kimoyawtiw in tapalan
'he will go along spreading the fertilizer' (ki- 3sg obj, in
'the', tapalan 'fertilizer').

(1) wan taiškalakiytiyoweh 'they go along planting them all
over' (ta- gen obj, iškalaki 'plant', -y [ya] tr vi, ti comb,
yoweh 'go' pl sbj); (2) kiiškalakiyah in kamohti tatampa
den tapalan 'they plant the potatoes under the fertilizer'
(ki- 3sg obj, -ya tr vi, -h pl sbj, kamohti 'potato', tatampa
'underneath', den 'of the').

The general object te- occurs in place of specific object
pronouns if the referent is a group of people or humanity in
general.

teikneliya 'he pities people' (te- gen obj, ikne- 'pity', -liya
rf vi); tepalewiya 'he helps people' (pale- 'help', -wi intr
vi, -ya tr vi), tekehcoma in tehsonkilit 'the plant is irritating
to people' (kehcoma 'bite', in 'the', tehsonkilit 'a poisonous
plant').

The contrastive function of general object (te-) and specific
object is shown in the following clauses which are taken from
a text on prayer.

(1) tetiočiwa in yehwacin 'God blesses everyone' (te- gen
obj, tiočiwa 'bless', in 'the', yehwacin 'God'); (2)
tečtiočiwakin tehwan 'He has blessed us' (teč- lpl obj.
tiočiwa 'bless', -k pret, in 'the' tehwan 'we/us').

2.13 There is one morpheme which occurs in the second
order prefix slot, on- hon. It is never the speaker who re-
ceives the honor; it can only be the one addressed. The
honorific marker modifies the preceding object pronoun only

if that object pronoun refers to the same person as the one
being addressed.

nimicontahpalowa 'I greet you, sir' (ni- 1sg sbj, mic- 2sg
obj, on- hon, tahpalo 'greet', -wa tr vi).

nikonišmati 'I know him, that honorable person' (k- 3sg obj,
išmati 'be acquainted with').

When the object pronoun is the same person as the speaker,
then the honorific morpheme refers to the one addressed.

nečonmakiliya 'he, that honorable person, gives it to me'
(neč- 1sg obj, on- hon, maki 'give', -liya rf vi);

tečontahpalowah 'they, those honorable people, greet us'
(teč- 1pl obj, tahpalo- 'greet', -wa tr vi, -h pl sbj).

When the imperative subject occurs, the honorific morpheme
refers to the one receiving the instruction.

šionpaki 'may you have good health, sir' (ši- impv subj, paki
'be healthy'); šikončiwa 'do it, sir' (k- 3sg obj, čiwa 'do').

2.14 One morpheme, in- plural, occurs in the first order.
It pluralizes only the 3rd person object pronoun. Note that
the plural morpheme was described in section 2.12 in reference
to the 3rd person plural object, i.e., kin- . However, the
honorific morpheme occurs between the 3rd singular object k-,
and the plural marker in-.

nikčiwa 'I make it' (ni- 1sg sbj, k- 3sg obj, čiwa 'make');

nikinčiwa 'I make them' (k- 3sg obj, in- pl);

nimiconinčiwiliya 'I make them for you' (ni- 1sg sbj, mic-
2sg obj, on- hon, in- pl, -liya rf vi).

Within the verb-syntagmemes which are referential or
causative-referential in voice, the plural in- marks only the
direct object. For instance, in a referential verb-syntagmeme
the object pronouns, such as neč- (1sg) or teč- (1pl), are in-
volved in the referential action of the verb, i.e., they are
glossed as indirect objects. The second object in such a con-

struction, i. e., the direct object, is implicit in the singular
number. The plural in-, then, refers to the direct object. In
the following example, the in- pluralizes the direct object and
and the mic- (2sg obj) is the object that is involved in the
referential action of the verb.

nimicinkawtewiliya 'I abandon them for you' (ni- 1sg sbj,

mic- 2sg obj, in- pl, kawtewi 'abandon', -liya rf vi).
There is a parallel situation in the causative-referential verb-
syntagmeme. The causative voice, marked by -ti, implicitly
includes a causative object; this parallels the referential
voice, marked by -li, which implicitly includes a referential
object. The occurrence of in- (pl) in a causative-referential
verb-syntagmeme is ambiguous in that it may mark either or
both of the causative or referential objects.

nimicinkawtewtiliya 'I cause him/them to abandon him/them
for you' (ni- 1sg sbj, mic- 2sg obj, in- pl, kawtew-
'abandon', -tiliya cs-rf vi)

Within a verb-syntagmeme involving two 3rd person objects
there is a double occurrence of the plural marker in-.

tikinoninčiwiliya 'you make them for those honorable
people' (ti- 2sg sbj, k- 3sg obj, in- pl, on- hon, in- pl,
čiwi 'make', -liya rf vi).
The double occurrence of the plural in- within one verb-
syntagmeme is rare.

2.15 In order to specify the co-occurrence of the sets of
morphemes from each of the four orders, first, let S represent
subject pronouns, let 0 represent object pronouns, let R-0
represent reflexive object, and let G-0 represent general ob-
ject, let H represent honorific, and let P represent plural.
The permitted co-occurrences of morpheme sets from the four
orders are:

S: niahsi 'I arrive' (ni- 1sg sbj, ahsi 'arrive'); SO:

nikteki 'I cut it' (teki 'cut', k- 3sg obj); SR-O: nimomaga
'I hit myself' (momaga 'hit'); SG-O: nitaqa 'I eat every-
thing' (ta- gen obj, qa 'eat'); SH: tionwalas 'you, sir,
will come' (ti- 2sg sbj, on- hon, wala 'come', -s fut);
SOH: tikončiwas 'you, sir, will make it' (ti- 2sg sbj, k-
3sg obj, on- hon, čiwa 'make', -s fut); SR-OH: timoonpoloh
'you, sir, lost your way' (ti- 2sg sbj, mo- rflx obj, on-
hon, polo 'lose' -h pret); SOHP: tikoninmakak 'you, sir,
gave them' (k- 3sg obj, on- hon, in- pl, maka 'give', -k
pret); SOP: tikinteyik 'you cut them' (k- 3sg obj, in- pl,
teyi 'cut' -k pret); SR-OP timoinmaka 'you give them to
yourself' (mo- rflx obj, in- pl, maka 'give').
The honorific and plural morphemes do not co-occur with the
generalized object.

2.2 The Predication Tagmeme. Although the Predication
(Pr) slot is designated as a tagmeme, one of the five which
together constitute the verb-syntagmeme, the Predication slot
is manifested by contrastive base types, i.e., B-1, B-2, B-3.
There are two grammatical phenomena, compounding and
embedding, which make necessary a syntagmatic definition of
the Predication slot. Compounding refers to the occurrence of
a maximum of four stems within the Predication slot; embedding
refers to the occurrence of bases within bases. The maximum
embedding possible is that of a di-stem base within a di-stem
base.

There are three discernible patterns of compounding and
embedding of stems among the constructions which manifest the
two slots within the Predication tagmeme. These patterns, or
construction types, are based on three factors: (1) the par-
ticular constructions which manifest the slots within the
Predication tagmeme, (2) the peculiar relationship that obtains
between the slots in each of the three bases, and (3) the stem

classes which manifest the slots within the Predication
tagmeme. The definition, therefore, of the Predication
tagmeme and its manifestants involves embedding, compounding,
and relationships between internal constructions. Before de-
fining the three bases, the distinction must be made between
roots and stems.

2.21 The root (r) is the elemental item of grammatical
structure. It is by definition a non-segmentable piece and non-
derivable, i.e., a formative; it does, however, undergo
morphophonemic alterations. The term 'root' will be used in
the definition of the four contrastive word types in Nahuat:
verbs, nouns, locatives, particles. The characteristic
canonical shape of the root is CVCV neki 'he wants' (root is
neki 'want'), maga 'he hits' (maga 'hit'). Other canonical shapes
are: VCCV ilpi- 'tie', ahwa 'scold'; VCV ewa 'arise', ili-
'say'; CV qa 'eat'; V aa- 'water'; CVCVCV namaka 'sell',
VCCVCV ihmati 'threaten'. The hyphen following the root
indicates that that root never occurs without a voice morpheme.

An alternate solution to that which posits roots as CVCV
(or some combination of C and V with stem-final V) is to con-
sider the final V as having some derivational or formative
function. The main reason for this suggestion is that a stem
occurring in a transitive verb-syntagmeme may have a different
final vowel when it occurs in an intransitive verb-syntagmeme.
Presumably it would be possible to classify sets of stems, and,
by appropriate rules, specify which vowel is to occur when a
stem is manifested in a specific verb-syntagmeme. The sets
of stems which do occur with different final vowels are few in
number; the set of rules necessary to specify the set of stems,
the final vowel, and the particular verb-syntagmeme would be
excessive in number and they would represent no pervading
patterns within the grammatical structure. It is more efficient,

therefore, to specify the few vowel changes than to posit the
final vowel as a separate morpheme.

For other analyses of Nahuatlan dialects and the use of
root and stem, see: (1) Boas (1917, p. 20), the root includes
the vowel; (2) Whorf (1946, p. 385), the stem or root includes
the vowel; (3) Croft (1953b, p. 278), the base includes the
vowel; (4) Pittman (1954, p. 23), the vowel is a suffix with
present tense function; (5) Law (1958, p. 110, 115), the
vowel is present tense marker (alternating with zero); (6)
Key (1960), the stem includes the vowel; the vowel is present
tense marker (in alternation with zero). In summary, the
vowel following the root in the above grammars is considered
to be a marker of present tense or it is not taken into account
as functionally relevant in the grammar. For arguments
against considering the final vowel of the root as present
tense marker, see section 2.5, timeless tense.

2.22 The term stem (s) refers to the root (1) as a single
morpheme, (2) in its reduplicated form, and (3) in its occur-
rence with the derivational prefix ta-. The convention
is adopted that bases are manifested by stems or stem construc-
tions; roots are the inventory items in terms of which the
stems are constructed.

(1) The stem as a root, a single morpheme:
kipaata 'he dissolves it' (ki- 3sg obj. paata 'dissolve');
weci 'he falls' (weci 'fall').

(2) The stem in its reduplicated form: root reduplication
(rd) occurs in two canonical shapes. The reduplication indi-
cates repetition of the action denoted in the root morpheme.

> (a) Reduplication of the first syllable of the root, i.e.,
> CV-. This type of reduplication indicates that the
> action of the verb is repeated at one point, at one
> place, or within one area.

nenemi 'he paces back and forth' (ne- rd, nemi 'walk');

kiteteki 'he gnaws it' (ki- 3sg obj, te- rd, teki 'cut').

If the canonical shape of the syllable is V, the reduplication
is Vh-.

olini 'it shakes', oholini 'it quakes/trembles' (oh-rd,
olini 'shake').

  (b) Reduplication of the first syllable of the root
       with -h suffixed to the reduplicated syllable, i.e.,
       CVh-. This type of reduplication indicates that
       the action of the verb is repeated in many different
       places.

nehnemi 'he travels' (neh- rd, nemi 'walk');

kitehteki 'he chops it up' (ki- 3sg obj, teh- rd, teki 'cut').

(3) The third type of stem is that of a root which occurs
with the derivational prefix ta-. In section 2.12 the general
objects ta- and te- were defined as occurring in place of
specific objects and as denoting referents which were distri-
butive in force, e.g., events or classes of things. The occur-
rence of ta- in the Sierra Nahuat dialect also involves a
derivational function which is probably an extension of the
distributive force of the object. The following set of forms
displays the contrastive function of ta- as a general object and
ta- as a derivational prefix.

kimaka 'he gives it' (ki- 3sg obj, maka 'give'); kitamaka
'he feeds him' (ta- der); tatamaka 'he feasts him' (ta gen
obj, ta- der).

The root maka 'give' with ta- der, correlates with a change of
meaning from 'give' to 'give to eat/feed'; this derived form
then occurs with ta- gen obj. The root maka does not occur
with ta- gen obj.

kitooka 'he plants it' (ki- 3sg obj, tooka 'plant'); tatooka
'he plants a crop' (ta- der); kitatooka 'he plants it as a

season's crop' (<u>ki</u>- 3sg obj, <u>ta</u>- der);   <u>tatatooka</u> 'he plants

many things as a season's crop' (<u>ta</u>- gen obj, <u>ta</u>- der).

Note that the <u>ta</u>- (der), as prefixed to a root, correlates with

the change in meaning of that root from a general semantic area

to a more specialized meaning, e.g., 'give' becomes 'feed';

'plant' becomes 'plant a crop'. The morpheme <u>ta</u>- as a deriva-

tional prefix forms part of the stem; this derived stem then

occurs as a unit in compounded stem constructions.

The inventory of fillers and constructions of fillers to be

described in the following sections consists of the following:

root (r) = a morpheme, as listed in sc- 1 through sc- 15.

stem (s) = a root, reduplicated root, or derived root.

B-1 = ± Modifier: s/th/B-1 +Head: s/th.

B-2 = +M: s/th/B-1/B-2/ +Comb: combinative +H: s/th/
B-1.

B-3 = +H: s/th/B-1/B-3 +H: s.

2.23 The Base is manifested by stems. As many as four

stems may be manifested in a given Base. There are three

distinctive patterns of relationships that obtain between multiple

stems and they are most conveniently described by positing

two slots within the Base. The Base as a construction provides

the descriptive apparatus for explicating the compounding, the

embedding, and the relationships between stems in a multiple

occurrence. There are three different Bases, B-1, B-2, B-3.

A syntagmatic formulation will be used in specifying the three

Bases. Stems which characteristically occur in verb-

syntagmemes, noun-syntagmemes, and locative-syntagmemes

occur as fillers of either or both slots in the Base.

B-1 is defined by the formula. ±M:s/th/B-1 +H:s/th, i.e.,

an optional Modifier tagmeme manifested by stems, themes, or

B-1, and an obligatory Head tagmeme manifested by stems or

themes. The theme is a stem with a voice suffix, e.g., intr

-ni; full description of themes is given in sections 2.3 and 2.6.
There are two readings of the formula for B-1: H and MH.

(1) H: kičiwa 'he does it' (ki- 3sg obj, čiwa 'do' [s]);
kičihčiwa 'he fixes it' (čih- rd [čihčiwa ▪ s]);

patani 'it flies' (pata- 'fly' [s], -ni intr vi, [patani = th]).
The non-occurrence of themes in the Modifier slot or B-1 in
the Head slot is not due to grammatical restrictions; no
examples occur in the corpus of data under analysis. When
compounding occurs, the norm is to have either of the two
slots filled by a Base; it is rare to have both slots filled by
a Base in the same construction.

(2) MH: A verb stem modifies a verb stem.
kikehkeltahpalowah 'they mockingly greet him' (ki- 3sg obj,
keh-rd, kel- 'mock' [kehkel ▪ s]; tahpalo- 'greet', -wa tr
vi [tahpalowa = th], -h pl sbj; [M:s H:th]).
kintamipohpowak 'he finished wiping them' (kin- 3pl obj,
tami 'finish' [▪ s], poh ▪ rd, powa 'wipe' [pohpowa ▪ s],
-k pret; [M:s H:s]).

A set of stems which manifest Bases in the particle-
syntagmeme also manifest Bases in the Modifier slot of B-1;
thus, a particle modifies a verb stem. The particles illus-
trated below are: yek 'intensely', nel 'greatly', sen 'com-
pletely', and sepan 'altogether'.

kinyeknohnocak 'he talked to them intensely' (kin- 3pl obj,
yek 'intensely' [▪ s], noh- rd, noca 'talk' [nohnoca = s],
-k pret; [M:s H:s]).
nelmeya 'it surges greatly' (nel 'greatly' [= s], meya
'surge' [= s]; [M:s H:s]).
kinsenkawak 'he abandoned them' (kin- 3pl obj, sen 'com-
pletely' [▪ s], kawa 'leave' [▪ s], -k pret; [M:s H:s]).
šimosepantasohtakan 'you shall love each other' (ši- impv
sbj, mo- rflx obj, sepan 'altogether' [▪ s), tasohta 'love'

[⁼ s], -kan pl sbj; [M:s H:s]).

tečsenoločahaqiskeh 'they will gather us all up together'
(teč- 1pl obj, sen 'completely' [ꞓ s], oloč 'together' [⁼ s],
stem modifies stem [⁼ B-1], ahaqi 'gather up' [ꞓ s], -s fut,
-keh pl sbj; [M:B- 1 H:s]).

B-2 is defined by the formula: +M:s/th/B-1/B-2 +Comb:
comb +H:s/th/B-1, i.e., an obligatory Modifier tagmeme mani-
fested by stems, themes, B-1, or B-2, an obligatory Combina-
tive tagmeme manifested by the combinative morpheme ka-, and
an obligatory Head tagmeme manifested by stems, themes, or
B-1. Although the distinction between events and abstractions
as contrastive word types, i.e., verbs and adjectives, is not
drawn in this grammar, the functions of predication and modi-
fication are expressed by the two slots in B-2. The sets of
roots occurring in the Modifier slot of B- 1 are event-like and
those occurring in the Modifier slot of B-2 are abstraction-
like. There is but one reading of the formula for B-2: MCH.
There is a general rule that the stem final vowel or voice
vowel is deleted before the combinative morpheme.

qalankanemi 'he's always angry' (qala- 'angry', -ni intr
vi, [qalani ꞓ th], -ka comb, nemi 'live/walk' [ꞓ s]; [M:th
C:comb H:s]). čikawkakokowa 'it hurts awfully' (čika-
'strong', -w tr vi [čikawa ꞓ th], -ka comb, koko- 'hurt', -wa
tr vi [kokowa ꞓ th]; [M:th C:comb H:th]).
taihsiwkatekiti 'he works fast in everything' (ta- der,
ihsi 'hurry' -w intr vi, -ka comb, tekiti 'work'; [M:th C:
comb H:s]).
yolmelawkatayekana 'he rules righteously' (yol 'heart'
[ꞓ s], mela- 'straight', -w intr vi [melawa ꞓ th], stem
modifies theme [⁼ B-1], -ka comb, ta- der, yeka- 'guide',
-na tr vi [tayekana ꞓ th]; [M:B-1 C:comb H:th]).
kimowkayeknohnoca 'he hesitatingly conversed with him'

(ki- 3sg obj, mow 'fear' [= s], -ka comb, yek 'intensely'
[= s], noh- rd, noca 'talk' [noh-noca = s], stem modifies
stem [= B-1]; [M:s C:comb M:B-1]).

číkawkamowkakistewkeh 'they fled with great fear' (čika-
'strong', -wa intr vi [čikawa = th], -ka comb, mow- 'fear'
[= s], theme modifies stem [= B-2], -ka comb, kis- 'exit'
[=s], tew- arise [= s], -keh pret pl sbj; [M:B-2 C:comb
H:s]).

B-3 is defined by the formula: +G:s/th/B-1/B-3/noun/
locative +P:s, i.e., an obligatory Goal tagmeme manifested
by stems, themes, B-1, B-3, nouns or locatives, and an obli-
gatory Predication tagmeme manifested by stems. The rela-
tionship between the two slots is that of action to goal-of-action.
The Goal is manifested by verb, noun, and locative
syntagmemes. There is one reading of the formula for B-3:
GP. Illustrations of the reading are given in terms of the
different word types which manifest the Goal tagmeme.

A class of roots which manifests Bases in noun-syntagmemes
also manifests Bases in the Goal slot of B-3:

kikečposteki 'he breaks its neck' (ki- 3sg obj, keč- 'neck'
[= s], posteki 'break' [= s]; [G:s H:s]).
moqaawiwikah 'they wag their heads' (mo- rflx obj, qaa
'head' [= s], wi- rd, wika 'carry' [= s], -h pl sbj; [G:s
H:s]).

A set of stems which manifests Bases in locative -
syntagmemes also manifests Bases in the Goal tagmeme of B-3.

kikalankištiya 'he takes it outside' (ki- 3sg obj, kalan
'outside' [= s], kiš- 'exit' [= s], -tiya cs vi; [G:s H:s]).
nečmectatampatahtaatiya 'he burned me all over the bottom
of my foot' (neč- 1sg obj, mec- 'foot' [= s], ta- der, tampa
'bottom of' [= s], [G:s H:s = B-3]; tah- rd, taati 'burn'
[tahtaati = s], -ya tr vi, [G: B-3 H:th]).

The reduplication of the root for 'burn' and the derived form
for 'bottom of' intensifies the activity so that the gloss might
better read 'he burned me repeatedly over the entire surface
of the bottom of my foot'.

A set of stems which manifests Bases in verb-syntagmemes
also manifests Bases in the Goal slot of B-3. The Head slot is
filled only by the stem neki 'want'; the stems/themes which
manifest the Goal slot occur with -s fut. The characteristic
gloss of this construction is the finite verb followed by the
infinitive, 'want to...'. The construction may also be glossed
'it was about to...'.

tekitisneki 'he wants to work' (tekiti 'work' [= s], -s fut,
neki 'want' [= s]; [G:s H:s]).

kinyekilisneki 'he really wants to tell them' (kin- 3pl obj,
yek 'intensely' [= s], ili- 'say' [= s]; [M:s H:s = B-1];
neki 'want' [= s]; G:B-1 H:s]).

2.3 The Voice Tagmeme. The function of derivational
suffixation is termed voice (vi). The voice specifies the rela-
tionship of dramatis personae (a cover term which refers to
the various subjects and objects involved in a clause) to the
action of the verb, i.e., the Voice tagmeme relates the subject
and/or object of a given verb-syntagmeme to the action ex-
pressed through the Predication slot. This relationship is
realized through a scale of transitivity: zero transitivity is
represented by intransitive verb-syntagmemes which involve
only one dramatis persona; plus transitivity is represented by
the presence of one or more objects. The greater the number of
dramatis personae the higher is the degree of transitivity: the
transitive verb-syntagmeme involves one or two dramatis
personae; the referential and causative verb-syntagmemes
involve two or three dramatis personae; the causative-
referential verb-syntagmeme involves three or four persons.

The difference in the number of objects manifested in a clause correlates with the stem class which manifests the Predication tagmeme. This correlation will be fully developed in the definition of the five emic verb-syntagmemes.

The scale of transitivity which expresses the relationship between dramatis personae and predication is marked by closed sets of morphemes - see list in chart below. There are seven morphemes which are basic to the derivational system and represent the relationship between the dramatis personae and the action of the verb: -K, -N, -W, -T, -wi, -Y, and -L. They occur singly or in combination; except for -L each has more than one allomorph. The morphemes -K, -N, and -W mark either intransitive or transitive voice. The morpheme -K occurs as -k/-ka with intransitive verb-syntagmemes and as -ca with transitive verb-syntagmemes; the morpheme -N occurs as -n/-ni with intransitive verb-syntagmemes and as -n/-na with the transitive verb-syntagmemes; the morpheme -W occurs as -w/-wa with both intransitive and transitive verb-syntagmemes. The allomorphic shapes with the vowel apocopated occur before the marker -T.

The morpheme -T occurs as -ti with intransitive verb-syntagmemes and as -tiya (-TY) with the causative verb-syntagmeme. The morpheme -wi occurs as -w/-wi with intransitive verb-syntagmemes. The morpheme -Y occurs as -ya with transitive verb-syntagmemes and obligatorily follows -T (-tiya) with causative verb-syntagmemes, -L (-liya) with referential verb-syntagmemes and -TL (-tiliya) with the causative-referential verb-syntagmeme.

The following chart is a display of the derivational suffixes, i.e., the members of the set which manifests the Voice tagmeme.

INTRANSITIVE MARKERS		TRANSITIVE MARKERS	
Simple	Complex	Simple	Complex
-K (-k/ka)	-KT (-kti)	-K (-ca)	-TY (-tiya)
-N (-n/-ni)	-NT (-nti)	-N (-n/-na)	-LY (-liya)
-W (-w/-wa)	-WT (-wti)	-W (-w/-wa)	-TLY (-tiliya)
-T (-ti)		-Y (-ya)	
-wi			

Illustrations of the voice markers are given below:

kakalaka 'it knocks' (ka- rd, kala 'knock', -ka intr vi);

čipini 'it drips' (čipi- 'drip', -ni intr vi);

taqawa 'it's hard' (taqa- 'hard', -wa vi);

toyawi 'it spills' (toya- 'spill', -wi intr vi);

teteštik 'it's twisted' (te- rd, teš- 'twist', -ti vi, -k pret);

čipintik 'it's dripped' (čipi- 'drip', -n intr vi, -ti vi, -k pret);

alaktik 'it's slippery' (alak- 'slippery' -ti vi, -k pret);

kikakalaca 'he knocks on it' (ki- 3sg obj, -ca tr vi);

kitapana 'he breaks it' (tapa- break', -na tr vi);

kipačowa 'he crushes it' (pačo- 'crush', -wa vi);

kipečiya 'he flattens it' (peči- 'flat', -ya tr vi).

Illustrations of the complex transitive voice markers are given here. There are two allomorphs of -TY: -tiya occurs when stem-final vowel or voice vowel apocopates; -ltiya occurs immediately following the stem-final vowel or the voice vowel. The two verb-syntagmemes are synonymous in meaning.

čoka 'he cries' (čoka 'cry'); kičoktiya 'he causes him to cry' (ki- 3sg obj, čok- 'cry', -tiya cs vi); kičokaltiya 'he causes him to cry' (-ltiya cs vi).

There is some evidence to suggest that the allomorph -ltiya is partially referential in function as well as causative. If this proves to be true, then -ltiya and -tiliya would be allomorphs. The examples in the corpus of data under analysis which sug-

gest referentiality for the marker -ltiya are ambiguous, i.e.,
there is no clear contextual evidence that they are only
causative. On the other hand, there is no contextual evidence
that they must be translated as involving referential action.
See the analysis in the dialect of Mecayapan, Law (1958).

The marker for the causative-referential voice has two
allomorphs which parallel in distribution those which mark the
causative voice: -tiliya/-ltiliya.

niknamaktiliya/niknamakaltiliya 'I cause him to sell it to
you' (ni- 1sg sbj, k- 3sg obj, namak-/namaka 'sell',
-tiliya/-ltiliya cs-rf vi).

The marker for the referential voice is -L (-liya).

kiteki 'he cuts it' (ki- 3sg obj, teki 'cut'); kitekiliya 'he
cuts it for him' (-liya rd vi).

The co-occurrences of intransitive with transitive voice
markers:

-N-Y: kitapaniya 'he makes it break' (ki- 3sg obj, tapa-
'break', -ni intr vi, -ya tr vi);

-N-TY: kitapantiya/kitapanaltiya 'he causes him to break
it' (-tiya/-ltiya cs vi);

-N-LY: kitapaniliya 'he breaks it for him' (-liya rf vi);

-N-TLY: kitapantiliya/kitapanaltiliya 'he causes him to
break it for him' (-tiliya/-ltiliya cs-rf vi);

-W-TY: kičipawtiya/kičipawaltiya 'he causes him to clean
it' (čipa- 'clean', -wa vi, -tiya/-ltiya cs vi);

-W-LY: kičipawiliya 'he cleans it for him' (-liya rf vi);

-W-TLY: kičipawtiliya/kičipawaltiliya 'he causes him to
clean it for him' (-tiliya/-ltiliya cs-rf vi);

-wi-Y: kisonewiya 'he inflates it' (sone- 'inflate', -wi intr
vi, -ya tr vi);

-wi-LY: kisonewiliya 'he inflates it for him' (-liya rf vi).

2.4 The Modifier Tagmeme. The term participle (pa)

refers to a tagmeme which is manifested by a closed set of
stems; these stems are verbal in structure and adjectival in
function. They are intransitive verb-syntagmemes and modify
the stems/themes which manifest the Predication tagmeme.
Six of the participles specify both manner and location, i.e.,
the manner in which the action of the Predication tagmeme is
carried out and the location of the subject in reference to the
speaker as he, the subject, carries out the action of the verb.
Two of the participles specify only the manner in which the
subject/actor realizes the action of the verb in the Predication
tagmeme.

> čokatiwic in wancin 'John comes crying' (čoka 'cry', -ti
> comb, -wic pa 'come', in 'the', wan 'John', -cin hon);
> keptikisa 'he turns around on the way' (kep- 'turn around'
> -ti comb, kisa pa 'exit').

The Participle tagmeme is optional to the structure of the
verb-syntagmeme; it occurs following the Voice tagmeme and
preceding the Tense tagmeme. There is a similarity of struc-
ture between bases and participles in that both constructions
involve a combinative morpheme that joins stems to other
stems/themes. The intransitive verb-syntagmemes that mani-
fest the Participle tagmeme are obligatorily preceded by the
combinative marker -ti (-ti occurs preceding a consonant and
-t occurs preceding a vowel). The Participle, however,
cannot be considered as relevant to the structuring of the
Base since (1) the Voice tagmeme modifies the entire structure
which manifests the Base, i.e., stem/theme/B-1/B-2/B-3, (2)
the Voice tagmeme occurs between the Predication and the
Tense tagmemes, and (3) the Participle allows of no modifica-
tion of structure except that of the time-aspect inflection.

The Participle tagmeme is manifested by a relator-axis
phrase and is defined by the formula: +R:comb +A:verb-

syntagmeme, i.e., an obligatory Relator tagmeme manifested by the allomorphs of the combinative morpheme -ti, and an obligatory Axis tagmeme manifested by the closed set of intransitive verb-syntagmemes which specify location and manner. The inventory of stems which manifest the Participle tagmeme is given here. The list on the left is the dictionary form of the stem; the list on the right is the form and meaning of the stem as it manifests the Participle tagmeme.

1.	wica	'he comes'	1.	-tiwic	'on the way here'
	walas	'he will come'		-tiwalas	(fut)
	walah	'he came'		-tiwalah	(pret)
2.	yoweh/weh	'they go'	2.	-tiyoweh/ -tiweh	'on the way there'
	yaya	'he was going'		-tiyaya	(impf)
	yahki	'he went'		-tiyahki	(pret)
3.	ehko	'he arrives here'	3.	-tehko	'upon arrival here'
4.	ahsi	'he arrives there'	4.	-tahsi	'upon arrival there'
5.	ewa	'he arises'	5.	-tewa	'upon leaving'
6.	kisa	'he exists'	6.	-tikisa	'on the way'
7.	weci	'he falls'	7.	-tiweci	'in a hurry'
8.	nemi	'he walks/lives'	8.	-tinemi	'as a way of life'

The intransitive verb-syntagmeme wica 'he comes' occurs in the Participle tagmeme with the timeless, future, and preterite inflection and denotes that the action of the verb in the Predication tagmeme is done 'on the way here'. There is one allomorph for the timeless tense; it occurs without the stem-final vowel, i.e., wic-. The other allomorph, wala, occurs with other tense-aspect inflection.

motaliytiwic 'he comes sitting down' (mo- rflx obj, tali- 'place', -y tr vi, -ti comb, wic- pa 'come'); kiaasakatiwalas 'he will come carrying water' (ki- 3sg obj, aa- 'water', saka 'carry', -ti comb, wala pa 'come', -s fut); note that the form aasaka 'carry water' is a B-3. tačičintiwalah 'he came smoking' (ta- der, čiči 'suck', -n vi, -ti comb, wala pa 'come', -h pret).

The intransitive verb-syntagmeme <u>yow</u> 'he goes' occurs in the Participle tagmeme with timeless, future, preterite, and imperfect inflection and denotes that the action of the verb in the Predication tagmeme is done 'on the way there'. The allomorph which occurs with timeless tense has two shapes: <u>yoweh/weh</u>. The second shape appears to be a result of some morphophonemic reduction that does not conform to the rules stated in section 1.3. The verbs meaning 'to go' and 'to come' are the only two irregular verbs, in the structure of Nahuat, in reference to morphophonemic rules.

<u>mah</u> ticahcitiyoweh 'let's go along shouting' (<u>mah</u> perm, <u>ti</u>- 1pl sbj, <u>cahci</u> 'shout', <u>-ti</u> comb, <u>yow</u> pa 'go', <u>-eh</u> pl sbj)

kimatitiweh 'they go along knowing it' (<u>ki</u>- 3sg obj, <u>mati</u> 'know' <u>weh</u> pa 'go');

There are, in addition to <u>yoweh</u>, the allomorphs of the verb 'to go' <u>ya</u> and <u>yah</u>.

kipipictiyaya 'he was going along blowing it' (<u>pi</u>- rd, <u>pica</u> 'blow', <u>-ti</u> comb, <u>-ya</u> pa 'go', <u>-ya</u> impf);

kitilintiytiyahki 'he went along causing it to stretch' (<u>ki</u>- 3sg obj, <u>tili</u>- 'stretch', <u>-n</u> vi, <u>-tiy</u> cs vi, <u>-ti</u> comb, <u>yah</u> pa 'go');

tikmamaatiyaskeh 'we will go along carrying the load' (<u>ti</u>- 1 pl sbj, <u>k</u>- 3sg obj, <u>mamaa</u> 'carry a load', <u>-ti</u> comb, <u>ya</u> pa 'go', <u>-s</u> fut, <u>keh</u> pl sbj).

The intransitive verb-syntagmeme <u>ehko</u> 'he arrives here' occurs in the Participle tagmeme with tense inflection and denotes that the action of the verb in the Predication tagmeme is done 'upon arrival here'.

<u>ni</u>kahwatehkos 'I'll scold him upon arriving here' (<u>ni</u>- 1sg sbj, <u>k</u>- 3sg obj, <u>ahwa</u> 'scold', <u>-ti</u> comb, <u>ehko</u> pa 'arrive here', <u>-s</u> fut);

kitagolqecowtehko 'she grinds corn upon arriving here'

(ki- 3sg obj, tagol 'corn', qečo- 'grind', -w vi, -ti comb, ehko pa 'arrive here'). Note that this manifestant of the Predication tagmeme is a B-3.

The intransitive verb-syntagmeme ahsi 'he arrives there' occurs in the Participle tagmeme with tense inflection and denotes that the action of the verb in the Predication tagmeme is done 'upon arrival there'.

> še nitapaktahsi 'shall I wash the clothes upon arrival there' (še question, ni- 1sg sbj, ta- gen obj, pak- 'wash clothes', -ti comb, ahsi pa 'arrive there');
> kitahpalowtahsis 'he will greet him upon arriving there' (ki- 3sg obj, tahpalo- 'greet', -w vi, -ti comb, ahsi pa 'arrive there', -s fut).

The intransitive verb-syntagmeme ewa 'he arises' occurs in the Participle tagmeme in the construction D tr-2b, i.e., in a transitive verb-syntagmeme, and denotes that the action of the verb in the Predication tagmeme is done 'upon leaving'.

> kikawiliytewas 'he will leave it for him upon leaving' (ki- 3sg obj, kawi 'leave', -liy rf vi, -ti comb, ewa pa 'arise', -s fut);
> niktayitewak 'I took a drink upon leaving' (ni- 1sg sbj, k- 3sg obj, tayi 'drink', -ti comb, ewa pa 'arise', -k pret).

The intransitive verb-syntagmeme kisa 'he exits' occurs in the Participle tagmeme with tense inflection and means that the action of the verb in the Predication tagmeme is done 'on the way'. No location is denoted.

> nikqitikisa 'I'll pick it up on the way' (ni- 1sg sbj, k- 3sg obj, qi 'take', -ti comb, kisa pa 'exit');
> kinehnemiliytikisa 'he thinks on the way' (ki- 3sg obj, neh-rd, nemi 'walk/live', -liy rf vi, -ti comb, kisa pa 'exit').

The intransitive verb-syntagmeme weci 'it falls' occurs in the Participle tagmeme with tense inflection and denotes that

the action of the verb in the Predication tagmeme is done 'in a
hurry'. No location is denoted.

yoksitiweci 'it cooks in a hurry' (yoksi 'cook', -ti comb,
weci pa 'fall');

kitamiytiwecis 'he'll finish it in a hurry' (ki- 3sg obj, tami
'finish', -y tr vi, ti comb, weci pa 'fall', -s fut).

The intransitive verb-syntagmeme nemi 'he walks/lives'
occurs in the Participle tagmeme with tense inflection and
denotes that the action of the verb in the Predication tagmeme
is done 'as a way of life, a characteristic of the speaker'.

qalantinemi 'he's always angry' (qala- 'angry', -n intr vi,
-ti comb, nemi pa 'live');

mowintiytinemiya 'he was always drunk' (mo- rflx obj, win-
'be drunk', -tiy cs vi, -ti comb, nemi pa 'live', -ya impf).

There is one problem in the structuring of the Participle
tagmeme that cannot be resolved with the data at hand, i.e.,
to justify structurally the apocopation of the vowel just before
the combinative morpheme -ti. There is a tendency for verb-
syntagmemes which are themes to occur without the voice
vowel before the combinative morpheme; verb-syntagmemes
which are stems occur with or without the stem-final vowel
before the combinative morpheme. Illustrations below show
both patterns. The examples given here are to display the
problem not to solve it.

mecnehnentiyaya 'he was going along on foot' (mec- 'foot',
neh- rd, nen- 'walk', -ti comb, -ya pa 'go', -ya impf);

kikeptikisa 'he returns it on the way' (ki- 3sg obj, kep-
'return' -ti comb, kisa pa 'exit');

šikočtiweci 'go take a nap!' (ši- impv sbj, koč- 'sleep',
-ti comb, weci pa 'fall');

kitahtaniytiyoweh 'they go along requesting it' (ki- 3sg obj,
tah- rd, tani 'request', -y tr vi, -ti comb, yow pa 'go', -eh
pl sbj).

2.5 The Tense - Aspect Tagmeme. The inflectional
suffixes in Nahuat are distinguished from derivationals and
participles by the distinctive function of each group, the
phonemic shapes, and by position in the verb-syntagmeme.
The distinctive functions of the two systems, the derivational
and inflectional, are as follows: derivational markers overtly
signal the transitivity factor and the relationships among the
verb-syntagmemes; inflectionals specify a given verb-
syntagmeme as to the aspect and/or time of action and, as
well, mark the pluralization of subjects.

No one of the morphemes in the chart given below specifies
either aspect or time to the exclusion of the other category.
At the heart of the tense-aspect system is the contrast between
processive and non-processive action, i.e., action-in-process
and action completed. Verb-syntagmemes marked with -to are
processive; verb-syntagmemes without -to are completive in
force. Some of the tense-aspect markers do not co-occur with
the processive -to.

The aspects to be defined in the following sections are:
indicative (ind), directional (dir), conditional (cond), impera-
tive (impv), and honorific (hon). The temporal factors are:
remote past (rem), preterite (pret), imperfect (impf), timeless
(tml) and future (fut). Each of the five sections defines one of
the aspects and the temporal modifications possible with that
aspect. For each inflectional morpheme the co-occurrence
with the processive -to is defined.

The chart on the following page is a visual display of the
inflectional morphemes. The horizontal axis shows the
temporal points; the verticle axis shows the aspects.
Pluralization for each morpheme, i.e., plural subject, is
shown in parentheses following the singular form. The symbol
∅ indicates that there is an implicit category.

Chart showing Tense-Aspect-Number inflection:

ASPECT	TENSE				
	Remote	Preterite	Imperfect	Timeless	Future
Ind:	-ka (h)	-h/ -k (keh)	-ya (h)	∅ (-h)	-s (keh)
Dir:					
away		-to (h)		-ti (h)	-tiw (h)
towards		-ko (h)		-ki (h)	-kiw (h)
Cond:		-ni (h)		-skiya (h)	
Impv:					
impv				∅ (kan)	
perm				∅ (kan)	
Hon:					
hon- A				-tikah (teh)	
hon- B				-cinow (ken)	

2.51 The indicative aspect in Nahuat is marked by suf-
fixes which specify the time as to remote past, preterite,
imperfect, timeless, and future. The singular subject is
unmarked; the plural subject is marked by -h following vowels
and -keh following consonants.

INDICATIVE ASPECT.

	Remote	Preterite	Imperfect	Timeless	Future
Singular	-ka	-h/ -k	-ya	∅	-s
Plural	-kah	-hkeh	-yah	-h	-skeh
		-kkeh		-keh	

Remote Past is marked by -ka, with -h plural. The marker
signifies that the action was completed some time in the past
and that action is not necessarily in force at this moment. It
is an action completed and its effect terminated in the past; it
is roughly equivalent to the English pluperfect. There is pre-
served in two forms of the verb 'to go'. yahki 'he went (and has
not yet returned)' and yahka 'he went (and has returned)', a
contrast of completive and non-completive action. It is
possible that at a previous stage of Nahuat the -ka was func-
tionally contrastive with -ki in the sense denoted by the forms

of the verb 'to go'. At the present time the form -ka occurs in
contrast with the preterite -h/-k. The remote past -ka does
not occur with the processive -to.

> čokka 'he had cried' (čok- 'cry', -ka rem); čolowka 'he
> had fled' (čolo- 'flee', -w vi, -ka rem); kočkah 'they had
> slept' (-ka rem, -h pl sbj); kitamiykah 'they had finished
> it' (ki- 3sg obj, tami 'finish', -y vi, -ka rem, -h pl sbj).

Preterite is marked by -k/-h. The allomorph -k occurs
with all verb-syntagmemes which are stems and those particu-
lar themes which do not have the phonemic sequences /-iya/ or
/-owa/. This phonemic sequence includes the stem-final vowel
and the voice marker. The allomorph -h occurs with those
themes which do have the phonemic sequence /-iya/ or /-owa/.
The allomorph -h, however, is a morphophonemic representa-
tion of three different phonemes, i.e., /-h, -y, -w/. Regard-
ing the themes which manifest the phonemic sequences /-iya/
and /-owa/, the preterite is formed by the apocopation of the
voice vowel. Morphophonemic rule 5 states that voiced seg-
ments are voiceless preceding voiceless segments or juncture.
Therefore, the preterite is /-iy/ for those themes with the
phonemic sequence /-iya/; it is /-ow/ for those themes with
the phonemic sequence /-owa/. The distribution of the
different representations of the morphophoneme -H is deter-
mined phonologically: /-y/ is the voiceless manifestation
which occurs following /-i/; /-w/ is the voiceless manifesta-
tion which occurs following /-o/; /-h/ occurs elsewhere. All
other phonemic sequences are marked by -k in the preterite,
i.e., -a, -ewa, -iwi, -ani. -ini, -oni, -aka, -ana, -ina, -ona,
and -aca. The convention is now adopted that the allomorph
-h will be identified in the description of Nahuat forms by the
symbol -H, followed immediately by the particular phonemic
manifestation.

The marker -k/-h signifies that the action was completed in recent past time.

čokak̲ 'he cried' (č̌oka 'cry, -k̲ pret); kočik 'he slept' (koči 'sleep'); ehkewik̲ 'it peeled off' (ehke 'peel', -wi intr vi); čoloh 'he fled' (čolo 'flee', -H [-w̲] pret); kitamih 'he finished it' (ki- 3sg obj, tami 'finish', -H [-y̲] pret); tamik it's finished' (-k̲ pret); kič̌ololtih 'he chased him' (čolo 'flee' -tiH [-tiy] cs vi); kič̌ipawtiy 'he made it clean' (č̌ipa 'clean', -w̲ vi, -tiH [-tiy] cs vi).

The plural marker for the preterite is -k̲eh; the stem-final vowel or voice vowel apocopates before the suffixation of -k̲eh.

čokkeh 'they cried' (č̌ok̲- 'cry', -k̲eh pret pl sbj); kočkeh 'they slept' (koč̌- 'sleep'); tapankeh 'they broke' (tapa- 'break' -n̲ vi); ehkewkeh 'they peeled off' (ehke- 'peel off', -w̲ vi); čolowkeh 'they fled' (č̌olo- 'flee', -w̲ vi); kič̌ololtiykeh 'they chased him' (ki- 3sg obj, -ltiy cs vi); kič̌ipawtiykeh 'they made it clean' (č̌ipa- 'clean', -w̲ vi, -tiy cs vi). Note that in this final illustration all three phonemic representations of -H occur, i.e., voiceless /-w/ before / -t/, voiceless / -y/ before / -k/, and / -h/.

The preterite marker -k̲ occurs following the processive -to in two different senses. The semantic distinction is not based on any structural contrasts.

(1) -to with preterite -k̲ signifies that the action is in force at this very moment.

čoktok 'he is crying' (č̌ok̲- 'cry', -to proc, -k̲ pret); walahtok 'he is coming' (wala 'come'); kič̌ipawtok he is cleaning it' (ki- 3sg obj, č̌ipa- 'clean', -w̲ vi).

(2) -to with pret -k̲ signifies that the action is completed and still in force; in this sense it is perfective. It often occurs as an equivalent for the Spanish passive construction.

ihqiliwtok 'it is written/it stands written' (ihqili 'write',
-w vi, -to proc, -k pret); tahtowtok 'it is said' (ta- der,
ihto 'say'; -w vi); taneštok 'it is clear/the weather
cleared up' (ta- der, nesi 'appear').

Imperfect is marked by -ya; this signifies that the action
was in process in the past and is now terminated.

pewaya 'he was beginning' (pewa 'begin', -ya impf);
tamiya 'he was finishing' (tami 'finish'); kitamiyaya 'he
was finishing it' (ki- 3sg obj, -ya tr vi, -ya impf),
kičololtiyaya 'he was causing it to flee (čolo- 'flee', -ltiya
cs vi, -ya impf).

The processive morpheme - to occurs with the imperfect
-ya.

pewtoya 'he was continuing to begin' (pew- 'begin', -to
proc, -ya impf)

kitamiytoya 'he was continuing to finish it' (ki- 3sg obj,
tami 'finish', -y vi, -to proc, -ya impf); kičololtiytoya
'he was continuing to cause him to flee' (ki- 3sg obj, čolo-
'flee' -ltiy cs vi, -to proc, -ya impf).

The marker for plural subject is -h:

pewayah 'they were beginning' (pewa 'begin', -ya impf, -h
pl sbj);

kitamiyayah 'they were finishing it' (ki- 3sg obj, tami
'finish' -ya tr vi, -ya impf, -h pl sbj).

Timeless tense is implicitly marked in the singular number
and is marked by -h in the plural. That which is termed time-
less in Nahuat corresponds to the present tense in other
grammars of Nahuatlan languages. The position of the author
is that specific time is not in focus; there is, rather, a
straightforward assertion of action, state of being, or feeling.

kikisi 'he whistles' (kikisi 'whistle'); čipawa 'it's clean'
(čipa- 'clean', -wa vi); kipečiliya 'he causes him to

flatten it for him' (ki- 3sg obj, peč- 'flat', -tiliya cs-rf vi).

In some of the verb-syntagmemes with timeless tense there is a possible gloss which suggests habitual or customary action.

kitooka tagol 'he customarily plants corn' (ki- 3sg obj, tooka 'plant', tagol 'corn'); kiaasaka 'he carries water (for a living)' (ki- 3sg obj, aa- 'water', saka 'carry').

The plural forms are as follows:

kičiwah 'they make it' (ki- 3sg obj, čiwa 'make', -h pl sbj);

kipolowah 'they lose it' (polo- 'lose', -wa vi, -h pl sbj);

kitapanah 'they break it' (tapa- 'break', -na vi, -h pl sbj).

The marker for present tense in other Nahuatl grammars is usually -a (see section 2.21 for list of grammars referred to). The corresponding vowel in this grammar is treated as the stem-final vowel or the voice vowel with no special func-tion. The following three reasons summarize the argument against considering the vowel -a to mark tense and, by impli-cation, the reasons for considering the timeless tense in Nahuat to be implicitly marked. The question of present versus timeless tense is not in focus; that is defined in the previous paragraph.

(1) -a is a member of a set of eight vowels which all occur in the same position, i.e., stem-final vowel or voice vowel: /i, ii, e, ee, a, aa, o, oo/. If -a marks the tense, why do not also the other seven vowels mark tense? The result would be eight allomorphs of the tense marker.

(2) Which vowel marks the tense, the vowel of the deriva-tional morpheme, i.e., the voice marker, or is it the final vowel of the stem? If the vowel -a marks tense, then when a stem occurs, its final vowel marks tense and when a theme occurs, its final vowel marks tense. To emphasize the prob-

lems presented by (1) and (2) note that: stems occur with
different vowels in different verb-syntagmemes, e.g., K intr-
2b (CVCi) and K tr-2b (CVCa); themes occur with different
vowels in different verb-syntagmemes, e.g., K intr-7a
(CVCVni) and D tr-7a (CVCVna). Which particular vocalic
quality is the tense marker and which of the two positions mark
tense?

(3) Except for the remote past marker -ka, all markers of
tense are suffixed to the stem-final vowel or voice vowel. To
consider this vowel as marking tense is to allow for a double
and contradictory marking of tenses, i.e., present tense with
preterite,

kičiwak 'they did it' (ki- 3sg obj, čiwa 'do' -a present, -k
pret);

the present tense with imperfect,

kičiwayah 'they were doing it' (-a present, -ya impf, -h
pl sbj);

the present tense with future,

kičiwas 'he will do it' (-a present, -s future).

It is then, because of (1) membership in a set, (2) con-
fusion of two structures, i.e., stems and themes, and (3)
reluctance to mark contrastive tenses in the same verb-
syntagmeme that the following conclusion is made: the stem-
final vowel and voice vowel are not tense markers but simply
part of the canonical shape of stems and voices.

Future is marked by -s. This signifies that the action
will be effected in some future time. It may also signify that
the action is incomplete.

tayowas 'it'll get dark' (tayo- 'be dark', -wa vi, -s fut);

kiowis 'it'll rain' (kio- 'rain', -wi intr vi, -s fut;

picinis 'it'll burst' (pici- 'burst', -ni intr vi, -s fut).

For those particular themes which have the voice markers -W

and -Y the entire voice marker apocopates when it is preceded
by a vowel which corresponds to the semivowel, i.e., -W
apocopates following /-o/, -Y apocopates following /-i/.

čolowa 'he flees' (čolo- 'flee', -wa vi); čolos 'he will
flee' (-s fut); kitamiya 'he finishes it' (ki- 3sg obj, tami
'finish' -ya tr vi); kitamis 'he will finish it' (-s fut).
The future marker -s occurs with the processive -to:
čoktos 'he will be crying' (čok- 'cry', -to proc, -s fut);
kičiwtoskeh 'they will be doing it' (ki- 3sg obj, čiw- 'do',
-to proc, -s fut, -keh pl sbj).

2.52 The directional aspect in Nahuat is marked by
suffixes which specify 'motion away from' and 'motion towards'
the speaker and, as well, the preterite, timeless and future
tenses. Plural number of subject is marked by -h.

DIRECTIONAL ASPECT MARKERS

	Preterite	Timeless	Future
Motion away from	-to (-h)	-ti (-h)	-tiw (-h)
Motion towards	-ko (-h)	-ki (-h)	-kiw (-h)

'Motion away from', preterite tense is marked by -to:
takowato 'he went to buy' (ta- gen obj, kowa 'buy', -to dir
pret);
nikiqito 'I went to get it' (ni- 1sg sbj, ki- 3sg obj, qi- 'get',
-to dir pret); takowatoh 'they went to buy' (-h pl sbj);
tikiqitoh 'we went to get it' (ti- 1pl sbj, -h pl sbj).

The morphophonemic rule ld is represented in the following
illustration (i.e., -Y apocopates before -TY):
kimačtito 'he went to teach him' (ki- 3sg obj, mač- 'learn',
-tiya cs vi, -to dir pret);
'Motion away from', timeless tense is marked by -ti:
takowati 'he goes to buy' (ta- der, kowa 'buy', -ti dir tml);
nikiqiti 'I go get it' (ni- 1sg sbj, ki- 3sg obj, qi 'get',
-ti dir tml); kimačtiti 'he goes to teach him' (mač- 'learn'

-tiya cs vi, -ti dir tml; note that -ya apocopates before
-ti).

takowatih 'they go to buy'(-h pl sbj); kiqitih 'they go to
get it' (ki- 3sg obj, -h pl sbj).

The processive marker -to occurs with the timeless
directional in both the singular and plural forms but only with
the verb 'to be in a location'.

yetoti 'he is to be here' (ye- 'be here', -to proc, -ti dir
tml);

yetotih 'they are to be here' (-h pl sbj).

'Motion away from, future tense is marked by -tiw:
takowatiw 'he will go on to buy it'(ta- der, kowa 'buy', -tiw
dir fut); nikiqitiw 'I will go on to buy it' (ni- 1sg sbj, ki-
3sg obj, qi 'get', -tiw dir fut); kimačtitiw 'he will go on
to teach him' (mač- 'learn', -tiya cs vi, -tiw dir fut).

The marker of the plural subject is -h; the co-occurrence
of -w (voiceless manifestation) followed by -h gives the only
occurrence in Nahuat of a syllable final consonant cluster: the
phonetic manifestation is a lenthened voiceless [-w].

takowatiwh 'they will go on to buy it' (ta- gen obj, kowa
'buy' -tiw dir fut, -h pl sbj); kiqitiwh 'they will go on to
get it' ki- 3sg obj, qi 'get' -tiw dir fut, -h pl sbj); etc.

The processive marker -to occurs with only certain of the
intransitive verb-syntagmemes which manifest the future
directional:

yetotiwh 'they will go on being here' (ye- 'be here', -to
proc, -tiw fut dir, -h pl sbj); kočtotiwh 'they will go on
sleeping' (koč- 'sleep', -ti proc, -tiw dir fut, -h pl sbj).

'Motion towards', preterite tense is marked by -ko:
takowako 'he came to buy' (ta- gen obj, kowa 'buy', -ko dir
pret); kočiko 'he came to sleep' (koči 'sleep');
nečmačtiko 'he came to teach me' (neč- 1sg obj, mač-

'learn', -tiya cs vi, the -ya apocopates).

The marker of the plural subject is -h:

takowakoh 'they came to buy' (ta- gen obj, kowa 'buy',
ko dir pret, -h pl sbj); kočikoh 'they came to sleep'
(koči 'sleep').

'Motion towards', timeless tense is marked by -ki:

takowaki 'he comes to buy' (ta- gen obj, kowa 'buy', -ki
dir tml);

kočikih 'they come to sleep' (koči 'sleep', -ki dir tml, -h
pl sbj);

tečmačtikih 'they come to teach us' (teč- 1pl obj, mač-
'learn' -tiya cs vi, -ki dir tml, -h pl sbj).

The processive marker -to does not occur with timeless
directional.

'Motion towards', future tense is marked by -kiw:

takowakiw 'he will come to buy' (ta- gen obj, kowa 'buy',
-kiw dir fut); kočikiwh 'they will come to sleep' (koči
'sleep', -kiw dir fut, -h pl sbj); kimačtikiwh 'they will
come to teach him' (ki- 3sg obj, mač- 'learn', -tiya cs vi,
-kiw dir fut, -h pl sbj).

2.53 The conditional aspect in Nahuat is marked by
suffixes which specify the preterite and timeless tenses in
addition to conditionality. In effect, it is not time that is in
focus but completive versus non-completive action. The
conditionality is marked for preterite (completive) and timeless
(non-completive) tense. The processive morpheme occurs only
with the non-completive conditional. The plural subject is
marked by -h.

CONDITIONAL ASPECT

	Completive	Non-completive
Singular	-ni	-skiya
Plural	-nih	-skiyah

The conditional aspect with preterite tense is -ni:

nikowani 'I might have bought it' (ni- lsg obj, k- 3sg obj,
kowa 'buy', -ni cond pret); tikočinih 'we might have slept'
(ti- lpl sbj, koči 'sleep', -ni cond pret, -h pl sbj);
čolowani 'he might have fled' (čolo- 'flee', -wa vi, -ni
cond pret);

kitamiyanih 'they might have finished it' (ki- 3sg obj, tami
'finish', -ya tr vi, -ni cond pret, -h pl sbj).

The conditional aspect with timeless tense is -skiya:

nikkowaskiya 'I might buy it' (ni- lsg sbj, k- 3sg obj, kowa
'buy', -skiya cond tml); kitamiskiyah 'they might finish
it' (ki- 3sg obj, tami 'finish', -skiya cond tml, -h pl sbj).
kočiskiyah 'they might sleep' (koči 'sleep', skiya cond
tml, -h pl sbj).

The processive marker -to occurs with the conditional timeless
both in the singular and plural number.

čokatoskiya 'he might go on crying' (čoka 'cry', -to proc,
-skiya cond tml); tatookatoskiyah 'they might go on plant-
ing' (ta- der tooka 'plant', -to proc, -skiya cond tml, -h
pl sbj).

tekititoskiya 'he might go on working' (tekiti 'work', -to
proc, -skiya cond tml).

2.54.   The imperative aspect in Nahuat is timeless in tense;
the plural subject is marked by -kan. There are no modifications
as to time. The imperative aspect has two manifestations,
that of permissive (perm) and that of imperative (impv). The
processive marker -to occurs with both types of imperative.
The timeless directionals of singular number, i.e., -ti and
-ki, also occur with both types of imperative.

IMPERATIVE ASPECT

	Imperative	Processive	Directional
Impv sg	ši-	ši-. . -to	ši-. . -ti/-ki

pl	ši-...(-kan)	ši-..-to(kan)	ši-..-tih/kih
Perm sg	mah	mah -to	mah -ti/-ki
	mah (-kan)	mah -to(-kan)	-ti (kan)

The marker <u>mah</u> (perm) is not an affix; it is a free form. It is structurally parallel to the imperative marker in that there is no marker of singular number and in that it has the same plural marker as the imperative.

The imperative singular is marked by <u>ši</u>- prefix and ∅ suffix.

> <u>šikoči</u> 'go to sleep!' (<u>koči</u> 'sleep', <u>ši</u>- impv sg); <u>šiknamaka</u> 'sell it' (<u>k</u>- 3sg obj, <u>namaka</u> 'sell').

The plural of the imperative is marked by <u>-kan</u> suffix.

> <u>šikočikan</u> 'go to sleep, you-pl' (<u>ši</u>- impv sg, <u>koči</u> 'sleep', <u>-kan</u> pl sbj); <u>šikinnamakakan</u> 'sell them, you-pl' (<u>kin</u>- 3pl obj).

The processive marker <u>-to</u> occurs with imperative singular and plural.

> <u>šiyeto</u> 'be still' (<u>ye</u>- 'be here', <u>-to</u> proc); <u>šiyetokan</u> (<u>-kan</u> pl sbj).

The timeless directional markers occur with singular imperative.

> <u>šikkowati</u> 'go buy it' (<u>ši</u>- impv sg, <u>k</u>- 3sg obj, <u>kowa</u> 'buy', <u>-ti</u> dir tml); <u>šikočiki</u> 'come sleep here' (<u>koči</u> 'sleep', <u>-ki</u> dir tml).

The imperative permissive is not marked in the prefix system. Its junctural features are such that it occurs as a free form; it parallels in structure the imperative singular and plural. There occurs a permissive phrase: <u>mah</u> (perm) plus a verb-syntagmeme. The plural subject is marked in the suffix system by <u>-kan</u>.

> <u>mah niknamaka</u> 'may I sell it' (<u>mah</u> perm, <u>ni</u>- 1sg sbj, <u>k</u>- 3sg obj

namaka 'sell'); mah tiknamakakan 'may we sell it' (ti- 1pl

sbj, -kan pl sbj).

The timeless directional markers occur with the permissive in

the singular number.

mah nikočiti 'may I go to sleep' (mah perm, ni- 1sg sbj,

koči- 'sleep', -ti tml dir); mah nikočiki 'may I come sleep

here' (-ki dir tml).

The processive marker occurs with the permissive in

both the singular and plural numbers.

mah niyeto 'may I remain here' (mah perm, ni 1sg sbj, ye-

'be here' -to proc); mah tiyetokan 'may we stay here'

(ti- 1pl sbj, -kan pl sbj).

2.55 The honorific aspect in Nahuat occurs only in a few

forms. It occurs with both singular and plural number; it

does not occur with the processive -to. The honorific aspect

has little or no reference to time; a few forms have been

found with the future tense. The meaning, however, of such

forms is incompletive rather than future. The two types of

honorific, i.e., hon-A, hon-B, show some distributional

tendency; hon-A occurs mostly in the greeting system; the

hon-B occurs in the greeting system, in conversation, and in

the narrative materials.

HONORIFIC ASPECT	Hon-A	Hon-B
Singular	-tikah	-cinow
Plural	-tikateh	-cinowken

The honorific-A forms are: -tikah (sg), -tikateh (pl).

tionpaktikah 'you are well, sir' (ti- 2sg sbj, on- hon, pak

'be healthy', -tikah hon sg); tionyetikah 'you are there,

sir' (ti- 2sg sbj, on- hon, ye- 'be here', -tikah hon sg);

nanonpaktikateh 'you are well, sirs' (nan- 2pl sbj, on-

hon pak- 'be healthy', -tikateh hon pl).

Note that the honorific prefix -on co-occurs with both hon-A

and hon-B.

The honorific-B forms are: -cinow (sg), -cinowken (pl).
Presumably this suffix was at one time a more productive verb
pattern, probably functioning like stems from sc-6 and like
the verb-syntagmeme K intr-6, i.e., *-cinowa 'he respect-
fully greets'. The stem -cin is manifested in the inflectional
system of the noun-syntagmeme. This hon-B occurs in the
greeting system and in conversation wherein the exalted
position of the person referred to is of importance. In the
greeting system the hon-B correlates with a time of day
morpheme.

    taneštiycinow 'good morning, sir' (taneš 'light', -tiy cs
vi cinow hon-B); taneštiycinowken 'good morning, sirs'
(-cinowken hon-B pl); kenin nanontiotakiliytiycinowken
'good afternoon, sirs' (kenin 'how', nan- 2pl sbj, on-
hon, tiotaki 'afternoon', -liya vi, -tiy cs vi, -cinowken
hon-B pl).

The hon-B also occurs in other types of discourse:
šimosewicinow 'sit down, please, sir' (ši- impv sbj,
mo- rflx obj, sewi 'rest', -cinow hon-B); momikiliycinow
'he passed on' (mo- rflx obj, miki 'die', -liy rf vi, -cinow
hon-B);

mowalwikiliycinos 'he will return' (mo- rflx obj, wal-
'come' wiki 'carry', -liy rf vi, -cino hon-B, -s fut).

2.56 The tense-aspect markers are re-classified in this
section in order to display a morphophonemic correlation
between the canonical shape of the stem or theme and the sub-
sets of markers of inflection. There are three sub-sets of
tense-aspect inflection: (1) Set 1 occurs with the full form of
the stem or theme, i.e., the stem-final vowel or the voice vowel
is manifested; (2) Set 2 occurs with an apocopated form of the
stem or theme, i.e., the stem-final vowel or the voice vowel
apocopates; (3) Set 3 occurs with an apocopated form of the

theme and the full form of the stem, i.e., the voice marker itself apocopates while the stem-final vowel is retained. The themes involved in this discussion are those which have the phonemic sequence /-iya/ and /-owa/.

Set 1 suffixes consists of: -h pl sbj, -k pret, -ya impf, -ni cond, and -kan impv pl sbj. When these markers occur, the stem-final vowel or the voice vowel is retained.

akih 'they fit' (aki 'fit', -h pl sbj); kiihitah 'they criticize it' (ki- 3sg obj, ihita 'criticize', -h pl sbj); tamik 'it finished' (tami 'finish', -k pret); akiyah 'it used to fit' (aki 'fit', -ya impf, -h pl sbj); wecini 'he might have fallen' (weci 'fall' -ni cond pret); šikočikan 'go to sleep, you-pl' (ši- impv sbj, koči 'sleep', -kan impv pl sbj).

Set 2 suffixes consists of: -H (pret), -to (proc), -ka (rem), -keh (pret/fut pl sbj), -tikah (hon-A), -cinow (hon-B) and -kan (impv pl sbj). When these markers occur, the stem-final vowel or the voice vowel apocopates. -kan is a member of both Set 1 and Set 2, but only in its occurrence with themes; otherwise it functions like the markers of Set 1.

kitamih 'he finished it' (ki- 3sg obj, tami 'finish', -H [-y] pret, čoloh 'he fled' (čolo- 'flee, -H [-w] pret); kiowtok 'it's raining' (kio- 'rain', -w vi, -to proc, -k pret); šinka 'it had fallen off' (šini 'fall off', -ka rem); kikisikkeh 'they whistled' (ki- rd, kisi 'whistle', -k pret, -keh pl sbj); tečtiočiwtikah 'the honorable one blesses us' (teč- 1pl obj, tiočiw- 'bless', -tikah hon-A); timonekiltiycinow 'you, sir, desire it' (ti- 2sg sbj, mo- rflx obj, neki 'want', -ltiy cs vi, -cinow hon-B); šiktamiykan 'finish it, you-pl' (ši- impv sbj, k-3sg obj, tami 'finish', -y vi, -kan pl sbj).

Set 3 suffixes consists of: -s fut, -skiya cond tml, -ti/ -to/ -tiw/-ki/-ko/-kiw directionals. When these suffixes occur, the

stem-final vowel is retained; the voice marker apocopates.
For instance, in the sequence /-owa/ the voice marker -wa
apocopates; in the sequence /-iya/ the voice marker -ya
apocopates.

čolos 'he will flee' (čolo- flee', -s fut, -wa voice
apocopates);

kikawaskeh 'they will leave it' (ki- 3sg obj, kawa 'leave',
-s fut, -keh pl sbj); čoloskiya 'he might flee' (čolo- 'flee',
-skiya cond tml); kitamiti 'he goes to finish it' (ki- 3sg
obj, tami 'finish' -ti dir, -ya tr vi apocopates); kitamito
'he went to finish it' (-to dir pret); kitamitiw'he will be
going to finish it'(-tiw dir fut);

kitamiki 'he comes to finish it' (-ki dir tml); kitamiko 'he
came to finish it' (-ko dir pret); kitamikiw 'he will be
coming to finish it' (-kiw dir fut).

2.6 The Five Emic Verb-Syntagmemes. With the defini-
tions of the five constituent tagmemes already stated, there is
sufficient structure explicated to define the verb-syntagmeme
as a unit, to describe the contrastive verb-syntagmemes, and
to delineate the relationships that obtain between sets of verb-
syntagmemes. The explanation of terms given in the following
paragraphs is intended to supplement that found in section 1.3.
The terms used in the definition of the verb-syntagmemes are:
(1) contrastive and allo verb-syntagmemes, (2) the relation-
ships of enation, partial enation, and agnation, and (3) kernel
and derived verb-syntagmemes. Each set of terms is useful
for focusing on a different facet of the structure of the verb-
syntagmeme in Nahuat.

In section 1.3 four word types or syntagmemes were
posited for Nahuat: verb-syntagmemes,
noun-syntagmemes, locative-syntagmemes, and particle-
syntagmemes. Each type of syntagmeme is defined by a formula

appropriate to its structure, i.e., appropriate to the peculiar patterned clustering of constituent tagmemes and the sets of markers which manifest those tagmemes. Each word type has some obligatory tagmemes not shared by other types; the tagmemes that are similar are manifested by sets of fillers that are peculiar to the word type. In referring to word types, the use of the term verb-syntagmeme refers to the unit with its internal structure in focus; the use of the term 'verb' or 'noun' refers to the unit as it functions in the clause, sentence, or discourse.

There are five emic verb-syntagmemes in Nahuat: intransitive verb-syntagmemes, transitive verb-syntagmemes, referential verb-syntagmemes, causative verb-syntagmemes, and causative-referential verb-syntagmemes. The five contrastive structures are distinguished by the different co-occurrence patterns formed by the stem classes and the voice markers. Although the formulaic reading is the same for each of the five emic verb-syntagmemes, their contrastive status is maintained because (1) each verb-syntagmeme has different transformational potential (see Longacre [1965, p. 75] for his reference to the logical relationships that exist between emic units); (2) the contrastive sets of fillers which manifest the Voice tagmeme occur with the same stem classes and produce verb-syntagmemes which have different functions; and (3) it is possible to define emic clause types (i.e., patterned clusterings of word types) on the basis of the five emic verb-syntagmemes.

The verb-syntagmeme in Nahuat is defined by the reading PPrViT (see the introduction to Chapter 2 for complete formula). The Voice tagmeme is obligatory to the verb-syntagmeme. By definition the Voice tagmeme is implicitly marked in the constructions termed stems; it is explicitly

marked in themes. Therefore, the reading PPrT defines the
intransitive and transitive stems; the reading PPrViT defines
the intransitive, transitive, referential, causative, and the
causative-referential themes. Only the Participle is optional
to the verb-syntagmeme; it is defined in section 2.4.

For each emic verb-syntagmeme there are as many as a
dozen allo manifestants. The variety of co-occurrence combi-
nations of the exponents of the Predication and Voice tagmemes
is represented by the approximately sixty-five manifestants of
these five emic verb-syntagmemes. These sixty-five patterns
are an expression of the extreme complexity and productivity
of the derivational system of Voice markers in Nahuat.

In summary, the derivational system of Voice markers
accounts for (1) different types of syntagmemes, e.g., verb-
syntagmemes and noun-syntagmemes, (2) contrastive
syntagmemes within a given type, e.g., intransitive and transi-
tive verb-syntagmemes, and (3) allo manifestants of a given
emic verb-syntagmeme. The different types of syntagmemes
and the emic syntagmemes within a type have been explicated
by grammars of other dialects of Nahuatlan languages. It is
the individual manifestant, i.e., the allo syntagmeme, that is
the focus of this section of the grammar.

In the introduction to Chapter 2 and in section 2.3 the
tagmemic definitions of the verb-syntagmeme and the constituent
tagmemes are given. Sections 2.61 - 2.65 are used to define
the five emic verb-syntagmemes by exploring and explicating
the relationships between emic verb-syntagmemes and between
the allo manifestants of a given type of verb-syntagmeme.

The explication of the derivational system is not complete
without a careful delineation of the structured relationships
that exist between emic verb-syntagmemes and between the allo
manifestants of a given emic verb-syntagmeme. The relation-

ships of agnation, partial enation, and enation are defined in
section 1.3.   They are further described here in terms of their
application to specific verb-syntagmemes.

The tagmemic notation of formulae and readings allows for
a static representation of grammatical function-sets in the
verb-syntagmeme.   The labeling of relationships between
specific function-sets as agnate, enate, or partially enate
allows for a more dynamic approach to the grammatical struc-
ture.   There are at least four such relationships that are
labeled in the description of the verb-syntagmemes:

(1) the relationship between different word types,

(2) the relationship between the five emic verb-syntagmemes,

(3) the relationship between derived syntagmemes and
their sources,

(4) the relationship between kernel syntagmemes which
are allo manifestants of one emic verb-syntagmeme.

The first relationship is agnation, the last is enation;   the
middle two come under the label of partial enation.

AGNATION: Word types differ by the contrastive,
patterned clusterings of constituent tagmemes;   this is shown
in the tagmemic notation by the addition and/or deletion of
constituent tagmemes.   The formulae and/or the readings of
the formulae are representations the contrastive word types.
The relationship between these contrastive word types is
agnate;   it is expressed by a reversible transform ($\leftrightarrow$),
e.g., the verb-syntagmeme is agnate with the noun-syntagmeme
(v-sytm $\leftrightarrow$ n-sytm).

PARTIAL ENATION: Within a given word type such as
the verb-syntagmeme there may be represented a set of con-
trastive syntagmemes.   The reading of the formula for each
member of the set is the same;   the changing of one member of
the set to another member of the set does not involve the

addition and/or deletion of constituent tagmemes. It involves
the manifestation of contrastive sets of markers of one of the
constituent tagmemes. This is the situation for the verb and
noun syntagmemes; each is represented by a set of five emic
syntagmemes with the one word type. The relationship between
each of the five emic verb-syntagmemes is partial enation; the
relationship between each of the five emic noun-syntagmemes
is partial enation. It is symbolized by a reversible trans-
form (←→).

A second type of partial enation is the relationship between
derived verb-syntagmemes and their sources; it is symbolized
by the reversible transform. A kernel syntagmeme is always
to the left of the arrow; the derived syntagmeme is always to
the right of the arrow. The structural changes involved in the
syntagmemes are similar to those described for the emic verb-
syntagmemes.

ENATION: The relationship between kernel verb-
syntagmemes within one emic verb-syntagmeme is enate. The
only structural change involved is the manipulation of individual
members of one set of markers, e.g., the members of the set
of transitive markers. The enate relationship is not symbolized.

The terms kernel and derived are best explained by de-
scribing the verb-syntagmemes that are labeled with k and D/d.
The kernel (k) verb-syntagmeme contains within itself no
structurally simpler construction that is identifiable as a
derived verb-syntagmeme. The structure of the kernel verb-
syntagmeme (k v-sytm) is such that other verb-syntagmemes
can be "efficiently and relevantly" derived from it. See Nida
(1964 p. 66) for discussion of kernel constructions. By con-
trast, the derived (D/d) verb-syntagmeme contains within itself
a structurally simpler construction that is identifiable as a
kernel verb-syntagmeme. The kernel and derived verb-

syntagmemes are relatable by partial enation; the kernel verb-syntagmemes within the same emic verb-syntagmeme are relatable by enation. The use of upper case D indicates derivation from one of the other emic verb-syntagmemes; the use of lower case d indicates derivation from within the same emic verb-syntagmeme.

The root morphemes which are neither affixial nor derivational in function have been gathered into eleven stem classes (labeled with sc-1 through sc-11; some numbers have subsections 'a' and 'b'. Sc-12 through sc-15 refer to noun constructions). Each stem class manifests a kernel intransitive or transitive verb-syntagmeme, e.g., sc-1 manifests the kernel intransitive verb-syntagmeme number 1 (k intr- 1). The order of the stem classes (1-11 for verbs) reflects the structural distinction between stems and themes; furthermore, the order reflects a correlation between a stem class, the final vowel of the stems in that class, and the transform potential of the verb-syntagmemes which that particular stem class manifests. The list below shows the canonical shape of the root and the voice marker which characteristically occurs with stems from that particular stem class. The transform potential is discussed in each of the following sections. The vocalic quality is identified as follows: high-front (hf), low-front (l-f), high-back (h-b), and low-back (l-b). The use of the cover symbol V, for vowel, means that the particular vowel quality manifested may be any one of the four.

STEM CLASSES AND CANONICAL SHAPES:

sc-1	CVCl-b	sc-7b	CVCV-ni
sc-2a	CVCh-f	sc-8a	CVCh-b-wi
sc-2b	CVCh-f	sc-8b	CVCV-wi
sc-3	-CVCl-b	sc-9	CVC-ti
sc-4	-CVCh-f	sc-10a	CVCh-f

sc-5	CVCl-b-wa	sc-10b	-CVCh-f-ya
sc-6	CVCh-b-wa	sc-11	-CVC-wi-ya
sc-7a	CVCV-ni		

An independent criterion, one which cross-cuts those mentioned above for the individual stem classes, is used to form hyper-classes of stem classes, i.e., sc-A, sc-B, and sc-C. These hyper-classes represent a correlation between a specific kernel verb-syntagmemes and the number of dramatis personae that can be manifested as free forms within a clause. In the definition of the referential, the causative, and the causative-referential verb-syntagmemes this correlation is illustrated (sections 2.63, 2.64, 2.65). Stem class-A consists of sc-3, sc-4, and sc-10b; the stems from these classes occur in the transitive, referential, causative, and causative-referential verb-syntagmemes. Stem class-B consists of sc-1, sc-2a, and sc-6; these stems occur only in the intransitive and the causative verb-syntagmemes. Stem class-C consists of sc-2b, sc-5, sc-7a, sc-8a, sc-8b, sc-9, sc-10a; the stems from these classes occur in all types of verb-syntagmemes.

The shifting of the eleven stem/classes into the three hyper-classes in no way affects the canonical shape of the stems. In summary, the hyper-class-A manifests only transitive verb-syntagmemes; it never manifests an intransitive verb-syntagmeme. The hyper-class-C manifests all of the five emic verb-syntagmemes, i.e., both the intransitive and the transitive verb-syntagmemes. The hyper-class-B manifests the intransitive verb-syntagmemes but not the transitive verb-syntagmemes. It is only by virtue of the causative transform that sc-B can be said to manifest a transitive verb-syntagmeme. This presents just the shadow of an outline of sememic structuring among verb stems, i.e., stems which are only transitive, stems which are only intransitive, and stems which are both transitive and intransitive.

The numbering of the verb-syntagmemes in the succeeding sections correlates a complex of seven factors with a specific allo manifestation of an emic verb-syntagmeme. The seven factors exhaust the potential grammatical relationships involved in matching the five functions of the Voice markers with the eleven stem classes.

(1) Stem classes are identified by numbers, i.e., 1 through 11. The stems within a given stem class manifest the Base in the allo verb-syntagmeme being defined.

(2) Sub-sets within one stem class are identified by lower case letters following the number, e.g., 2a, 2b. Sub-sets of stem classes share either a common phonemic representation or a common grammatical function in contrast to other sub-sets of the same stem class.

(3) The emic verb-syntagmeme is identified by the label intransitive (intr), transitive (tr), referential (rf), causative (cs), or causative-referential (cs-rf).

(4) The transform source of an allo manifestant is identified by either k (kernel) or D/d (derived) before its emic label, e.g., k intr-1.

(5) Upper case D indicates derivation from another emic verb-syntagmeme, either intransitive or transitive, e.g., D tr-3 shows derivation from k intr-3.

(6) Lower case d indicates derivation from within one emic verb-syntagmeme, e.g., d intr-5 shows derivation from k intr-5.

(7) Either D or d is followed by a number if more than one allo manifestant has the same source.

The ordering of the stem classes and verb-syntagmemes is as follows: 1-4 are stems, 5-11 are themes. Within each group the intransitive precedes the transitive. Within the intransitive

or transitive the stem-final vowel or voice vowel low-back
precedes the high-front.

2.61 The subject of the intransitive verb-syntagmeme is
represented as acting, either as performing the action or
experiencing the action denoted by the verb stem.

> niewa 'I arise' (ni- 1sg sbj, ewa 'arise'); tiahsi 'you
> arrive' (ti- 2sg sbj, ahsi 'arrive'); timayana 'you are
> hungry' (ti- 2sg sbj, mayana 'be hungry').

A few of the intransitive verb-syntagmemes regularly occur
without a specified subject, especially those verb-syntagmemes
which refer to the activities of nature.

> taeheka 'it is windy' (ta-der, eheka 'wind blows'); kiowi
> 'it is raining' (kio- 'rain', -wi intr vi); toona 'it is sunny'
> (toona 'sun shines').

The markers of the intransitive voice are: -K (-k/-ka), -N
(-n/-ni), -W (-w/-wa), -T (-t/-ti), and -wi (see section 2.3 for
extensive definition). A semantic distinction between intransi-
tive and stative is difficult to maintain since some intransitive
verb-syntagmemes which have -ni or -wi can be glossed with
either intransitive or stative meanings. Other semantic distinc-
tions among intransitives are: intransitive verb-syntagmemes
with -K are onomatopoetic, intransitives with -T, -nti, or -kti
are ingressive in meaning. Although some semantic distinc-
tions are possible, all verb-syntagmemes in this section are
labeled as intransitive; the semantic distinctions are not
pertinent to the structural contrasts between the transitive and
intransitive verb-syntagmemes.

The following chart displays the morphemes to be defined in
this section:

INTRANSITIVE VOICE MARKERS:

Simple	Complex
-K (-k/-ka)	-KT (-kti)

-N (-n/-ni)   -NT (-nti)

-W (-w/-wa)

-T (-t/-ti)

-wi

Summary of the kernel and derived intransitive verb-syntagmemes: The particular vowel following the stem is included in the definition only if its presence is significant. The symbol : is to be read 'equals', in the sense that the symbols on each side of the symbol are different representations of the same structure. The column on the left is the list of the names of the intransitive verb-syntagmemes; the column in middle is a representation of the lexemic structure (in stratificational terms) or of the tagmeme (in tagmemic terms). The column on the right lists the stem classes associated with the verb-syntagmemes.

k intr-1	:	sbj-stem(a)-tense	sc-1
k intr-2a	:	sbj-stem(i)-tense	sc-2a
k intr-2b	:	sbj-stem(i)-tense	sc-2b
k intr-5	:	sbj-stem(a)-wa-tense	sc-5
d intr-5	:	sbj-stem-k-ti-tense	sc-5
k intr-6	:	sbj-stem (o)-wa-tense	sc-6
k intr-7a	:	sbj-stem-ni-tense	sc-7a
d1 intr-7a	:	sbj-stem-n-ti-tense	sc-7a
d2 intr-7a	:	sbj-stem-k-ti-tense	sc-7a
d3 intr-7b	:	sbj-rd-root-ka-tense	sc-7b
k intr-8a	:	sbj-stem(i)-wi-tense	sc-8a
k intr-8b	:	sbj-stem-wi-tense	sc-8b
k intr-9	:	sbj-stem-ti-tense	sc-9
k intr-10a	:	sbj-stem(i)-tense	sc-10a

Summary of the intransitive transforms (intr tfms):

Intr tfm-1 : delete voice vowel; add voice marker -ti, e.g.,

k intr 7a ⟵⟶ d1 intr-7a, i.e.,

           sbj-stem-ni-tense   ⟵--⟶   sbj-stem-n-ti-tense.

Intr tfm- 2 ⸗ voice marker -N/-W ---⟶ voice marker -kti, e.g.,

           k intr- 7a   ⟵--⟶   d2 intr- 7a, i.e.,

           sbj-stem-ni-tense   ⟵--⟶   sbj-stem-k-ti-tense, or,

           k intr- 5   ⟵--⟶   d intr- 5, i.e.,

           sbj-stem (a)-wa-tense   ⟵--⟶   sbj-stem(a)-k-ti-tense.

Onomatopoetic tfm ⸗ reduplicate root; then voice marker -N
---⟶ -K, e.g.,

           k intr- 7a   ⟵--⟶   d3 intr- 7b, i.e.,

           sbj-stem-ni-tense   ⟵--⟶   sbj-rd-root-ka-tense.

    Intr- 1, intr- 2a, and intr- 2b represent a set of kernel
intransitive verb-syntagmemes and are defined by the formula:
+Per:per-pfx +Pr:base +T:infl-sfx, i.e., an obligatory Person
tagmeme manifested by person prefixes, an obligatory Predica-
tion tagmeme manifested by B- 1/ B-2/ B- 3, and an obligatory
Tense tagmeme manifested by time-aspect inflection. The three
allo manifestants of the one reading of the formula, PerPrT,
are differentiated by the stem classes which manifest the Base.
Each manifestant is enate with each other manifestant. The
illustrations from Nahuat are given in terms of the minimum
reading of B- 1, i.e., the Head slot manifested by a stem. The
occurrence of other Bases or of the full reading of one Base in
no way changes the structure of the verb-syntagmeme. It is
the stem class which manifests the Head tagmeme of the Base
that is crucial; the maximum of three additional stems to the
left of the Head tagmeme may occur without affecting the defini-
tion of the verb-syntagmeme.

    Intr- 1 signifies a kernel intransitive verb-syntagmeme.
Stems which manifest the Base are from sc-1, i.e., CVCa.
Stems from sc- 1 manifest bases of transitive verb-syntagmemes
only in causative constructions.

    k intr- 1 ⸗ sbj-stem(a)-tense.

ihya 'it stinks' (ihya 'stink'); wiwika 'it wiggles' (wi- rd,
wika 'carry'); nimayana 'I'm hungry' (ni- lsg sbj, mayana
'hungry').

(Throughout all the illustrations in this section [2.6] the time-
less tense is used. Since it is indicated only by ∅, there are
no overt markers. See section 2.5 for extensive description
of tense markers).

Intr-2a signifies a kernel intransitive verb-syntagmeme.
Stems which manifest the Base are from sc-2a, i.e., CVCi.
Stems from sc-2a manifest bases of transitive verb-syntagmemes
only in causative constructions.

k intr- 2a ≃ sbj-stem(i)-tense.

niaki 'I fit' (ni- lsg sbj, aki 'fit'); nesi 'it appears' (nesi
'appear'); tatasi 'he coughs' (ta- rd, tasi 'cough').

Intr-2b signifies a kernel intransitive verb-syntagmeme.
Stems which manifest its Base are from sc-2b, i.e., CVCi. K
intr-2b is enate with k intr-2a. Stems from sc-2b manifest the
Base of D tr-2b; stems from sc-2a manifest the Base of
causative verb-syntagmemes.

k intr- 2b ≃ sbj-stem(i)-tense.

paati 'it dissolves' (paati 'dissolve'); tohtomi 'it unties'
(toh- rd, tomi 'untie'); piŝki 'it drops off' (piŝki 'drop
off').

Intr-5 through intr- 10a signify a set of kernel and derived
intransitive verb-syntagmemes and are defined by the formula:
+Per:per-pfx +Pr:base +Vi:vi marker +T:infl-sfx, i.e., an
obligatory Person tagmeme manifested by person prefixes, an
obligatory Predication tagmeme manifested by B- 1/B-2/B-3, an
obligatory Voice tagmeme manifested by voice markers, and an
obligatory Tense tagmeme manifested by time-aspect inflection.
There are ten allo manifestants of the one reading of the
formula, PerPrViT; six are kernel and four are derived verb-

syntagmemes. The allo manifestants are differentiated by the co-occurrence patterns of stem classes and voice markers. Each kernel manifestant is enate with every other kernel manifestant; the derived syntagmemes are partially enate with their source verb-syntagmemes. The relationship of partial enations is expressed by an appropriate transform.

Intr- 5 signifies a kernel intransitive verb-syntagmeme. Stems which manifest its Base are from sc-5, i.e., CVCa; the voice marker is -W.

k intr- 5 ≟ sbj-stem(a)-wa-tense.

Čipawa 'it's clean' (Čipa- 'clean', -wa vi); tilawa 'it's dense' (tila- 'dense', -wa vi); pinawa 'he's ashamed' (pina- 'be ashamed').

d intr- 5 signifies a derived intransitive verb-syntagmeme. Stems which manifest its Base are from sc-5, i.e., CVCa; the voice markers are -K and -T. K intr- 5 is the source for d intr- 5; the relationship of partial enation is expressed by the second transitive transform.

Intr tfm- 2 ≟ voice marker -N/-W ---→ voice marker -kti.

k intr- 5 ≟ sbj-stem (a)-wa-tense.

d intr- 5 ≟ sbj-stem-k-ti-tense.

pinawa 'he's ashamed' (pina- 'be ashamed', -wa vi), pinaktik 'he has been put to shame' (-k intr vi, -ti vi, -k pret);

tecawa 'it's sticky' (teca- 'sticky', -wa vi), tecaktik 'it has become sticky' (-k intr vi, -ti vi, -k pret); čikawa 'it's strong' (čika- 'strong', -wa vi), čikaktik 'it has gotten strong' (-k intr vi, -ti vi, -k pret).

Intr- 6 signifies a kernel intransitive verb-syntagmeme. Stems which manifest its Base are from sc- 6, i.e., CVCo; the voice marker is -W.

k intr- 6 ≟ sbj-stem (o)-wa-tense.

čolowa 'he flees' (čolo- 'flee', -wa vi); panowa 'he passes
by' (pano- 'pass by', -wa vi); tiišpilowa 'you point' (ti-
2sg sbj, išpilo- 'point', -wa vi).

Intr- 7a signifies a kernel intransitive verb-syntagmeme.
Stems which manifest its Base are from sc-7a, i.e., CVCV
(the final vowel may be any vowel except low-front). The voice
marker is -N. About 70 percent of the stems from sc-7a have
identical vowels in the root, i.e., CaCani, CiCini, CoConi.

k intr- 7a = sbj-stem-ni-tense.

patani 'it flies' (pata- 'fly', -ni intr vi); picini 'it bursts'
(pici- 'burst', -ni intr vi); moloni 'it boils' (molo- 'boil'
-ni intr vi).

dl intr- 7a signifies a derived intransitive verb-
syntagmeme. Stems which manifest its Base are from sc- 7a;
the voice markers are -N and -T. K intr- 7a is the source for
dl intr- 7a; the relationship of partial enation is expressed
by the first intransitive transform. Intr tfm- 1 = delete voice
vowel; add voice marker -ti.

k intr- 7a = sbj-stem-ni-tense.

dl intr- 7a = sbj-stem-n-ti-tense.

kašani 'it loosens' (kaša- 'loose', -ni intr vi); kopini 'it
disengages' (kopi- 'disengage' -ni intr vi); kotoni 'it
breaks' (koto- 'break', -ni intr vi); kašantik 'it's loosened'
(-n intr vi, -ti vi, -k pret); kopintik 'it's disengaged' (-n
intr vi, -k vi, -k pret); kotontik 'it's broken' (-n intr vi,
-ti vi, -k pret).

d2 intr- 7a signifies a derived intransitive verb-syntagmeme.
Stems which manifest its Base are from sc-7a; the voice
markers are -K and -T. K intr- 7a is the source for d2 intran-
sitive-7a; the relationship of partial enation is expressed by
the second transitive transform (voice marker -N/-W --->
-kti).

k intr- 7a $\leq$ sbj –stem-ni-tense.

d2 intr- 7a $\leq$ sbj-stem-k-ti-tense

cayani 'it splits' (caya- 'split', -ni intr vi), cayaktik 'it is split' (-k intr vi, -ti vi, -k pret); picini 'it bursts' (pici- 'burst', -ni intr vi), piciktik 'it has burst' (-k intr vi, -ti -k pret); totooni 'it's hot' (totoo- 'hot', -ni intr vi), totooktik 'it is hot' '-k intr vi, -ti vi, -k pret).

d3 intr- 7b signifies a derived intransitive verb-syntagmeme. Stems which manifest its Base are from sc- 7b and also occur in the reduplicated form. The voice marker is -K. About 2/3 of the stems from sc- 7b have identical vowels in the root and reduplicated syllable, i.e., CaCaCaka, CiCiCika, CoCoCoka. The relationship of partial enation between the source k intr- 7a and d3 intr- 7b is expressed by the onomatopoetic transform (reduplicate root; the voice marker -N ---→ -K).

k intr- 7a $\leq$ sbj-stem-ni-tense.

d3 intr- 7b $\leq$ sbj-rd-root-ka-tense.

kapani 'it whacks' (kapa- 'whack', -ni intr vi), kakapaka 'sound of whacking' (ka- rd, -ka intr vi); čipini 'it drips' (čipi- 'drip', -ni intr vi), čičipika 'sound of dripping' (či- rd -ka intr vi); moloni 'it boils' (molo- 'boil', -ni intr vi); momoloka 'sound of boiling' (-mo- rd, -ka intr vi).

Note the similarity of sc- 7b with sc- 7a; there are 32 stems in common in sc- 7a and sc- 7b. d3 intr- 7b is the only verb-syntagmeme which has a stem class that is different from the stem class which manifests the source verb-syntagmeme.

Intr-8b signifies a kernel intransitive verb-syntagmeme. Stems which manifest its Base are from sc-8a, i.e., CVCi; the voice marker is -wi. The subdivision of sc-8 into two sub-classes is in terms of high-front vowel versus non-high-front

vowels, i.e., CVCi versus CVCa/e/o.

k intr-8a ± sbj-stem(i)-wi-tense.

pačiwi 'it covers' (pači- 'cover', -wi intr vi); poliwi 'it
lacks (poli- 'lack', -wi intr vi); šehšeliwi 'it separates
out' (šeh- rd, šeli- 'separate out', -wi intr vi).

Intr-8b signifies a kernel intransitive verb-syntagmeme.
Stems which manifest its Base are from sc-8b, i.e., CVCV;
the voice marker is -wi.

k intr-8b ± sbj-stem-wi-tense.

qetawi 'it weakens' (qeta- 'weaken', -wi intr vi); ehkewi
'it peels off' (qeta- 'peel off', -wi intr vi); sepowi 'it
deadens' (sepo- 'deaden', -wi intr vi).

Intr-9 signifies a kernel intransitive verb-syntagmeme.
Stems which manifest its Base are from sc-9, i.e., CVC/CVCo,
i.e., stems occur with or without the high-back vowel. The
voice marker is -T. The stems occur without the high-back
vowel when they manifest the k intr-9; they occur with the
high-back vowel when they manifest the D intr-9.

k intr-9 ± sbj-stem-ti-tense.

teciltik 'it's twisted' (tecil- 'twist', -ti intr vi, -k pret);
alaštik 'it's smooth' (alaš- 'smooth', -ti intr vi, -k pret);
cohqiltik 'it's dirty' (cohqil- 'dirty' -ti intr vi, -k pret).
The only tense-aspect inflection that occurs with k intr-9 is the
preterite -k as shown above and the preterite plural form -keh.

Intr-10a signifies a kernel intransitive verb-syntagmeme.
Stems which manifest its Base are from sc-10a, i.e., CVCi.
Stems from sc-10a, sc-2a, and sc-2b are similar in structure
in that all are of the canonical shape CVCi; their distribution
is different in that all manifest verb-syntagmemes which have
different transform potentials.

k intr-10a ± sbj-stem(i)-tense.

kalaki 'he enters' (kalaki 'enter'); tami 'it finishes'

(tami 'finish'); weeyi 'it's large' (weeyi 'large').

2.62 In the transitive verb-syntagmeme the action denoted by the verb stem is carried over to a stated goal. Transitive verb-syntagmemes which are implicitly marked for Voice are stems; those which are explicitly marked for Voice are themes. All transitive verb-syntagmemes are obligatorily marked in the Person tagmeme for object.

kimana in nakat 'he boils the meat' (ki- 3sg obj, mana 'boil', in 'the', nakat 'meat'); kikotona 'he breaks it' (ki- 3sg obj, koto- 'break', -na tr vi).

The markers for the transitive voice are: -K (-ca), -N (-n/-na), -W (-w/-wa), -Y (-ya); the marker for the causative verb-syntagmeme (which is transitive by definition): -TY (-tiya/-ltiya); the marker for the referential verb-syntagmeme (which is transitive by definition): -LY (-liya); the marker for the causative-referential verb-syntagmeme (which is transitive by definition): -tiliya/ -ltiliya. See section 2.3 for extensive definitions of markers. The referential, causative, and causative-referential verb-syntagmemes never occur without the final -Y. The allomorphs -n and -w occur as representations of their respective morphemes before the causative marker -TY.

TRANSITIVE VOICE MARKERS:

Simple	Complex	Co-occurrence
-K (-ca)	-TY (-tiya)	-NTY (-ntiya)
-N (-n/-na)	-LY (-liya)	-WTY (-wtiya)
-W (-w/-wa)	-TLY (-tiliya)	-NLY (-niliya)
-Y (-ya)		-WLY (-wiliya)
		-NTLY (-ntiliya)
		-WTLY (-wtiliya)

Summary of kernel and derived transitive verb-syntagmemes

with the sources from kernel or derived intransitive verb-
syntagmemes. The format is the same as given in section 2.61.

k intr-2b	D tr-2b	≝	sbj-obj stem(a)-tense	sc-2b
	k tr-3	≝	sbj-obj-stem(a)-tense	sc-3
	k tr-4	≝	sbj-obj-stem(i)-tense	sc-4
k intr-5	D tr-5	≝	sbj-obj-stem(a)-wa-tense	sc-5
k intr-7a	Dl tr-7a	≝	sbj-obj-stem-na-tense	sc-7a
k intr-7a	d2 tr-7a	≝	sbj-obj-stem-ni-ya-tense	sc-7a
k intr-7a	D tr-7b	≝	sbj-obj-rd-root-ca-tense	sc-7b
k intr-8a	D tr-8a	≝	sbj-obj-stem(o)-wa-tense	sc-8a
k intr-8b	D tr-8b	≝	sbj-obj-stem-wa-tense	sc-8b
k intr-8a/b	D tr-8a/b	≝	sbj-obj-stem-wi-ya-tense	sc-8a/b
	k tr-9	≝	sbj-obj-stem(o)-wa-tense	sc-9
	k tr-10a	≝	sbj-obj-stem(i)-ya-tense	sc-10a
	k tr-10b	≝	sbj-obj-stem(i)-ya-tense	sc-10b
	k tr-11	≝	sbj-obj-stem-wi-ya-tense	sc-11

Summary of the transitive transforms (tr tfms):

Tr tfm-0 ≝ add object, if none present, e.g.,

      k intr-6 ←--→ D tr-6, i.e.,

      sbj-stem(a)-wa-tense ←--→ sbj-obj-stem(a)-wa-tense.

Tr tfm-1 ≝ stem-final vowel /-i/ ---→ /-a/, e.g.,

      k intr-2b ←--→ D tr-2b, i.e.,

      sbj-stem(i)-tense ←--→ sbj-obj-stem(a)-tense.

Tr tfm-2 ≝ stem-final vowel /-i/ ---→ /-o/, e.g.,

      k intr-8a ←--→ D tr-8a, i.e.,

      sbj-stem(i)-wi-tense ←--→ sbj-obj-stem(o)-wa-tense.

Tr tfm-3 ≝ voice vowel /-i/ ---→ /-a/, e.g.,

      k intr-8b ←--→ D tr-8b, i.e.,

      sbj-stem-wi-tense ←--→ sbj-obj-stem-wa-tense.

Tr tfm-4 ≝ add -Y to voice marker; if no voice marker present,
add to stem, e.g.,

      k intr-7a ←--→ D2tr-7a, i.e.,

sbj-stem-ni-tense   ⟵⟶   sbj-obj-stem-ni-ya-tense,

or, k intr-10a   ⟵⟶   D tr-10a, i.e.,

sbj-stem(i)-tense   ⟵⟶   sbj-obj-stem(i)-ya-tense.

Tr tfm-5 ⁼ voice marker -ka ⟶ -ca, e.g.,

d3 intr-7b ⟶ D tr-7b, i.e.,

sbj-rd-root-ka-tense ⟶ sbj-obj-rd-root-ca-tense.

Tr tfm-6 ⁼ delete nominalizer of noun stem; add voice markers

-wi and -Y in succession, e.g.,

noun-syntagmeme   ⟵⟶   k tr-11, i.e.,

sbj-stem-t/-ti-pl   ⟵⟶   sbj-obj-stem-wi-ya-tense.

Tr tfm-7 ⁼ voice marker -T ⟶ -W; add vowel /-o/ to stem.

k intr-9   ⟵⟶   D tr-9, i.e.,

sbj-stem-ti-tense   ⟵⟶   sbj-obj-stem(o)-wa-tense.

Constraints: (1) Tr tfm-0 precedes every other transform:
if two or more transforms are applied, tr tfm-0 precedes only
the first. (2) Tr tfm-2 is always followed by tr tfm-3, but tr
tfm-3 also occurs alone.

Tr-2 through tr-4 represent a set of kernel and derived
transitive verb-syntagmemes and are defined by the formula:
+Per:per-pfx +Pr:base +T:infl-sfx, i.e., an obligatory Person
tagmeme manifested by person prefixes (both subject and
object are obligatory), an obligatory Predication tagmeme
manifested by base types B-1/B-2/B-3, and an obligatory Tense
tagmeme manifested by time-aspect inflection. The three allo
manifestants of the one reading of the formula PerPrT are
differentiated by stem classes which manifest the bases and by
the transform potential of each allo verb-syntagmeme. K tr-3
and k tr-4 are enate in relationship: D tr-2b is partially
enate with k intr-2b and the relationship is expressed by the
first transitive transform. The first time a transform appears
in the explanatory sections it will be defined; subsequent
occurrences are referred to by symbols. See discussion above

for definitions of all transitive transforms and section 2.61 for
definitions of intransitive transforms. Since all transitive
verb-syntagmemes obligatorily manifest an object, the form ki-
(3sg obj) will not be identified in the explanatory sections.
This includes the transitive, referential, causative, and
causative-referential verb-syntagmemes.

Tr-2b signifies a derived transitive verb-syntagmeme.
Stems which manifest its Base are from sc-2a, i.e., CVCa.
K intr-2b is the source for D tr-2b; the relationship of
partial enation is expressed by the first transitive transform
(tr tfm-1: stem-final vowel /-i/ ---→ /-a/).

k intr-2b ≚ sbj-stem(i)-tense.

D tr-2b ≚ sbj-obj-stem(a)-tense.

temi 'it piles up' (temi 'pile up'), kitema 'he piles it up'
(tema 'pile up'); paati 'it dissolves' (paati 'dissolve'),
kipaata 'he dissolves it' (paata 'dissolve'); waaki 'it
dries' (waaki 'dry'), kiwaaca 'he dries it' (waaca 'dry').
See Key (1960, p. 133, fn 5) for suggestions regarding the
relationship between stem-final vowels and the intransitive or
transitive verb-syntagmemes. In Nahuat most of the verb-
syntagmemes with theme vowel /-a/ are transitive; ten of the
fourteen intransitive verb-syntagmemes have a final vowel
/-i/.

Tr-3 signifies a kernel transitive verb-syntagmeme.
Stems which manifest its Base are from sc-3, i.e., CVCa.

k tr-3 ≚ sbj-obj-stem(a)-tense.

kišima 'he shears it' (šima 'shear'); kisowa 'he spreads
it' (sowa 'spread'); kikeca 'he stands it up' (keca 'stand
up').

Tr-4 signifies a kernel transitive verb-syntagmeme. Stems
which manifest its Base are from sc-4, i.e., CVCi.

k tr-4 ≚ sbj-obj-stem(i)-tense.

kiteki 'he cuts it' (teki 'cut'); kitayi 'he drinks it' (tayi 'drink'); kimati 'he knows it' (mati 'know').

Tr- 5 through tr- 12 signify a set of kernel and derived verb-syntagmemes and are defined by the formula: +Per:per-pfx +Pr:base +Vi: voice marker +T:infl-sfx, i.e., an obligatory Person tagmeme manifested by person prefixes (both subject and object are obligatory), an obligatory Predication tagmeme manifested by base types B-1/B-2/B-3, an obligatory Voice tag-meme manifested by voice markers, and an obligatory Tense tag-meme manifested by tense-aspect inflection. There are eleven allo manifestants of the one reading of the formula PerPrVit; they are differentiated by stem classes which manifest bases, by the transform potential of the transitive verb-syntagmemes, and by the specific voice markers manifested in the Voice tagmeme. All kernel transitive verb-syntagmemes are in enate relationship with each other; all derived (D/d) transitive verb-syntagmemes are partially enate with their respective sources. The rela-tionship of partial enation is expressed by appropriate trans-forms.

Tr- 5 signifies a derived transitive verb-syntagmeme. Stems which manifest its Base are from sc- 5, i.e., CVCa; the voice marker is -W. K intr- 5 is the source for D tr- 5; the relationship of partial enation is expressed by the zero transitive transform (tr tfm-0: add object, if none present).

k intr- 5 $\leq$ sbj-stem(a)-wa-tense.

D tr- 5 $\leq$ sbj-obj-stem(a)-wa-tense.

melawa 'it's straight' (mela- 'straight', -wa intr vi); kimelawa 'he straightens it'; taqawa 'it's hard' (taqa-'hard', -wa intr vi), kitaqawa 'he hardens it'; tomawa 'it's fat' (toma- 'fat' -wa intr vi), kitomawa 'he fattens it'.

Dl tr- 7a signifies a derived transitive verb-syntagmeme. Stems which manifest its Base are from sc- 7a, i.e., CVCV;

the voice marker is -N.   K intr- 7a is the source for Dl tr- 7a;
the relationship of partial enation is expressed by the third
transitive transform (tr tfm- 3: voice vowel /-i/ ---→ /-a/).

   k intr- 7a ⸻ sbj-stem-ni-tense.

   Dl tr- 7a ⸻ sbj-obj-stem-na-tense.

   tapani 'it breaks up' (tapa- 'break up', -ni intr vi),

   kitapana 'he breaks it up' (-na tr vi); kotoni 'it splits'

   (koto- 'split' -ni intr vi), kikotona 'he splits it' (-na tr vi);

   kopini 'it disengages' (kopi- 'disengage', -ni intr vi),

   kikopina 'he disengages it' (-na tr vi).

   Note the similarity between the first and third transitive
transforms:

   Tr tfm- 1 ⸻ stem-final vowel /-i/ ---→ /-a/.

   Tr tfm- 3 ⸻ voice vowel /-i/ ---→ /-a/.

The replacement of the high-front vowel by the low-back vowel
in the change from intransitive to transitive verb-syntagmemes
further emphasizes the suggestion that high-front vowels are
associated with intransitivity and that low-back vowels are
associated with transitivity. The pattern, however, cannot be
extended to cover all verb-syntagmemes in Nahuat. The
paucity of stems with a final vowel /-i/ among the transitive
verb-syntagmemes is evidence enough to suggest that at an
earlier stage of the language the high-front vowel, as stem-
final vowel, may have occurred only in the intransitive verb-
syntagmemes and that the /-a/ vowel occurred only in the
transitive verb-syntagmemes.

The following chart shows the trend away from the putative
complementation; the number in the boxes shows the verb-
syntagmemes in which the high-front and low-back vowel occur
with intransitive and transitive verb-syntagmemes.

INTRANSITIVE V-SYTMS   TRANSITIVE V-SYTMS

	Stem	Theme	Stem	Theme
-i vowel	1	6	1	0
-a vowel	1	3	2	11

Seven intransitive verb-syntagmemes have high-front vowel; four intransitive verb-syntagmemes have low-back vowel. One transitive verb-syntagmeme has high-front vowel; thirteen transitive verb-syntagmemes have low-back vowel.

D2 tr- 7a signifies a derived transitive verb-syntagmeme. Stems which manifest its Base are from sc- 7a, i.e., CVCV; the voice markers are -N and -Y. K intr- 7a is the source for D2 tr- 7a; the relationship of partial enation is expressed by the fourth transitive transform (tr tfm- 4: add -Y to voice marker; if no voice marker present, add -Y to stem).

    k intr- 7a ⁼ sbj-stem-ni-tense.

    D2 tr- 7a ⁼ sbj-obj-stem-ni-ya-tense.

    <u>wilani</u> 'it wiggles' (wila- 'wiggle', -<u>ni</u> intr vi), <u>kiwilaniya</u> 'he wiggles it' (-<u>ya</u> tr vi); <u>tilini</u> 'it stretches' (tili- 'stretch' -<u>ni</u> intr vi), <u>kitiliniya</u> 'he stretches it' (-<u>ya</u> tr vi); <u>moloni</u> 'it boils' (molo- 'boil', -<u>ni</u> intr vi), <u>kimolo</u>-<u>niya</u> 'he boils it' (-<u>ya</u> tr vi).

D tr-7b signifies a derived transitive verb-syntagmeme. Stems which manifest its Base are from sc-7b, i.e., CVCV; the voice marker is -K. The source for D tr-7b is k intr-7a through d3 intr-7b; the relationship of partial enation is expressed by the onomatopoetic transform and the fifth transitive transform. Onomatopoetic transform: reduplicate root; voice marker -N ⟶ -K; tr tfm-5: voice marker -ka ⟶ -ca.

    k intr-7a   ▪ sbj-stem-ni-tense.

    d3 intr-7b ▪ sbj-rd-root-ka-tense.

    D tr-7b   ▪ sbj-obj-rd-root-ca-tense.

kalani 'it knocks' (kala- 'knock', -ni intr vi), kakalaka
'sound of knocking' (ka- rd, -ka intr vi), kikakalaca 'he
makes it knock' (-ca tr vi); teyini 'it crumbles' (teyi-
'crumble', -ni intr vi), teteyika 'sound of crumbling' (te-
rd, -ka intr vi), kiteteyica 'he crumbles it' (-ca tr vi);
toponi 'it explodes' (topo- 'explode', -ni intr vi), totopoka
'sound of exploding' (to- rd, -ka intr vi), kitotopoca 'he
makes it explode' (-ca tr vi).

Tr- 8a signifies a derived transitive verb-syntagmeme.
Stems which manifest its Base are from sc- 8a, i.e., CVCi;
the voice marker is -W. K intr- 8a is the source of D tr-8a;
the relationship of partial enation is expressed by the second
and third transitive transforms (see tr tfm- 2 and tr tfm- 3 in
the summary of transitive transforms given previously in this
section).

k intr- 8a   ≐ sbj-stem(i)-wi-tense.

D tr- 8a   ≐ sbj-obj-stem(o)-wa-tense.

wehweliwi 'it falls apart' (weh- rd, weli- 'fall apart', -wi
intr.vi), kiwehwelowa 'he takes it apart' (welo- 'fall apart',
-wa tr vi); poliwi 'it lacks' (poli- 'lack', -wi intr vi),
kipolowa 'he loses it' (polo- 'lack', -wa tr vi); awiliwi 'it
wastes away' (awili- 'waste', -wi intr vi), kiawilowa 'he
misuses it' (awilo- 'waste', -wa tr vi).

Tr- 8b signifies a derived transitive verb-syntagmeme.
Stems which manifest its Base are from sc- 8b, i.e., CVCV
(the final vowel must be non-high-front); the voice marker is
-W. K intr- 8b is the source for D tr- 8b; the relationship of
partial enation is expressed by the third transitive transform.

k intr- 8b   ≐ sbj-stem-wi-tense.

D tr- 8b   ≐ sbj-obj-stem-wa-tense.

toyawi 'it spills' (toya- 'spill', -wi intr vi), kitoyawa 'he
spills it' (-wa tr vi); ehkewi 'it peels off' (ehke- 'peel off',

-wi intr vi), kiehkewa 'he peels it off (-wa tr vi); tepewi
'it falls off' (-wi intr vi), kitepewa 'he releases it' (-wa tr
vi).

Tr- 8a/b signifies a derived transitive verb-syntagmeme.
Stems which manifest its Base are from either sc- 8a or sc- 8b;
the voice markers are -wi and -Y. K intr- 8a or k intr- 8b are
both (alternate) sources for D tr- 8a/b; the relationship of
partial enation is expressed by the fourth transitive transform.

k intr- 8a/b = sbj-stem-wi-tense.

D tr- 8a/b = sbj-obj-stem-wi-ya-tense.

tanawi 'it worsens' (tana- 'worsen', -wi intr vi), kitanawiya
'he makes it worsen' (-ya tr vi); šehšeliwi 'it separates
out' (šeh- rd, šeli- 'separate out', -wi intr vi),
kišehšeliwiya 'he divides it up' (-ya tr vi); sonewi 'it
swells' (sone- 'swell', -wi intr vi), kisonewiya 'he inflates
it' (-ya tr vi).

Tr- 9 signifies a derived transitive verb-syntagmeme.
Stems which manifest its Base are from sc-9, i.e., CVC
(optional high-back vowel); the voice marker is -W. K intr- 9
is the source for D tr- 9; the relationship of partial enation
is expressed by the seventh transitive transform (tr tfm-7:
voice marker -T ---→ -W; add vowel /-o/ to stem).

k intr- 9 = sbj-stem-ti-tense.

D tr- 9   = sbj-obj-stem(o)-wa-tense.

alaštik 'it's curled' (alaš- 'curl', -ti intr vi, -k pret),
kialašowa 'he curls it' (alašo- 'curl', -wa tr vi); tokoctik
'it's hunched' (tokoc- 'bend over', -ti intr vi, -k pret),
kitokocowa 'he bends it over' (tokoco- 'bend over', -wa tr
vi); nečiktik 'it's collected' (nečik- 'collect' (-ti intr vi,
-k pret), kinečikowa 'he collects it' (nečiko- 'collect', -wa
tr vi).

Tr- 10a signifies a derived transitive verb-syntagmeme.

Stems which manifest its Base are from sc-10a, i.e., CVCi;
the voice marker is -Y. K intr-10a is the source for D tr-10a;
the relationship of partial enation is expressed by the fourth
transitive transform.

k intr-10a ≟ sbj-stem(i)-tense.

D tr-10a ≟ sbj-obj. stem(i)-ya-tense.

kalaki 'he enters' (kalaki 'enter'), kikalakiya 'he inserts
it' (-ya tr vi); tami 'he finishes' (tami 'finish'), kitamiya
'he completes it' (-ya tr vi); tamati 'he's quiet' (tamati 'be
quiet'), kitamatiya 'he quiets him' (-ya tr vi).

Tr-10b signifies a kernel transitive verb-syntagmeme.
Stems which manifest its Base are from sc-10b, i.e., CVCi;
the voice marker is -Y.

k tr-10b ≟ sbj-obj-stem(i)-ya-tense.

kitaaliya 'he places it' (taali- 'place', -ya tr vi); kitaatiiya
'he burns it' (taatii- 'burn', -ya tr vi); kitokiya 'he draws
it close' (toki- 'draw close', -ya tr vi).

Tr-11 signifies a kernel transitive verb-syntagmeme. Stems
which manifest its Base are from sc-11, i.e., stems which
regularly occur in noun-syntagmemes. The voice markers are
-wi and -Y. The noun-syntagmeme is the source for k tr-11;
the agnate relationship is expressed by the sixth transitive
transform (tr tfm-6: delete nominalizer of noun stem; add
voice markers -wi and -Y in succession).

noun-syntagmeme ≟ sbj-stem-t/ti-pl

k tr-11 ≟ sbj-obj-stem-wi-ya-tense.

tálnešti 'dust' (talneš 'dust', -ti nom), kitalnešwiya 'he
makes it dusty' (-wi intr vi, -ya vi); tepehšit 'cliff'
(tepehši 'cliff', -t nom), kitepehšiwiya 'he throws it over
the cliff' (-wi intr vi -ya tr vi); sookit 'mud' (sooki- 'mud',
-t nom), kisookiwiya 'he muddies it' (-wi intr vi, -ya tr vi).

2.63 The subject of the referential verb-syntagmeme is

represented as performing the action denoted by the verb stem.
The action is referred to, directed towards, or applied to a
second or third dramatis persona, i.e., the referential object
(rf obj). The dramatis personae in the referential verb-
syntagmeme consist of the subject, the direct object (first
object), and the referential object (second object). The
manifestation of the third dramatis persona is possible only if
the base of the referential verb-syntagmeme is manifested by
stems from hyperstem-class-A or hyperstem-class-C. If the
base of the referential verb-syntagmeme is manifested by
stems from hyperstem-class-B, then only the subject and the
referential object are involved. The referential object in the
singular number is implicitly marked in the verb-syntagmeme
(see section 2.14 for a discussion concerning plural markers).
All referential verb-syntagmemes are derived; they are a sub-
set of verb-syntagmemes which manifest plus transitivity. The
sources for the derived referential verb-syntagmemes are
either transitive or intransitive verb-syntagmemes as defined
in sections 2.61 and 2.62.

niknekiliya 'I want it for him' (ni- 1sg sbj, k- 3sg obj, neki
'want', -liya rf vi); niktapaniliya 'I break it for him' (ni-
1sg sbj, k- 3sg obj, tapa- 'break', -ni intr vi, -liya rf vi).
The referential voice marker is -LY (-liya). Since there is but
one phonemic representation of -LY, it will be referred to by
its cover symbol -LY in the explanatory sections.

The following morphophonemic rules are a summary of
those given in section 1.4; they are the ones pertinent to the
morphophonemic changes that accompany the co-occurrence
of -Y/-W/-LY/-TY.

Mphphm 1a: CVCi + -ya	---→ CVCiá.
Mphphm 1b: CVCi + -ya + -liya	---→ CVCiliya.
Mphphm 1c: CVCi + -ya + -liya	---→ CVCiˇiliya.

Mphphm 1d: CVCi + -ya + -tiya   ---→ CVCtiya.

Mphphm 1e: CVCi + -ya + -ltiya   ---→ CVCiltiya.

Mphphm 1f: CVyV + -t   ---→ CVš̌t-

Mphphm 2a: CVCo + -wa   ---→ CVCoá.

Mphphm 2b: CVCo + -wa + -tiya   ---→ CVCowtiya/CVCtiya.

Mphphm 2c: CVCo + -wa + -ltiya   ---→ CVColtiya.

Mphphm 3: /s/ ---→ /š/ before /-t/.

Mphphm 4: /m/ ---→ /n/ before alveolar consonants.

There is one structuring for the referential verb-syntagmeme because (1) all referential verb-syntagmemes are themes, and (2) there is only one referential voice marker. There are, however, a variety of co-occurrence patterns with other voice markers. The referential verb-syntagmeme represents a set of eleven allo manifestants and is defined by the formula: +Per:per-pfx +Pr:base +Vi:voice marker +T:infl-sfx, i.e., an obligatory Person tagmeme manifested by person prefixes (both subject and object are obligatory), an obligatory Predication tagmeme manifested by base types B-1/B-2/B-3, an obligatory Voice tagmeme manifested by intransitive, transitive, and referential voice markers, and an obligatory Tense tagmeme manifested by time-aspect inflection. There is one reading for the formula, i.e., PerPrViT; the manifestants are differentiated by the specific voice marker and by the derivational source of the derived referential verb-syntagmeme. By source is meant: (1) Is the rf v-sytm derived from a kernel or derived transitive or intransitive verb-syntagmeme? (2) Is the path of development for the rf v-sytm directly from one source or does it come through other derived verb-syntagmemes? The referential verb-syntagmemes numbers two through four are built on stems; numbers five through

eleven are built on themes. All derived referential verb-syntagmemes are partially enate with their sources.

Summary of derived referential verb-syntagmemes with their sources specified as either intransitive or transitive verb-syntagmemes.

k intr- 2b	D rf- 2b	$=$	sbj-obj-stem (i)-LY-tense	sc- 2b
k tr- 3	D rf- 3	$=$	sbj-obj-stem (i)-LY-tense	sc- 3
k tr- 4	D rf- 4	$=$	sbj-obj-stem (i)- LY-tense	sc- 4
D tr- 5	D rf- 5	$=$	sbj-obj-stem (a)-wi-LY-tense	sc- 5
k intr- 6	D rf- 6	$=$	sbj-obj-stem (o)-wi-LY-tense	sc- 6
D tr- 7a	D rf- 7a	$=$	sbj-obj-stem-ni-LY-tense	sc- 7a
D tr- 8a	D rf- 8a	$=$	sbj-obj-stem (o)-wi-LY-tense	sc- 8a
D tr- 8b	D rf- 8b	$=$	sbj-obj-stem-wi-LY-tense	sc- 8b
D tr- 9	D rf- 9	$=$	sbj-obj-stem (o)-wi-LY-tense	sc- 9
k intr- 10a	D rf- 10a	$=$	sbj-obj-stem (i)-Y-LY-tense	sc- 10a
k tr- 10b	D rf- 10b	$=$	sbj-obj-stem (i)-Y-LY-tense	sc- 10b
k tr- 11	D rf- 11	$=$	sbj-obj-stem-wi-Y-LY-tense	sc- 11

The referential transform is defined as: add -LY to the voice marker; if no voice marker is present, add it to the stem; the vowel preceding -LY $\longrightarrow$ /-i/. The referential transform is obligatorily preceded by the zero transitive transform (tr tfm-0: add object, if none present).

Rf-2b signifies a derived referential verb-syntagmeme. Stems which manifest its Base are from sc-2b, i.e., CVCi; the voice marker is -LY. K intr-2b is the source for D rf-2b; the relationship of partial enation is expressed by the transitive transform zero and the referential transform.

k intr-2b $=$ sbj-stem(i)-tense.

D rf-2b $=$ sbj-obj-stem(i)-LY-tense.

paati 'it dissolves' (paati 'dissolve'), kipaatiliya 'he · dissolves it for him' (ki- 3sg obj, -LY rf vi); kepi 'it returns' (kepi- 'return'), kikepiliya 'he returns it for him'

(ki- 3sg obj, -LY rf vi); piŝki 'it drops off' (piŝki 'drop off'), kipiŝkiliya 'he picks it for him' (ki- 3sg obj, -LY rf vi).

An alternate path for the derivation of D rf-2b is one which cites both k intr-2b and D tr-2b as sources, i.e., k intr-2b through D tr-2b to D rf-2b. This would necessitate the application of the transitive transforms zero and 1, and the referential transform.

    k intr-2b   ≚ sbj-stem(i)-tense.

    D tr-2b   ≚ sbj-obj-stem(a)-tense.

    D rf-2b   ≚ sbj-obj-stem(i)-LY-tense.

The development is shown by using the same illustration shown in the paragraph above:

    paati 'it dissolves' (paati 'dissolve'), kipaata 'he dissolves it' (ki- 3sg obj, paata 'dissolve'), kipaatiliya 'he dissolves it for him' (paati 'dissolve', -LY rf vi).

For any D rf v-sytm in this section, its source may be traced to either an intransitive or transitive berb-syntagmeme. If the source is a kernel intransitive verb-syntagmeme, then the path is traced directly to the D rf v-sytm or it is traced through the D tr v-sytm to the D rf v-sytm. In the examples from Nahuat given below the longer path will be traced and illustrated; the shorter path is included within the longer path. Since the object marker is obligatory to the occurrence of any referential verb-syntagmeme, it will appear in the examples but not be identified, i.e., ki- (3sg obj).

Rf-3 signifies a derived referential verb-syntagmeme. Stems which manifest its Base are from sc-3, i.e., CVCa; the voice marker is -LY. K tr-3 is the source for D rf-3; the relationship of partial enation is expressed by the referential transform.

k tr-3 ≐ sbj-obj-stem(a)-tense.

D rf-3 ≐ sbj-obj-stem(i)-LY-tense.

kimaka 'he gives it' (maka 'give'), kimakiliya 'he gives it
to him' (maki 'give', -LY rf vi); kinoca 'he summons him'
(noca 'summon'), kinociliya 'he summons him for him'
(noci 'summon', -LY rf vi). kimawa 'he spreads it' (mawa
'spread'), kimawiliya 'he spreads it for him' (mawi
'spread', -LY rf vi).

Rf-4 signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-4, i.e., CVCi; the
voice marker is -LY. K tr-4 is the source for D rf-4; the
relationship of partial enation is expressed by the referential
transform.

k tr-4 ≐ sbj-obj-stem(i)-tense.

D rf-4 ≐ sbj-obj-stem(i)-LY-tense.

kineki 'he wants it' (neki 'want'), kinekiliya 'he wants it
for him' (-LY rf vi); kitayi 'he drinks it' (tayi 'drink'),
kitayiliya 'he drinks it for him' (-LY rf vi); kitiitani 'he
sends it' (tiitani 'send'), kitiitaniliya 'he sends it for him'
(-LY rf vi).

Rf-5 signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-5, i.e., CVCa; the
voice markers are -W and -LY. The source for D rf-5 is K
intr-5 through D tr-5; the relationship of partial enation is
expressed by the transitive transform zero and the referential
transform.

k intr-5 ≐ sbj-stem(a)-wa-tense.

D tr-5 ≐ sbj-obj-stem(a)-wa-tense.

D rf-5 ≐ sbj-obj-stem(a)-wi-LY-tense.

kanawa 'it's thin' (kana- 'thin', -wa intr vi), kikanawa 'he
thins it' (-wa tr vi), kikanawiliya 'he thins it for him' (-wi
intr vi, -LY rf vi); tomawa 'it's fat' (toma- 'fat', -wa vi),

kitomawa 'he fattens it' (-wa vi), kitomawiliya 'he fattens
it for him' (-wi vi, -LY rf vi); tilawa 'it's dense' (tila-
'dense', -wa vi), kitilawa 'he makes it dense' (-wa vi),
kitilawiliya 'he makes it dense for him' (-wi vi, -LY rf
vi).

    Rf-6 signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-6, i.e., CVCo;
the voice markers are -W and -LY. K intr-6 is the source for
D rf-6; the relationship of partial enation is expressed by the
transitive transform zero and the referential transform.

    k intr-6 $\doteq$ sbj-stem(o)-wa-tense.

    D rf-6 $\doteq$ sbj-obj-stem(o)-wi-LY-tense.

čolowa 'he flees' (čolo- 'flee', -wa vi), kičolowiliya 'he
flees from him' (-wi vi, -LY rf vi); panowa 'it passes by'
(pano- 'pass by', -wa vi), kipanowiliya 'he passes it by
for him' (-wi vi, -LY rf vi); temowa 'he descends' (temo-
'descend', -wa vi), kitemowiliya 'he lowers it for him'
(-wi vi, -LY rf vi).

    Rf-7a signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-7a, i.e., CVCV;
the voice markers are -N and -LY. The source for D rf-7a
is K intr-7a through Dl tr-7a; the relationship of partial
enation is expressed by transitive transform three and the
referential transform.

    k intr- 7a $\doteq$ sbj-stem-ni-tense.

    Dl tr-7a $\doteq$ sbj-obj-stem-na-tense.

    D rf-7a $\doteq$ sbj-obj-stem-ni-LY-tense.

kašani 'it loosens' (kaša- 'loose', -ni intr vi), kikašana
'he loosens it' (-na tr vi), kikašaniliya 'he loosens it for
him' (-ni voice, -LY rf vi); tilini 'it stretches' (tili-
'stretch', -ni intr vi), kitilina 'he stretches it' (-na tr vi),
kitiliniya 'he stretches it for him' (-ni vi, -LY rf vi);

kotoni 'it breaks' (koto- 'break', -ni intr vi), kikotona 'he
breaks it' (-na tr vi), kikotoniliya 'he breaks it for him'
(-ni vi, -LY rf vi).

Rf-8a signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-8a, i.e., CVCi;
the voice markers are -wi and -LY. The source for D rf-8a
is K intr-8a through D tr-8a; the relationship of partial
enation is expressed by the second transitive transform and
the referential transform.

k intr-8a   = sbj-stem(i)-wi-tense.

D tr-8a   = sbj-obj-stem(o)-wa-tense.

D rf-8a   = sbj-obj-stem(o)-wi-LY-tense.

pačiwi 'it covers' (pači- 'cover', -wi intr vi), kipačowa
'he covers it' (-wa tr vi), kipačowiliya 'he covers it for
him' (-wi vi, -LY rf vi); poliwi 'it lacks' (poli- 'lack',
-wi intr vi), kipolowa 'he loses it' (polo- 'lack', -wa tr
vi), kipolowiliya 'he loses it for him' (-wi vi, -LY rf vi);
šehšeliwi 'it separates out' (šeh- rd, šeli- 'separate', -wi
intr vi), kišehšelowa 'he distributes it' (-wa tr vi),
kišehšelowiliya 'he distributes it for him' (-wi vi, -LY rf
vi).

Rf-8b signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-8b, i.e., CVCV
(final vowel cannot be high-front). The voice markers are -wi
and -LY. The source for D rf-8b is K intr-8b through D tr-8b;
the relationship of partial enation is expressed through the
third transitive transform and the referential transform.

k intr-8b   = sbj-stem-wi-tense.

D tr-8b   = sbj-obj-stem-wa-tense.

D rf-8b   = sbj-obj-stem-wi-LY-tense.

toyawi 'it spills' (toya- 'spill', -wi intr vi), kitoyawa 'he
spills it' (-wa tr vi), kitoyawiliya 'he spills it for him'

(-wi vi, -LY rf vi) ehkewi 'it peels off' (ehke- 'peel off'
-wi intr vi), kiehkewa 'he peels it off' (-wa tr vi),
kiehkewiliya 'he peels it off for him' (-wi vi, -LY rf vi);
sonewi 'it swells' (sone- 'swell', -wi intr vi), kisonewa
'he inflates it' (-wa tr vi), kisonewiliya 'he inflates it
for him' (-wi vi, -LY rf vi).

Rf-9 signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-9, i.e., CVC/CVCo;
the voice markers are -W and -LY. The source for D rf-9 is
K intr-9 through D tr-9; the relationship of partial enation is
expressed by the seventh transitive transform and the
referential transform.

teciltik 'it's twisted' (tecil- 'twist', -ti vi, -k pret),
kitecilowa 'he twists it' (tecilo- 'twist', -wa tr vi),
kitecilowiliya 'he twists it for him' (-wi vi, -LY rf vi);
momoštik 'it's crumbled' (mo- rd, moš-'crumble', -ti vi, -k
pret), kimomošowa 'he crumbles it' (-mošo- 'crumble', -wa
tr vi), kimomošowiliya 'he crumbles it for him' (-wi vi,
-LY rf vi); takactik 'it's stretched' (takac- 'stretch',
-ti vi, -k pret), kitakacowa 'he stretches it' (takaco-
'stretch', -wa tr vi), kitakacowiliya 'he stretches it for
him' (-wi vi, -LY rf vi).

Rf-10a signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-10a, i.e., CVCi;
the voice markers are -Y and -LY. The source for D rf-10a
is K intr-10a through D tr-10a; the relationship of partial
enation is expressed by the fourth transitive transform and
the referential transform. Note the morphophonemic rule
1b: -Y + -LY ---→ -LY.

k intr-10a ≟ sbj-stem(i)-tense.

D tr-10a   ≟ sbj-obj-stem(i)-ya-tense.

D rf-10a   ≟ sbj-obj-stem(i)-ya-LY-tense.

kalaki 'he enters' (kalaki 'enter'), kikalakiya 'he inserts
it' (-ya tr vi), kikalakiliya 'he inserts it for him' (-LY rf
vi); tami 'it finishes' (tami 'finish'), kitamiya 'he completes
it' (-ya tr vi), kitamiliya 'he completes it for him' (-LY rf
vi); taawi 'it shines' (taawi 'shine'), kitaawiya 'he
illumines it' (-ya tr vi), kitaawiliya 'he illumines it for
him' (-LY rf vi).

Rf-10b signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-10b, i.e., CVCi;
the voice markers are -Y and -LY. K tr-10b is the source for
D rf-10b; the relationship of partial enation is expressed by
the referential transform.

k tr-10b $\div$ sbj-obj-stem(i)-ya-tense.

D rf-10b $\div$ sbj-obj-stem(i)-ya-LY-tense.

kipečiya 'he flattens it' (peči- 'flat', -ya tr vi), kipečiliya
'he flattens it for him' (-LY rf vi), kitahtaniya 'he requests
it' (tah- rd, tani- 'request', -ya tr vi), kitahtaniliya 'he
requests it for him' (-LY rf vi); kikickiya 'he grabs it'
(kicki- 'grab', -ya tr vi), kikickiliya 'he grabs it for him'
(-LY rf vi).

Rf-11 signifies a derived referential verb-syntagmeme.
Stems which manifest its Base are from sc-11, i.e., noun-
syntagmeme; the voice markers are -wi, -Y, and -LY. K
tr-11 is the source for D rf-11; the relationship of partial
enation is expressed by the referential transform. Note the
morphophonemic rule 1b and its application here.

k tr-11 $\div$ sbj-obj-stem-wi-ya-tense.

D rf-11 $\div$ sbj-obj-stem-wi-ya-LY-tense.

kiteneešwiya 'he whitewashes it' (téneešti 'dust' [noun-
sytm], -wi intr vi, -ya tr vi), kiteneešwiliya 'he
whitewashes it for him' (-wi intr vi, -LY rf vi);
kimaasakawiya 'he hexes him' (maasákati 'devil', -wi intr

vi, -ya tr vi), <u>kimaasakawiliya</u> 'he hexes him for him' (-<u>wi</u> intr vi, -LY rf vi); <u>kimaahpilwiya</u> 'he points it out' (<u>maahpilti</u> 'finger', -<u>wi</u> intr vi, -<u>ya</u> tr vi), <u>kimaahpilwiliya</u> 'he points it out for him' (-<u>wi</u> intr vi, -LY rf vi).

2.64 The subject of the causative verb-syntagmeme is the dramatis persona who causes the action denoted by the verb stem to be performed or experienced. The causal action is mediated through a second or third dramatis persona, i.e., the causative object. The dramatis personae in the causative verb-syntagmeme consist of the subject, the direct object (first object), and the causative object (second object). The manifestation of the third dramatis persona is possible only if the base of the causative verb-syntagmeme is filled by stems from hyperstem-class-A or hyperstem-class-C. If the base of the causative verb-syntagmeme is manifested by stems from hyperstem-class-B, only the subject and the causative object are involved in the predication of the verb. The causative object in the singular number is implicitly marked (see section 2.14 for discussion concerning plural markers). All causative verb-syntagmemes are derived; they are a sub-set of verb-syntagmemes which manifest plus transitivity. The sources for the derived causative verb-syntagmemes are either intransitive or transitive verb-syntagmemes as defined in sections 2.61 and 2.62.

<u>nikčoktiya</u> 'I cause him to cry' (<u>ni</u>- 1sg sbj, <u>k</u>- 3sg obj, <u>čoka</u> 'cry', -<u>tiya</u> cs vi); <u>niktapantiya</u> 'I cause him to break it' (<u>tapa</u>- 'break', -<u>n</u> vi, -<u>tiya</u> cs vi).

The causative voice marker is -TY; it occurs in either of two phonemic realizations: -<u>tiya</u>/-<u>ltiya</u>. The shape -<u>ltiya</u> occurs following stem-final vowel or voice vowel; the shape -<u>tiya</u> occurs following stem-final consonant or the voice marker consonant. The resultant verb-syntagmemes are synonymous

semantically.

> čoka 'he cries' (čoka 'cry'), kičoktiya/kičokaltiya he
> causes him to cry' (ki- 3sg obj, čok-/čoka 'cry', -tiya/
> -ltiya cs vi); čipawa 'it is clean' (čipa- 'clean', -wa intr
> vi), kičipawtiya/ kičipawaltiya 'he causes him to clean it'
> (čipa- 'clean', -w/ -wa vi, -tiya/ -ltiya cs vi).

There is one structuring of the causative verb-syntagmeme because (1) all causative verb-syntagmemes are based on themes, and (2) there is only one marker for the causative voice. There are, however, a variety of co-occurrence patterns with other voice markers. The cs v-sytm represents a set of thirteen allo manifestants and is defined by the reading of the fomula: PerPrViT (see section 2.63 for a detailed explanation of the formula). The reading is the same for both the referential and causative verb-syntagmemes. The manifestants are differentiated by the specific voice marker, by the derivational sources for the causative verb-syntagmemes, and by the stem classes which manifest the bases of the causative verb-syntagmemes. The causative verb-syntagmemes numbers one through four are based on stems; those with numbers five through ten are based on themes. The latter group manifest two or three voice markers. All derived causative verb-syntagmemes are partially enate with their sources. Summary of the derived causative verb-syntagmemes with sources from intransitive or transitive verb-syntagmemes:

k intr-1	D cs-1	=	sbj-obj-stem (a)-TY-tense.	sc-1
k intr-2a	D cs-2a	=	sbj-obj-stem (i)-TY-tense.	sc-1a
D tr-2b	D cs-2b	=	sbj-obj-stem (a)-TY-tense.	sc-2b
k tr-3	D cs-3	=	sbj-obj-stem (a)-TY-tense.	sc-3
k tr-4	D cs-4	=	sbj-obj-stem (i)-TY-tense.	sc-4
D tr-5	D cs-5	=	sbj-obj-stem (a)-wa-TY-tense.	sc-5
k intr-6	D cs-6	=	sbj-obj-stem (o)-wa-TY-tense.	sc-6

D tr- 7a	D cs- 7a	≐	sbj-obj-stem-ni-TY-tense,	sc- 7a
D tr- 8a	D cs- 8a	≐	sbj-obj-stem (o)-wi-TY-tense.	sc- 8a
D tr- 9	D cs- 9	≐	sbj-obj-stem (o)-wa-TY-tense.	sc- 9
D tr- 10a	D cs- 10a	≐	sbj-obj-stem (i)-Y-TY-tense.	sc- 10a
k tr- 10b	D cs-10b	≐	sbj-obj-stem (i)-Y-TY-tense.	sc- 10b

The causative transform is obligatorily preceded by the transitive transform zero (tr tfm-0: add object, if none present). The causative transform is: add appropriate allomorph of -TY to voice marker; if no voice marker is present, add to stem. Since the object is required for any occurrence of a causative verb-syntagmeme, the form ki- (3sg obj) will appear in all examples from Nahuat but will not be identified. The cover symbol -TY will be used in the explanations of Nahuat examples for the allomorphs of the causative voice -tiya/ -ltiya.

Cs-1 signifies a derived causative verb-syntagmeme. Stems which manifest its Base are from sc-1, i.e., CVCa; the voice marker is -TY. K intr-1 is the source for D cs-1; the relationship of partial enation is expressed by the causative transform.

k intr-1 ≐ sbj-stem(a)-tense.

D cs-1 ≐ sbj-obj-stem(a)-TY-tense.

pewa 'he begins' (pewa 'begin'), kipewtiya/kipewaltiya 'he causes it to begin' (pew/pewa- 'begin', -TY cs vi); kisa 'he exits' (kisa 'exit'). kikištiya/kikisaltiya 'he causes it to exit' (kiš/kisa-'exit', -TY cs vi); šoota 'it burns' (šoota 'burn'); kišoottiya/kišootaltiya 'he causes it to burn' (šoot-/šoota 'burn', -TY cs vi).
The form kikisaltiya 'he causes it to exit' is rare; it was obtained by elicitation from an informant. It is considered not acceptable.

Cs-2a signifies a derived causative verb-syntagmeme. Stems which manifest its Base are from sc-2a, i.e., CVCi;

the voice marker is -TY. K intr- 2a is the source for D cs-2a;
the relationship of partial enation is expressed by the causa-
tive transform.

k intr- 2a = sbj-stem(i)-tense.

D cs- 2a = sbj-obj-stem(i)-TY-tense.

čiči 'he sucks' (čiči 'suck'), kičičtiya/kičičiltiya 'he
causes him to suck (suckle him)', (čič- /čiči 'suck', -TY
cs vi); tisi 'she grinds' (tisi 'grind'), kitištiya/kitisiltiya
'he causes her to grind' (tiš-/tisi 'grind', -TY cs vi); nemi
'he walks' (nemi 'walk'), kinehnentiya/kinehnemiltiya 'he
causes him to walk' (neh rd nen-/nemi 'walk', -TY cs vi);
note the evidence for the morphophonemic rule 4 in the
stem allomorphs for 'walk'.

Cs- 2b signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 2b, i.e., CVCi;
the voice marker is -TY.: The source for D cs- 2b is K intr-2b
through D tr- 2b; the relationship of partial enation is ex-
pressed through the first transitive transform and the causative
transform (see section 2. 62 for transitive transforms).

k intr- 2b = sbj-stem(i)-tense.

D tr- 2b = sbj-obj-stem(a)-tense.

D cs- 2b = sbj-obj-stem(a)-TY-tense.

paati 'it dissolves' (paati 'dissolve'), kipaata 'he dissolves
it' (paata 'dissolve'), kipaattiya/kipaataltiya 'he causes
him to dissolve it' (paat-/paata 'dissolve', -TY cs vi);
wiwiti 'it comes out' (wii- rd, wit 'come out'), kiwiiwita
'he pulls it out' (wita 'come out'), kiwiiwittiya/
kiwiiwitaltiya 'he causes him to pull it out' (wit-/wita 'come
out', -TY cs vi); tohtomi it unties' (toh- rd, tomi 'untie'),
kitohtoma 'he unties it' (toma 'untie'), kitohtontiya/
kitohtomaltiya 'he causes him to untie it' (ton-/toma 'untie',
-TY cs vi).

Cs- 3 signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 3, i.e., CVCa;
the voice marker is -TY. K tr- 3 is the source for D cs- 3;
the relationship of partial enation is expressed by the
causative transform.

k tr- 3 $\doteq$ sbj-obj-stem(a)-tense.

D cs- 3 $\doteq$ sbj-obj-stem(a)-TY-tense.

kimaka 'he gives it' (maka 'give'), kimaktiya/kimakaltiya
'he causes him to give it' (mak-/maka 'give', -TY cs vi);
kinoca 'he summons him' (noca 'summon'), kinoctiya/
kinocaltiya 'he causes him to summon him' (noc-/noca
'summon', -TY cs vi); kimawa 'he spreads it' (mawa
spread'), kimawtiya/kimawaltiya 'he causes him to spread
it' (maw- /mawa 'spread', -TY cs vi).

Cs- 4 signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 4, i.e., CVCi;
the voice marker is -TY. K tr- 4 is the source for D cs- 4;
the relationship of partial enation is expressed by the
causative transform.

k tr- 4 $\doteq$ sbj-obj-stem(i)- tense.

D cs- 4 $\doteq$ sbj-obj-stem(i)- TY- tense.

kineki 'he wants it' (neki 'want'), kinektiya/kinekiltiya 'he
causes him to want it' (nek-/neki 'want', -TY cs vi);
kiteki 'he cuts it' (teki 'cut'), kitektiya/kitekiltiya 'he
causes him to cut it' (tek-/teki 'cut', -TY cs vi); kitayi
'he drinks it' (tayi 'drink'), kitaštiya/kitayiltiya 'he
causes him to drink it' (taš- /tayi 'drink', -TY cv vi);
note the evidence for morphophonemic rule lf in the stem
allomorphs for 'drink'.

Cs- 5 signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 5, i.e., CVCa;
the voice markers are -W and -TY. The source for D cs- 5

is K intr- 5 through D tr- 5;   the relationship of partial
enation is expressed through the transitive transform zero
and the causative transform (see section 2.62 for transitive
transforms).

k intr- 5 = sbj-stem(a)-wa-tense.

D tr- 5   = sbj-obj-stem(a)-wa-tense.

D cs- 5   = sbj-obj-stem(a)-wa/w-TY-tense.

kanawa 'it's thin' (kana- 'thin', -wa intr vi), kikanawa 'he
thins it', kikanawtiya/kikanawaltiya 'he causes him to thin
it' (kana- 'thin', -w/-wa vi, -TY cs vi); tomawa 'it's fat'
(toma- 'fat', -wa intr vi), kitomawa 'he fattens it',
kitomawtiya/ kitomawaltiya 'he causes him to fatten it'
(-w/-wa vi, -TY cs vi); tilawa 'it's dense' (tila- 'dense',
-wa intr vi), kitilawa 'he makes it dense', kitilawtiya/
kitilawaltiya 'he causes him to make it dense' (-w/-wa vi,
-TY cs vi).

Cs- 6 signifies a derived causative verb-syntagmeme. Stems
which manifest its Base are from sc- 6; i.e., CVCo; the voice
markers are -W and -TY. K intr- 6 is the source for D cs- 6;
the relationship of partial enation is expressed by the causative
transform.

k intr- 6 = sbj-stem(o)-wa-tense.

D cs- 6   = sbj-obj-stem(o)-w/-wa-TY-tense.

čolowa 'he flees' (čolo- 'flee', -wa intr vi), kičolowtiya/
kičololtiya 'he causes him to flee' (-w vi, -TY cs vi);
panowa 'it passes by' (pano- 'pass by', -wa intr vi),
kipanowtiya/ kipanoltiya 'he causes it to pass by' (-w vi,
-TY cs vi); tekpowa 'he replants' (tekpo- 'replant', -wa
intr vi), kitekpowtiya/ kitekpowaltiya 'he causes him to
replant' (-w/-wa vi, -TY cs vi);

Note the evidence for morphophonemic rules 2b and 2c.

There are three possible patterns for the causative voice

with this stem class: the voice marker -W occurs as -wa,
as -w, or as ∅. It is not possible to predict which
pattern will occur with which particular stem from sc- 6.

Cs- 7a signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 7a, i.e., CVCV;
the voice markers are -N and -TY. The source for D cs- 7a
is K intr- 7a through D tr- 7a; the relationship of partial
enation is expressed by the third transitive transform and the
causative transform (see section 2.64 for transitive transforms).

k intr- 7a ⁼ sbj-stem-ni-tense.

D tr- 7a   ⁼ sbj-obj-stem-na-tense.

D cs- 7a ⁼   sbj-obj-stem-na-TY-tense.

kašani 'it loosens' (kaša- 'loose', -ni intr vi), kikašana
'he loosens it' (-na tr vi), kikašantiya/kikašanaltiya 'he
causes him to loosen it' (-n/-na vi, -TY cs vi); tilini
'it stretches' (tili--ni intr vi), kitilina 'he stretches it'
(-na tr vi), kitilintiya/ kitilinaltiya 'he causes him to
stretch it' (-n/-na vi, -TY cs vi); kotoni 'it breaks'
(koto- 'break', -ni intr vi), kikotona 'he breaks it' (-na tr
vi), kikotontiya/kikotonaltiya 'he causes him to break it'
(-n/-na vi, -TY cs vi).

Cs- 8a signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 8a, i.e., CVCi;
the voice markers are -wi and -TY. The source for D cs- 8a
is K intr- 8a through D tr- 8a; the relationship of partial
enation is expressed by the transitive transforms two and
three, and the causative transform.

k intr- 8a ⁼ sbj-stem(i)-wi-tense.

D tr- 8a   ⁼ sbj-obj-stem(o)-wa-tense.

D cs- 8a ⁼ sbj-obj-stem(o)-w/wa-TY-tense.

pačiwi 'it covers' (pači- 'cover, -wi intr vi), kipačowa 'he
covers it' (pačo- 'cover', -wa tr vi), kipačowtiya/

kipačoltiya 'he causes him to cover it' (-w vi, -TY cs vi);
poliwi 'it lacks' (poli- 'lack', -wi intr vi), kipolowa 'he
loses it' (polo- lack' -wa tr vi), kipolowtiya/kipololtiya 'he
causes him to lose it' (-w vi, -TY cs vi); yowaaliwi 'it
circles' (yowaali 'circle', -wi intr vi), kiyowaalowa 'he
circles it' (yowaalo- 'circle', -wa tr vi), kiyowalowtiya/
kiyowaaloltiya 'he causes him to circle it' (-w vi, -TY cs
vi).

Cs- 8b signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 8b, i.e., CVCV;
the voice markers are -wi and -TY. The source for D cs- 8b
is K intr- 8b through D tr- 8b; the relationship of partial
enation is expressed by the third transitive transform and the
causative transform (see section 2.62 for the transitive
transforms). The morphophonemic rules for the reduction of
-W (-wa) are found in section 2.63.

toyawi 'it spills' (toya- 'spill', -wi intr vi), kitoyawa 'he
spills it' (-wa tr vi), kitoyawtiya/kitoyawaltiya 'he causes
him to spill it' (-w/-wa vi, -TY cs vi); sonewi 'it swells'
(sone- 'swell', -wi intr vi), kisonewa 'he inflates it (-wa
tr vi), kisonewtiya/kisonewaltiya 'he causes him to
inflate it' (-w/-wa vi, -TY cs vi); tapowi 'it opens'
(tapo- 'open', -wi intr vi), kitapowa 'he opens it' (-wa tr
vi), kitapowtiya/kitapowaltiya 'he causes him to open it'
(-w/-wa vi, -TY cs vi).

Cs- 9 signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc- 9, i.e., CVC/
CVCo; the voice markers are -T (intr), -W, and -TY. The
source for D cs- 9 is K intr- 9 through D tr- 9; the relation-
ship of partial enation is expressed by transitive transform
seven and the causative transform.

k intr- 9 ≟ sbj-stem-ti-tense.

D tr- 9   ≟ sbj-obj-stem(o)-wa-tense.

D cs- 9   ≟ sbj-obj-stem(o)-w/wa-TY-tense.

nepantik 'it's stacked' (nepan- 'stack', -ti vi, -k pret),

kenepanowa 'he stacks it' (nepano- 'stack', -wa tr vi),

kinepanowtiya/kinepanoltiya 'he causes him to stack it'

(-w vi, -TY cs vi); mowistik 'it's sacred' (mowis-

'respect', -ti vi, -k pret), kimowisowa 'he enjoys it'

(mowiso- 'respect', -wa tr vi), kimowisowtiya/

kimowisowaltiya 'he causes him to enjoy it' (-w vi, -TY cs

vi); čačantik 'it's hairy' (ča- rd, čan 'hairy', -ti vi, -k

pret), kičačanowa 'he makes it hairy' (čano- 'hairy', -wa

tr vi), kičačanowtiya/kičačanowaltiya 'he causes him to

make it hairy' (-w/-wa vi, -TY cs vi).

    Cs- 10a signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc-10a, i.e., CVCi;
the voice markers are -Y and -TY. The source for D cs- 10a
is K intr- 10a through D tr- 10a; the relationship of partial
enation is expressed through the fourth transitive transform
and the causative transform (see section 2.62 for transitive
transforms).

    k intr- 10a   ≟ sbj-stem(i)-tense.

    D tr- 10a   ≟ sbj-obj-stem(i)-ya-tense.

    D cs- 10a   ≟ sbj-obj-stem(i)-ya-TY-tense.

See morphophonemic rules 1d and 1e, section 2.63 for the
reduction or apocopation of -Y.

    kalaki 'he enters' (kalaki 'enter'), kikalakiya 'he inserts

it' (-ya tr vi), kikalaktiya/kikalakiltiya 'he causes him to

insert it' (kalak-/kalaki 'insert', -TY cv vi);

tami 'he finishes' (tami 'finish'), kitamiya 'he completes

it' (-ya tr vi), kitantiya/kitamiltiya 'he causes him to

complete it' (tan-/tami 'finish', -TY cs vi); tawi 'it

shines' (tawi 'shine') kitawiya 'he illumines it' (-ya tr vi),

kitawtiya/kitawiltiya 'he causes him to illumine it' (taw-/
tawi 'shine', -TY cs vi).

Cs-10b signifies a derived causative verb-syntagmeme.
Stems which manifest its Base are from sc-10b, i.e., CVCi;
the voice markers are -Y and -TY. K tr-10b is the source for
D cs-10b; the relationship of partial enation is expressed by
the causative transform. The morphophonemic rules 1d and 1e
are also in effect here.

k tr-10b ꞊ sbj-obj-stem(i)-ya-tense.

D cs-10b ꞊ sbj-obj-stem(i)-ya-TY-tense.

kipečiya 'he flattens it' (peči- 'flat', -ya tr vi), kipečtiya/
kipečiltiya 'he causes him to flatten it' (peč-/peči 'flat',
-TY cs vi); kitahtaniya 'he requests it' (tah- rd, tani
'request', -ya tr vi), kitahtantiya/kitahtaniltiya 'he causes
him to request it' (tan-/tani 'request', -TY cs vi);
kinokiya 'he empties it' (noki 'empty', -ya tr vi),
kinoktiya/kinokiltiya 'he causes him to empty it' (nok-/noki
'empty', -TY cs vi).

2.65 The subject of the causative-referential verb-
syntagmeme is the dramatis persona who (1) causes the action
denoted by the verb stem to be performed or experienced and
(2) refers, directs, or applies that action to one of the objects
of the verb-syntagmeme. The dramatis personae in the
causative-referential verb-syntagmeme consist of the subject,
the direct object (first object), the causative object (second
object), and the referential object (third object). The mani-
festation of four dramatis personae is possible only if the base
of the causative-referential verb-syntagmeme is manifested by
stems from hyperstem-class-B or hyperstem-class-C. If the
base of the causative-referential verb-syntagmeme is manifested
by stems from hyper-class A, then only the subject and two
objects are involved, i.e., the causative and referential

objects. The causative and referential objects are implicitly marked in the causative-referential verb-syntagmeme. All the causative-referential verb-syntagmemes are derived; they are a sub-set of verb-syntagmemes which manifest plus transitivity. The sources for the derived causative-referential verb-syntagmemes are either intransitive or transitive verb-syntagmemes as defined in section 2.61 and 2.62.

nikčoktiliya 'I cause him to cry for him' (ni- 1sg sbj, k- 3sg obj, čok- 'cry', -tiliya cs-rf vi); niktapantiliya 'I cause him to break it for him' (ni- 1sg sbj, k- 3sg obj, tapa- 'break', -n vi, -tiliya cs-rf vi).

There is one structuring of the causative-referential verb-syntagmeme because (1) all causative-referential verb-syntagmemes are based on themes; and (2) there is only one marker for the causative-referential voice. There are, however, a variety of co-occurrence patterns with other voice markers. The causative-referential verb-syntagmeme represents a set of thirteen allo manifestants and is defined by the reading of the formula; PerPrViT (see section 2.63 for detailed explanation of the formula). The manifestants are differentiated by the specific voice markers, by the derivational sources for the causative-referential verb-syntagmeme, and by the stem classes which manifest the bases of the causative-referential verb-syntagmemes. The causative-referential verb-syntagmemes numbers one through four are based on stems; those with numbers five through ten are based on themes. The latter group manifest two or three voice markers. All derived causative-referential verb-syntagmemes are partially enate with their source verb-syntagmemes.

The causative-referential voice marker is a combination of the causative voice marker and the referential voice marker. Therefore, the causative-referential voice marker has two

allomorphs; the distribution is the same as that of the
causative voice marker, i. e., the shape -tiliya occurs follow-
ing stem-final consonant or voice marker consonant, the
shape -ltiliya occurs following stem-final vowel or the voice
vowel. The reduction phenomena of the phonemic sequence
/-owa/ and /-iya/ before the causative-referential voice mark-
er is the same as described in section 2.64.

There are several alternative paths for the derivation of
the causative-referential verb-syntagmeme:

1. Derive it from the intransitive or transitive verb-
   syntagmemes, using -TLY as the voice marker.

2. Derive it from the causative verb-syntagmeme using
   -LY as the voice marker.

3. Derive it from the referential verb-syntagmeme using
   -L as the voice marker.

The third alternative is rejected because (1) the referen-
tial marker -LY has but one phonemic representation in the
referential verb-syntagmeme system. To add the phonemic
representation of -LY as -L is to add an allomorphic shape to
the inventory. Then, -LY would occur with the referential
verb-syntagmemes and -L with the causative-referential verb-
syntagmemes. The shape -L would be an infix which would
occur between the -T and -Y. (2) To consider -L as the voice
marker would mean adding infixal morphemes to account for the
structure of Nahuat; there are no infixal morphemes used to
describe any part of the word structure of Nahuat.

The second alternative is rejected because the suffixation
of -LY to the causative-referential verb-syntagmeme requires a
rule to delete the -Y of -TY before suffixing -LY.

The first alternate, therefore, is chosen; the following
procedure is used in describing the causative-referential verb-
syntagmemes: first state the rules necessary to prepare the

stems for the causative-referential voice marker;   then add
the voice marker.

The causative-referential transform is similar to the
causative transform;   only the voice markers are different.
The causative-referential transform is: add appropriate
allomorph of -TLY to the voice marker;   if no voice marker is
present, add it to stem.   This transform is obligatorily pre-
ceded by the transitive transform zero, i.e., add object if no
object is present.

A summary of all derived causative-referential verb-
syntagmemes with their sources from either intransitive or
transitive verb-syntagmemes:

k intr-1	D cs-rf-1	=	sbj-obj-stem (a)-TLY-tense	sc-1
k intr-2a	D cs-rf-2a	=	sbj-obj-stem (i)-TLY-tense	sc-2a
D tr-2b	D cs-rf-2b	=	sbj-obj-stem (a)-TLY-tense	sc-2b
k tr-3	D cs-rf-3	=	sbj-obj-stem (a)-TLY-tense	sc-3
k tr-4	D cs-rf-4	=	sbj-obj-stem (i)-TLY-tense	sc-4
D tr-5	D cs-rf-5	=	sbj-obj-stem (a)- W-TLY-tense	sc-5
k intr-6	D cs-rf-6	=	sbj-obj-stem (o)-W-TLY-tense	sc-6
D tr-7a	D cs-rf-7a	=	sbj-obj-stem-N-TLY-tense	sc-7a
D tr-8a	D cs-rf-8a	=	sbj-obj-stem (o)-W-TLY-tense	sc-8a
D tr-8b	D cs-rf-8b	=	sbj-obj-stem-W-TLY-tense	sc-8b
D tr-9	D cs-rf-9	=	sbj-obj-stem (o)-W-TLY-tense	sc-9
D tr-10a	D cs-rf-10a	=	sbj-obj-stem (i)-Y-TLY-tense	sc-10a
k tr-10b	D cs-rf-10b	=	sbj-obj-stem (i)-Y-TLY-tense	sc-11

Since the object is required for any occurrence of a
causative-referential verb-syntagmeme, the form <u>ki-</u> (3sg obj)
will appear in all examples from Nahuat but will not be identi-
fied.   The cover symbol -TLY will be used in the explanations
of Nahuat forms to identify the allomorphs <u>-tiliya</u>/<u>-ltiliya</u>.

Cs-rf-1 signifies a derived causative-referential verb-
syntagmeme.   Stems which manifest its Base are from sc-1,
i.e., CVCa;   the voice marker is -TLY.   K intr-1 is the

source for D cs-rf-1; the relationship of partial enation is
expressed by transitive transform zero and the causative-
referential transform.

k intr- 1 ≟ sbj-stem(a)- tense.

D cs-rf- 1 ≟ sbj-obj-stem(a)-TLY- tense.

šoota 'it burns' (šoota 'burn'), kišoottiliya/kišootaltiliya
'he causes it to burn for him' (šoot-/šoota 'burn', -TLY cs-
rf vi); meya 'it surges' (meya 'surge'), kimeštiliya/
kimeyaltiliya 'he causes it to surge for him' (meš-/meya
'surge', -TLY cs-rf vi); čoka 'he cries' (čoka 'cry'),
kičoktiliya/kičokaltiliya 'he causes him to cry for him'
(čok-/čoka 'cry', -TLY cs-rf vi).

Cs-rf- 2a signifies a derived causative-referential verb-
syntagmeme. Stems which manifest its Base are from sc- 2a,
i.e., CVCi; the voice marker is -TLY. K intr- 2a is the
source for D cs-rf- 2a; the relationship of partial enation is
expressed by the transitive transform zero and the causative-
referential transform.

k intr- 2a ≟ sbj-stem(i)- tense.

D cs-rf- 2a ≟ sbj-obj-stem(i)-TLY-tense.

čiiči 'he nurses' (čiiči 'nurse'), kičiictiliya/kičiičiltiliya
'he causes him to nurse for him' (čiič/čiiči 'nurse', -TLY
cs-rf vi); posteki 'it breaks' (posteki 'break'),
kipostektiliya/kipostekiltiliya 'he causes it to break for
him' (postek-/posteki 'break'. -TLY cs-rf vi); weci 'he
falls down' (weci 'fall down'), kiwectiliya/kiweciltiliya
'he causes it to fall down for him' (wec-/weci 'fall down',
-TLY cs-rf vi).

Cs-rf- 2b signifies a derived causative-referential verb-
syntagmeme. Stems which manifest its Base are from sc- 2b,
i.e., CVCi; the voice marker is -TLY. The source for cs-
rf-2b is K intr-2b through D tr-2b; the relationship of partial

enation is expressed through transitive transform one and the causative-referential transform (see section 2.6 for transitive transforms).

k intr-2b ⸗ sbj-stem(i)-tense.

D tr-2b ⸗ sbj-obj-stem(a)-tense.

D cs-rf-2b ⸗ sbj-obj-stem(a)-TLY-tense.

paati 'it dissolves' (paati 'dissolve'), kipaattiliya/ kipaataltiliya 'he causes him to dissolve it for him' (paat-/paata 'dissolve', -TLY cs-rf vi); caqi 'it closes' (caqi 'close'), kicaktiliya/kicaqaltiliya 'he causes him to close it for him' (cak-/caqi 'close', -YLT cs-rf vi); kepi 'it returns' (kepi 'return'), kikeptiliya/ kikepaltiliya 'he causes him to return it for him' (kep-/kepa 'return', -TLY cs-rf vi).

Cs-rf-3 signifies a derived causative-referential verb-syntagmeme. Stems which manifest its Base are from sc-3, i.e., CVCa; the voice marker is -TLY. K tr-3 is the source for D cs-rf-3; the relationship of partial enation is expressed by the causative-referential transform.

k tr-3 ⸗ sbj-obj-stem(a)-tense.

D cs-rf-3 ⸗ sbj-obj-stem(a)-TLY-tense.

kimaka 'he gives it' (maka 'give'), kimaktiliya/ kimakaltiliya 'he causes him to give it to him' (mak-/maka 'give', -TLY cs-rf vi); kitaakewa 'he hires him' (taakewa 'hire'), kitaakewtiliya/ kitaakewaltiliya 'he causes him to hire him for him' (taakew-/ taakewa 'hire', -YLY cs-rf vi); kipayana 'she grinds it' (payana 'grind'), kipayantiliya/ kipayanaltiliya 'she causes her to grind it for him' (payan-/payana 'grind', -TLY cs-rf vi).

Cs-rf-4 signifies a derived causative-referential verb-syntagmeme. Stems which manifest its Base are from sc-4, i.e., CVCi; the voice marker is -TLY. K tr-4 is the source

for D cs-rf- 4; the relationship of partial enation is expressed
by the causative-referential transform.

k tr- 4   =   sbj-obj-stem(i)- tense.

D cs-rf- 4 = sbj-obj-stem(i)-TLY- tense.

kikaki 'he hears it' (kaki 'hear'), kikaktiliya/kikakiltiliya
'he causes him to hear it for him' (kak-/kaki 'hear, -TLY
cs-rf vi); kitiitani 'he sends it' (tiitani 'send'),
kitiitantiliya/kitiitaniltiliya 'he causes him to send it for
him' (tiitan-/tiitani (send', -TLY cs-rf vi); kipiiki 'he
wraps it' (piiki 'wrap'), kipiiktiliya/kipiikiltiliya 'he
causes him to wrap it for him' (piik-/piiki 'wrap', -TLY
cs-rf vi).

Cs-rf- 5 signifies a derived causative-referential verb-
syntagmeme. Stems which manifest its Base are from sc- 5,
i.e., CVCa; the voice markers are -W and -TLY. The
source of D cs-rf- 5 is k intr- 5 through D tr- 5; the relation-
ship of partial enation is expressed through the transitive
transform zero and the causative-referential transform.

k intr- 5   =   sbj-stem(a)-wa-tense.

D tr- 5   =   sbj-obj-stem(a)-wa-tense.

D cs-rf- 5 =   sbj-obj-stem(a)-w/wa-TLY- tense.

čipawa 'it's clean' (čipa- 'clean', -wa intr vi), kičipawa
'he cleans it', kičipawtiliya/kičipawaltiliya 'he causes him
to clean it for him' (čipa- 'clean', -w/-wa vi, -TLY cs rf
vi); patawa 'it's wide' (pata- 'wide', -wa intr vi),
kipatawa 'he widens it', kipatawtiliya/kipatawaltiliya 'he
causes him to widen it for him' (pata- 'wide', -w/-wa vi,
-TLY cs-rf vi); melawa 'it's straight' (mela- 'straight',
-wa intr vi), kimelawa 'he straightens it', kimelawtiliya/
kimelawaltiliya 'he causes him to straighten it for him'
(mela- 'straight', -w/-wa vi, -TLY cs-rf vi).

Cs-rf- 6 signifies a derived causative-referential verb-

syntagmeme. Stems which manifest its Base are from sc- 6, CVCo; the voice markers are -W and -TLY. The source for D cs-rf- 6 is k intr- 6; the relationship of partial enation is expressed by the causative referential transform.

k intr- 6 $\doteq$ sbj-stem(o)-wa- tense.

D cs-rf- 6 $\doteq$ sbj-obj-stem(o)-w/wa- TLY- tense.

čihkolowa 'it's crooked' (čihkolo- 'crooked', -wa intr vi), kičihkolowtiliya/kičihkolowaltiliya 'he causes it to be crooked for him' (čihkolo- 'crooked', -w/-wa vi, -TLY cs-rf vi); tehkowa 'he ascends' (tehko- 'ascend'), kitehkowtiliya/kitehkowaltiliya 'he causes him to ascend for him' (tehko- 'ascend', -w/-wa vi, -TLY cs-rf vi); qešanowa 'it folds up' (qešano 'fold up', -wa intr vi). kiqešanowtiliya/kiqešanowaltiliya 'he causes it to fold up for him' (qešano- 'fold up', -w/-wa vi, -TLY cs-rf vi).

Cs-rf- 7a signifies a derived causative-referential verb-syntagmeme. Stems which manifest its Base are from sc- 7a, i.e., CVCV; the voice markers are -N and -TLY. The source for D cs-rf- 7a is k intr- 7a through D tr- 7a; the relationship of partial enation is expressed through transitive transform three and the causative-referential transform (see section 2.62 for transitive transforms).

k intr- 7a $\doteq$ sbj-stem-ni-tense.

D tr- 7a $\doteq$ sbj-obj-stem-na-tense.

D cs-rf- 7a $\doteq$ sbj-obj-stem-n/na-TLY-tense.

tapani 'it breaks' (tapa- 'break', -ni intr vi), kitapana 'he breaks it' (tapa- 'break', -na tr vi), kitapantiliya/kitapanaltiliya 'he causes him to break it for him' (tapa- 'break', -n/-na tr vi, -TLY cs-rf vi); cilini 'it tinkles' (cili- 'tinkle', -ni intr vi), kicilina 'he tinkles it' (cili- 'tinkle', -ni intr vi), kicilintiliya/kicilinaltiliya 'he causes him to tinkle it for him' (cili- 'tinkle', -n/-na tr vi, -TLY

cs-rf vi); coyoni 'it fries' (coyo- 'fry', -ni intr vi),

kicoyona 'he fries it' (coyo- 'fry', -na tr vi), kicoyontiliya/
kicoyonaltiliya 'he causes him to fry it for him' (coyo- 'fry',
-n/-na tr vi, -TLY cs-rf vi).

Cs-rf- 8a signifies a derived causative-referential verb-
syntagmeme. Stems which manifest its Base are from sc- 8a,
i.e., CVCi; the voice markers are -W and -TLY. The source
for D cs-rf- 8a is K intr- 8a through D tr- 8a; the relationship
of partial enation is expressed through transitive transforms
two, three, and zero, and the causative-referential transform
(see section 2.62 for transitive transforms).

k intr- 8a   =   sbj-stem(i)-wi- tense.

D tr- 8a   =   sbj-obj-stem(o)-wa-tense.

D cs-rf- 8a   =   sbj-obj-stem(o)-w/wa- TLY- tense.

aawiliwi 'it wastes away' (aawili- 'waste away', -wi intr
vi), kiaawilowa 'he wastes it' (aawilo-'waste away', -wa tr
vi), kiaawilowtiliya/kiaawilowaltiliya 'he causes him to
waste it for him' (aawilo- 'waste away', -w/-wa tr vi, -TLY
cs-rf vi).

saliwi 'it straightens out' (sali- 'straighten out', -wi intr
vi), kisalowa 'he straightens it out' (salo- 'straighten out',
-wa tr vi), kisalowtiliya/kisalowaltiliya 'he causes him to
straighten it out for him' (salo- 'straighten out', -w/-wa tr
vi, -TLY cs-rf vi); pehpečiwi 'it sticks' (peh- rd, peǎi-
'stick', -wi intr vi), kipehpečowa 'he glues it' (peh- rd,
pečo- 'stick', -wa tr vi), kipehpečowtiliya/kipehpečowalti-
liya 'he causes him to glue it for him', (peh- rd, pečo-
'stick', -w/-wa tr vi, -TLY cs-rf vi).

Cs-rf- 8b signifies a derived causative-referential verb-
syntagmeme. Stems which manifest its Base are from sc- 8b,
i.e., CVCV (final vowel cannot be high-front). The voice
markers are -W/-wi and -TLY. The source for D cs-rf- 8b is

K intr- 8b through D tr- 8b.   The relationship of partial enation
is expressed through the transitive transform three and the
causative referential transform.

k intr- 8b $=$ sbj-stem-wi-tense.

D tr- 8b $=$ sbj-obj-stem-wa-tense.

D cs-rf- 8b $=$ sbj-obj-stem-w/wa-TLY-tense.

toyawi 'it spills' (toya- 'spill', -wi intr vi), kitoyawa 'he
spills it' (toya- 'spill', -wa tr vi), kitoyawtiliya/
kitoyawaltiliya 'he causes him to spill it for him' (toya-
'spill', -w/-wa tr vi, -TLY cs-rf vi);   sonewi 'it inflates'
(sone- 'inflate', -wi intr vi), kisonewa 'he inflates it'
(sone- 'inflate', -wa tr vi), kisonewtiliya/kisonewaltiliya
'he causes him to inflate it for him' (sone-'inflate', -w/-wa
tr vi, -TLY cs-rf vi);   tepewi 'it sprinkles' (tepe-
'sprinkle' -wi intr vi), kitepewa 'he sprinkles it' (tepe-
'sprinkle', -wa tr vi), kitepewtiliya/kitepewaltiliya 'he
causes him to sprinkle it for him' (tepe- 'sprinkle', -w/-wa
tr vi, -TLY cs-rf vi).

Cs-rf- 9 signifies a derived causative-referential verb-
syntagmeme.   Stems which manifest its Base are from sc- 9,
i.e., CVC/CVCo; the voice markers are -T (intr), -W, and
-TLY.   The source for D cs-rf- 9 is k intr- 9 through D tr- 9;
the relationship of partial enation is expressed through transi-
tive transform seven and the causative-referential transform
(see section 2.62 for transitive transforms).

k intr- 9 $=$ sbj-stem-ti-tense.

D tr- 9 $=$ sbj-obj-stem(o)-wa-tense.

D cs-rf- 9 $=$ sbj-obj-stem(o)-wa-TLY-tense.

neqiltik 'it's twisted' (neqil- 'twist', -ti intr vi, -k pret);
kineqilowa 'he twists it' (neqilo- 'twist', -wa tr vi),
kineqilowtiliya/kineqilowaltiliya 'he causes him to twist
it for him' (neqilo- 'twist', -w/-wa tr vi, -TLY cs-rf vi);

malakactik 'it's spun' (malakac- 'spin', -ti intr vi, -k pret),
kimalakačowa 'he spins it' (malakačo- 'spin', -wa tr vi),
kimalakačowtiliya/kimalakačowaltiliya 'he causes him to
spin it for him' (malakačo- 'spin', -w/-wa tr vi, -TLY
cs-rf vi); yekapictik 'it's pointed' (yekapic- 'pointed',
-ti intr vi, -k pret), kiyekapicowa 'he shapes it to a point'
(yekapico- 'pointed', -wa tr vi), kiyekapicowtiliya/
kiyekapicowaltiliya 'he causes him to shape it to a point
for him' (yekapico- 'shape', -w/-wa tr vi, -TLY cs-rf vi).

Cs-rf-10a signifies a derived causative-referential verb-
syntagmeme. Stems which manifest its Base are from sc-10a;
i.e., CVCi; the voice markers are -Y and -TLY. See
morphophonemic rule-1c for loss of -Y before -TLY. K
intr-10a is the source for D cs-rf-10a through D tr-10a; the
relationship of partial enation is expressed by the transitive
transforms zero and four and the causative-referential trans-
form.

k intr-10a   =   sbj-stem(i)-tense.
D tr-10a   =   sbj-obj-stem(i)-Y-tense.
D cs-rf-10a   =   sbj-obj-stem(i)-Y-TLY-tense.

aati 'it dilutes' (aati 'dilute'), kiaatiya 'he dilutes it' (aati-
'dilute', -ya tr vi), kiaatitiliya/kiaatiltiliya 'he causes him
to dilute it for him' (aati- 'dilute', -TLY cs-rf vi); tami
'he finishes' (tami 'finish'), kitamiya 'he finishes it' (tami
'finish', -ya tr vi), kitantiliya/kitamiltiliya 'he causes him
to finish it for him' (tan-/tami 'finish', -TLY cs-rf vi);
weeyi 'it's large' (weeyi 'large'), kiweeyiya 'he enlarges
it' (weeyi 'large', -ya tr vi), kiweeyištiliya/kiweeyiltiliya
'he causes him to enlarge it for him' (weeyi 'large', -š see
mphphm rule-1c for replacement of -ya by -š, -TLY cs-rf
vi).

Cs-rf-10b signifies a derived causative-referential verb-

syntagmeme.   Stems which manifest its Base are from sc-10b,
i.e., CVCi;   the voice markers are -Y and -TLY.   See
morphophonemic rule-1c for loss of -Y before -TLY.   K intr-
10b is the source for D cs-rf-10b;   the relationship of partial
enation is expressed through the causative-referential trans-
form.

  k tr-10b ≟ sbj-obj-stem(i)-ya-tense.

  D cs-rf-10b ≟ sbj-obj-stem(i)-Y-TLY-tense.

  kinookiya 'he empties it' (nooki 'empty', -ya tr vi),
kinooktiliya/kinookiltiliya 'he causes him to empty it for
him' (nooki/nook- 'empty', -TLY cs-rf vi);   kiseeliya 'he
receives it' (seeli 'receive', -ya tr vi), kiseeltiliya/
kiseeliltiliya 'he causes him to receive it for him' (seel-/
seeli 'receive', -TLY cs-rf vi):   kiikneliya 'he pities him'
(ikneli- 'pity', -ya tr vi), kiikneltiliya/kiikneliltiliya 'he
causes him to pity him for him' (ikneli- 'pity', -TLY cs-rf
vi).

  This is the last section that deals with the definition of the
verb-syntagmeme.   Chapter 3 is used for the definition of the
noun-syntagmeme.

III. THE NOUN-SYNTAGMEME

The noun-syntagmeme is defined by the formula: ±Per:per-
pfx +Nu:base +Vi:vi marker +As:infl-sfx, i.e., an optional
Person tagmeme manifested by possessive pronouns, an obli-
gatory Nucleus tagmeme manifested by base type B-1, an
obligatory Voice tagmeme manifested by derivational suffixation,
and an obligatory Aspect tagmeme manifested by suffixes which
specify possession, honor, and plural. The term Nucleus
replaces Predication for the nuclear slot of the syntagmeme
since the stems which manifest the Nucleus tagmeme do not
always denote action.

The noun-syntagmeme contrasts with the verb-syntagmeme
in that (1) the Person tagmeme is optional; (2) there is no
Participle tagmeme, (3) the sets of markers which manifest
the Person, Voice, and Aspect tagmemes of the noun-syntagmeme
never manifest the corresponding tagmemes of the verb-
syntagmeme; and (4) the construction which manifests the
Nucleus tagmeme of the noun-syntagmeme is usually the minimal
reading of base type B-1, i.e., a Head tagmeme manifested by
a stem. A few instances occur of base type B-1 embedded
within the base type B-1. The following chart is a visual dis-
play of the syntagmatic structure of the noun-syntagmeme.

NOUN-SYNTAGMEME:

±PERSON:	+NUCLEUS:	+VOICE:	+ASPECT:
possessive pronouns.	B-1.	nominali-zers.	posses-sion, honor plural.

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3.1 The Person Tagmeme. The prefix system of the noun-syntagmeme consists of one set of fillers which mark possession. This closed set of morphemes specifies the person and number of the possessor; there is an accompanying set of suffixes which mark both the singular and plural number of the noun possessed. The prefixes are termed possessive pronouns (poss prns).

The following chart is a visual display of the possessive prefixes and the possessive suffixes which obligatorily co-occur with the prefixes.

POSSESSIVE PRONOUNS: PREFIX   SUFFIX

		PREFIX		SUFFIX	
Singular person	1	no-			
	2	mo-	Singular noun	∅ /-w	
	3	i-/ni-			
Plural person	1	to-			
	2	namo-	Plural noun	-wan	
	3	nin-			

The possessive pronouns of singular number are: no- 1sg, mo- 2sg, and i-/ni- 3sg. The occurrence of the possessive prefixes requires the presence of the suffix indicating the number of the noun possessed. The marker of singular number is ∅ /-w (∅ following a consonant, -w following a vowel). The marker of plural number is -wan.

noaamaw 'my paper' (no- 1sg poss, aama- 'paper', -w sg poss), moaamaw 'your paper' (mo- 2sg poss), iaamaw/ niaamaw 'his paper' (i-/ni- 3sg poss); noaamawan 'my papers' (no- 1sg poss, -wan pl poss), moaamawan 'your papers' (mo- 2sg poss), iaamawan/niaamawan 'his papers' (i-/ni- 3sg poss).

noaayoh 'my squash' (no- 1sg poss, aayoh 'squash'), moaayoh 'your squash' (mo- 2sg poss), iaayoh/niaayoh 'his squash' (i-/ni- 3sg poss); noaayohwan 'my squashes' (no-

1sg poss, -wan pl poss), moaayohwan 'your squashes'
(mo- 2sg poss), iaayohwan/niaayohwan 'his squashes'
(i-/ni- 3sg poss).

See section 3.3 for a description of the optional occurrence of
-ti 'nominalizer' with noun stems which end in consonant.

The possessive pronouns of plural number are: to- 1pl,
namo- 2pl, nin- 3pl. The occurrence of the possessive pronoun
requires the presence of the suffix which marks the number of
the possessed noun.

toaamaw 'our paper' (to- 1pl poss, aama- 'paper', -w sg
poss), namoaamaw 'your-pl paper' (namo- 2pl poss),
ninaamaw 'their paper' (nin- 3pl poss); toaamawan 'our
papers' (to- 1pl poss, -wan pl poss);
ninaamawan 'their papers' (nin- 3pl poss, aama- 'paper',
-wan pl poss). toaayoh 'our squash' (to- 1pl poss),
namoaayoh 'your-pl squash' (namo- 2pl poss), ninaayoh
'their squash' (nin- 3pl poss); toaayohwan 'our squashes'
(to- 1pl poss, aayoh 'squash', -wan pl poss), namoaayohwan
'your-pl squashes' (namo- 2pl poss), ninaayohwan 'their
squashes' (nin- 3pl poss).

3.2 The Nucleus Tagmeme. The Nucleus tagmeme of the
noun-syntagmeme is manifested by base type B-1 (Nu:B-1):
±M:s/th +H:s/th/B-1, i.e., an optional Modifier tagmeme mani-
fested by a stem or a theme, and an obligatory Head tagmeme
manifested by a stem, a theme, or base type B-1. There are
two readings of the formula:

(1) H: owaat 'sugar cane' (owaa- 'sugar cane', -t nom);
tóminti 'money' (tomin 'money', -ti nom); temaakištiykacin
'savior' (te- gen obj, maakiš 'rescue', -tiy cs vi [maakištiy
- theme], -ka actor, -cin hon).

(2) MH: analteeko 'foreigner' (anal 'other side', teeko
'master' [analteeko - B-1, i.e., M:anal H:teeko]);

koyootaškal 'bread' (koyoo- 'white man' -t nom, taškal
'tortilla' [koyootaškal - B-l, i.e., M:koyoo H:taškal]);
analteekotaškal 'bread' (anal 'other side', teeko 'master'
[analtecko - B-l, i.e., M:anal H:teeko], taškal 'tortilla'
[taškal - stem: B-l - M:B-l H:s]).
totasohmowistemaakištiykacin 'our beloved, honorable
savior' (to- 1pl poss, tasoh 'love, mowis 'respect'
[tasohmowis- - B-l, i.e., M:tasoh H:mowis], te- gen obj,
maakiš 'rescue', -tiy cs vi [maakištiy - theme], -ka actor,
-cin hon; B-l - M:B-l H:th).

3.3 The Voice Tagmeme. The function of derivational
suffixation is termed Voice. The Voice markers specify the
type of noun, i.e., verbal noun (bs-n), actor noun (ac-n),
agentitive noun (ag-n), and pronoun noun (pr-n). The Voice
tagmeme itself is manifested by two orders of markers: The
markers in the first order (i.e., the slot immediately following
the stem) specify derivation from verb-syntagmemes; morphemes
in the second order mark the construction as a noun-
syntagmeme. Sections 3.31 - 3.34 are used to define the four
noun-syntagmemes.

The following chart is a visual display of the morphemes
which manifest the Voice tagmeme of the noun-syntagmeme.
VOICE TAGMEME:

	First order: (der)	Second order: (nom)
verbal noun	$\emptyset$	-t
	-l	-ti
	-lis	-ti
	-C	-ti
Actor noun	-keh	-eh
	-ka	

Agentitive

   noun   -loni

Pronoun

   noun   -wa

3. 31 The derivational (der) -l specifies the noun-syntagmeme as one derived from a verb-syntagmeme, either a transitive or intransitive verb-syntagmeme. The derivational -l is suffixed directly to the stem-final vowel or to the voice vowel. The meaning of this derived form depends upon the stem-class which is its source. There are two possible glosses for any noun-syntagmeme with the derivational -l:

(1) The noun-syntagmeme is glossed as an object; the derivational prefix ta- often occurs.

paati 'it dissolves' (paati 'dissolve'), tapaatil 'dissolved thing', (ta- der, paati 'dissolve', -l der); kiqečowa 'she grinds it' (ki- 3sg obj, qečo- 'grind', -wa tr vi), taqečol 'the ground up thing' (ta- der, -l der).

(2) The second gloss is that of perfective action, something like the perfect participle in English or Spanish.

paati 'it dissolves' (paati 'dissolve'), paatil 'it has been dissolved' (paati 'dissolve', -l der); qečowal 'it has been ground' (qečo- 'grind, -wa vi, -l der). The gloss for paatil may also be: 'it is in the state of having been dissolved'; the gloss for qečowal may also be: 'it is in the state of having been ground up'.

3. 32 The derivational -lis specifies the noun-syntagmeme as one derived from a verb-syntagmeme, either a transitive or intransitive verb-syntagmeme; the derivational -lis is suffixed directly to the stem-final vowel or to the voice vowel. Whereas the suffixation of the derivational -l results in a form which has the meaning of a perfect participle, the suffixation of the derivational -lis results in a form which has the meaning of

an English present participle. The focus is: action-in-process.
The derivational -l denotes a completive state; the derivational
-lis denotes a non-completive state. The derivational prefix
ta- occurs with this form.

> paati 'it dissolves' (paati 'dissolve'), paatilis 'action-of-
> dissolving' (paati 'dissolve', -lis der); kiqečowa 'she
> grinds it' (ki- 3sg obj, qečo- 'grind', -wa tr vi),
> taqečowalis 'action-of-grinding' (ta- der, qečo- 'grind',
> -wa vi, -lis der).

Any verb-syntagmeme may be transformed to the noun-
syntagmeme that has the derivationals -l or -lis by the second
noun transform. See section 3.51 for noun transforms.

3.33 The final consonant of the stem of a noun-syntagmeme,
other than -l, may be one of the following phonemes: / -k, -n, -s,
-š, -c, -x̌, -h, -w/ and is represented by the cover symbol -C. No
function is assigned to -C; the symbol -C is useful only insofar
as (1) derivational patterns might be discovered which would
show agnate relationships between noun-syntagmemes and verb-
syntagmemes, and (2) diachronic patterns might be discovered
which would show development of noun-syntagmemes from verb-
syntagmemes. The noun-syntagmemes whose canonical shapes
end with those phonemes specified above are termed non-derived
noun-syntagmemes (n-der n-sytm). There are some stems which
end in -V; they also are non-derived stems. Both types of the
non-derived noun-syntagmemes are discussed in section 3.55.
Those noun stems which end in a -V are obligatorily marked
with the nominalizer -t; those stems which end in -C are
optionally marked with the nominalizer -ti. The nominalizer
-ti is a post-clitic; its occurrence is not accompanied by a
shift of stress to the penultimate syllable.

3.34 The derivational markers which occur with the other
derived noun-syntagmemes are: -eh actor, -keh actor, -ka

actor, -loni agentitive, and -wa pronoun. The actor marker
-eh is suffixed only to noun-syntagmemes which have already
been derived from verb-syntagmemes by the suffixation of the
derivational -l.

tahtowa 'he says it' (ta- gen obj, ihto- 'say', -wa tr vi);

tahtol 'what has been said/word' (ta- gen obj, ihto- 'sat,

- l der); tahtoleh 'orator' (ta- gen obj, ihto- 'say, - l der,

-eh actor).

The marker -keh is suffixed to stems or themes of most of
the verb-syntagmemes; it also means 'actor'.

tepahtiykeh 'healer' (te- gen obj, 'pah- heal', -tiy cs vi,

-keh actor).

The marker -ka is an allomorph of -keh and occurs only
with the possessive and honorific markers in the actor noun-
syntagmemes.

tepahtiykeh 'healer', notepahtiykaw 'my doctor' (no- 1 sg

sbj, te- gen obj, pah- 'heal', -tiy cs vi, -ka actor, -w

sg poss); notepahtiykàcin 'my honorable doctor' (-cin hon).

The marker -loni indicates an agentitive relationship, i.e.,
the noun-syntagmeme that has this marker is one which
actuates, effects, or manipulates the action denoted by the
verb stem.

koyoni 'it bores' (koyo- 'bore', -ni intr vi); takoyoniloni

'a drill' (ta- gen obj, koyo- 'drill', -ni vi, -loni

agentitive).

The marker -wa is discussed in section 3.54.

3.4 The Aspect Tagmeme. The inflectional suffixes of
the noun-syntagmeme mark three categories: number (pl),
possession (poss), and honor (hon); they are replacive
morphemes in reference to the second order derivational
markers, but they do not replace first order derivational
markers. The following chart is a visual display of inflec-

tional suffixation relevant to all types of noun-syntagmemes.
Plural forms are in parentheses.

	PLURAL	POSSESSION	HONOR
Verbal noun	-meh	-w/ $\emptyset$ (-wan)	-cin (-cicin)
	-h		
Actor noun	-keh	-w/ $\emptyset$ (-wan)	
	-nih		
Pronoun noun	-n		-cin (-cicin)
			-pol(-polcicin)

3.41 The allomorphs of the plural marker for the basic
noun-syntagmemes are -meh and -h; they replace the nomina-
lizer -t/ -ti, but follow the derivational -l and -lis. The
allomorph -h is extremely limited in occurrence.

The plural suffix -meh occurs with noun-syntagmemes which
are derived from verb-syntagmemes and also occurs with non-
derived noun-syntagmemes.

> tahtol 'word' (ta- gen obj, ihto- 'say', -l der), tahtolmeh
> 'words' (-meh pl); tayokolis 'being sad/sadness' (tayokoya
> 'he's sad'), tayokolismeh 'many times being sad/sadnesses'
> (-meh pl); icqinti 'dog' (icqin- 'dog', -ti nom), icqinmeh
> 'dogs' (-meh pl); koyoot 'white man' (koyoo- 'white man',
> -t nom), koyoomeh 'white men', (-meh pl).

The plural suffix -meh also occurs with noun-syntagmemes
which are loan words from Spanish. Those loan words with
stem-final vowel have a suffix -h (not a plural marker) when
used in Nahuat discourse.

> compaleh 'god-father' (Sp. 'compadre'); compalehmeh
> 'god-fathers'; mesah 'table' (Sp. 'mesa'), mesahmeh
> 'tables'; šapoh 'soap' (Sp. 'jabon'), šapohmeh 'soaps'.

The plural suffix -h occurs with only two nouns: moosta
'tomorrow', mostah 'daily', taagat 'man', taakah 'men'.
The allomorphs of the plural marker for the actor noun-

syntagmeme are -keh and -nih. The shape -keh occurs with
noun-syntagmemes which are derived from verb-syntagmemes
by the suffixation of the derivational marker -l; the -keh is
suffixed to the actor marker -eh. The shape -nih occurs with
all other noun-syntagmemes that are derived from verb-
syntagmemes by means of the derivational marker -keh.

tahtoleh 'orator' (ta- gen obj, -ihto 'say', -l der, -eh
actor), tahtolehkeh 'orators' (-keh pl); tamačtiykeh
'teacher' (ta- gen obj, mač 'learn', -tiy cs vi, -keh der
actor), tamačtiyanih 'teachers', (ta- gen obj, mač- 'learn'
-tiya cs vi, -nih pl).

The allomorphs of the plural marker for the pronoun noun-
syntagmeme is -n. The limited occurrence of the plural -n
suggests that it has been replaced by the more frequently
occurring -meh. See chapter 5 for occurrence of plural -n with
numeral-syntagmemes. The occurrence of the plural -n with the
free pronouns is limited to the pronominal forms of mild respect
(see section 3. 43): tehwan 'we' namehwan 'you-pl', and
yehwan 'they'.

tehwan tiyoweh 'we go' (ti- 1pl sbj, yoweh 'go', tehwan
'we); namehwan nanyoweh 'you-pl go' (nan- 2pl sbj,
namehwan 'you-pl'); yehwan yoweh 'they go' (yehwan
'they').

Note that an argument could be advanced that the plural
-n has an allomorph -an which occurs with the possessive
singular -w. By parallel cutting, however, the -in of
honorific -cin would be a third allomorph of the plural -n.
The marker -cin is the singular form of the honorific; its
plural is formed by reduplication, i.e., -cicin. One other
form in Nahuat is known to form the plural by reduplication,
i.e., pili 'child', pipil 'children'. In summary, the only
unambiguous pluralizing function of -n is with the free pronouns

(only in the three forms given above) and with the numeral particle-syntagmemes.

3.42 The markers of possessed nouns are -w/∅ singular and -wan plural. There is an obligatory co-occurrence of the affixes which mark person and number of the possessor. The suffix markers of the possessed noun replace the nominalizer -t/-ti, i.e., -t ---→ -w; -ti ---→ ∅ (the -ti apocopates and the stem remains unmarked for possessive singular). The marker for possessive plural -wan replaces the -t/-ti. See section 3.1 for additional examples.

picot 'pig' (pico- 'pig', -t nom), nopicow 'my pig' (no- 1sg poss, -w sg poss), mopicow 'your pig' (mo- 2sg poss, -w poss sg), ipicow/nipicow 'his pig' (i-/ni- 3sg poss), topicow 'our pig' (to- 1pl poss), namopicow 'your-pl pig' (namo- 2pl poss), ninpicow 'their pigs' (nin- 3pl poss); nopicowan 'my pigs' (no- 1sg poss, -wan pl poss), mopicowan 'your pigs' (mo- 2sg poss), ipicowan/ nipicowan 'his pigs' (i-/ni- 3sg poss), topicowan 'our pigs'; tákenti 'coat' (taken 'coat', -ti nom), notaken 'my coat', (no- 1sg poss), motaken 'your coat' (mo- 2sg poss), itaken/nitaken 'his coat' (i-/ni- 3sg poss), totaken 'our coat' (to- 1pl poss), namotaken your coat' (namo- 2pl poss), nintaken 'their coat' (nin- 3pl poss), notakenwan 'my coats' (no- 1sg poss, -wan pl poss), motakenwan 'your coats' (mo- 2sg poss), itakenwan/nitakenwan 'his coats' (i/ni- 3sg poss), totakenwan 'our coats' (to- 1pl poss), namotakenwan 'your-pl coats' (namo- 2pl poss), nintakenwan 'their coats' (nin- 3pl poss).

3.43 The honorific markers for all noun-syntagmemes are -cin singular and -cicin plural. The nominalizer -t/-ti is replaced by the honorific markers. The honorific markers denote small size, respect and/or endearment.

aat 'water' (aa- 'water', -t nom), aacin 'water-hon' (-cin

hon); toonal 'day' (toona- 'sun-shine', -l der), toonalcin

'sun' (-cin hon); icqinti 'dog' (icqin 'dog', -ti nom),

icqincin 'puppy' (-cin hon), icqincicin 'puppies' (-cicin hon

pl); siwaat 'woman' (siwaa- 'woman' -t nom), siwaacin

'wife' (-cin hon); mistonti 'cat' (miston 'cat' -ti nom),

mistoncin 'kitten' (-cin hon), mistoncicin 'kittens' (-cicin

hon pl).

In order to mark both the possession and honor in a noun-
syntagmeme, as well as the singular and plural numbers, the
honorific markers replace the possessive suffixes; the
following chart is a display of the inflection of a noun-
syntagmeme with the three categories of possession, honor,
and number marked.

	Singular	Plural
Possessive	noaamaw 'my paper'	noaamawan 'my papers'
Honorific	aamacin 'hon-paper'	aamacicin 'hon-papers'
Poss-Hon	noaamacin 'my hon-paper'	noaamacicin 'my hon-papers'

The marker for augmenting respect is -pol; it precedes
the honorific -cin. It occurs only with the free pronouns.

tehwa 'you', tehwacin 'you-hon' tehwapolcin 'you,

greatly honored sir' (-pol hon, -cin hon).

3.5 The Five Emic Noun-Syntagmemes. There are three
general types of nouns in Nahuat: derived nouns, non-derived
nouns, and nouns with only apparent derivations. The three
general types are explicated by five specific noun-syntagmemes.
The derived nouns are explicated by the verbal noun-
syntagmeme (vb-n-sytm), the actor noun-syntagmemes (ac-n-
sytm), and the agentitive noun-sytagmeme (ag-n-sytm). The
non-derived noun is explicated by the freely occurring pronoun
noun-syntagmeme (pr-n-sytm). The nouns which have apparent
derivations are explicated by the non-derived noun-syntagmeme

(nd-n-sytm). The derived noun-syntagmemes are agnate with many of the verb-syntagmemes and the transformational processes are largely the same. The other noun-syntagmemes are not derivable from either verb-syntagmemes or noun-syntagmemes.

The formulaic reading for the derived noun-syntagmeme is: PerNuViAs, i.e., a Person tagmeme manifested by possessive prefixes, a Nucleus tagmeme manifested by base type B-1, a Voice tagmeme manifested by derivational markers, and an Aspect tagmeme manifested by honorific and number markers. The reading for the pronoun noun-syntagmeme is NuViAs, i.e., there is an obligatory lack of the Person tagmeme in comparing it with the previous reading. Sections 3.51 through 3.53 are used to define the three derived noun-syntagmemes; section 3.54 defines the pronoun noun-syntagmeme; section 3.55 is used to define the noun-syntagmemes with only apparent derivations. The structure of stem classes 12 to 14 is defined in section 3.55.

The inventory of noun transforms for use in the following sections is:

noun tfm-1 $\div$ add -l or -lis to the voice vowel or to stem vowel.

čoka 'he cries', čokal 'having cried', čokalis 'crying'.

noun tfm-2 $\div$ 3sg obj ki- ---→ gen obj ta-.

kinamaka 'he sells it' (ki- 3sg obj, namaka 'sell'), tanamakal 'what was sold', tanamakalis 'selling'.

noun tfm-3 $\div$ for singular actor, delete voice vowel or stem vowel; add -keh.

kikowa 'he buys it' (ki- 3sg obj, kowa 'buy', takowkeh 'buyer'.

noun-tfm-4 $\div$ for plural actor add -nih to voice vowel or stem vowel.

kikowa 'he buys it' (ki- 3sg obj, kowa 'buy'), takowanih
'buyers'.

noun tfm- 5 ⸗ for actor with honorific delete voice vowel or
          stem vowel, add -ka.

tisi 'she grinds', notiskaw 'my wife' (no- 1sg poss, tis-
'grind' -ka actor, -w poss sg).

noun tfm- 6 ⸗ for actor of verbal noun add -eh; the plural is
          -ehkeh.

noun tfm- 7 ⸗ for agentitive noun add -loni to voice vowel or to
          stem vowel; voice markers -Y and -W are lost
          before -loni.

tahtol 'word' tahtoleh 'orator', tahtolehkeh 'orators'.

kipipicowa 'he blows it' tapipicoloni 'fan'.

3.51 The verbal noun-syntagmeme is defined by the formula
given in the introduction to this chapter; the reading is
PerNuViAs. The Voice tagmeme is manifested by -l or -lis.
The verbal noun-syntagmeme is derivable either from intransi-
tive or transitive verb-syntagmemes; the agnate relationship
is expressed by the noun transforms one and/or two. The
following illustrations demonstrate the application of the noun
transform one and two to the kernel intransitive and transitive
verb-syntagmemes; the suffixation of -l and -lis to the other
three emic verb-syntagmemes does not occur in the data under
analysis. Either of the derived forms may occur with the
definite article in 'the'. The illustrations are given in terms
of hyperstem-class-A, -B, and -C. The application of noun
transforms one and two to stems from hyperstem-class-A pro-
duces forms which have the general object ta- (noun tfm-2 is
obligatory); the application of noun transform one (only number
one) to hyperstem-class-B produces forms which never occur
with the general object ta-; the application of either or both
of the noun transforms to stems from hyperstem-class-C pro-

duces forms which occur with or without the general object ta-.

Stems from hyperstem-class-A; apply both noun tfm- 1 and -2.

kimaka 'he gives it' (ki- 3sg obj, maka 'give').

k tr-3:   tamakal 'having been given/gift',

              tamakalis 'giving'.

k tr-4:   tanekil 'having been desired/desire',

              tanekilis 'desiring'.

k tr- 10b: tapečiyal 'having been flattened',

              tapečiyalis 'flattening'.

k tr- 11:   no occurrence.

Stems from hyperstem-class-B; apply only noun transform one.

k intr- 1:   čokal 'having cried',

              čokalis 'crying'.

k intr-2a: kočil 'having slept/nap',

              kočilis 'sleeping'.

k intr-6:   tekpowal 'having replanted',

              tekpowalis 'replanting'.

Stems from hyperstem-class-C; apply either/both noun trans-
form- 1, -2.

k intr- 2b: paatil/tapaatil 'having dissolved/having been
              dissolved',

              paatilis/tapaatilis 'dissolving'.

k intr- 5:   čipawal/tačipawal 'having cleansed/having
              been cleansed',

              čipawalis/tačipawalis 'cleansing'.

k intr- 7a: tapanil/tatapanil 'having been broken',

              tapanilis/tatapanilis 'breaking'.

k intr- 7b: kakalakal/takakalakal 'having knocked',

              kakalakalis/takakalakalis 'knocking'.

k intr- 8a: aawiliwil/taaawilowal 'having been wasted',

              aawiliwilis/taaawilowalis 'wasting'.

k intr- 8b: toyawil/tatoyawal 'having spilt/having been
              spilt',

<u>toyawalis</u>/<u>tatoyawalis</u> 'spilling'.

k intr- 9:   <u>teteštil</u>/<u>tatetešowal</u> 'having twisted/having
              been twisted',

              <u>teteštilis</u>/<u>tatetešowalis</u> 'twisting'.

k intr- 10a: <u>kalakil</u>/<u>takalakiyal</u> 'having entered/having
              been entered',

              <u>kalakilis</u>/<u>takalakiyalis</u> 'entering'.

3.52 The actor noun-syntagmeme-A is defined by the
formula given in the introduction to this chapter; the reading
is PerNuViAs. The Voice tagmeme is manifested by the
allomorphs of the actor marker <u>-keh</u> and <u>-ka</u>. The actor noun-
syntagmeme-A is derivable from transitive verb-syntagmemes
which are themes; the agnate relationship is expressed by
the noun transforms two, three, and four. The meaning of
this noun-syntagmeme is 'actor', i.e., he who performs the
action denoted by the stem. The following illustrations demon-
strate the application of the noun transforms to the kernel
intransitive and transitive verb-syntagmemes. The illustra-
tions follow the order of the hyperstem-classes.
Stems from hyperstem-class-A; apply noun transforms-2, -3,
and -4.

k tr- 3:   <u>tanamakkeh</u> 'salesman', <u>tanamakanih</u>
             'salesmen'.

k tr- 4:   <u>tačtekkeh</u> 'thief', <u>tačtekinih</u> 'thieves'.

k tr- 10b: <u>tataqatiykeh</u> 'feaster/glutton', <u>tataqatiyanih</u>
             'feasters'.

Stems from hyperstem-class-B; apply only noun transform-3
and -4.

k intr- 1:   <u>tagoškeh</u> 'corn-shucker', <u>tagoyanih</u> 'corn-
             shuckers'.

k intr- 2a: <u>tiskeh</u> 'corn-grinder', <u>tisinih</u> 'corn-grinders'.

k intr 6:   <u>kamanalowkeh</u> 'jokester', <u>kamanalowanih</u>
             'jokesters'.

Stems from hyperstem-class-C; apply noun transforms-2, -3, and -4.

k intr- 2b: tapiškeh 'harvester', tapiškinih 'harvesters'.

k intr- 5:   tamelawkeh 'honest man', tamelawanih 'honest men'.

k intr- 7a: tatawankeh 'drunkard', tatawaninih 'drunkards'.

k intr- 7b: no occurrence.

k intr- 8a: tatapowkeh 'story-teller', tatapowanih 'story-tellers'.

k intr- 8b: taihsiwkeh 'fast person', taihsiwinih 'fast people'.

k intr- 9:   takehkelowkeh 'mocker', takehkelowanih 'mockers'.

k intr- 10a: taiškalakiykeh 'attendant', taiškalakiyanih 'attendants'

(i.e., the god-parents who present the bride and groom inside the church for the wedding ceremony; from verb kikalakiya 'he enters it').

The following illustrations show the actor noun-syntagmeme-A as derived from causative verb-syntagmemes.

kimačtiya 'he teaches him' (ki- 3sg obj, mač- learn, -tiya cs vi).

tamačtiykeh 'teacher', tamačtiyanih 'teachers'.

kitaskaltiya 'he begets it' (ki- 3sg obj, ta- der, iska- 'grow', -ltiya cs vi), tetaskaltiykeh 'parent', tetaskaltiyanih 'parents'.

kimiktiya 'he kills it' (ki- 3sg obj, mik- 'die', -tiya cs vi), tamiktiykeh 'butcher', tamiktiyanih 'butchers'.

The allomorph of the actor noun-syntagmeme marker -ka occurs in place of -keh when there is affixation for possessive or honorific. The actor noun-syntagmemes that occur with

-keh are not affixed for possessive or honorific. The
derivational process is the same as that for deriving the actor
noun-syntagmeme-A with -keh; the agnate relationship between
the actor noun-syntagmeme with -ka and its source is expressed
by the noun transform-five. The second noun transform obliga-
torily precedes the fifth. There are only a few actor noun-
syntagmemes that occur with this possessive and honorific
affixation.

k tr- 3:   tapiya 'he guards it' (ta- gen obj, piya
                'guard'),
                tapiškeh 'shepherd', notapiškaw 'my
                shepherd',
                notapiškawan 'my shepherds', notapiškacin
                'my hon-shepherd', notapiškacicin 'my hon-
                shepherds'.

D cs- 4:   kimačtiya 'he teaches it' (mač- 'learn', -tiya
                cs vi),
                notamačtiykaw 'my teacher', notamačtiykawan
                'my teachers',
                notamačtiykacin 'my hon-teacher',
                notamačtiykacicin 'my hon-teachers'.

k intr- 2:   tisi 'she grinds [corn]', tiskeh 'corn-
                grinder'.
                notiskaw 'my wife', notiskawan 'my wives',
                notiskacin 'my hon-wife', notiskacicin 'my
                hon-wives'.

The following illustration demonstrates the complete derivation
from verb-syntagmeme to noun-syntagmeme.

k intr- 1:   kisa 'he exits', kikištiya 'he pulls it out' (ki-
                3sg obj.
                kiš- 'exit', -tiya cs vi), kimaakištiya 'he
                rescues him' (maa 'hand'), temaakištiykeh

'savior' (te- gen obj human, -keh actor),

notemaakištiykaw 'my God' (no- 1sg poss,

-ka actor, -w poss sg.), notemaakištiykacin

'my hon-God' (-cin hon).

The actor noun-syntagmeme-B is defined by the formula given for the actor noun-syntagmeme-A, except that -eh is the voice marker. The actor noun-syntagmeme-B is derivable from the verbal noun-syntagmeme, i.e. the noun-syntagmeme which has -l derivational. The relationship of partial enation is expressed by the sixth noun transform. The meaning of this noun-syntagmeme is 'actor', i.e., he who performs the action denoted by the stem. There is a very limited occurrence of this noun-syntagmeme in the data; only four illustrations occur. Not all sources for the derived noun-syntagmeme can be specified; those which can be specified show derivation from themes with voice markers -wa and -ya. The voice markers are lost before the suffixation of the derivational -l.

v-sytm	n-sytm	ac-n-sytm-B	ac-n-sytm-B-pl
tahtowa	tahtol	tahtoleh	tahtolehkeh
'he speaks'	'word'	'orator'	'orators'
tekipačowa	tekipačol	tekipačoleh	tekipačolehkeh
'he mourns'	'sorrow'	'mourner'	'mourners'
*tahtakowa	tahtakol	tahtakoleh	tahtakolehkeh
'he sins'	'sin'	'sinner'	'sinners'
tamačtiya	tamačil	tamačileh	tamačilehkeh
'he teaches'	'thought'	'thinker'	'thinkers'

3.53 The agentitive noun-syntagmeme (ag-n-sytm) is defined by the formula given in section 3.51; the reading is the same except that the Voice tagmeme is manifested by -loni. The agentitive noun-syntagmeme is derivable from the intransitive and transitive verb-syntagmemes; the agnate relationship is expressed by the seventh noun transform. The meaning of -loni is: that which is doing the action denoted by the stem;

the marker -loni does not occur with the referential, causative, and causative-referential verb-syntagmemes. The following illustrations demonstrate the application of the seventh transitive transform to the kernel intransitive and transitive verb-syntagmemes.

Stems from hyperstem-class-A; apply noun transforms two and seven:

k tr- 3:   kioč̃pana 'he sweeps it' tač̃panaloni 'broom'.

k tr- 4:   kipiiki 'he wraps it' tapiikiloni 'napkin'.

k tr- 10b: kitatawtiya 'he requests it', tatatawtiloni 'prayer'.

Stems from hyperstem-class-B; apply only noun transform seven.

k intr- 1:   tagoya 'he shucks corn', tagoyaloni 'corn shucker'.

k intr- 2a: posteki 'it breaks', postekiloni 'club'.

k intr- 6:   tekpowa 'he replants', tekpowaloni/ tekpoloni 'planting stick'.

Stems from hyperstem-class-C; apply noun transforms two and seven.

k intr- 2b: no occurrence.

k intr- 5:   č̃ipawa 'it's clean', tač̃ipawaloni 'a cleanser'.

k intr- 7a: koyoni 'it drills', takoyoniloni 'a drill'.

k intr- 7b: no occurrence.

k intr- 8a: ehkewi 'it peels off', taehkewiloni 'a peeler'.

k intr- 8b: tepewi 'it sprinkles', tatepewiloni 'a sprinkler'.

k intr- 9:   kipipicowa 'he blows it', tapipicaloni 'fan'.

k intr-10a: sewi 'he rests', sewiloni 'chair'.

3.54 The freely occurring pronoun noun-syntagmeme (pr-n-sytm) is defined by the formula given in the introduction to this chapter; the reading is NuViAs, i.e., a Nucleus tag-

meme manifested by a closed set of four stems (neh, teh, yeh, nameh-), a Voice tagmeme manifested by a derivational formative -wa, and an Aspect tagmeme manifested by plural marker -n and honorific markers -cin and -pol. From the one reading of the formula there develops a closed set of seventeen noun-syntagmemes which function as freely occurring subjects and objects of the verb-syntagmeme. The pronoun noun-syntagmeme is distinctive in that there is an obligatory absence of the person prefixes and of the possessive markers.

In effect, the pronoun noun-syntagmeme could well be postulated as a syntagmeme that is contrastive with the other four word types. The decision to consider it as a noun-syntagmeme is based on its internal structuring as contrasted with the internal structure of the locative and particle-syntagmemes. The pronoun noun-syntagmeme has a manifestant of the Voice tagmeme but no manifestant of the Person tagmeme. The locative and particle-syntagmemes are characterized by a lack of the voice (derivational) tagmeme. Furthermore, the pronoun noun-syntagmeme is characterized by the manifestants of both the plural and honorific markers; the locative and particle-syntagmemes have almost a complete lack of the plural and honorific. In addition, the honorific marker -pol occurs only with the pronoun noun-syntagmeme.

A comparison of the four major word types helps in showing the structural similarity of the pronoun noun-syntagmeme with the noun-syntagmeme and its contrast with other syntagmemes.

v-sytm = PerPrViT (Person-Predication-Voice-Tense).

n-sytm = PerNuViAs (Person-Nucleus-Voice-Aspect).

l-sytm = PerNu As (Person-Nucleus-Aspect).

pc-sytm = Nu As (Nucleus-Aspect).

A comparison of the four types of noun-syntagmemes helps in showing the structural similarity of the pronoun-syntagmeme

with the noun-syntagmemes and its contrast with other word
types.

    vb-n-sytm $\doteq$ PerNuViAs (Person-Nucleus-Voice-Aspect).

    ac-n-sytm $\doteq$ PerNuViAs (Person-Nucleus-Voice-Aspect).

    ag-n-sytm $\doteq$ PerNuViAs (Person-Nucleus-Voice-Aspect).

    prn-n-sytm $\doteq$ NuViAs (Nucleus-Voice-Aspect).

Thus, the internal structuring of the pronoun noun-syntagmeme
is more like construction types known as noun-syntagmemes
than those known as locative-syntagmemes. The following
chart is a display of the freely occurring pronouns; the
horizontal axis shows increasing degree of respect; the verti-
cal axis shows person and number.

INCREASING DEGREE OF HONOR ----›

	Neutral	Mild	Moderate	Intense
1st	neh	nehwa	- - -	- - -
2nd (sg)	teh	tehwa	tehwacin	tehwapolcin
3rd	yeh	yehwa	yehwacin	yehwapolcin
1st	- - -	tehwan	- - -	- - -
2nd (pl)	- - -	namehwan	namehwancicin	namehwanpolcicin
3rd	- - -	yehwan	yehwancicin	yehwanpolcicin

    The following is to be taken as diachronic speculation, not
what can be demonstrated from the corpus of data under
analysis. Note that for each of the singular pronouns of
neutral honor there occurs the element -eh; it is homophonous
with the -eh which marks the actor noun-syntagmeme -B (section
3.42). Assuming for the moment that the element -eh is 'actor'
in both constructions, this leaves the formative elements for
pronouns: n- 1st sg, t- 2nd sg, y- 3rd sg. The lack of a 3sg
subject, as manifestant of the Person tagmeme, may be
accounted for by the fact that its manifestation would be *yi-.
According to the morphophonemic rules given in section 1.4
(mphphm- 1b) the form *yi- would apocopate. See Law (1958
p. 110ff) for a treatment of formatives of pronominals.

The first column of the preceding chart displays the pro-
noun noun-syntagmemes of neutral honor as they occur in
usage among children; such forms also occur in rapid story-
telling or conversations in which the factor of honor is irrele-
vant. There is redundant marking of person and number when
the free pronoun occurs. The person prefixes are obligatory
to the verb-syntagmeme while the pronoun noun-syntagmeme is
optional to the clause or sentence.

neh nikčiwa 'I do it' (neh 'I', ni- 1sg sbj, k- 3sg obj,
čiwa 'do'), teh tikčiwa 'you do it' (teh 'you', ti- 2sg sbj),
yeh kičiwa 'he does it' (yeh 'he', ki- 3sg obj).

The occurrence of this form of the pronoun noun-
syntagmeme serves to emphasize the role of the speaker or
actor.

neh nikčiwa 'I, myself, do it', teh tikčiwa 'you, yourself,
do it', yeh kičiwa 'he, himself, does it'.

The second column displays the pronoun noun-syntagmemes
of mild honor as they occur in usage among older children and
young adults. This is the most frequently occurring form of
the pronouns. The use of this form specifically means that
little respect is intended; to use it when addressing members
of the older generation is considered insulting. On the con-
trary, the use of these forms among young adults does not
convey an insult; they are not yet ready to be addressed with
the respect forms. As the young adults take on more of the
responsibilities of the community, such as affinal relationships
and god-parent relationships, they replace this set with those
pronouns shown in column three.

nehwa ni oh 'I am going' (nehwa 'I', ni- 1sg sbj, yoh 'go'),
tehwa tiyoh 'you are going' (tehwa 'you', ti- 2sg sbj),
yehwa yowi 'he is going' (yehwa 'he', yowi 'go/goes').
tehwan tiyoweh 'we are going' (tehwan 'we', ti- 1pl sbj,

-eh pl sbj),

namehwan nanyoweh 'you-pl are going' (namehwan 'you-pl',
nan- 2pl sbj),

yehwan yoweh 'they are going' (yehwan 'they').

The third column displays the pronoun noun-syntagmemes
of moderate honor as they occur in usage among members of
the older generation and in usage by any others who intend to
show respect in their pronominal speech forms. All children
and young adults use the moderate honorific forms in speaking
with members of the older generation, with foreigners, and
with government officials. The occurrence of the pronoun
noun-syntagmeme with moderate respect is obligatorily matched
in the verb-syntagmeme with the occurrence of the honorific
prefix on-.

tehwacin tionsiowi 'you, sir, are tired' (tehwa 'you', -cin
hon, ti- 2sg sbj, on- hon, siowi 'be tired'), yehwacin
onyolqali 'he, that honorable person, is a good man'
(yehwa 'he', -cin hon, on- hon, yol 'heart', qali 'good'),
namehwancicin nanonpašalowkeh 'you, sirs, have gone
visiting' (namehwan 'you-pl', -cicin hon pl, nan- 2pl sbj,
on- hon, pašalo- 'visit' [from Spanish pasear 'visit'], -w
vi, -keh pret pl), yehwancicin on yahkeh 'they, those
honorable ones, have left' (yehwan 'they', -cicin hon pl,
yah- 'go', -keh pret pl).

The singular forms of the moderate honorifics occur
regularly as pronominal substitutes for addressing deities.
Evidence from the corpus of data shows that in the prayers of
the herb doctors and witch doctors the forms of mild respect
(column 2) are used in addressing their deities.

namehwan in tepewanimeh tečpalewikan 'you, mountain
spirits, help us' (namehwan 'you-pl', in 'the', tepewanimeh
'mountain spirits', teč 1pl obj, pale- 'help', -wi vi, -kan
impv pl).

Members of the Methodist churches in the Zacapoaxtla area
use the forms of moderate respect (column 3) in their prayers.

> tehwacin tionyeticah tеč in elwiyakcinko 'you, God, are
> in heaven'
> (tehwa 'you', -cin hon, ti- 2sg sbj, on- hon, ye- 'be
> [location]', -tikah hon-A, teč 'in', in 'the', elwiyak 'sky',
> -cinko hon lc).

The fourth column displays the pronoun noun-syntagmemes
of intense honor as they occur in forms of address to those of
highest authority, e.g., priest, minister, town president,
state official, or deity.

> tehwapolcin tiontečtiočiw tikah 'you (e.g., God) do bless
> us' (tehwa 'you', -pol hon, -cin hon, ti- 2sg sbj, on- hon,
> teč- 1pl obj tiočiw- 'bless', -tikah hon-A), yehwapolcin
> tečonpalewtikahkan 'sir (e.g., the governor), please help
> us' (yehwa 'he', -pol hon, -cin hon, teč- 1pl obj, on- hon,
> pale- 'help', -w vi, tikah hon-A, -kan impv pl),
> namehwanpolcicin tinamečonmaktikateh in bienbenido
> 'to you, sirs (governor's party), we give a welcome'
> (namehwan 'you-pl', -pol hon, -cin hon, ti- 1pl sbj,
> nameč- 2pl obj, on- hon, mak- 'give', -tikateh hon-A pl, in
> 'the', bienbenido 'welcome'), yehwanpolcicin
> tečonmačtiytikateh 'these sirs (e.g., teachers), teach us'
> (yehwan 'they', -pol hon, -cin hon, teč- 1pl obj, on- hon,
> mač- 'learn', -tiy cs vi, tikateh hon-A pl).

The following chart is a visual display of all the systems
of pronominals in Nahuat:

	Poss	Sbj	Obj	Pr-n-syt with degree of honor			
				Neutral	Mild	Moderate	Intense
Sg							
1	no-	ni	neč-	neh	nehwa	- - -	- - -
2	mo-	ti-	mic-	teh	tehwa	tehwacin	tehwapolcin
3	i-/ni-	∅	k-/ki-	yeh	yehwa	yehwacin	yehwapolcin
Pl							
1	to-	ti-, (h)	teč-	- - -	tehwan	- - -	- - -
2	namo-	nan- (h)	nameč-	- - -	namehwan	namehwancicin	namehwanpolcicin
3	nin-	∅... (h)	kin-	- - -	yehwan	yehwancicin	yehwanpolcicin

3.55 The non-derived noun-syntagmeme (nd-n-sytm) is defined by the formula given in 3.51; the reading is the same except that the Voice tagmeme is manifested only by the nominalizer -t/-ti (-t following vowels, -ti following consonants). The non-derived noun-syntagmeme is inflected for possession, number, and honor.

The non-derived noun-syntagmeme represents a noun construction which has an apparent derivation from a verb-syntagmeme but whose derivation cannot be demonstrated in terms of the syntagmatic and derivational structures postulated for this grammar. There are three reasons advanced to account for the lack of derivation:

A. There is no verb-syntagmeme to stand as the derivational source for the noun-syntagmeme, even though the noun is in active use and even though the noun matches other nouns which have derivational sources.

B. There is a verb-syntagmeme which might well be the derivational source for a noun-syntagmeme but there are no derivational processes for transforming one structure into the other. If agnate relationships are postulated, they would be ad hoc constructs; they would not reflect the systematic and recurring relationships which stand behind the verbal and nominal transforms.

C. There is a verb-syntagmeme which matches structurally the noun-syntagmeme but there is a semantic mis-matching of the noun and verb. These arguments will be discussed in more detail below.

The stems which manifest the non-derived noun-syntagmemes have a canonical shape which ends in -V (any vowel) or -C (a cover symbol for the phonemes listed in section 3.33). There is no derivational function assigned to either of the symbols -V or -C; they are useful for stating the distribution of the

nominalizer -t/-ti. Stems which end in -V are obligatorily
followed by -t nominalizer;   stems which end in -C are
optionally followed by -ti nominalizer. Stem class- 12 is a
list of stems which end in -C (only -l);   stem class- 13 is a list
of stems which end in -C (except - l);   stem class - 14 is a list
of stems which end in -V.

Within the corpus of data under analysis there are approxi-
mately four hundred stems which manifest the noun-syntagmemes.
Of the four hundred, about eight-five have the canonical shape
which ends in - l; about one hundred and forty-five end with
-C; about one hundred and twenty end with -V. Noun-
syntagmemes which have the derivational suffix -lis are not
considered in this section; they are not included in the listing
of stem classes. Of the four hundred stems, about forty per-
cent are marked with -t; about sixty percent are marked with
-ti.

The following is a description of non-derived noun-
syntagmemes which have no verb-syntagmeme as a derivational
source.   Illustrations are from stem classes - 12, - 13, - 14.

A. Concerning the stems with final consonant - l, about
twenty of the eighty-five listed in sc- 12 are directly derivable
from verb-syntagmemes (see description of noun transforma-
tions of verbs in section 3.51). The remaining sixty-five stems
with the final consonant - l cannot be traced as to derivational
source at this time. The final consonant - l is probably the
same grammatical element as the - l which marks derivation
from a verb-syntagmeme. But there is no verb-syntagmeme to
match the noun-syntagmeme.
Some stems which end in - l are:

taškal 'tortilla', takomol 'plain/meadow', topil 'red'.
These stems which end in - l form part of the inventory of stem
classes -9 - 11; their agnate relationship with verb-syntagmemes

is represented by the seventh transitive transform.

tahsol 'rubbish', kitahsolwiya 'he dirties it' (ki- 3sg obj,

tahsol 'rubbish', -wi vi, -ya tr vi).

B. Concerning the stems which end in -C, they also form
part of the inventory of sc-9 and sc-11. It is not possible to
postulate an additional derivational layer within the stem in
terms of the structure of this grammar.

ókocti 'pine pitch', kiokocwiya 'he daubs it with pitch'.

C. Concerning the stems which end in -V, most of them
show no relationships to any verb-syntagmeme.

ihwit 'feather' (ihwi- 'feather', -t nom),

istit 'finger nail' (isti- 'finger nail', -t nom).

The following is a description of non-derived noun-
syntagmemes which may have a derivational source in a verb-
syntagmeme. The verb-syntagmeme, however, cannot be
matched structurally with the noun-syntagmeme; there is no
agnate relationship which is statable by a transform.

A. Concerning the stems with final consonant -l, the
morpheme nawal 'witch' may possibly be derived from an active
verb-syntagmeme

kinawatiya 'he advises him' (ki- 3sg obj, nawati- 'advise',

-ya tr vi).

Since one of the witch's duties is to advise and inform his
clients, it could be argued that the element nawa- is part of
the morpheme nawal 'witch'. If the form kinawatiya were cut
as follows nawa- verb stem and -tiya causative voice, then it
would conform to the structure of most any transitive verb-
syntagmeme which undergoes the causative transform. But the
allomorph -tiya of the causative voice occurs only following a
stem-final consonant. There is no derivational process to
account for the relationship between this noun-syntagmeme and
the verb-syntagmeme.

B. Concerning the stems which end in final -C, the form
tapic 'flute' may possibly be derived from an active verb-
syntagmeme.

   kipipicowa 'he blows it' (ki- 3sg obj, pi- rd, pico- 'blow',
   -wa vi).

The agentitive form of this verb is:

   tapipicoloni 'fan' (ta- gen obj, -loni agentitive).

Thus, it is possible to see the relationship between tapic
'flute' and kipipicowa 'he blows it'. but there is no derivational
process to account for it.

C. Concerning stems which end in -V, the form tekit
'work' is obviously related to the verb:

   tekiti 'he works' (tekiti 'work').

Any postulation of a transformation would be an ad hoc proce-
dure. A similar example is the form:

   malakat 'spindle' (malaka- 'spindle', -t nom).

The active verb form is:

   kimalakačowa 'he spins it' (ki 3sg obj, malakačo- 'spin',
   -wa vi).

There is no transformation to account for these two forms.

   The following is a description of non-derived noun-
syntagmemes which have an apparent source in a verb-
syntagmeme but there is a mismatching of semantic areas.
Sometimes the two constructions share a common semantic
area.

A. Concerning the stems with final consonant - l, the form
mahsewal 'Indian' appears to be related structurally to the form
kimahsewa 'he eats dinner'. The nominalized form of the verb
kimahsewa would be mahsewal 'dinner/having been eaten'.

   kimahsewa 'he eats it' (ki- 3sg obj, mahse- 'eat', -wa vi).

   mahsewal 'dinner' (mahse- 'eat', wa vi, -l der).

Although the two constructions are structurally relatable, the

semantic areas are too diverse for them to be considered in
agnate relationship.

B. Concerning the stems which end in -C, the form točin
'rabbit' appears to be related to the verb syntagmeme kitočowa'
he bends it over'. For the change of stem final vowel from
/i/ to /o/ see the transitive transform which accounts for the
transformation of k intr- 8a to D tr- 8a, i.e., aawiliwi 'it
wastes away' ---> kiaawilowa 'he wastes it'. Although this
agnate relationship is not represented by many verb-
syntagmemes, the relationship is a solid one and it could be
used to account for the difference between točin and kitočowa.
The common semantic area of both forms is difficult to define.
This is another case of apparent derivation; but the problems
involved in a precise definition of the relationship cannot be
resolved.

C. Concerning the stems which end in -V, the form tomat
'tomato' appears to be relatable to the verb-syntagmeme tomawa
'it's fat'. There is no transformation to account for the rela-
tionship between the two forms:

tomat 'tomato' (toma- tomato', -t nom),

tomawa 'he's fat' (toma- 'fat', -wa intr vi).

In summary, there are two main reasons for postulating
a section of non-derived noun-syntagmemes.

(1) There are layers of derivation, especially in the noun-
syntagmemes, that cannot be accounted for by the structure
used in this grammar. A study of such non-productive patterns
is more properly the domain of a diachronic not a synchronic
study of Nahuat.

(2) Attempts to account for the structure of syntagmemes
which do not share the constituents of the verb-syntagmeme
become increasingly difficult in proportion to the number of
constituents which they do not share. The next two sections

of this grammar deal with the locative- and particle-syntagmemes. At times their structure will appear to be almost ad hoc constructs. This is due to the fact that the locative- and particle-syntagmemes have little in common with the verb-syntagmeme.

IV. THE LOCATIVE-SYNTAGMEME

The locative-syntagmeme is defined by the formula:
±Per:per-pfx +Nu:base +As:infl-sfx, i.e., an optional Person
tagmeme manifested by possessive pronouns, an obligatory
Nucleus tagmeme manifested by base type B-1, and an obliga-
tory Aspect tagmeme manifested by locative suffixes. The
locative-syntagmeme is differentiated from both noun- and verb-
syntagmemes in that (1) the locative-syntagmeme has no Voice
tagmeme, i.e., there is no derivational suffixation, (2) there
is no potential for transforming a locative syntagmeme to a
noun- or verb-syntagmeme (note that the verb-syntagmeme and
the noun-syntagmeme are agnate, i.e., they are mutually trans-
formable), and (3) the Aspect tagmeme is manifested by a
closed set of locative suffixes which do not occur in the noun-
or verb-syntagmeme. Furthermore, the suffixes which manifest
the Aspect tagmeme of the noun- and verb-syntagmemes do not
occur in the locative-syntagmeme. Each set of suffixes is
mutually exclusive in distribution. The following chart is a
visual display of the syntagmatic structure of the locative-
syntagmeme.

LOCATIVE-SYNTAGMEME:

±PERSON:	+NUCLEUS:	+ASPECT:
possessive	B-1.	locative
pronouns.		suffixes.

4.1 The Locative-Syntagmeme - 1. The locative-
syntagmeme-1 is defined by the formula given above because
of the optional Person tagmeme, there are two readings of the

formula: PNA and NA: The locative-syntagmeme-1 is quite
similar in structure to the noun-syntagmeme in that the Nucleus
of both syntagmemes is manifested by base type B-1 and in that
both syntagmemes may occur with possessive prefixes. It
would be possible to consider the locative-syntagmeme-1 as a
noun-syntagmeme if the noun-syntagmeme were re-defined to
make the Voice tagmeme optional. It is the obligatory absence
of the Voice tagmeme in the locative-syntagmeme that aids in
defining the latter as structurally contrastive with the noun-
syntagmeme. One other feature, previously indicated, aids in
defining contrastively this locative-syntagmeme-1, i.e., the
Aspect tagmeme is manifested by a distinctive closed set of
suffixes.

Locative suffixes mark location in space or in time or
both. The latter two functions are realized by a small closed
set of suffixes and will be discussed at the close of this
section.

The set of suffixes which manifests the Aspect tagmeme of
locative-syntagmeme-1 consists of the following:

-ko 'specific location', -pa 'generalized location', -pan
'place on top of', -tan 'location beside/below', -calan 'in
between', -yan 'place of usual activity'. These suffixes
are identified in this description by the symbol 'lc', loca-
tive suffix.

Illustrations for the reading PNA, with the suffixes given
above, are:

nomecko 'at the exact spot where my foot is' (no- 1sg poss,
mec- 'foot', -ko lc), nočanko 'at my house' (no- 1sg poss,
čan- 'house', -ko lc); nočampa 'the place where my house
is' (no- 1sg poss, čam- 'house', -pa lc); noelpan 'on my
chest' (no- 1sg poss, el- 'chest', -pan lc); inahnakastan
'beside his ears' (i- 3sg poss, nah- rd, nakas 'ear', -tan

lc); momaacalan 'between your hands' (mo- 2sg poss, maa-
'hand', -calan lc);

ninemiyan 'his usual place for walking' (ni- 3sg poss, nemi
'walk', -yan lc).

The Aspect tagmeme of locative-syntagmeme-1 is also
manifested by a set of compounded locative suffixes, i.e., each
is a cluster of two locative suffixes which occur singly. The
set consists of -kopa 'generalized location' (-kopa consists of
-ko 'specific location' and -pa 'general location'), -yampa
'place of usual activity' (yampa consists of -yan 'place of usual
activity' and -pa 'general location'), and -cinko 'honorable
location' (-cinko consists of -cin 'honorific' and -ko 'specific
location'). The honorific -cin does not occur in the locative
syntagmeme apart from this compound suffix -cinko. Both the
compound suffixes -kopa and -cinko occur following other loca-
tive suffixes. The following illustrations are of the reading
PNA with the compound suffixes:

močankopa 'the area around your house' (mo- 2sg poss,
čan- 'house', -kopa 'generalized location'); ičankokopa
'around my house, i.e., in the general area near my
house' (i- 3sg poss, čan- 'house', -ko 'specific location',
-kopa 'generalized location');

toonalkisayampa 'east, i.e., the place where the sun
usually comes up' (toonal 'sun', kisa 'exit', -yampa 'place
of usual activity');

motasohmowisišpancinko 'allow me to pass in front of your
honorable presence' (mo- 2sg poss, tasoh 'love', mowis
'respect', iš 'face', -pan 'on top of', -cinko 'honorable
location'). This type of utterance occurs in the greeting
system when relatives meet each other. Note that the
construction -mowis-iš- is represented by base type B-1,
i.e., M:mowis H:iš. This B-1 is embedded in the Head

slot of a base type B-1 and its Modifier slot is manifested by tasoh, i.e., M:tasoh H:B-1.

There is a small set of locative suffixes which occur only in the Aspect tagmeme of the reading NA:

-kan 'place of/place characterized by', -lan 'place name' (no occurrence apart from place name), -tah/-ah 'place characterized by' (-tah following vowels, -ah following consonants), -tampa 'beneath/underneath' (a compound which consists of -tan 'position beside' and -pa 'general location'), -tenoh 'along the edge of' (perhaps a compound noun consisting of ten- 'lip/edge' and oh- 'trail'; neither element occurs singly in the locative-syntagmeme) -cintan 'at the foot of' (consists of -cin 'base' and -tan 'location beside/below').

Illustrations for the reading NA, with the suffixes given above are:

owihkan 'a difficult place' (owih 'difficult', -kan lc); wicilan 'Huitzilan, town name' (wic- 'thorn', -lan lc); qowtah 'forest' (qow- 'tree', -tah lc); tahsolah 'untidy place' (tahsol 'rubbish', -ah lc); awakatampa 'beneath the avocado tree' awaka- 'avocado', -tampa lc); qowtenoh 'the edge of the forest' (qow- 'tree', -tenoh lc); tepeecintan 'at the foot of the mountain' (tepee- 'mountain', -cintan 'at the foot of').

The suffix -pan when it manifests the Aspect tagmeme of the reading PNA is glossed 'place of top of' (see page 134); when -pan manifests the Aspect tagmeme of the reading NA, it is glossed 'place characterized by'.

kalpan 'town' (kal- 'house', -pan 'place characterized by'), tiopan 'church' (tio- 'god', -pan 'place characterized by').

The compound suffix -cinko often occurs following another compound:

tepeecintancinko 'at the foot of the honorable mountain'
(tepee- cintan 'at the foot of', -cinko 'honorable location'.
sakapoastankopacinko 'in the area around the honorable
location of Zacapoaxtla [market town]' (sakapoastan
'Zacapoaxtla', -kopa 'general location', -cinko 'honorable
location'). Note the locative -tan which precedes both
locative compounds. It appears to function like -lan
'place name'. It is part of the name of the market town;
it is not a suffix that freely combines with other suffixes
or with constructions.

There is a small set of suffixes which denote location in
time; they function like other members of the set of locative
suffixes. They are:

-aman 'a point of time in the future', -tika/ika 'within a
specified period of time'. kaštolaman 'in fifteen days'
(kaštol 'fifteen', -aman lc); čiqeyiaman 'in a week'
(čiqeyi 'eight', -aman lc):
imostika 'by tomorrow' (i- 3sg poss, mosta 'tomorrow',
-ika lc), in ilwitika 'within the time of the fiesta' (in 'the',
ilwit 'fiesta', -ika lc)

Some of the locative suffixes mark location in time in
addition to location in space:

-pa 'number of times', ešpa 'three times/third time' (eš-
'three', -pa 'number of times'), nočipa 'always/all the time'
(noči 'all' -pa 'number of times');
-kopa 'general area of time', in huliohkopa 'around the
month of July' (hulioh 'July', -kopa 'general time');
-yan 'period of time', iokičpiltiyan 'time of his youth' (i-
3sg okič- 'male', pil- 'child', -ti intr vi, -yan 'period of
time').

4.2 The Locative- Syntagmeme- 2. The locative-
syntagmeme-2 is defined by the formula given in the introduc-

tion to this chapter; there is one reading of the formula: PNA.
In this reading the Person tagmeme always occurs; the Aspect
tagmeme rarely occurs and when it does occur, its only mani-
festant is -cinko 'honorable location'. The Nucleus tagmeme of
both locative syntagmemes is manifested by base type B-1. The
differences between the two locative syntagmemes are two-fold:
(1) the Head tagmeme of B-1 of locative-syntagmeme-1 is
manifested by noun or verb stems; the Head tagmeme of B-1
of locative-syntagmeme-2 is manifested only by stems from
sc-15; (2) the Aspect tagmeme of locative-syntagmeme-1 is
manifested by the locative suffixes defined in the previous
sections, the Aspect tagmeme of locative-syntagmeme-2 is
manifested only by the locative compound suffix -cinko.

    The set of morphemes which comprise stem class-15 are:
ihti 'inside of', kan 'behind', nawak 'in front of', pan 'on
top of',

tampa 'beneath', tenoh 'edge of', teč 'in/on', calan 'in
between', cintan 'at the foot of'.

    These illustrations show the reading PN of locative-
syntagmeme-2:

noihti 'inside me' (no-1sg poss, ihti 'inside'), ikan 'behind
it' (i-3sg poss, kan 'behind'), monawak 'in front of you'
(mo-2sg nawak 'in front of'), nopan 'on top of me' (no-1sg
poss, pan 'on top of'), itampa 'underneath it' (i-3sg poss,
tampa 'beneath'),

itenoh 'along its edge' (i-3sg poss, tenoh 'edge of'),
moteč 'in you' (mo-2sg poss, teč 'in'), nincalan 'between
them' (nin-3pl poss, calan 'between'), nincintan 'at their
base' (nin-3pl poss, cintan 'base').

    Each of the above illustrations also occurs with the honori-
fic locative -cinko; thus, the reading of the formula is PNA.

moihticinko 'inside your honorable self' (mo-2sg poss,

ihti 'inside of', -cinko hon lc), monawakcinko 'in your

honorable presence' (mo- 2sg poss, nawak 'in front of',

-cinko hon lc), etc.

V. THE PARTICLE-SYNTAGMEME

Particle-syntagmemes are those patterned clusterings of tagmemes which are neither verb-syntagmemes, noun-syntagmemes, nor locative-syntagmemes. The particle-syntagmemes have a complete lack of derivational suffixation, a complete lack of embedding among the manifestants of the Nucleus tagmeme, and only meager inflectional suffixation. It is not possible to specify derivational histories of particle-syntagmemes: no agnate nor partially enate relationships or transformations can be stated for them. The formula for the particle-syntagmeme is: +Nu:base ±As:infl-sfx, i.e., an obligatory Nucleus tagmeme manifested by base type B-1 (but only a minimal manifestation of the Head tagmeme of B-1) and an optional Aspect tagmeme manifested by plural and honor suffixation. There are two readings of the formula: NA and A. The numeral and deictic particle-syntagmemes have the reading NA; the relative particle-syntagmeme has the reading N. The following is a visual display of the syntagmatic structure of the particle-syntagmeme.

PARTICLE-SYNTAGMEME

        +NUCLEUS: ±ASPECT:

        B-1.   plural,

                           honorific.

5.1 The Numeral Particle-Syntagmeme. The Nucleus tagmeme of the numeral particle-syntagmeme is manifested by a closed set of twelve stems which specify, in terms of fives and twenties, the numeric quantities from one to 100,000. Two

of the stems are loan words from Spanish. The stems are
optionally inflected for plural (-n or -meh) and for honor. The
set of stems consist of:

see 'one', ome 'two', eeyi 'three', nawi 'four', maaqil
'five', čik-/čiq- combinative, máhtakti 'ten', -on/-om
combinative, kaštol 'fifteen', powal 'count', siento
'hundred', mil 'thousand'.

The tactics which guide the combination of stems are: the
stems 'one' through 'five' occur in isolation. The combinative
čik-/čiq-precedes the stems 'one' through 'four' to form the
numbers 'six' through 'nine'. The stem for 'ten' occurs in
isolation. The combinative-on/-om follows the stem for 'ten'
and precedes the stems 'one' through 'four' to form the numbers
'eleven' through 'fourteen'. The stem for 'fifteen' occurs in
isolation. The combinative -on/-om follows the stem for
'fifteen' and precedes the stems for 'one' through 'four' to form
the numbers 'sixteen' through 'nineteen'. The stem powal
'count' is preceded by the stems 'one' to 'four' to specify
'twenty', 'forty', 'sixty', 'eighty'. Each of these is followed
by the numbers 'one' to 'nineteen' to form the individual numbers
between the quantities of twenties. This pattern continues up
to 'ninty-nine'. The number 'hundred' is from Spanish; it is
preceded and followed by the set specified above for counting
up to a thousand. The number 'thousand' is from Spanish; it
is preceded and followed by the set specified above for counting
higher. The following illustrations show the pattern for count-
ing:

1	see	6	čiqasce
2	ome	7	čikome
3	eeyi	8	čiqeeyi
4	nawi	9	čiknawi
5	maaqil	10	máhtakti

11	mahtaktionsee	21	sem powal wan see
12	mahtaktiomome	25	sem powal wan maaqil
13	mahtaktiomeeyi	30	sem powal wan máhtakti
14	mahtaktionnawi	35	sem powal wan kaštol
15	kaštol	40	ome powal
16	kaštolonsee	60	eeyi powal
17	kaštolomome	80	nawi powal
18	kaštolomeeyi	100	see siento
19	kaštolonnawi	1000	see mil
20	sem powal	153	see siento wan ome powal wan mahtaktiomeeyi

The plural -n occurs with numerals for the sake of emphasis:

ome 'two', omen 'two and only two'.

The plural -n occurs with a few numerals which specify generalized quantities:

nočï 'all', nočin 'all of them', seki 'some', sekin 'some of them'.

The plural -meh occurs with the numerals if one out of a group is being emphasized:

seemeh den icqinmeh 'one of the dogs' (see 'one', -meh pl, icqinmeh 'dogs').

The plural -meh occurs with the numeral if the numeral particle-syntagmeme functions in place of the noun-syntagmeme.

kanači icqinmeh 'how many dogs are there?' (kanači 'how many', icquinmeh 'dogs'), nawimeh 'four' (nawi 'four', -meh pl).

The numerals occur with the honorific suffixation:

seecin 'just one little one' (see 'one', -cin hon).

5.2 The Deictic Particle-Syntagmeme. The Nucleus tagmeme of the deictic particle-syntagmeme is manifested by a closed set of three stems which direct the attention to objects;

the deictic occurs in isolation and as a modifier of a noun-syntagmeme. The plural marker is -keh; the honorific marker is -cin.

nihín 'this', nihinkeh 'these', nihincin 'this little one', nihincicin 'these little ones'; nohón 'that', nohonkeh 'those', nohoncin 'that little one', nohoncicin 'those little ones', nee 'that over there', neekeh 'those over there', neecin 'that little one over there', neecicin 'those little ones over there'.

5.3 The Relative Particle-Syntagmeme. The Nucleus of the relative particle-syntagmeme is manifested by a set of stems which function as introducers of both independent and dependent clauses. The relatives occur non-inflected.

Some of the particles which introduce independent clauses are:

wan 'and', iksá 'sometimes', ihkón 'in this way', ihqak 'and then', ihqakón 'and as a result', niman 'afterwards', noo 'also', o/oso 'or', pero 'but', pues 'but/well', šaa 'if', šee 'question', katihyehwa 'which', koš 'if', qak 'when', kemanyan 'when', toni 'what', aconi 'who'.

Some of the particles which introduce dependent clauses are:

den 'that which', hasta 'until', mah 'that (permissive)', mahya 'like', maski 'in spite of', para 'in order to', porin 'because', kemeh 'as/like', kenín 'how', kenameeh 'like/as', taa 'if', takán 'if it is possible that', yono 'neither', sankenamo 'rather than', naqen 'who'.

APPENDICES

The appendices consist of stem classes 1 - 15.

Note that the marking of long and short vowels does not conform to the marking as shown in Key's vocabulary of Sierra Nahuat (Key and Key 1953). Although there is an emic contrast between short and long vowels, the factors of stress, of preceding voiced consonants, and of following voiced consonants cause neutralization of the length contrast. The length factor in Nahuat is yet to be exhaustively analyzed. Only those vowels with emic contrast between long and short quantity as analyzed by the author are given here.

STEM-CLASS-1: stem-final vowel is low-back; the stems occur in the intransitive, causative, and causative-referential verb-syntagmemes.

ahwiyaya	'it smells'	tagooya	'he shucks corn'
taeheka	'it blows'	tašiwtata	'it's hot'
ihka	'it extends'	tatasa	'it lays eggs'
ihkoma	'it tangles'	tayowa	'it gets dark'
ihsa	'he awakes'	teena	'he moans'
ihsika	'he pants'	toona	'sun shines'
ihsota	'he's nauseated'	tostasa	'it leans'
išwa	'it sprouts'	cohya	'it smells'
iksa	'he steps'	conqita	'he's serious'
kisa	'he exits'	čawa	'it's greasy'
mayana	'he's hungry'	čihča	'he spits'
meeya	'it surges'	čoka	'he cries'
molewa	'he roots'	wala	'he came'
pakita	'he's happy'	wecka	'he laughs'
peewa	'he begins'	wica	'he comes'
šoota	'it burns'	wiwika	'it trembles'

The order of alphabet followed through the appendices is:

a, e, i, k, q, l, m, n, o, p, s, š, t, c, č, w, y.

STEM-CLASS-2a: stem-final vowel is high-front; the stems occur only in the intransitive and causative verb-syntagmemes.

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ahki	'he swims'	tatasi	'he coughs'
ahsi	'he arrives there'	taawi	'it shines'
aki	'it fits'	tekiti	'he works'
ihkopi	'he winks'	teemi	'it piles up'
kikisi	'he whistles'	tiotaki	'it's afternoon'
kiowi	'it rains'	tisi	'she grinds'
koči	'he sleeps'	cahci	'he shouts'
qali	'it's good'	čiiči	'he sucks'
miawati	'corn grows'	weli	'he is able'
miki	'he dies'	weeli	'it's delicious'
mowi	'he fears'	weci	'he falls down'
nemi	'he lives/walks'	yoksi	'it cooks'
nesi	'it appears'	yooli	'it is born'
paki	'he's healthy'	yowi	'he goes'
posteki	'it breaks'		

STEM-CLASS-2b: stem-final vowel is high-front; the stems occur in all types of verb-syntagmemes.

ewi	'he arises'	temi	'it piles up'
kepi	'it returns'	tohtomi	'it unties'
paati	'it dissolves'	caqi	'it shuts'
piški	'it drops off'	waki	'it dries'
teeki	'it pours'	wiwiti	'it comes out'

STEM-CLASS-3: stem-final vowel is low-back; the stems occur in all types of verb-syntagmemes except the intransitive verb-syntagmeme.

ki-ahwa	'he scolds him'	ki-kawa	'he leaves it'
ki-ehekama	'he fans it'	ki-kehcoma	'he bites it'
ki-ihita	'he criticizes it'	ki-keca	'he stands it up'
ki-ihcoma	'he sews it'	ki-kočita	'he dreams it'
ki-ištawa	'he pays it'	ki-kowa	'he buys it'
ki-ita	'he sees it'	ki-qa	'he eats it'
ki-ičqa	'he digs it'	ki-mahkawa	'he loosens it'
ki-ičtaka	'he works secretly'	ki-mahpewa	'he rejects it'
ki-mahsewa	'he eats it'	ki-tamota	'he throws it'
ki-maamaa	'he carries it'	ki-tapaca	'he crushes it'
ki-mana	'he boils it'	ki-tasohta	'he loves it'
ki-maawa	'he spreads it'	ki-tawelita	'he hates it'
ki-meewa	'he cultivates it'	ki-tawika	'he owes it'
ki-moyawa	'he spreads it'	ki-teema	'he bathes it'
ki-namaka	'he sells it'	ki-temaka	'he delivers it'

ki- nemaka	'he sacrifices it'	ki- tenewa	'he invokes it'
ki- nooca	'he summons it'	ki- topewa	'he pushes it'
ki- ohsa	'he anoints it'	ki- toka	'he chases it'
ki- očpana	'he sweeps it'	ki- tooka	'he plants it'
ki- paaka	'he washes it' *	ki- tolina	'he desires it'
ki- payana	'she grinds it'	ki- cocona	'he plays it'
ki- pena	'he searches it'	ki- čiičina	'he sucks it'
ki- pica	'he blows it'	ki- čiwa	'he does it'
ki- pohpowa	'he rubs it'	ki- čiya	'he waits for it'
ki- saka	'he carries it'	ki- wahwana	'he scratches it'
ki- sowa	'he spreads it'	ki- welita	'he likes it'
ki- šima	'he shears it'	ki- wana	'he shares it'
ki- šipewa	'he skins it'	ki- wika	'he carries it'
ki- tahpiya	'he guards it'		
ki- takewa	'he hires him'		

STEM-CLASS-4: stem-final vowel is high-front; stems occur in all verb-syntagmemes except the intransitive verb-syntagmeme.

ki- ahaki	'he dunks it'	ki- mati	'he knows it'
ki- ahaoi	'he picks it up'	ki- mayowi	'he fells it'
ki- ihkiti	'he weaves it'	ki- namiki	'it fits him'
ki- ihmati	'he threatens him'	ki- neki	'he wants it'
ki- ihneqi	'he scents it'	ki- piiki	'he wraps it'
ki- ihqani	'he removes it'	ki- qi	'he takes it'
ki- isteqi	'he pinches him'	ki- semati	'he greets him'
ki- ičteki	'he steals it'	ki- seewi	'he rests it'
ki- kaki	'he hears it'	ik- taaḵamati	'he obeys it'
ki- kowaki	'he pierces it'	ki- tani	'he overcomes it'

STEM-CLASS-5: stem-final vowel is low-back; stems occur in all types of verb-syntagmemes.

alawa	'it's smooth'	posawa	'it's swelled'
kanawa	'it's narrow'	šolawa	'it's slippery'
kayawa	'it's deceptive'	taqawa	'it's hard'
kosawa	'it's yellow'	tecawa	'it's thick/viscous'
qečawa	'it's humid'	tilawa	'it's thick/dense'
melawa	'it's true'	tomawa	'it's fat'
patawa	'it's wide'	čikawa	'it's strong'
pinawa	'he's ashamed'	čipawa	'it's clean'
picawa	'it's thin'	wehkawa	'it's far away'

STEM-CLASS-6: stem-final vowel is high-back; the stems occur in all verb-syntagmemes except the transitive verb-syntagmeme.

ekšowa	'he sneezes'	seqalowa	'it's frosty'
išpilowa	'he points'	sihsiqilowa	'he snarls'
kamanalowa	'he jokes'	tahyalowa	'he's nauseated'
kamačalowa	'he yawns'	tekpowa	'he replants'
qešanowa	'he makes a lap'	tehkowa	'he ascends'
masowa	'he gestures'	tomocowa	'he squats'
mašalowa	'it opens up'	ciknowa	'he hiccoughs'
milowa	'cornfield grows'	cinowa	'he pays respect'
motalowa	'he runs'	cocoqelowa	'he wiggles'
oqilowa	'it gets wormy'	čihkolowa	'it's crooked'
panowa	'he passes by'	čolowa	'he flees'
pašalowa	'he visits'	yolowa	'it forms a heart'

STEM-CLASS-7: stem-final vowel is -i/-a/-o; stems occur in all verb-syntagmemes.

Type CaCani:

kaašani	'it loosens'	sawani	'he's hoarse'
kalani	'it drops'	šamani	'it shatters'
kapani	'it claps'	tapani	'it breaks'
kawani	'it burns'	cayani	'it splits'
qalani	'he's angry'	čalani	'it falls into water'
palani	'it's rotten'	čapani	'it plops'
patani	'it flies'	čaqani	'it bursts'
milini	'it glitters'	tilini	'it stretches'
olini	'it shakes'	cilini	'it tinkles'
picini	'it bursts'	čipini	'it drips'
šitini	'it crumbles'	ciqini	'it jumps'
tiqini	'it thunders'		

Type CoConi:

komini	'it splashes'	soloni	'it buzzes'
kotoni	'it breaks'	toponi	'it explodes'
koyoni	'it drills'	totoni	'it's hot'
moloni	'it boils'	coyoni	'it fries'
poloni	'it loses'	čoloni	'it bounces'
posoni	'it foams'	čoponi	'it splashes'

Type CVCVni:

kopini	'it disengages'	tacini	'it creaks'
qetani	'it trembles'	tepini	'it pricks'
petani	'it flashes'	teyini	'it crumbles'
pešoni	'it fills up'	yemani	'it softens'
počini	'it whitens'	wilani	'it wiggles'

STEM-CLASS-7b: stem-final vowel is -i/-a/-o; stems occur only in the intransitive and transitive verb-syntagmemes. All glosses mean: 'sound of...'. Type CaCaCaka:

kakalaka	'knocking'	sasawaka	'rustling'
kakapaka	'whacking'	šašamaka	'grinding'
kakawaka	'heating'	šašawaka	'creaking'
kakayaka	'breaking'	cacayaka	'splintering'
qaqalaka	'boiling'	čačaqaka	'splattering'
nanacaka	'chewing'	čačalaka	'cawing'
papataka	'flapping'	čačapaka	'splattering'

Type: CiCiCika:

mimilika	'glittering'	cicilika	'tinkling'
šišitika	'dripping'	ciciqika	'splattering'
titiqika	'palpitating'	čičipika	'dripping'
kokomoka	footsteps'	sosoloka	'spitting'
kokotoka	'splitting'	totomoka	'palpitating'
kokošoka	'swishing'	totopoka	'exploding'
kokoyoka	'dripping'	cocoyoka	'whining'
momoloka	'boiling'	čočoloka	'filling a bottle'
popoloka	'babbling'	čočopoka	'boiling'
poposoka	'foaming'		

Type CVCVCVka:

kikinaka	'blabber'	tatacika	'creaking'
qeqetaka	'snoring'	teteyika	'dripping'
nanacaka	'squeaking'	titilaka	'pulling/dragging'
pepešoka	'filling up'	čočopika	'dripping'
pepetaka	'glittering'	wiwiyoka	'trembling'
šošolaka	'dragging'		

STEM-CLASS-8a: stem-final vowel is high-front and is replaced by high-back. Stems occur in all verb-syntagmemes.

aawiliwi	'it wastes away'	pečiwi	'it sticks'
ehkewi	'it peels off'	poliwi	'it lacks'
insiwi	'it hurries'	saliwi	'it straightens out'
iliwi	'it hurries'	šehšeliwi	'it separates out'
kehkeliwi	'it mocks'	tahyaliwi	'it smells'
qehmoliwi	'it bothers'	taciwi	'it's lazy'
pačiwi	'it covers'		

STEM-CLASS-8b: stem-final vowel is any vowel except high-front; it is replaced by high-back. Stems occur in all verb-syntagmemes.

milawi	'it glitters'	tanawi	'it worsens'

qetawi	'it trembles'	tapowi	'it opens'
sepowi	'it deadens'	tepewi	'it sprinkles'
sonewi	'it swells'	tonewi	'it stings'
šikawi	'it worsens'	toyawi	'it spills'
šošowi	'it gets green'	čičilewi	'it gets red'

STEM-CLASS-9: stem-final vowel is high-back; stems occur in all verb-syntagmemes

ki- alakowa	'he smooths it'	ki- pahpalowa	'he laps it'
ki- alašowa	'he smooths it'	ki- pilowa	'he hangs it up'
ki- ehekowa	'he probes it'	ki- pipicowa	'he blows it'
ki- ihihtowa	'he criticizes it'	ki- pisilowa	'he crumbles it'
ki- ihqilowa	'he writes it'	ki- siqilowa	'he shows his teeth'
ki- ihsolowa	'he molests it'	ki- šikowa	'he withstands it'
ki- ihtakowa	'he ruins it'	ki- šikalowa	'he strips it'
ki- ihtowa	'he says it'	ki- šoločowa	'he gathers it'
ki- išikowa	'he withstands it'	ki- tahpalowa	'he greets him'
ki- kemilowa	'he wraps it'	ki- tahsolowa	'he dirties it'
ki- kokowa	'he hurts it'	ki- takatowa	'he stretches it'
ki- kolowa	'he curls it'	ki- taškalowa	'she makes tortillas'
ki- kopicowa	'he makes it a point'	ki- tekipanowa	'he supports him'
ki- qehsowa	'he worries him'	ki- tekowa	'he reserves it'
ki- qelowa	'he folds it'	ki- telowa	'he butts it'
ki- qečowa	'she grinds it'	ki- teemowa	'he searches for it'
ki- malakašowa	'he spins it'	ki- teteqinowa	'he rolls it'
ki- macowa	'he clenches his fist'	ki- tetešowa	'he roughs it'
ki- manelowa	'he mixes it'	ki- tecilowa	'he twists it'
ki- mašalowa	'he opens it'	ki- tocowa	'he hunches it'
ki- mimilowa	'he sprays it'	ki- tolowa	'he swallows it'
ki- momošowa	'he crumbles it'	ki- tecowa	'he winds it'
ki- mowisowa	'he enjoys it'	ki- cecelowa	'he shakes it'
ki- napalowa	'he embraces it'	ki- cohqilowa	'he dirties it'
ki- nepanowa	'he piles it'	ki- cocolowa	'he wrinkles it'
ki- neqilowa	'he twists it'	ki- čačanowa	'he stands it on end'
ki- netečowa	'he gathers it'	ki- wehwelowa	'he destroys it'
ki- nečikowa	'he gathers it'	ki- witolowa	'he curves it'
ki- ololowa	'he gathers it'	ki- wiwisowa	'he shakes it'
		ki- yekapicowa	'he sharpens it'
		ki- yekowa	'he tastes it'

STEM-CLASS-10a: stem-final vowel is high-front; stems occur in all verb-syntagmemes.

aati	'it dilutes'	tami	'it finishes'
kalaki	'he enters'	tamati	'it's quiet'

šini	'it crumbles'	weeyi	'it's large'

STEM-CLASS-10b: stem-final vowel is high-front; stems occur in all verb syntagmemes except the intransitive verb-syntagmeme.

ki- ihtotiya	'he dances it'	ki- šikitiya	'he stuffs it'
ki- ikneliya	'he pities it'	ki- šokoliya	'he scrapes it'
ki- iliya	'he says it'	ki- taaliya	'he places it'
ki- ilpiya	'he ties it'	ki- taatiya	'he hides it'
ki- kickiya	'he grabs it'	ki- taatiiya	'he burns it'
ki- kohkomiya	'he makes noise'	ki- tayokoliya	'he gives it'
ki- mačiliya	'he senses it'	ki- taqatiya	'he feasts on it'
ki- nawatiya	'he notifies him'	ki- tačiliya	'he cares for it'
ki- nemiliya	'he thinks it'	ki- telwiliya	'he accuses him'
ki- nookiya	'he empties it'	ki- tiitaniya	'he sends for it'
ki- pečiya	'he flattens it'	ki- tokiya	'he draws it close'
ki- seeliya	'he receives it'	ki- copitiya	'he injects it'

STEM-CLASS-11: no stem-final vowel following /-l, -š/; stems occur in only the transitive and referential verb-syntagmemes.

ki- ahwačwiya	'he sprays it'	ki- manelwiya	'he mixes it'
ki- ahmowiya	'he shampoos it'	ki- maasakawiya	'he hexes him'
ki- ačtowiya	'he precedes it'	ki- masolwiya	'he handles it'
ki- elewiya	'he desires it'	ki- nawalwiya	'he hexes him'
ki- ihyowiya	'he withstands it'	ki- netewiya	'he picks a fight'
ki- istawiya	'he salts it'	ki- nešikolwiya	'he envies it'
ki- išaawiya	'he rinses it'	ki- okocowiya	'he daubs it with pitch'
ki- išewiya	'he dares it'	ki- panawiya	'he passes it'
ki- ičtakawiya	'he steals it'	ki- popočwiya	'he offers incense'
ki- mahpilwiya	'he points at it'	ki- sekawiya	'he carries it'
ki- sesewiya	'he cools it'	ki- tatalwiya	'he cultivates it'
ki- sewiya	'he rests it'	ki- tekiwiya	'he offers it'
ki- sokiwiya	'he muddies it'	ki- teneešwiya	'he whitewashes it'
ki- šošokewiya	'he makes it green'	ki- tepeešiwiya	'he throws it over a cliff'
ki- tahsolwiya	'he dirties it'	ki- tecawiya	'he divines it'
ki- tahtowiya	'he defends him'	ki- topalwiya	'he collects taxes'
ki- takewiya	'he intercedes'	ki- cikawaswiya	'she combs her hair'
ki- takolwiya	'he circles it'	ki- wicwiya	'he pierces it'
ki- talneešwiya	'he makes it dusty'		
ki- tanewiya	'he borrows it'	ki- yekawilwiya	'he shades it'

STEM-CLASS-12: noun stems which end with /-l/; nominalizer is -ti.

ahkol	'shoulder'	maaqil	'five'

ahmol	'soap plant'	mašal	'fork in tree'
ahsil	'type of fish'	maacol	'fistfull'
ahtapal	'wing'	mekapal	'tump line'
aanal	'other side'	meškal	'maguey juice'
aamel	'spring'	meyal	'spring'
aatool	'corn gruel'	nawal	'witch'
aawil	'toy'	neštamal	'hominy'
emol	'bean soup'	nešqitil	'lesson'
ihyal	'stench'	nešikol	'envy'
keečol	'piece'	nohnel	'youth'
kaštil	'rooster'	nopal	'cactus leaf'
kaštol	'fifteen'	sanil	'notice'
kayowal	'night'	sootol	'type of basket'
kintonil	'type of herb'	šaal	'sand'
komal	'griddle'	šiikal	'cup'
kopal	'incense'	šoočihqal	'banana'
kostal	'burlap bag'	tagool	'corn'
koyal	'type of snake'	tahsol	'rubbish'
qetaškol	'type of worm'	tahtakol	'sin'
mahpil	'finger'	tahtol	'word'
mahsewal	'indian'	takawal	'widow'
takomol	'plain'	tepisil	'pebble'
taal	'dirt'	tiil	'soot'
tamal	'corn cake'	toonal	'sun/day'
tapal	'color'	topil	'rod'
tapalol	'dinner'	tootol	'bird'
tapiyal	'domestic animal'	compil	'a cold'
taakewal	'hired man'	coocokol	'water jug'
tasal	'cloth'	čiil	'chile'
taškal	'tortilla'	čičiil	'red'
tayowal	'night'	yowal	'night'
tekol	'live coal'	yekacol	'nose'
temal	'pus'	wel	'sibling'
tempil	'beak'	wipil	'dress'

STEM-CLASS-13: noun stems which end with-C; nominalizer is -ti.

Type CVCVk

elwiyak	'heaven/sky'	qeek	'fox'
istaak	'white'	sek	'snow'
išik	'navel'	sook	'mud'
kamak	'mouth'	taaltikpak	'the earth'

kokook	'hot (spicy)'	tiotak	'afternoon'
koyok'	'hole'	toskak	'throat'
moolik	'elbow'	čaawak	'grease'
nook	'liquor'	čilak	'type of chile'

Type CVCVn

almon	'a measure'	qiišin	'hawk'
aamin	'dysentery'	maltan	'type of berry'
aškan	'today/now'	maapačin	'raccoon'
ihkočin	'type of worm'	melan	'truth'
icqin	'dog'	miston	'cat'
kapolin	'type of cherry'	nepan	'stack'
kosan	'type of rodent'	neškon	'jar of hominy'
kočan	'nest'	oqilin	'wild animal'
qalkan	'early'	palen	'liquor-still'
qesaltin	'bird-dancer'	saayoolin	'type of fly'
sekatan	'armpit'	tekpin	'flea'
sen	'dry corn'	točin	'rabbit'
sitaalin	'star'	tomin	'money'
sotolin	'type of basket'	tootolin	'young turkey'
takeen	'garment'	con	'hair'
taqacin	'opossum'	čan	'house/home'
taman	'a type'	čapolin	'grasshopper'

Type CVCs/š/c/č

ahwač	'dew'	takees	'slope'
aapis	'type of sickness'	talneeš	'dust'
ayotoč	'amardillo'	tamanis	'plain'
es	'blood'	tanees	'light'
iič	'maguey fiber'	tapeč	'pillow'
ičpoč	'female'	tapic	'flute'
kees	'slope'	tekoč	'hole'
keč	'neck'	tenamas	'fire stones'
kooleš	'cabbage'	teneeš	'lime powder'
qetaš	'skin'	tepus	'metal'
mangaš	'sleeve'	tiš	'corn dough'
mec	'foot'	tootomoč	'dry corn leaves'
meec	'moon'	čič	'owl'
miš	'cloud'	wic	'thorn'
nakas	'ear'	okič	'male'
okoc	'pine pitch'	ooloč	'group'
opoč	'left side'		

Type CVCh/w

aayoh	'squash'	oh	'trail'
ehkaw	'light'	pah	'medicine'
istih	'type of bird'	pašah	'sash'
kamoh	'potato'	payoh	'shawl'
qaaqoweh	'cow'	pesoh	'badger'
qawit	'wood'	šapoh	'soap'
toopeh	'lizard'	čiknaw	'type of rodent'

Type CVCV ? (ends with non-phonemic glottal; no nominalizer occurs).

ikni-	'sibling'	pawa	'type of avocado'
iško	'face'	pahpata	'type of flower'
ištololo	'eye'	pepewani	'type of insect (ant)'
qaa	'head'	piyo	'young chicken'
qeya	'toad'	šopepe	'cockroach'
maamaata	'type of flower'	šošotani	'lightning bug'
maasaka	'devil'	tanqa	'knee'
milpa	'cornfield'	teeko	'master'
moosta	'tomorrow'	tootot	'bird'
nepanta	'noon'	cinaka	'bat'

STEM-CLASS-14: noun stems which end with -V; nominalizer is -t.

aakat	'bamboo'	ičkat	'sheep'
aamat	'paper'	ičpokat	'young female'
aaskat	'ant'	kakaaloot	'crow'
aat	'water'	kakawaat	'peanut'
aačawit	'swamp'	kašit	'clay bowl'
aawaat	'oak tree'	kiliit	'an herb'
aawakat	'avocado'	kiowit	'rain'
aayat	'hemp net'	koneet	'son'
eelot	'ear of corn'	koomit	'clay jar'
epasoot	'type of herb'	kosamaloot	'rainbow'
epat	'skunk'	kooskat	'necklace'
cšoot	'string bean'	koowaat	'snake'
et	'beans'	koyoot	'white man'
eewat	'string bean shell'	qemit	'furrow'
ihyot	'breath'	qeeyit	'skirt'
ihwit	'feather'	qowit	'tree'
iksot	'cactus tree'	lamat	'female'
ilwit	'fiesta'	malakat	'spindle'
istat	'salt'	masaat	'deer'
istit	'finger nail'	maayit	'hand'

iswat	'corn husks'	mekat	'rope vine'
ištawaat	'meadow'	metat	'grinding stone'
meeyot	'ray of sunshine'	šoočit	'flower'
miawat	'corn silk'	takiloot	'produce'
mikeet	'corpse'	takoot	'measuring stick'
montaat	'father-in-law'	taseloot	'pasture'
moosoot	'type of flower'	tapalkat	'potsherds'
mooyot	'blow fly'	telpokat	'young male'
nakat	'meat'	tepaamit	'wall'
nalwat	'root'	tepeet	'mountain'
nanakat	'type of mushroom'	tepchšit	'cliff'
nanawat	'wrinkles'	tet	'stone'
ooloot	'corn cob'	tekit	'work'
owat	'sugar cane'	tehsiwit	'hail'
papaloot	'butterfly'	tekoloot	'owl'
petat	'palm mat'	tit	'fire'
picot	'pig'	tohmit	'hair/wool'
sakat	'grass'	tokat	'spider'
saawat	'wart'	tomat	'tomato'
siwaat	'woman'	cakat	'dry corn stalks'
sokiit	'mud'	capot	'type of fruit'
šiloot	'ear of corn'	cipot	'type of worm'
šiwit	'leaf'	cohpiloot	'vulture'
šokot	'fruit'	coyot	'youngster'
šomeet	'elderberry'	yaawit	'blue'
šoonoot	'type of flower'	yekaqit	'nasal mucus'

STEM-CLASS-15: occur only in locative-syntagmemes.

ihti	'inside of'	tenoh	'edge of'
kan	'behind'	teč	'in/on'
nawak	'in front of'	calan	'in between'
pan	'on top of'	cintan	'at the foot of'
tampa	'beneath'		

NOTE ON SPANISH LOAN WORDS

A. The non-verbal loan words used in Nahuat conform to the Nahuat phonological system, i.e., the stress is penultimate and certain Spanish phonemes are replaced by Nahuat phonemes. Nouns which have ultimate stress in Spanish have penultimate stress when they occur in Nahuat discourse.

arroz 'rice' [arós]; in Nahuat, aros 'rice' [áros];

José 'Joseph' [hosé]; in Nahuat, hose 'Joseph' [hóse];

One Spanish phoneme found to shift in manner of articulation when it occurs in Nahuat discourse is /v/: Spanish /v/ ---> Nahuat /b/.

avena 'oatmeal' [avena]; in Nahuat, abena 'oatmeal' [abena].

Another shift of articulation is noted in the Spanish consonant cluster /dř/, as in padre 'father' [padře]. In Nahuat the /dř/ cluster is /gř/, as in Nahuat pagře 'father'.

Any Spanish non-verbal word which ends in an open syllable has a final /h/ when it occurs in Nahuat discourse. The /h/ is retained when the plural marker is suffixed.

ventana 'window' [ventana]; in Nahuat, bentanah 'window' [bentanah], bentanahmeh 'windows'.

B. Spanish verbs are easily assimilated into Nahuat discourse. Both the transitive and intransitive verbs of Spanish fall into the canonical structure represented by stem classes- 6 and - 9, i.e., CVC + -owa. Regardless of the length of the Spanish verb, and regardless of the particular set of infinitives to which the verb belongs in Spanish, the verb is used in Nahuat in the infinitive form and is followed by the phonemic sequence /owa/.

kikosečařowa 'he harvests it' (ki- 3sg obj, kosečařo-
'harvest' [from Spanish cosechar 'to harvest'], -wa tr vi);

kimořdeřowa 'he bites it' (ki- 3sg obj, mořdeřo- 'bite'
[from Spanish morder 'to bite'], -wa tr vi);

kiřecibiřowa 'he receives it' (ki- 3sg obj, řecibiřo-
'receive' [from Spanish recibir 'to receive'], -wa tr vi).

The voice markers and the tense-aspect markers are suffixed
to the loan word in accordance with the descriptions given in
the respective sections on the Voice and Tense tagmemes.

SUMMARY OF VERB-SYNTAGMEMES

INTRANSITIVE	TRANSITIVE	REFERENTIAL	CAUSATIVE	CAUSATIVE-REFERENTIAL
k intr-1	- - -	- - -	D cs-1	D cs-rf-1
čoka			kičoktiya	kičoktiliya
k intr-2a	- - -	- - -	D cs-2a	D cs-rf-2a
koči			kikočtiya	kikočtiliya
k intr-2b	D tr-2b	D rf-2b	D cs-2b	D cs-rf-2b
paati	kipaata	kipaatiliya	kipaatiya	kipaatiliya
- - -	k tr-3	D rf-3	D cs-3	D cs-rf-3
	kimaka	kimakiliya	kimaktiya	kimaktiliya
- - -	k tr-4	D rf-4	D cs-4	D cs-rf-4
	kineki	kinekiliya	kinektiya	kinektiliya
k intr-5	D tr-5	D rf-5	D cs-5	D cs-rf-5
čipawa	kičipawa	kičipawiliya	kičipawtiya	kičipawtiliya
d intr-5	- - -	- - -	- - -	- - -
čipawtik				
k intr-6	- - -	D rf-6	D cs-6	D cs-rf-6
čolowa		kičolowiliya	kičolowtiya	kičolowtiliya

INTRANSITIVE	TRANSITIVE	REFERENTIAL	CAUSATIVE	CAUSATIVE-REFERENTIAL
k intr- 7a	D1 tr- 7a	D rf- 7a	D cs- 7a	D cs-rf- 7a
tapani	kitapana	kitapaniliya	kitapantiya	kitapantiliya
d1 intr- 7a	D2 tr- 7a			
tapantik	kitapaniya	- - -	- - -	- - -
d2 intr- 7a	- - -	- - -	- - -	- - -
tapaktik				
d3 intr- 7b	D tr- 7b	- - -	- - -	- - -
kikakalaka	kikakalaca			
k intr- 8a	D tr- 8a	D rf- 8a	D cs- 8a	D cs-rf- 8a
aawiliwi	kiaawilowa	kiaawilowiliya	kiaawilowtiya	kiaawilowtiliya
k intr- 8b	D tr- 8b	D rf- 8b	D cs- 8b	D cs-rf- 8b
toyawi	kitoyawa	kitoyawiliya	kitoyawtiya	kitoyawtiliya
	D tr- 8a/8b			
- - -	kiaawiliwiya/ kitoyawiya		- - -	- - -
k intr- 9	D tr- 9	D rf- 9	D cs- 9	D cs-rf- 9
teteštik	kitetešowa	kitetešowiliya	kitetešowtiya	kitetešowtiliya
k intr- 10a	D tr- 10a	D rf- 10a	D cs- 10a	D cs-rf- 10a
kalaki	kikalakiya	kikalakiliya	kikalaktiya	kikalaktiliya
- - -	k tr- 10b	D rf- 10b	D cs- 10b	D cs-rf- 10b
	kipečiya	kipečiliya	kipečtiya	kipečtiliya
- - -	k tr- 11	D rf- 11	- - -	- - -
	kiteneešwiya	kiteneešwiliya		

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AA   American Anthropologist

AL   Anthropological Linguistics

IJAL   International Journal of American Linguistics

IUPAL   Indiana University Publications in Anthropology and Linguistics

VFPA   Viking Foundation Publications in Anthropology

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