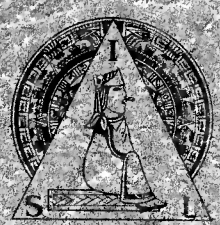
A GENERATIVE SYNTAX OF PEÑOLES MIXTEC



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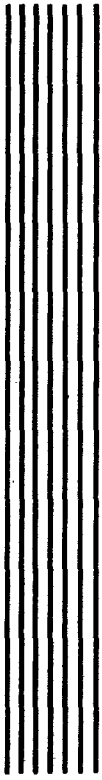

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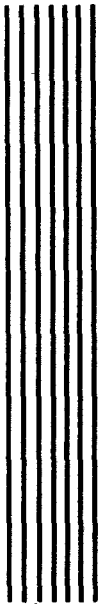

A GENERATIVE SYNTAX OF PEÑOLES MIXTEC

by
John P. Daly

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PREFACE

The present analysis of Peñoles Mixtec within the generative framework was begun during the longest, most stable period in the development of transformational-generative theory, the period between the publication of Noam Chomsky's *Syntactic Structures* in 1957 and his *Aspects of the Theory of Syntax* in 1965. This study, completed in the same year, was influenced by Chomsky's later work, but for the most part is based on the former. Since that time there have been many further innovations in transformational theory; nevertheless this study is of interest not only because of what it reveals about the structure of Mixtec grammar, but because it is the only analysis of a Mixtec language which has yet appeared that draws upon any version of transformational theory.

This study in its original form was presented to the faculty of the Graduate School of Indiana University in partial fulfillment of the requirements for the degree of Doctor of Philosophy. In this revision, only those changes that seemed essential have been made, changes that involve for the most part some minor adjustment in the rules or an occasional revision in the text. In all the changes I have attempted to maintain the perspective held at the time of the first writing, with one exception: I have modified the tone orthography to conform to a subsequent reanalysis of the tonal system. Many other improvements could have been made, but have not, since not only would there be diminishing returns from the time spent in anything short of a major revision at this point, but there would be the danger of obscuring what is distinctive in work done in one period in the development of grammatical theory.

This analysis of Mixtec grammar makes use of the *Syntactic Structures* model as adapted by Fred W. Householder, who directed my graduate

work and to whom I am indebted for many insights. The basic analysis which I did on field trips to Mexico was influenced, especially in the earlier stages, by the work of Robert E. Longacre on Trique, a language related to Mixtec. Some details in the final formulation of the rules were suggested to me by Joseph E. Grimes.

Many Mixtec Indians have instructed me in their language, but I am particularly indebted to Raúl Alavez Chávez, who supplied much of the data during the process of analysis. Acknowledgment is due also to those of my colleagues in the Summer Institute of Linguistics who for a number of years have encouraged me to publish this attempt at a generative syntax of Peñoles Mixtec.

Finally, I am especially grateful to my wife, Margaret H. Daly, for her constant encouragement in field work and writing, and for her willingness to do much of the stenographic work.

Mitla, Oaxaca
November 29, 1972

John P. Daly

LIST OF SYMBOLS

⟨ ⟩	Angle brackets enclose optional elements.
( )	Parentheses with subscript category labels mark off phrase structure constituents.
[ ]	Square brackets enclose two or more sets of elements in a rule: the first element in one pair of brackets corresponds to the first element in a second pair of brackets; likewise the second element in one corresponds to the second element in the other, etc.
{ }	Braces enclose disjoint elements.
# #	Number signs set off strings generated by the grammar.
' '	Single quotation marks set off English glosses.
,	The comma separates disjoint elements.
-	The hyphen indicates phonological dependence.
+	The plus sign marks morpheme boundaries and separates category symbols.
ˇ	The inverted caret precedes symbols for syntactic features.
'	The prime symbol marks a category which derives from a category without this symbol (e.g., NP' derives from NP).
~	The alternation symbol indicates obligatory absence of a category or feature.

$\longrightarrow$ The single arrow means "is rewritten as" (in rules which introduce category symbols) or "has associated with it" (in rules which introduce feature symbols).

$\Longrightarrow$ The double arrow means "is transformed to."

X and Y represent any string of zero or more elements unless otherwise defined.

Category symbols written in CAPITALS are non-terminal symbols (e.g., EMP emphatic phrase).

Category symbols written with only the initial letter capitalized are terminal symbols (e.g., Comp completive).

Symbols written entirely in lower-case letters are feature symbols or labels for single-membered classes (e.g., pro pronoun).

Category Symbols

Adj	adjective	NUM	numeral phrase
ADM	adverb modifier phrase	Num	numeral
Adm	adverb modifier	Plu	plural
ADV	adverb phrase	Pri	preverb intensifier
Adv	adverb	PRL	verb particles
ASP	aspect	Pro	pronoun
BT	below twenty	PRS	presentence
Comp	completive	PRV	preverb phrase
Cont	continuative	Prv	preverbal
EMP	emphatic phrase	Ptl	potential
HD	hundred	QUAN	quantifier phrase
IMP	imperative	Quan	quantifier
INJ	interjection	Rsp	response
Ins	intensifier	S	initial symbol of the grammar
Int	interrogative		
LOC	locational phrase	SEN	sentence
Loc	locational	SNUC	sentence nucleus
Mod	noun modifier	TEM	temporal phrase
N	noun	Tem	temporal
Neg	negative	TW	by twenties
NN	ninety-nine	V	verb
NNUC	noun phrase nucleus	VNUC	verb phrase nucleus
NP	noun phrase	VP	verb phrase

Feature Symbols

aml	animal	na'	potential
an	animate	nc	no causative
cls	classifier	ni	five through nine
com	common	nv	modifies nouns or verbs
cs	causative	plu	plural
csn	complex sentence nucleus	pos	possessive
cvn	complex verb nucleus	pre	preverb
da	kada	pri	preverb intensifier
dty	deity	pro	pronoun
equ	equative	prp	proper
fem	feminine	pst	post verb
fo	two through four	qu	quote
hd	hundred	sta	stative
hf	half	ta'	continuative
idf	indefinite	tem	temporal
in	inanimate	tf	ten through fifteen
itr	intransitive	ths	thus
ka	kaa	tku	takes kuu
ko	koo	tr	transitive
ku	kuu	tsa	takes saa
lm	limiting	tw	twenty
loc	locative	un	unit
mf	masculine-feminine	1st	first person
msc	masculine	2nd	second person

[blank]

1 INTRODUCTION

In the development of a set of syntactic rules to generate Mixtec sentences, the model which has been followed is basically the generative-transformational model of Noam Chomsky as set forth in his *Syntactic Structures* (1957). The model has been modified by adopting Chomsky's proposal in his *Aspects of the Theory of Syntax* (1965) to include syntactic features,[1] although the way in which this has been done differs in some respects from Chomsky's formulation. The model has been further modified by placing the lexicon after the transformational component instead of before it, for reasons given below.

The components of a transformational grammar here developed for Mixtec are **Phrase Structure**, **Transformational Structure**, and **Lexical Structure**. The phrase structure component is more fully developed than the transformational component, the most obvious limitation in the latter being in respect to optional orderings and sentence fragments. The lexical component is least developed, but it does give some examples of each of the large classes and at least one member of the small classes introduced in the other two components. Thus it provides sufficient information to associate each grammatical symbol with at least one phonological string,

1 The inclusion of syntactic features was prompted by Chomsky's lectures at the Linguistics Institute at Indiana University during the summer of 1964. Others of his proposals such as elimination of generalized transformations in favor of recursion in the phrase structure component (renamed "base"), were not adopted primarily because the development of the proposals was not in print until the work on Mixtec syntax was near completion.

and in addition includes English glosses in each entry. Neither semantic structure nor morphophonemic structure is treated here.[2]

In the phrase structure component, syntactic categories are introduced by those phrase structure rules (P rules) which have the following form. A category symbol is followed by an arrow pointing to the right to one or more category symbols. The arrow is to be interpreted as an instruction to rewrite the category represented to the left of the arrow by one or more categories to its right. Each category which is nonterminal (one that is not found in the lexicon) is rewritten by such a rule until all categories are terminal. For example, P Rule 11, which rewrites a verb phrase is:

$$VP \longrightarrow PRV + VP'$$

This rule states that a verb phrase is rewritten as an optional preverb phrase followed by an obligatory verb phrase prime. Both the preverb phrase and the verb phrase prime are nonterminal categories, so are rewritten by subsequent P rules.

Some categories at the time they are introduced have associated with them a syntactic feature which subcategorizes them. For example, an optional noun introduced by P Rule 6, which rewrites a temporal phrase, is marked with the feature ˇtem (temporal), thus limiting nouns in this position to temporal ones.

A second kind of P rule associates syntactic features with categories or other features in the following way. A category or feature is followed by an arrow which in turn is followed by one or more features. The arrow is to be interpreted in this case as an instruction to associate one of the features to the right of the arrow with the category or feature to the left of the arrow, providing the contextual restrictions given in the rule are met. The context which limits the application of the rule is one or more categories or features which have been introduced by an earlier rule. For example, the feature ˇtr (transitive) is associated with a verb which is in the context of two noun phrases (one functioning as its subject and the other as its object) by P Rule 29. The part of the rule which marks verbs as transitive is:

$$V \longrightarrow V\check{}tr \,/\, \_\_\_ NP + NP$$

In the phrase structure rules, features are associated with both terminal and nonterminal categories. Those associated with nonterminal categories are, by convention, associated with terminal ones which derive from the

2 The morphophonemics of tone are described in Daly, "Tone Sandhi in Peñoles Mixtec" (in preparation).

nonterminal ones. For example, a noun phrase which is derived from a temporal phrase is marked with the feature ˇtem (NPˇtem in P Rule 6). Subsequently, by convention, a noun deriving from such a noun phrase is also marked with the feature ˇtem.

In addition to the P rules given in the phrase structure component, there are P rules that introduce features which depend solely on the categories or features with which they are associated. Rules of this type are not given since they can be constructed from the categories and features as they appear in the lexicon. For example, a P rule can be constructed to associate ˇmsc (masculine) with the feature ˇan (animate), but not with the feature ˇin (inanimate), since there are lexical entries for Nˇanˇmsc, but not for Nˇinˇmsc.

The transformational component takes the output of the phrase structure component as its input. If the input matches the structural description of a transformational rule (that part of a rule which is to the left of the arrow), it undergoes the change specified on the right of the arrow. The output of a transformational rule may serve as the input of a subsequent transformational rule provided that the structural description of the latter rule is met.

Category symbols and features introduced in the phrase structure rules that have survived the transformational rules along with some additional category symbols and features introduced in the transformational component are matched with phonological strings in the lexicon. A category and its features limit the choice of a phonological string but do not determine its choice except in the case of single-membered classes. For multi-membered classes the choice of a phonological string would be determined by a choice of a set of semantic features along with a choice of a category and a set of syntactic features.

The lexicon has been placed after the transformational component instead of before it, since the phonological strings which are introduced from the lexicon perform no role in the transformational component. Furthermore, since category symbols and features introduced in the transformational component must be subsequently associated with phonological strings, all categories and features, whether introduced in the phrase structure component or the transformational component, can just as well be matched with phonological strings at the same time after all P rules and T rules have been applied.

Mixtec Languages

The Mixtecan language family comprises numerous mutually unintelligible languages spoken by over two hundred fifty thousand persons living in an area of Mexico which covers a large part of the western half of the state of Oaxaca and extends into the states of Puebla and Guerrero. Linguistic research is being done in several of the Mixtec languages by members of the Summer Institute of Linguistics. Published work on phonology is available for Metlatonoc Mixtec (Overholt 1961); San Miguel Mixtec (Mak 1950, 1953; Pike 1944, 1945, 1946, 1948, 1953; Stark 1947); and Ocotepec Mixtec (Mak 1958). Pike (1944) has given a survey of some of the important grammatical facts of San Miguel Mixtec (see also notes in Dyk and Stoudt 1965). Bradley in his doctoral thesis (1965) has given in more detail a descriptive grammar of Jicaltepec Mixtec.[3]

The Mixtec language studied here is represented by the dialect spoken in Santa María Peñoles, a town of about fifteen hundred inhabitants located in the mountains of the District of Etla in the state of Oaxaca. There are several other small towns in the District of Etla whose ten thousand inhabitants speak dialects differing from, but mutually intelligible with, that of Santa María Peñoles. The grammatical structure of these dialects can be expected to be very similar to that of Peñoles.

The basis of the analysis has been the author's speaking knowledge of the language, text materials gathered on extended field trips to Peñoles since 1957, a concordance of part of the text materials,[4] and informant sessions which provided much additional language data.

Phonology

Consonants are: voiceless unaspirated stops p, t, č, k, kw, ʔ; prenasalized voiced stops mb, nd, nǰ, ng, ngw; voiceless fricatives f, s, š, h; voiced fricatives b, d, ž; nasals m, n, ñ; and liquids l and r.

3 Publications on Mixtec phonology and grammar since this monograph was written are: "Phonology and Morphotonemics of Ayutla Mixtec," by Leo Pankratz and Eunice V. Pike, *International Journal of American Linguistics* 33:287-99 (October 1967); "Huajuapan Mixtec Phonology and Morphophonemics" by Eunice V. Pike and John H. Cowan, *Anthropological Linguistics* 9:5:1-15 (May 1967); "The Phonology and Tone Sandhi of Molinos Mixtec" by Georgia G. Hunter and Eunice V. Pike, *Lingua* 47:24-40 (April 1969); "Molinos Mixtec Clause Structure" by William R. Merrifield and Betty J. Stoudt, *Lingua* 32:58-78 (June 1967); *A Linguistic Sketch of Jicaltepec Mixtec* by C. Henry Bradley (Summer Institute of Linguistics Publications in Linguistics and Related Fields: Publication No. 25), Norman, Oklahoma: Summer Institute of Linguistics of the University of Oklahoma (December 1970).

4 This concordance was produced by computer at the University of Oklahoma as part of a pilot project devised by Joseph E. Grimes.

Vowels are: i, e, ɨ, a, u, o.

Other phonemes are high tone (´), low tone (unmarked), tone modification (`),[5] and nasalization (¸).

Stress is predictable in terms of morpheme syllable structure. It falls on the penultimate syllable of morphemes with two or more syllables (a syllable being an optional consonant, plus obligatory vowel, plus optional glottal catch). Morphemes of a single syllable are never stressed and are phonologically dependent on stressed morphemes. (The phonological dependence of monosyllabic morphemes is indicated by a hyphen at the beginning of a morpheme).

In order to avoid obscuring morpheme boundaries, morphemes are given in the form they have before being reduced by morphophonemic rules.

5 Reanalysis of the tonal system has led to the introduction of a unit called here "tone modification." For a discussion of the tonal feature Modify see Nancy Woo, "Prosody and Phonology," unpublished doctoral dissertation, Massachusetts Institute of Technology, 1969.

2 PHRASE STRUCTURE

1. # S # ⟶ {SEN / Inj}

S, the initial string of the grammar from which all sentences of the language are derived, is rewritten as SEN (sentence) or Inj (interjection). If rewritten SEN, the next rule applies to rewrite SEN; if rewritten Inj, no other P rule applies since Inj, as a member of the P terminal alphabet (indicated by capitalizing only the initial letter of the symbol), is itself a terminal string of the P rules.

Inj can enter into one optional transformation where it becomes a quotation by substituting for a noun phrase accompanying the verb kąʔą 'say', or it can be rewritten directly in the lexicon where it is a fully-developed S.

àbîi	'ummm'
ái mbái	'wow'
úči	'ouch'

2. SEN ⟶ ⟨PRS⟩ + SEN' + ⟨Rsp⟩

SEN is rewritten as optional PRS (presentence) followed by obligatory SEN' (sentence prime) followed by optional Rsp (response). SEN' without the optional elements is a simple declarative sentence. With PRS it is imperative or interrogative; with Rsp it has added to it either a request for a yes-or-no answer or an expression of the amazement of the speaker with a response by the hearer being appropriate.

žá?a -dé ą̀ą́
SEN' + Rsp
passes he question
'will he come by?'

kà?nu bi?i -di ráa
SEN' + Rsp
large very it amazement
'it (animal) is huge!'

3. **PRS** ⟶ {**Imp** / **Int**}

Imp (imperative) of PRS (presentence) enters the obligatory imperative transformation where it and the subject of the sentence are deleted, and if the deleted subject was plural, čii 'imperative' is added before the verb.

Int (interrogative) enters the obligatory interrogative transformation where it and any one of several phrases or parts of phrases are replaced by the appropriate interrogative, e.g.,

náá	'what'
žoo	'who'
ndèé	'where'
ndéé dau	'how much'

4. **SEN'** ⟶ ⟨Neg⟩ + SNUC + ⟨LOC⟩ + ⟨TEM⟩

The optional element Neg (negative) of Rule 4 is rewritten as ña-díú 'not' (which in some environments by morphophonemic rules becomes ña-túú, túú, or ña). Neg applies to any phrase which immediately follows it (not just verb phrase, but also noun phrase, locational phrase, temporal phrase, etc.).

5. **LOC** ⟶ ⟨ndéé⟩ + {**Loc** / ⟨N˅loc⟩ + **NP˅an,in**}

Rule 5, which rewrites LOC (locational phrase), introduced as an optional element of SEN' in Rule 4, is to be read: rewrite LOC either as optional ndéé plus obligatory Loc (locational) or optional ndéé plus optional N˅loc (noun locative) plus obligatory NP˅an,in (noun phrase animate or

inanimate). Or, to be more precise: rewrite LOC either as optional ndéé plus obligatory Loc or optional ndéé plus optional N (noun) with the feature ˇloc (locative) and obligatory NP subsequently rewritten to include N with a feature ˇan (animate) or ˇin (inanimate).

Although the single-membered class ndéé 'to, until' and some other single-membered classes subsequently introduced are given in their phonological form as a matter of convenience, they are to be taken as abstractions of the same order as any other member of the P-terminal alphabet and only as phonological sequences once they have entered the lexicon (where by convention all such grammatical symbols are automatically associated with identical phonological strings).

ní-ndešìo -ndí žàką́
SEN¹ + Loc
arrived we there
'we arrived there'

kwá- ndiši -í ndéé be?e -í
SEN¹ + ndéé + NPˇloc
going return I to house my
'I return to my house'

kwą́?ą́ -dé žuku
SNUC + NPˇloc
goes he mountain
'he is on his way to the mountain'

Loc (locational) which has only two members, i?a 'here' and žàką́ 'there', occurs here as an element of LOC (locational phrase) or, by an optional transformation, as an element of a noun phrase.

There is no restriction on the NPˇan,in (noun phrase animate or inanimate) which can occur in LOC; every NPˇan,in can occur both in LOC and as NP subject and object (see T Rule 6).

Nˇloc (noun locative) occurs both here and as head (the obligatory element) of a noun phrase (see T Rule 10). As head of a noun phrase it has a concrete sense; as an optional element of LOC it has an abstract sense. For example, díkí 'head' in the phrase díkí bé?é (head house) means either 'roof of the house' or 'above the house', depending on whether díkí is the head of a noun phrase or an optional element of a locational phrase. Compare also sátá bé?é (back house) 'back part of the house' or 'behind the house' and núú-dě (face he) 'his face' or 'in front of him'.

6. TEM ⟶ ⟨ndéé⟩ + { Tem / ⟨N˅loc⟩ + NP˅tem }

TEM (temporal phrase) from Rule 4 is similar in structure to LOC, having optional ndéé plus obligatory Tem or optional ndéé plus optional N˅loc (noun locative) plus obligatory NP˅tem (noun phrase temporal).

Tem (temporal), such as bitą 'today', iku 'yesterday', né?é 'early', etc., occurs only here. NP˅tem occurs both in TEM and as NP subject and object.

N˅loc of TEM has an abstract sense, but unlike N˅loc of LOC it is not ambiguous with N˅loc in its concrete sense. This is simply because NP˅tem following N˅loc never occurs as possessor but only as head of TEM, whereas NP˅an,in following N˅loc occurs both as possessor (núú-dě 'his face') and as head of LOC (núú-dě 'in front of him').[1]

kiši -í ndéé ìdá
SNUC + ndéé + Tem
will return I until day after tomorrow
'I will come back day after tomorrow'

koo -í čįų šití úú kwíá
SNUC + N˅loc + NP˅tem
will be I work stomach two year
'I will be an official within two years'

7. SNUC ⟶ VP + NP˅an, in, tem + ⟨ NP˅an, in, tem ⟩

SNUC (sentence nucleus) is rewritten as VP (verb phrase) plus one obligatory and one optional NP (noun phrase). The obligatory NP functions as subject and the optional NP as object.

1 There is one exception to the generalization that N˅loc of TEM in its abstract sense is not ambiguous with N˅loc in its concrete sense. žóó 'month' is an abstract use of the term žóó 'moon'. Therefore it would be possible to confuse šití žóó 'within the month' with šití žóó 'the inner part of the moon'. To avoid having the one morpheme žóó with both the features temporal and inanimate, žóó will be treated as two morphemes. Thus the statement that NP˅tem never functions as a possessor is true.

Introducing NP subject following VP instead of before VP, where it can also occur, achieves some additional economy in the transformational component (see T Rules 12 and 15 below).

ní-kuu lu?a itú-í
VP + NP
produced little cornfield my
'my cornfield produced a little'

kìde tée kùu čįų hundá
VP + NP + NP
doing man be work meeting
'the town authorities are having a town meeting'

There are two verbs, ką?ą 'say' and kwá?a 'give', which take two NP objects. Instead of positing a special class of ditransitive verbs, these two verbs are derived from the verbs tee dó?o 'listen' and kę?ę 'take' to which the transitive causative transformational rule has applied. tee dó?o can be used to derive ką?ą, and kę?ę can be used to derive kwá?a by way of the causative transformation just because neither tee dó?o nor kę?ę actually occur as causative verbs.

kada tee dó?o *becomes* ką?ą
V + V V
make listen speak, say

ką̀?ą -ši -dé įį kwèndú
VP + NP + NP + NP
speaks she he one story
'she tells him a story'

kada kę?ę *becomes* kwá?a
V + V V
make take give

kwá?a -ši -dé įį lìbrú
VP + NP + NP + NP
will give she he one book
'she will give him a book'

By deriving kwá?a and kąʔą from transitive verbs, there is no need to specify in the P rules that the first NP object of kąʔą and kwá?a has the feature ˇan and the second NP object has the features ˇan,in, since these restrictions are the same as those on the two NP objects of transitive verbs to which the causative transformation applies.

By P Rule 29 the feature ˇitr (intransitive) is added to V in the context of one noun phrase dominated by SNUC, and the feature ˇtr (transitive) in the context of two noun phrases dominated by SNUC.

In a more fully-developed set of P rules, other features would be added to V in the context of NP subjects and objects designated ˇan, ˇin, or ˇtem. One rule of this type, P Rule 30, limits the feature ˇequ (equative) to the contexts in which NP subject and object both have the same feature ˇan, ˇin, or ˇtem.

8. NP ⟶ NP' + ⟨Mod⟩

NP is rewritten as NP' plus optional Mod (modifier). Mod is a dummy symbol which has substituted for it Loc (locational) or a sentence in the transformational component. NP' is the unit which by transformation possesses, or is possessed by, another NP' (T Rule 22).

žoʔo ditó -í
NP' + NP' + NP'
rope uncle my
'my uncle's rope'

úú žu-žèʔe beʔe déʔe -í
NP' + NP' + NP' + NP'
two door house child my
'two doors of the house of my child'

9. NP' ⟶ ⟨QUAN⟩ + NNUC + ⟨EMP⟩

NP' is rewritten as NNUC (noun phrase nucleus), accompanied by optional QUAN (quantifier) and optional EMP (emphatic phrase). When all these elements occur, EMP is transformed to intervene between QUAN and NNUC (T Rule 40).

bài biʔi ñá-žiu
QUAN + NNUC
many very people
'very many people'

be?e	-ni	-ká
NNUC	+	EMP
house	definite	more

'only another house'

úú	-ni	-ká	be?e		*úú	be?e	-ni	-ká
QUAN	+ EMP	+	NNUC	*but not*	QUAN	+ NNUC	+	EMP
two	definite	more	house		two	house	definite	more

'only two more houses'

10. NNUC ⟶ ⟨N˅cls⟩ + N

If N˅cls (noun classifier) is chosen in the rewriting of NNUC, the obligatory N is given the feature ˅prp (proper) by P Rule 28 below. Between N˅cls and N˅prp are numerous co-occurrence restrictions yet to be formalized:

nduu màrtí	'day Tuesday'
tée ndǒní	'the man Anthony'
ndíi ndǒní	'deceased Anthony'
táá lěsá	'the woman Teresa'
ndíi lěsá	'deceased Teresa'
žaa dáú	'deity of rain'
ñuú čįą	'town Estetla'

N without the feature ˅cls is either N˅pro (pronominal) in the absence of following EMP and Mod, or N˅com (common noun) with or without EMP or Mod (see P Rule 28).

Pronominals are N˅pro˅1st (first person) žú?ú 'I'; N˅pro˅2nd (second person) žò?ó 'you'; and by transformation, N˅pro˅1st˅2nd (first person inclusive) nǰoo 'we' (T Rule 11). Replacing and cross-referencing these pronominals are pronoun enclitics: Pro˅1st -í 'I'; Pro˅2nd -ngi 'you'; and Pro˅1st˅2nd -o 'we' (T Rules 14–16).

N˅com (common nouns) and N˅prp (proper nouns) are subclassified by features of gender: ˅msc (masculine), ˅fem (feminine), ˅mf (masculine-feminine), ˅dty (deity), ˅aml (animal), or ˅neu (neuter).

Replacing and cross-referencing each N˅com or N˅prp is Pro with the same feature of gender as N˅com or N˅prp.

˅msc	tée	'man'	-dé	'he'
	ndǒní	'Antonio'	-dé	'he'
˅fem	ña-dì?í	'woman'	-ši	'she'
			-ą	'she' (respect)

	lěsá	'Teresa'	-ši, -ą	'she'
ˇmf	ñá-žiu	'people'	-žu	'people'
ˇdty	ndiǒší	'God'	-ká	'deity'
ˇaml	kiti	'animal'	-di	'it'
ˇneu	be?e	'house'	-ši	'it'

The majority of nouns are morphemically simple, but many are morphemically complex idioms with the pattern N plus N (or more than one N); N plus Adj; or N plus V. Idioms are not generated by syntactic rules but are simply listed in the lexicon, owing to the large number of co-occurrence restrictions between the constituent morphemes.

N + N

kiti šìlé
animal chair 'pack animal'

ti-kóó
animal snake 'tamale'

⟨⟨N⟩ + N⟩ + N + N

tų-ñùu
tree palm 'palm branch'

žúú tų-ñùu
arroyo tree palm 'Palm Branch Gully'

šíkí žùú tų-ñùu
fist arroyo tree palm 'Ridge of Palm Branch Gully'

N + V

žiki tìkú
bone sew 'needle'

tų-tì?u
tree sweep 'broom'

N + Adj

kiti ndee
animal strong 'mule'

The N + Adj which forms an idiom should not be confused with N + Adj in which Adj is entered by transformation from a sentence with V$^{\vee}$sta (verb stative). The former can take an additional Adj by

transformation, but not the latter; i.e., only one Adj can be added to N (whether internally N or N + Adj).

N	+	Adj	
kiti		bá?a	
animal		good	'good animal'

N (consisting of N + Adj)

kiti		ndee	
animal		strong	'mule'

N (consisting of N + Adj) + Adj

kiti		ndee	bá?a	
animal		strong	good	'good mule'

but not

*kiti bá?a ndee
animal good strong 'good strong animal'

Compare iná 'dog', a noun that does not join with any other morpheme to form an idiom. It can take ndee 'strong' or bá?a 'good' as modifying adjectives, but not both.

N	+	Adj	
iná		ndee	'strong dog'
iná		bá?a	'good dog'

but not

*iná ndee bá?a or *iná bá?a ndee.

11. VP ⟶ ⟨PRV⟩ + VP'

12. VP' ⟶ VNUC + ⟨ADV⟩

13. PRV ⟶ $\langle \left\{ \begin{matrix} \text{Adj}\check{}\text{ths} \\ \text{Prv} \end{matrix} \right\} \langle \text{EMP} \rangle \rangle$ + ⟨Pri⟩ + ⟨QUAN˘nv⟩

VP (verb phrase) is rewritten as optional PRV (preverb phrase) and obligatory VP'. VP' is rewritten as VNUC (verb phrase nucleus) and optional ADV (adverbial phrase).

The category PRV has three optional parts, but (as with all such categories) some one of the optional parts must be present. The first part is either Adj˘ths, the one adjective dukạ 'thus'; or Prv, one of four pre-

verbs: du?a 'on this side', dàką 'on that side', dàtį 'to the right', kù?a 'to the left'. Dependent on the choice of Adjˇths or Prv is optional EMP. The second part is Pri, one of two preverb intensifiers súú-ní 'very, very much' and ío 'much'. The third part is QUANˇnv (quantifier phrase whose quantifiers modify both nouns and verbs), which has as its head one of the four quantifiers: bài 'many', sakú 'few', lu?a 'a little', kwe? é 'much'.

duką	kàa	istoriá	ní- kačí	ndíi	šíi-í
Adjˇths +	VP +	NP +	VP +	NP	
thus	is	story	comp tell	dead grandfather	my

'thus is the story my deceased grandfather told'

súú-ní	kà?nu	-di
Pri +	VP' +	NP
very definite	large	it (animal)

'it was huge'

lu?a	líí	nă-	kuú	-di	ni-	kùu
QUANˇnv +	VP +	NP +	VPˇku			
little definite	constraint	die	it	comp	be	

'just a little bit more and it would have died'

14. ADV ⟶ ⟨{Adj / Adv}⟩ + ⟨ADM⟩

ADV (adverbial phrase) is rewritten as optional Adj (adjective) or Adv (adverb) and optional ADM (adverb modifier phrase). Adv occurs only here as a modifier of the verb; Adj occurs both as a modifier of a verb and by transformation as a modifier of a noun.

kàa	ka?nu	kóó
VNUC +	Adj +	NP
be	large	snake

'the snake is big'

ní šitu	ba?a	na?i	-dě
VNUC +	Adj +	ADM +	NP
plowed	well	probably	he

'he probably plowed well'

ní- kụụ ní?i tuku ñiñi
VNUC + Adv + ADM + NP
fell forcefully again hailstone
'the hail fell very hard again'

There are a large number of co-occurrence restrictions between V and Adj. Some adjectives can occur with any verb, and others can occur with only a few verbs. All can occur with either one or both of the stative verbs kuu or kaa 'be'.

15. ADM ⟶ ⟨Adm⟩ + ⟨na?i⟩ + ⟨EMP⟩

ADM (adverb modifier phrase), optionally introduced in the rewriting of ADV, has three optional parts: Adm (adverb modifier) with two members bi?i 'very' and dụụ 'once for all'; na?i 'probably'; and EMP (emphatic phrase).

ke?ndé dụụ -í tụ́?ụ kạ̀?ą́ ndà?ú-ngí
VNUC + Adm + NP + NP + VP + NP
cut once for all I word speak poor you
'once and for all I am ending your begging'

nuu kóo na?i -dě
VNUC + na?i + NP
be seated probably he
'he is probably sitting down'

kuu dę́ę́ bí?í nà?i tuku -dé
VNUC + Adm + na?i + EMP + NP
be angry very probably again he
'he is probably very angry again'

16. VNUC ⟶ PRL + V

V (verb) of VNUC has an internal structure comparable to that of noun, and as with nouns, morphemically complex verbs are given unanalyzed in the lexicon. Verb idioms have the pattern V plus N, V plus Adj, or V plus V. No clear cases of more than two morphemes to a V have been noted.

čii nda?a
put hand 'help'

da-	ndà?ú	
do	poor	'deceive'

tee		tíį	
use	fingers	take hold	'tie'

17. **PRL** ⟶ ⟨sa-⟩ + **ASP** + ⟨na-⟩ + ⟨nd-⟩

18. **ASP** ⟶ { **Ptl** / **Cont** / **Comp** }

ASP (aspect), the only obligatory element of PRL (verb particle), is rewritten as Ptl (potential), Cont (continuative), or Comp (completive).

Ptl ordinarily has the force of future unless it is accompanied by a completive form of the verb 'to be' introduced by transformation following SNUC. Ptl with the completive of the verb 'to be' indicates that the action was anticipated in past time but not performed.

Ptl is rewritten in the lexicon as na!- 'potential' or as na- 'constraint'. The latter in addition to being potential conveys the idea of an action being in some way necessary. (na!- 'potential', but not na- 'constraint', is deleted in the morphophonemic component of the grammar.)

		kaši		-dé		kuñú
Ptlˇna!	+	V	+	NP	+	NP
ptl		eat		he		meat

'he will eat meat'

na-		kùtu		-dé
Ptlˇna	+	V	+	NP
constraint		plow		he

'he must plow'

Cont has the force of present unless it is accompanied by the verb 'to be' in the completive aspect, in which case the action of the verb was in the process of occurring in past time but was interrupted and not completed. Cont becomes ta!- 'continuative' or ta- 'process' in the lexicon. (ta!- is deleted by a morphophonemic rule after it has exerted its effect on the tones and/or segments of following morphemes.)

	šèši	-dé	kuñú
Cont˘ta¹ +	V +	NP +	NP
cont	eat	he	meat

'he is eating meat'

ta-	šìtu	-dé
Cont˘ta +	V +	NP
process	plow	he

'he is in the process of plowing'

Comp is the one morpheme ní- 'completive' that always means 'past time'. If the verb koo 'be' in the completive aspect is added by transformation to follow ní-, the action took place in the distant past (T Rule 4). If ní- is accompanied by the verb kuu 'be' in the completive aspect (introduced by transformation in T Rule 6), the completion of the action in past time is emphasized.

ní-	šeši	-dé	kuñú
Comp +	V +	NP +	NP
comp	eat	he	meat

'he ate meat'

ní-	šitu	-dé
Comp +	V +	NP
comp	plow	he

'he plowed'

To return to the optional elements introduced in PRL, sa- 'proximate' with Ptl indicates that the action is about to take place, with Cont sa- emphasizes that the action has begun, and with Comp sa- indicates that the action has just taken place.

sa-		káší	-dě
sa- +	Ptl +	V +	NP
prox	ptl	eat	he

'he is about to eat'

sa-		šèši	-dé
sa- +	Cont +	V +	NP
prox	cont	eat	he

'he has begun eating'

sa-	ní-	šeši	-dé
sa- +	Comp +	V +	NP
prox	comp	eat	he

'he has just eaten'

na- 'repetitive' occurs with verbs that involve repetitive motion.

ní-	na-	ti?u	-ši	bè?e
Comp +	na- +	V +	NP +	NP
comp	rep	sweep	she	house

'she was sweeping the house'

ní-	na-	kete	-ši	dóó
Comp +	na- +	V +	NP +	NP
comp	rep	wash	she	clothes

'she was washing clothes'

ní-	na-	kidi	-ši	dóó
Comp +	na- +	V +	NP +	NP
comp	rep	shake	she	clothes

'she was shaking the clothes'

nd- 'habitual' occurs with those verbs which may refer to customary action.

ní-	ndí?u	-dé	be?e	-dé
Comp +	nd- + V +	NP	+	NP
comp	hab enter	he	house	his

'he entered his house'

ní-	nú?ú	-dé	ñuú	-dé
Comp +	nd- + V +	NP	+	NP
comp	hab go	he	town	his

'he went back to his town'

In the above illustrations, ndí?u comes from nd- 'habitual' plus kí?u 'enter', and nú?ú comes from nd- 'habitual' plus kį?į 'go'.

19. EMP ⟶ ⟨-ni⟩ + ⟨-ká⟩ + ⟨tuku⟩

The three optional elements of EMP (emphatic) are -ni 'definite', -ká 'more', and tuku 'again'.

kwa- ngę̀ʔę ndaa -ni -ká tuku -ndí -di
VNUC + Adj + -ni + -ka + tuku + NP + NP
go get straight def more again we it
'we just went straight down some more to get it (animal)'

20. QUAN ⟶ {NUM / QUAN'} + ⟨Plu⟩

QUAN (quantifier phrase) is rewritten as NUM (numeral phrase) or QUAN' with an optional Plu (plural marker) kwee 'plural'.

kúmí ñá-žiu
NUM + N
'four people'

bài ñá-žiu
QUAN' + N
'many people'

kwee tée
Plu + N
'men'

ókó kwee tée
NUM + Plu + N
'twenty men'

21. QUAN' ⟶ {Quan / Numˇun} + ⟨Ins⟩

Optional Quan (quantifier) of QUAN' is rewritten in the lexicon by the subclass diu 'same', títį́ 'numerous', nǰaa 'all', and mee 'only', which occur only here; and by the subclass with the feature ˇnv, luʔa 'a little', bài 'many', sakú 'few', and kwéʔé 'very much', which also occur in PRV and VP. Numˇun ją́ 'one' is both QUAN' and NUM since of the numerals it alone can occur with a following Ins (intensifier).

bài biʔi kitɨ
Quan + Ins + N
many very animal
'very many animals'

įį		dìi		kiti
Numˇun	+	Ins	+	N
one		only		animal

'just one animal'

22. NUM ⟶ {Numˇidf / NUM'}

Numˇidf (indefinite numerals) are pairs of numbers used as rough approximations in place of numbers generated from NUM. Some common pairs are:

įį úú	'one or two, a few'
úú uní	'two or three, several'
úní kúmí	'three or four'
kúmí ų́ʔų	'four or five'
ų́ʔų íñú	'five or six'
úsá úná	'seven or eight'
úná úší	'eight or ten'
są́ʔų okó	'fifteen or twenty'
ókó okó ų́ʔų	'twenty or twenty-five'
úú diko úú diko úší	'forty or fifty'

23. NUM' ⟶ ⟨HD⟩ + ⟨NN⟩

24. HD ⟶ ⟨NN⟩ + Numˇhd

25. NN ⟶ ⟨TW⟩ + ⟨BT⟩

26. TW ⟶ ⟨Numˇfo⟩ + Numˇtw

27. BT ⟶ {⟨Numˇtf⟩ / ⟨Numˇni⟩ + ⟨Numˇun,fo⟩} + ⟨Numˇhf⟩

The preceding five rules give the numerical system of monolinguals, who can count up to 9,999½. The monolingual counts by hundreds from one hundred to ninety-nine hundred, whereas the bilingual, as a rule, counts by thousands using the Spanish loan mil 'thousand'.

To generate the monolingual numerical system, NUM' is rewritten as optional HD from which by hundreds the numerals from one hundred to ninety-nine hundred are derived and optional NN from which the numerals from ½ to 99½ are derived. HD is NN plus Numˇhd sièndú

'hundred' (Sp. *ciento*). NN is rewritten as optional TW, from which the numerals 20, 40, 60, and 80 are derived, plus optional BT, from which the numerals up to 19½ are derived. TW is rewritten as optional Num˅fo (numerals 2, 3, and 4) followed by Num˅tw ókó 'twenty', giving the numerals 20, 40, 60, 80. In BT the numerals ½, 1 through 10, and 15 are separate morphemes. The numerals 11 through 14 are the numeral úší 'ten' plus the numerals 1 through 4 (i̱i̱ 'one', úú 'two', úní 'three', or kúmí 'four'); and the numerals 16 through 19 are the numeral są́ʔų́ 'fifteen' plus the numerals 1 through 4.

íí	sièndú	úú	diko	úší	i̱i̱	daba
Num˅ni +	Num˅hd +	Num˅fo +	Num˅tw +	Num˅tf +	Num˅un +	Num˅hf
NN +	Num˅hd	+	TW	+	BT	
	HD	+		NN		
nine	hundred	two	twenty	ten	one	half

'nine hundred fifty-one and a half'

$$28.\quad \mathbf{N} \longrightarrow \left\{ \begin{array}{lll} \text{˅prp} & / & \text{N˅cls} \_\_\_\_ \\ \text{˅com} & / & \sim\text{N˅cls} \_\_\_\_ \\ \text{˅pro} & / & \sim\text{N˅cls} \_\_\_\_ \sim \text{Mod} \end{array} \right\}$$

In preceding rules, one category symbol to the left of the arrow has *substituted* for it one or more *category symbols* with or without accompanying features to the right of the arrow. In this and the following P rules, one category symbol or feature to the left of the arrow has *added* to it one of the *features* to the right of the arrow.

Added to N (noun) are the features ˅prp (proper), ˅com (common), and ˅pro (pronoun). ˅prp can be taken only following N˅cls; ˅com only in the absence of N˅cls; and ˅pro only in the absence of N˅cls and Mod.

Notice that ˅prp is mutually exclusive with ˅com and ˅pro, but that ˅com and ˅pro are not mutually exclusive with each other: ˅com occurs with or without following Mod, and ˅pro occurs only without following Mod.

tée	lèsú
N˅cls +	N˅prp
'man	Lorenzo'

čịụ
N˅com
'work'

žò?ó
N˅pro
'you'

29. V ⟶ { ˅tr / ____ + NP + NP
˅itr / ____ + NP + ~NP }

where NP is dominated by SNUC, and where other members of VP may intervene between V and NP

V has added to it ˅tr (transitive) before two noun phrases (subject and object) of the same SNUC and ˅itr (intransitive) before one noun phrase (subject) of SNUC.

sà?mi -dé ité
VP˅tr + NP + NP
burns he grass
'he is burning the grass'

kàžú ité
VP˅itr + NP
burns grass
'the grass is burning'

30. (Opt) ˅tr ⟶ ˅equ / ____ + NP˅[an in tem] + NP˅[an in tem]

If NP subject and NP object have the same feature ˅an, ˅in, or ˅tem, the feature ˅equ (equative) is optionally added to ˅tr.

kùu -dé tée
NP˅equ + NP˅an + NP˅an
is he man
'he is a man'

kùu	-ši	be?e
VPˇequ +	NPˇin +	NPˇin
is	it	house

'it is a house'

kùu	bitą	nduu kį?į-dé
VPˇequ +	NPˇtem +	NPˇtem
is	today	day will go he

'today is the day he will go'

Also possible is the equation of two noun phrases with different genders.

kùu	-dé	ña-dì?í
VPˇequ +	NPˇan +	NPˇan
is	he	woman

'he is womanish'

31. (Opt) ˇitr ⟶ ˇsta / ____ ADV

VˇitrVˇitr optionally receives the feature ˇsta (stative) in the presence of ADV.

kàa	bá?a	-dé		* kàa	-dé
Vˇsta +	ADV +	NP	*but not*	Vˇsta +	NP
is	good	he		is	he
'he is well'				'he is'	

compared to

šìnu	bá?a	-dé		šinu	-dé
Vˇ~sta +	ADV +	NP	*and*	Vˇ~sta +	NP
runs	good	he		runs	he
'he runs well'				'he runs'	

3 TRANSFORMATIONAL STRUCTURE

1. Nonsimultaneous Motion

Opt - Non R
Source: (1) P 7, 16, 17
(2) P 7, 12, 16, 17[1]

$$\left.\begin{array}{ll} (1) & \mathbf{ASP_1} + \mathbf{V\check{}pre} + \mathbf{NP_1} \\ (2) & \mathbf{X_1} + \mathbf{ASP_2} + \mathbf{X_2} + \mathbf{V} + \langle\mathbf{ADV}\rangle + \mathbf{NP_2} + \mathbf{X_3} \end{array}\right\} \longrightarrow$$

$$(3) \quad \mathbf{X_1} + \mathbf{ASP_2} + \mathbf{V\check{}pre} + \mathbf{X_2} + \mathbf{V} + \langle\mathbf{ADV}\rangle + \mathbf{NP_2} + \mathbf{X_3}$$

where $\mathbf{NP_1} = \mathbf{NP_2}$ and $\mathbf{Asp_1} = \mathbf{Asp_2}$

T Rule 1 is Opt (optional) and Non R (nonrecursive): if the rule is applied it may be applied only once to a sentence.

V˘pre (verb premotion), the one verb kį́ʔį́ 'go', is transformed from the embedding sentence (1) to immediately follow ASP (aspect) and to precede V of the frame sentence (2) to give sentence (3). A morphophonemic rule later reduces kį́ʔį́ to kį́-. X_1 permits zero or more categories to appear immediately before ASP, and X_2 permits zero or more categories immediately before V. Categories which can appear in X_2 are ná- 'repetitive' and nd- 'habitual'.

V˘pre adds to the frame sentence the idea of going from one place to another to perform the action of V. If ASP is completive (or potential), both V˘pre and V have the force of completive (or potential).

1 With each transformational rule are given the numbers of the P rules where the categories and features of the source sentence(s) have been introduced and the numbers of the T rules that have been applied to produce the source sentence(s).

If ASP is continuative, V$^{\vee}$pre has the force of continuative; but the action of V is ambiguously continuative or potential; i.e., with continuative the actor is in the process of going, and may or may not have begun to perform the action of V.

(1) kį́ʔį́ tée líʔli
Ptl + V$^{\vee}$pre + NP
ptl go man little
'the boy is going'

(2) kaʔni tée líʔli ñáñá
Ptl + V + NP + NP
ptl kill man little coyote
'the boy will kill a coyote'

(3) kį́- ngaʔni tée líʔli ñáñá
Ptl + V$^{\vee}$pre + V + NP + NP
ptl go kill man little coyote
'the boy will go kill a coyote'

2. Simultaneous Motion

Opt - Non R
Source: (1) P 7, 12, 16, 17, 18; T 1
(2) P 4, 7, 12, 16, 17, 18

$$(1)\quad \left[\begin{matrix}\text{Ptl}^{\vee}\text{na}' \\ \left\{\begin{matrix}\text{Cont}^{\vee}\text{ta}' + \text{V}^{\vee}\text{pre} \\ \text{Comp}\end{matrix}\right\}\end{matrix}\right] + \langle \text{nd-}_1 \rangle + \text{V}^{\vee}\text{pst} + \langle \text{ADV} \rangle + \text{NP}_1 \Bigg\} \Longrightarrow$$

$$(2)\quad \text{X}_1 + \left[\begin{matrix}\text{Ptl} \\ \text{Cont}\end{matrix}\right] + \langle \text{na-} \rangle + \langle \text{nd-}_2 \rangle + \text{V} + \langle \text{ADV} \rangle + \Bigg\}$$
$$\text{NP}_2 + \text{X}_2 + \langle \text{LOC} \rangle + \langle \text{TEM} \rangle$$

$$(3)\quad \text{X}_1 + \left[\begin{matrix}\text{Ptl} \\ \text{Cont}\end{matrix}\right] + \langle \text{na-} \rangle + \langle \text{nd-}_2 \rangle + \text{V} + \langle \text{ADV} \rangle +$$
$$\text{NP}_2 + \text{X}_2 + \left[\begin{matrix}\text{Ptl}^{\vee}\text{na}' \\ \left\{\begin{matrix}\text{Cont}^{\vee}\text{ta}' + \text{V}^{\vee}\text{pre} \\ \text{Comp}\end{matrix}\right\}\end{matrix}\right] + \langle \text{nd-}_1 \rangle +$$
$$\text{V}^{\vee}\text{pst} + \langle \text{LOC} \rangle + \langle \text{TEM} \rangle$$

where $\text{NP}_1 = \text{NP}_2$

Embedded in sentence (2) is Vˇpst (verb with the feature post-verb), e.g., kį̀ʔį̀ 'go', kiši 'return', kųų 'come down', kaa 'go up', etc. Along with Vˇpst is embedded optional nd- 'habitual' and obligatory Ptlˇna' (na'- 'potential' but not na- 'constraint'), Contˇta' (ta'- 'continuative' but not ta- 'process'), or Comp (completive). Accompanying Contˇta' is Vˇpre which was introduced in the preceding rule.

Optional na- and optional nd-, but not Vˇpre can intervene between ASP and V. Thus Vˇpre before V cannot co-occur with Vˇpst.

Corresponding to Ptl (including na'- and na-) from sentence (2) is Ptlˇna' from sentence (1) and corresponding to Cont (including ta'- and ta-) from sentence (2) is either Contˇta' or Comp from sentence (1). Comp of (1) takes precedence over Cont of (2): the action in both verbs took place in past time. Whatever the aspects of the two verbs, the actions are simultaneous.

(1) kwá- ndiši ditó-í
Cont + Vˇpre + Vˇpst + NP
cont go return uncle my
'my uncle is coming back'

(2) šìnu ditó-í
Cont + V + NP
cont run uncle my
'my uncle is running'

(3) šínu ditó-í kwá- ndiši
Cont + Vˇitr + NP + Cont + Vˇpre + nd- + Vˇpst
cont run uncle my cont go hab return
'my uncle is running on his way back'

3. Causative

Opt - Non R
Source: (1) P 7, 16, 17
(2) P 7, 16, 17, 29

(1) $ASP_1 + V^{\vee}da + NP_1 + NP_2$
(2) $X_1 + ASP_2 + X_2 + \langle nd\text{-}\rangle + V^{\vee}cs + NP_3 + \langle NP_4\rangle + X_3$ $\Big\} \Longrightarrow$

(3) $X_1 + ASP_2 + X_2 + V^{\vee}da + \langle nd\text{-}\rangle + V^{\vee}cs + NP_1 + NP_3 + \langle NP_4\rangle + X_3$

By this rule V˘da (verb causative) is transformed to precede V˘cs (verb taking causative). If the optional category of NP_4 is absent in sentence (2), V˘cs will have been specified as intransitive in the phrase structure component, so V˘cs in this case is V˘itr˘cs (verb intransitive taking causative). NP_1 (subject of V˘da) becomes the subject of sentence (3), NP_3 (subject of V˘itr˘cs) becomes the object of sentence (3), and NP_2 is deleted. In this way co-occurrence restrictions between noun phrases and verb phrases of the source sentences (1 and 2) are carried over to the output sentence (3).

(1)

		kìde		-dé		šį̨ą̨
Cont	+	V˘da	+	NP	+	NP
cont		do		he		that

'he is doing that'

(2)

		šìnu		kiti
Cont	+	V	+	NP
cont		run		animal

'the animal is running'

(3)

		dà-		kúnú		-dé		-di
Cont	+	V˘cs	+	V	+	NP	+	NP
cont		make		run		he		it

'he makes it run'

If the optional category NP_4 is present in sentence (2), V˘cs will have been specified as transitive, so V˘cs in this case is V˘tr˘cs (verb transitive taking causative). NP_1, subject of V˘da, becomes the subject of (3); NP_2, object of V˘da, is deleted; NP_3, subject of V˘tr˘cs, becomes the first object; and NP_4, object of V˘tr˘cs, becomes the second object. In the output sentence (2) NP_1 causes NP_3 to perform the action of V˘tr˘cs on NP_4.

(1)

		ní-		kide		šéčí-a		šį̨ą̨
Comp	+	V˘cs	+			NP	+	NP
comp		do				girl here		that

'she did that'

(2) ní- šeši -di ndà-žó?o
Comp + V˘tr˘cs + NP + NP
comp eat it dried cornstalks
'the animal ate dried cornstalks'

(3) ní- dá- káší šèčí-a -di ndà-žó?o
Comp + V˘da + V˘tr˘cs + NP + NP + NP
comp do eat girl here it dried cornstalks
'this girl fed dried cornstalks to it'

4. Distant Past

Opt - Non R
Source: (1) P 7, 16, 18
(2) P 18

(1) $Comp_1$ + V˘ko + NP_1 + NP_2
(2) X_1 + $Comp_2$ + X_2
$\Longrightarrow$
(3) X_1 + $_{Comp}(Comp_2$ + V˘ko) + X_2

V˘ko (verb koo 'be') of (1) is introduced following Comp (completive) of (2). The action of the verb of (2) is placed in the distant past. By morphophonemic rules, koo following Comp and preceding V˘ becomes šóo.

Comp + V˘ko is itself Comp (indicated by parentheses and subscript $_{Comp}$) with the consequence that in subsequent rules Comp may include V˘ko.

ío ní- šóo ndo?o šíì-í
Ins + Comp + V˘ko + V + NP
much comp be suffer grandfather my
'my grandfather used to suffer many hardships'

5. Complex Verb Nucleus

Opt - Non R
Source: (1) P 7, 16, 17
(2) P 16

$$\left.\begin{array}{llllllll} (1) & \textbf{ASP} & + & \textbf{V}\check{}\textbf{cvn} & + & \textbf{NP}_1 & + & \langle \textbf{NP}_2 \rangle \\ (2) & \textbf{X}_1 & + & \textbf{VNUC} & + & \textbf{X}_2 & & \end{array}\right\} \Longrightarrow$$

$$(3) \quad \textbf{X}_1 + \textbf{VNUC}(\textbf{ASP} + \textbf{V}\check{}\textbf{cvn} + \textbf{VNUC}) + \textbf{X}_2$$

A complex verb nucleus phrase is one which has two verb phrase nuclei combined by transformation to share the same ADV, NP subject, NP object, TEM, etc. The difference between a complex verb nucleus and a verb nucleus which has added to it V˘da by causative transformation, or V˘pre by auxiliary verb of motion transformation, is that a complex verb nucleus has two verbs, each with its own ASP (aspect), whereas in the other verb nuclei two verbs share one ASP.

V˘cvn (complex verb nucleus) can be either ˘tr or ˘itr—hence the optional NP_2 object of sentence (1). V˘cvn with its ASP is entered immediately before VNUC and together with VNUC becomes VNUC (verb nucleus phrase).

(1) ní- + kuu + šį́ą́
Comp + V˘cvn + NP
comp be that
'it was that'

(2) ní- + šika + -dé
Comp + V + NP
comp walk he
'he walked'

(3) ní- + kuu + ní- + šika + -dé
Comp + V˘cvn + Comp + V + NP
comp be comp walk he
'he can walk now (i.e., he is no longer lame)'

6. Past Time

Opt - Non R
Source: (1) P 7, 16, 18, 28
(2) P 4

(1) **Comp + V˘ku + NP˘pro˘in + NP˘tem** } ⟶
(2) **X + ⟨LOC⟩ + ⟨TEM⟩**
(3) **X + Comp + V˘ku + ⟨LOC⟩ + ⟨TEM⟩**

Comp + V˘ku (kuu 'be') places the action of the verb of sentence (2) in past time. As mentioned in the discussion of ASP under P Rule 18, if the verb of the frame sentence is in the potential aspect the action was intended or expected but not performed in past time; if it is in the continuative aspect, the action was interrupted and not completed in past time; and if it is in the completive aspect, the action was definitely completed in past time.

(1) kaši -ši ni- kùu
Ptl + V + NP + Comp + V˘ku
ptl eat she comp be
'she was going to eat (but didn't)'

(2) šèši -ši ni- kuu
Cont + V + NP + Comp + V˘ku
cont eat she comp be
'she was eating (but didn't finish)'

(3) ní- šeši -ši ni- kùu
Comp + V + NP + Comp + V˘ku
comp eat she comp be
'she was eating (but is now finished)'

7. Instrumental

Opt - Non R
Source: (1) P 7, 16, 17, 28
(2) P 4

(1) ASP + V˘cs + NP˘in + NP˘pro˘in
(2) X + ⟨LOC⟩ + ⟨TEM⟩
⟹
(3) X + ndi?i + NP˘in + ⟨LOC⟩ + ⟨TEM⟩

Accompanied by ndi?i 'with', NP˘in from (1) is introduced into (2) to express the instrumentality of the action. In the context of some verbs yet to be subclassified, ndi?i may be deleted.

Sentence (1) contributes only NP˘in. Nevertheless it is expanded to include what seems to be a reasonable source sentence.

(1) ní- kide žučí šį̈ą̈
Comp + V + NP + NP
comp do knife that
'a knife did that'

(2) ní- še?ndé -dé nda?a -dé
SNUC
comp cut he hand his
'he cut his hand'

(3) ní- še?ndé -dé nda?a -dé ndi?i ɨ̈ɨ̈ žučí
SNUC + ndi?i + NP
comp cut he hand his with one knife
'he cut his hand with a knife'

8. Directive Phrase

Opt - Non R
Source: (1) P 7, 16, 17
(2) P 4

(1) ASP + V˘ku + NP + NP˘an,in
(2) X + ⟨LOC⟩ + ⟨TEM⟩
⟹
(3) X + kwèndá + NP˘an,in + ⟨LOC⟩ + ⟨TEM⟩

The phrase kwèndá 'on behalf of, in respect to' plus NP˅an,in from sentence (1) tells for whom the action of the verb of sentence (2) is performed if the noun phrase is NP˅an, or what the action of the verb involves if the noun phrase is NP˅in, e.g., kìde čįų-dé kwèndá dé?e-dé 'he works on behalf of his child' and kìde čįų-dé kwèndá karpinterìá 'he does carpentry work (he works in respect to carpentry)'.

The phrase kwèndá + NP˅an,in is inserted immediately before optional LOC and TEM. In this way the most natural order of kwèndá + NP˅an,in in respect to other phrases is achieved. It will follow phrases introduced in preceding transformations (past time, instrumental, etc.) and precede the next two phrases introduced by transformation as well as LOC and TEM. Although this is the most natural order, it is by no means the only order; in fact, almost any ordering of the phrases following SNUC is possible.

	ndùku	-ši	komidá	kwèndá	-ó	bìtą
Cont +	V +	NP +	NP +	kwèndá +	NP +	TEM
cont	look for	she	food	behalf	us	today

'she is looking for food for us now'

9. Limiting Phrase

Opt - Non R
Source: (1) P 7, 8, 9, 10, 16, 17, 20, 28
(2) P 4, 16

(1) ASP + V˅ku + NP˅pro˅in + NUM + N˅in + ⟨EMP⟩ + ⟨Mod⟩ ⟹

(2) X_1 + V˅lm + X_2 + ⟨LOC⟩ + ⟨TEM⟩

(3) X_1 + V˅lm + X_2 + ndéé + NUM + N˅in + ⟨EMP⟩ + ⟨Mod⟩ + ⟨LOC⟩ + ⟨TEM⟩

NUM + N˅in + ⟨EMP⟩ + ⟨Mod⟩ (a noun phrase inanimate with obligatory numeral) from sentence (1) plus a preposed ndéé 'to, until' is introduced into sentence (2) which contains V˅lm (verb limiting) to give sentence (3), expressing the amount involved in a business transaction.

(1) ní- kuu -ši ų́ʔų́ sièndú pèsú
Comp + V˅ku + NP + NUM + N
comp be it five hundred peso
'it was five hundred pesos'

(2) ní- sąą -dé ndi-kutu
Comp + V + NP + NP
comp buy he ox
'he bought an ox'

(3) ní- sąą -dé ndi-kutu ndéé
Comp + V˅lm + NP + NP + ndéé
comp buy he ox at

úʔú sièndú pèsú
NUM + N
five hundred peso
'he bought an ox for five hundred pesos'

10. Indirect Object

Opt - Non R
Source: P 4, 7, 11, 28

$$(1)\quad X_1 + VP^1\ {}^{\vee}tr^{\vee}{\sim}equ + NP_1{}^{\vee}\begin{bmatrix}com,prp\\ \_\_\end{bmatrix} + NP_2{}^{\vee}an^{\vee}\begin{bmatrix}com,prp\\ 1st,2nd\end{bmatrix} + \langle LOC\rangle + \langle TEM\rangle \Longrightarrow$$

$$(2)\quad X_1 + VP^1\,(VP^1\ {}^{\vee}tr^{\vee}{\sim}equ + ña^{\prime}a) + NP_1{}^{\vee}\begin{bmatrix}com,prp\\ \_\_\end{bmatrix} + X_2 + \langle šii + NP_2{}^{\vee}an^{\vee}\begin{bmatrix}com,prp\\ 1st,2nd\end{bmatrix}\rangle + \langle LOC\rangle + \langle TEM\rangle$$

$NP_2{}^{\vee}an$, the object of $V^{\vee}tr^{\vee}{\sim}equ$ or first of two objects if the verb has become causative, can have the indirect object transformation applied to it if it has, in addition to the feature ˅an, a feature ˅1st or ˅2nd.

If $NP_2{}^{\vee}an$ has a feature ˅com or ˅prp, it can be transformed only if NP_1, the subject, also has a feature ˅com or ˅prp, i.e., a non-1st or 2nd NP object is transformed only following a non-1st or 2nd NP subject.

A noun phrase which meets all these conditions is deleted or receives a preposed šii 'to' and is moved from its place within SNUC to outside SNUC. ñá?a 'person' is inserted following VP', which with ña?a forms a VP'.

(1) ní- kana dútú žò?ó
VP' + NP + NP
comp call priest you
'the priest called you'

(2) ní- kana ña?a dŭtú šii žò?ó
VP' (VP' + ña?a) + NP + šii + NP
comp call person priest to you
'the priest called you'

11. First Person Inclusive[2]

Opt
Source: P 10

(1) Y_1 + N˅1st + Y_2
(2) X_1 + N˅2nd + X_2
$\Longrightarrow$
(3) X_1 + N˅1st˅2nd + X_2

N˅1st˅2nd (first person inclusive pronominal) is derived from N˅1st (first person pronominal) and N˅2nd (second person pronominal).

(1) žú?ú
N˅1st
'I'

(2) žò?ó
N˅2nd
'you'

(3) nǰoo
N˅1st˅2nd
'we (inclusive)'

2 Here and in subsequent rules X with the same subscript as Y equals Y, unless otherwise defined.

12. NP Subject Reordered

Opt
Source: P 2, 7

(1) ⟨PRS⟩ + VP + NP + X ⟹

(2) ⟨PRS⟩ + NP + VP + X

NP subject optionally transforms to precede VP, giving an optional ordering of NP subject and VP, and readying NP subject to enter into compounding and agreement rules which apply just to NP subject before VP.

(1) mee -ni ndàʔí landú lǐʔli
VP + NP
only definite cry child little

(2) landú lǐʔli mee -ni ndàʔí
NP + VP
child little only definite cry
'little children are always crying'

13. Noun Phrase Compound

Opt
Source: P 7; T 12

$$\left.\begin{array}{llllllll} (1) & Y_1 & + & NP_1{}^{\check{}}\begin{bmatrix} gp_1 \\ aml \\ dty \end{bmatrix} & + & VP_1 & + & Y_2 \\ (2) & X_1 & + & NP_2{}^{\check{}}\begin{bmatrix} gp_2 \\ aml \\ dty \end{bmatrix} & + & VP_2 & + & X_2 \end{array}\right\} \Longrightarrow$$

$$(3) \quad X_1 + NP_1{}^{\check{}}\begin{bmatrix} gp_1 \\ aml \\ dty \end{bmatrix} + ndiʔi + NP_2{}^{\check{}}\begin{bmatrix} gp_2 \\ aml \\ dty \end{bmatrix} + VP_1 + X_2$$

where gp • ˇmsc, ˇfem, ˇmf, ˇ1st, ˇ2nd; and $VP_1 \cdot VP_2$

Permitted with two NP subjects conjoined by ndi̱ʔi̱ 'with, and' are any combination of the features ˇmsc (masculine), ˇfem (feminine), ˇmf (masculine-feminine), ˇ1st (first person), ˇ2nd (second person). The rule may be applied recursively to give any number of noun phrases with any combination of these gender or person features.

Except for the two noun phrases being conjoined, the source sentences are identical.

ii̱ tée ndi̱ʔi̱ ña-di̱ʔí-dé
NPˇmsc + ndi̱ʔi̱ NPˇfem
one man with wife his
'one man and his wife'

ii̱ tée iʔa ndi̱ʔi̱ úú ñá-ži̱u žàką̱
NPˇmsc + ndi̱ʔi̱ + NPˇmf
one man here with two people over there
'one man here and two people over there'

žúʔú ndi̱ʔi̱ tée-ą̱
NPˇ1st + ndi̱ʔi̱ + NPˇmsc
I with man over there
'I and the man over there'

nǰoo ndi̱ʔi̱ mèstrú
NPˇ1stˇ2nd + ndi̱ʔi̱ + NPˇmsc
we, inc with teacher
'we and the school teacher'

but not

*ii̱ tée ndi̱ʔi̱ ii̱ ki̱ti̱
NPˇmsc + ndi̱ʔi̱ + NPˇaml
one man with one animal
'one man and one animal'

or

*ii̱ tée ndi̱ʔi̱ žá- dáú
NPˇmsc + ndi̱ʔi̱ + NPˇdty
one man with deity rain
'one man and the rain deity'

NP˅dty (noun phrase with the gender deity) before VP can only combine with another NP˅dty, and NP˅aml (noun phrase animal) can only combine with another NP˅aml. Conjoining the noun phrases is ndi?i 'with, and'. Applied recursively, the rule gives any number of NP˅dty or NP˅aml.

žá-	dáú	ndi?i	žá-	nǰíka nǰii
NP˅dty	+	ndi?i	+	NP˅dty
deity rain		with		deity sun

'the rain deity and the sun deity'

ɨɨ	ñáñá	ndi?i	ɨɨ	ží?í
NP˅aml	+	ndi?i	+	NP˅aml
one coyote		with		one wolf

'one coyote and one wolf'

14. Pronoun Substitution

Opt
Source: P 9

$$(1)\quad X_1 + {}_{NP}(QUAN + NNUC^{\vee}\begin{bmatrix}an\\in\end{bmatrix}{}^{\vee}F + \langle EMP\rangle) + X_2 \Longrightarrow$$

$$(2)\quad X_1 + {}_{NP}(QUAN + {}_{NNUC}(Pro^{\vee}\begin{bmatrix}an\\in\end{bmatrix}{}^{\vee}F{}^{\vee}pro) + \langle EMP\rangle) + X_2$$

where F = features of N of NP excepting ˅an, ˅in, ˅com, ˅prp

NNUC˅an,in (noun nucleus animate or inanimate) can have substituted for it Pro˅an or Pro˅in (pronouns animate or inanimate) with all the features of N of NNUC except ˅com and ˅prp, and with the added feature ˅pro.

˅com and ˅prp are excluded from Pro, and ˅pro is added to Pro in order to preserve the division of all heads of noun phrases into non-overlapping classes identified by ˅com, ˅prp and ˅pro.

NNUC can be preceded by QUAN and followed by EMP, but it may not be followed by Mod. (The parentheses labeled NP in the rule exclude the possibility of optional Mod.)

(1) ndùku tá- lěsá ǹjuši
VP + NP˅fem + NP˅aml
looks for fem Teresa chicken
'Teresa looks for a chicken'

(2) ndùku -ši -di
VP + Pro˅pro˅fem + Pro˅pro˅aml
looks for she it (animal)
'she looks for it'

15. Subject Pronoun Agreement

Obl
Source: P 7; T 12

(1) $X_1 + NP^{\vee}\begin{bmatrix}\text{an}\\\text{in}\end{bmatrix}{}^{\vee}F + VP + X_2 \Longrightarrow$

(2) $X_1 + NP^{\vee}\begin{bmatrix}\text{an}\\\text{in}\end{bmatrix}{}^{\vee}F + VP + {}_{NP}(Pro^{\vee}\begin{bmatrix}\text{an}\\\text{in}\end{bmatrix}{}^{\vee}F^{\vee}\text{pro}) + X_2$

F as in preceding rule

If NP has been transformed to precede VP it takes a Pro in agreement with it. The rule is labeled Obl (obligatory) in order to identify Pro subject and NP objects more readily in succeeding rules. The case of NP subject before VP but without a cross-referencing Pro following the verb is provided for by a later rule that transforms any NP to precede VP if no other phrase is already before VP (T Rule 36).

The rules that reorder NP subjects, substitute Pro, or add cross-referencing Pro, give these options for subject:

$$\begin{Bmatrix}\text{NP}\\\text{Pro}\end{Bmatrix} + \text{VP} + \begin{Bmatrix}\text{—}\\\text{Pro}\end{Bmatrix}$$

and

$$\begin{Bmatrix}\text{Pro}\\\text{—}\end{Bmatrix} + \text{VP} + \begin{Bmatrix}\text{NP}\\\text{Pro}\end{Bmatrix}$$

(1) ñaní-í ní- są?ą žá?u
NP˅msc + VP + LOC
brother my comp go market
'my brother went to market'

(2) ñaní-í ní- są?ą -dé- žá?u
NP˅msc + VP + Pro˅msc + LOC
brother my comp go he market
'my brother went to market'

16. Inclusive Pronoun Agreement

Obl
Source: P 4; T 11, 12, 13, 15

(1) X_1 + $\begin{bmatrix} NP^{\vee}prs_k \\ NP^{\vee}1st^{\vee}2nd \end{bmatrix}$ + X_2 + ndi?i + $NP^{\vee}prs_j$ +
X_3 + VP + $Pro^{\vee}gp$ + X_4 ⟹

(2) X_1 + $\begin{bmatrix} NP^{\vee}prs_k \\ NP^{\vee}1st^{\vee}2nd \end{bmatrix}$ + X_2 + ndi?i + $NP^{\vee}prs_j$ +
X_3 + VP + $Pro^{\vee}1st^{\vee}2nd$ + X_4

where prs = ˅1st, ˅2nd;
gp as in previous rules

If one of two or more noun phrases functioning as subject is NP˅1st (first person noun phrase) and another is NP˅2nd (second person noun phrase), or if one is NP˅1st˅2nd (first person inclusive), Pro˅gp (pronoun with gender-or-person feature) must become Pro˅1st˅2nd (first person inclusive). It makes no difference if X_1 or X_2 has one or more noun phrases with ˅msc, ˅fem, or ˅mf, for first person inclusive takes precedence over gender and first or second person.

nǰoo ndi?i nǰaa tée-ą̌ ndà-tų́?ų-o
NP˅1st˅2nd + ndi?i + NP˅msc + VP + Pro˅1st˅2nd
we with all man there converse we
'we and all those men over there will talk together'

17. First and Second Person Agreement

Obl
Source: P 7; T 12, 15

(1) $X_1 + NP^{\vee}\begin{bmatrix}1st\\2nd\end{bmatrix} + X_2 + VP + Pro^{\vee}gp + X_3 \Longrightarrow$

(2) $X_1 + NP^{\vee}\begin{bmatrix}1st\\2nd\end{bmatrix} + X_2 + VP + Pro^{\vee}\begin{bmatrix}1st\\2nd\end{bmatrix} + X_3$

gp as in previous rules

Pro$^{\vee}$gp (pronoun with gender or person feature), not transformed to Pro$^{\vee}$1st$^{\vee}$2nd by the previous rule, becomes Pro$^{\vee}$1st in the environment of a subject with NP$^{\vee}$1st and becomes Pro$^{\vee}$2nd in the environment of a subject with NP$^{\vee}$2nd. That is to say, a first person noun phrase, in the absence of a second person or first person inclusive noun phrase, agrees with a first person pronoun; and a second person noun phrase, in the absence of a first person or first person inclusive noun phrase, agrees with a second person pronoun. It makes no difference if X_1 or X_2 contains $^{\vee}$msc, $^{\vee}$fem, or $^{\vee}$mf, for first and second person features take precedence over features of gender.

žò?ó	ndi?i	tătà-í	kɨ?ɨ-ndó
NP$^{\vee}$2nd +	ndi?i +	NP$^{\vee}$msc +	VP + Pro$^{\vee}$2nd$^{\vee}$plu
you	with	father my	will go you (plu)

'you and my father will go'

18. Masculine-feminine Agreement

Obl
Source: P 4; T 12, 13, 15

(1) $X_1 + \begin{bmatrix}NP^{\vee}hu_k\\NP^{\vee}mf\end{bmatrix} + X_2 + ndi?i + NP^{\vee}hu_j\Big] + X_3 + VP + Pro^{\vee}hu + X_4 \Longrightarrow$

(2) $X_1 + \begin{bmatrix}NP^{\vee}hu_k\\NP^{\vee}mf\end{bmatrix} + X_2 + ndi?i + NP^{\vee}hu_j\Big] + X_3 + VP + Pro^{\vee}mf + X_4$

where hu : $^{\vee}$msc, $^{\vee}$fem, $^{\vee}$mf

Pro˅hu (pronoun with the features ˅msc, ˅fem or ˅mf), not transformed to Pro˅1st and/or ˅2nd by either of the two previous rules, becomes Pro˅mf (pronoun with the feature masculine-feminine) in the environment of a subject with one NP having a feature ˅msc, ˅fem, or ˅mf, and a second NP having a different one of these features; or in the environment of a subject with a NP having the feature ˅mf.

This rule and the two preceding rules give priority to the features in the following order from highest to lowest: (1) ˅1st˅2nd, (2) ˅1st or ˅2nd, (3) ˅mf, and (4) ˅msc or ˅fem.

ña-dì²í-a		ndi²i		žii -ši		ku-ndekú		-žu	i²a
NP˅fem	+	ndi²i	+	NP˅msc	+	VP	+	Pro˅mf	+ LOC
woman this		with		husband her		will stay		people	here

'this woman and her husband will stay here'

19. Plural Agreement

Obl
Source: P 7; T 11, 12, 13, 15

$$(1)\quad X_1 + \begin{bmatrix} NP_1 + ndi^2i + NP_2 \\ NP^{\vee}1st^{\vee}2nd \end{bmatrix} + VP + Pro + X_2 \Longrightarrow$$

$$(2)\quad X_1 + \begin{bmatrix} NP_1 + ndi^2i + NP_2 \\ VP^{\vee}1st^{\vee}2nd \end{bmatrix} + VP + Pro^{\vee}plu + X_2$$

Two or more NP subjects and one NP˅1st˅2nd subject before VP require the feature ˅plu on Pro following VP. A single NP subject with the feature ˅plu will already be cross-referenced by a pronoun with the feature ˅plu in T Rule 15.

tǎtà	-í	ndi²i	ditó	-í	kį-	na-	ku²ñu	-kwè-dé	ñu²u
NP˅msc	+	ndi²i	+	NP˅msc	+	VP	+	Pro˅msc˅plu	+ NP
father my		with		uncle my		go rep	irrigate	plu he	ground

'my father and my uncle are going to irrigate the field'

20. Adjectival Modifier

Opt - Non R
Source: (1) P 10, 12, 14, 15
(2) P 9, 10

(1) **VNUC˅ka + Adj + ⟨Adm˅bi⟩ + N_1˅com**
(2) X_1 + ⟨QUAN⟩ + N_2˅com + ⟨EMP⟩ + X_2 ⟹

(3) X_1 + ⟨QUAN⟩ + $_{NNUC}$(N_1˅com + Adj + ⟨bì?i⟩) + ⟨EMP⟩ + X_2
where $N_1 = N_2$

Adj (adjective) plus optional **Adm˅bi** (adverbial modifier bì?i 'very') of sentence (1) is introduced into sentence (2) as a modifier of **N˅com** (common noun but not proper noun or pronominal). The embedding sentence (1) which contributes **Adj** has N_1 (identical to the N_2 of the frame sentence (2)) and **VNUC˅ka** (verb nucleus with the stative verb kaa 'be').

N (itself a NNUC) combines with Adj and optional bì?i to become NNUC.

(1) kàa ka?nu bi?i be?e
VNUC˅ka + Adj + Adm˅bi + N˅com
be large very house
'the house is very large'

(2) ní- dá- káá -dě be?e
VP + Pro + N˅com
comp do go up he house
'he built a house'

(3) ní- dá- káá -dě be?e kà?nu bi?i
VP + Pro + N˅com + Adj + Adm˅bi
comp do go up he house large very
'he built a very large house'

21. Locative Modifier

Opt
Source: (1) P 5, 7, 8, 28
(2) P 8, 28

(1) $VP^{\vee}loc + NP'_1{}^{\vee}com,prp + Loc$ $\Big\}$ $\Longrightarrow$
(2) $X_1 + NP'_2{}^{\vee}com,prp + Mod + X_2$ $\Big\}$

(3) $X_1 + NP'_2{}^{\vee}com,prp + {}_{Mod}(Loc) + X_2$
where $NP_1 = NP_2$

Mod following NP˅com, prp (noun phrase common or proper but not pronominal) of sentence (2) may have substituted for it Loc (locatives i?a 'here' or žàką 'there') from sentence (1). žàką and i?a optionally become -ą and -a by a morphophonemic rule.

Sentence (1), which contributes Loc, is an intransitive sentence with VP˅loc ndeku 'be in a place' and NP'_1, a noun phrase subject which is identical to the noun phrase subject of sentence (2).

(1) ndèku -dé žàką
VP˅loc + NP + Loc
be he there
'he is there'

(2) nùu kóo -dé žu?u dě?bá
VP + NP + NP' + Mod
be seated he mouth canyon
'he is seated at the edge of the canyon'

(3) nùu kóo -dé žu?u dě?bá -ą
VP + NP + NP' + Mod(Loc)
be seated he mouth canyon over there
'he is seated at the edge of the canyon over there'

22. Possessive

Opt
Source: (1) P 7, 16, 17, 29; T 8
(2) P 8, 28

(1) ASP + V˅ku + NP'_1˅com + kwèndá + NP'_2˅an,in
(2) X_1 + NP(X_2 + NP'_3˅com + ⟨Mod⟩) + X_3 ⟶
(3) X_1 + NP(X_2 + NP'_3˅com + NP'_2˅an,in˅pos + ⟨Mod⟩) + X_3

where NP'_3 is not dominated by TEM, and $NP'_1 = NP'_3$

NP'_2˅an,in (a noun phrase prime with a feature animate or inanimate) is taken from sentence (1) and entered following NP'_3˅com (noun phrase prime with a feature common) in sentence (2) to give sentence (3). NP'_2˅an,in (but not noun phrase temporal) functions as possessor of NP'_3˅com (but not noun phrase prime with a feature proper or pronoun). If NP'_3˅com is also NP'_3˅tem, NP'_3 must not be dominated by TEM: only NP˅tem as subject or object can be possessed.

The morphemes which can possess or be possessed are shown on the chart below. A NP' with a pair of features from a column and a row intersecting with the numeral 1 can be *possessed*, and intersecting with the numeral 2 can be *possessor*.

	˅an	˅in	˅tem
˅com	1, 2	1, 2	1
˅prp	2	2	
˅pro	2	2	

Added to a noun phrase possessor is ˅pos (feature possessor) to facilitate differentiating NP' head and NP' possessor in subsequent rules.[3]

NP˅pos itself may be possessed if it is not only NP˅an,in but is also NP˅com. The rule may apply any number of times as long as the NP' to be possessed has the feature ˅com (common).

3 The feature ˅pos does not enter into the association of category symbols and features with phonoiogical strings in the lexical component. By convention it is simply ignored at that point in the grammar. Features which are associated with Pro by transformation and which are not found associated with Pro in the lexicon are treated in the same way.

(1) kùu tu̱-šìí kwèndá -dé
VP˅ku + NP' + kwèndá + NP
be rifle on account of him
'the rifle pertains to him'

(2) tu̱-šìí ní- šíta
NP(NP' + Mod) + VP
rifle comp lose
'the rifle was lost'

(3) tu̱-šìí -dé ní- šíta
NP (NP' + NP'˅pos) + VP
rifle his comp lose
'his rifle was lost'

23. Possessive Emphasis

Opt
Source: P 3, 7; T 21

(1) ⟨PRS⟩ + VP + X_1 + NP(X_2 + NP'˅pos˅F_k + ⟨Loc⟩) + X_3 ⟹

(2) ⟨PRS⟩ + NP'˅pos˅F_k + ⟨Loc⟩ + VP + X_1 + NP(X_2 + Pro˅pos˅F_k) + X_3

where F = features of NP, excepting ˅com and ˅prp

The last of one or more noun phrase primes with the feature ˅pos (possessor) is emphasized by transforming it to precede VP and inserting Pro˅pos (pronoun possessor) in cross-reference with NP˅pos.

(1) ní- kážú be?e dé?e tée -ą́
VP + NP' + NP' + NP' + Loc
comp burn house child man there

(2) tée -ą́ ní- kážú be?e dé?e -dé
NP˅pos + Loc + VP + NP' + NP˅pos + Pro˅pos
man there comp burn house child his
'that man's child's house burned'

24. Pronoun Repetition

Opt - Non R
Source: P 7

$$\left.\begin{array}{lllllllll} (1) & Y_1 & + & VP_1 & + & Pro_1 & + & Y_2 \\ (2) & X_1 & + & VP_2 & + & Pro_2 & + & X_4 \end{array}\right\} \Longrightarrow$$

$$(3) \quad X_1 + VP_2 + Pro_2 + t\grave{a}^{?}\acute{a} + Pro_3 + X_2$$

where $Pro_2 = Pro_3$, and $VP_1 = VP_2$

Pro_2 (pronoun subject with or without a NP subject before the verb phrase) is complemented by tą̀ʔą́ 'also' and Pro_3, a pronoun identical to Pro_2. Inasmuch as tą̀ʔą́ implies an unspecified subject, the source given for tą̀ʔą́ is sentence (1) which, except for its subject, is identical to the frame sentence (2).

úú	tée	kį́ʔį́	-kwe	-dé	tą̀ʔą́	-kwe	-dé
NP	+	VP	+	Pro	+	tą̀ʔą́	+ Pro
two	men	will go	plu	he	also	plu	he

'two men as well will go'

25. tą̀ʔą́ plus NP

Opt - Non R
Source: P 7

$$\left.\begin{array}{lllll} (1) & Y_1 & + & NP_1 & + & Y_2 \\ (2) & X_1 & + & NP_2 & + & X_2 \end{array}\right\} \Longrightarrow$$

$$(3) \quad X_1 + {}_{NP}(t\grave{a}^{?}\acute{a} + NP_2) + X_2$$

Any NP may be preceded by tą̀ʔą́ 'also', but no more than one tą̀ʔą́ to a noun phrase may occur. Even though the rule is nonrecursive, any number of noun phrases within a sentence may be preceded by tą̀ʔą́ by applying the rule to a different NP and changing the values of the variables in each application of the rule.

tą̀ʔą́ tée-ą̌ kį́ʔį́ -dé
NP + VP + NP
also man that will go he
'he also will go'

tą̀ʔą́ tée-ą̌ ndi²i ña-dì²í -dé kį́ʔį́ -žu
NP + ndi²i + NP + VP + NP
also man that with woman his will go people
'that man also with his wife will go'

tée-ą̌ ndi²i tą̀ʔą́ ña-dì²í -dé kį́ʔį́ -žu
NP + ndi²i + NP + VP + NP
man that with also woman his will go people
'that man and also his wife will go'

Both this rule and the preceding one may be applied to the same sentence to give:

tée-ą̌ ndi²i tą̀ʔą́ ña-dì²í -dé kį́ʔį́ -žu tą̀ʔą́ -žu
NP + ndi²i + NP + VP + NP + NP
man that with also woman his will go people also people
'that man and his wife as well will go'

26. Complex Sentence Nucleus

Opt
Source: (1) P 7; T 12, 15
(2) P 4, 7; T 12, 15

$$(1)\quad \begin{bmatrix} NP_1 \\ — \end{bmatrix} + VP^{\vee}csn + \begin{bmatrix} Pro_1 \\ NP_1 \end{bmatrix} + NP_2$$

$$(2)\quad X_1 + {}_{SNUC}(NP_3 + VP + Pro_2 + X_2) + X_3 \Bigg\} \Longrightarrow$$

$$(3)\quad X_1 + {}_{SNUC}(\begin{bmatrix} NP_1 \\ — \end{bmatrix} + VP^{\vee}csn + \begin{bmatrix} Pro_1 \\ NP_1 \end{bmatrix} + VP + Pro_2 + X_2) + X_3$$

where $NP_1 = NP_3$, and $Pro_1 = Pro_3$

The frame sentence (2) has NP_3 (noun phrase subject) with Pro_2 in agreement with it and VP (any verb phrase). The embedding sentence (1) has NP_1 (identical to NP_3) with or without Pro_1 in agreement with it and VP$^{\vee}$csn (verb phrase with the feature complex sentence nucleus), e.g., ngwíta 'begin', ndaku 'be able', kiní 'know', kwìní 'want'.

NP_3 of sentence (2) is replaced by all but NP_2 of sentence (1).

As the rule has been formulated, if the embedding sentence (1) contributes both NP_1 and Pro_1 (not just NP_1) the output sentence (3) may enter as a frame sentence (2) of the same rule. Although there is no limit given on the number of times that the rule may apply, there are only a few V$^{\vee}$csn that have been noted, and between these there are numerous co-occurrence restrictions, e.g., ndaku ngwíta 'be able to begin' but not *ngwíta ndaku 'begin to be able'.

Each addition to a sentence by this rule becomes a part of a complex SNUC (sentence nucleus). A phrase which follows SNUC (or a NP object at the end of SNUC) can be transformed to precede a complex SNUC just as with any other SNUC.

(1) úú -kwe -dé ngwíta -kwe-dé šíą̨
NP + VP + Pro + NP
two plu he begin plu he that
'two of them begin that'

(2) úú -kwe -de kada číų̨ -kwe-dé
NP + VP + Pro
two plu he do work plu he
'two of them will work'

(3) úú -kwe -dé ngwíta -kwe -dé kada číų̨ -kwe -dé
NP + VP + Pro + VP + Pro
two plu he begin plu he do work plu he
'two of them will begin to work'

Sentence (3) may be expanded by:

(1) úú -kwe -dé kwìní -kwe -dé šíą̨
NP + VP + Pro + NP
two plu he want plu he that
'two of them want that'

(2) úú -kwe -dé ngwíta -kwe -dé kada čį̣ų -kwe -dé
NP + VP + Pro + VP + Pro
two plu he begin plu he do work plu he
'two of them will begin to work' (sentence (3) above)

(3) úú -kwe -dé kwìní -kwe -dé ngwíta -kwe -dé
NP + VP + Pro + VP + Pro +
two plu he want plu he begin plu he

kada čį̣ų -kwe -dé
VP + Pro
do work plu he
'two of them want to begin work'

27. Sentence Modifier

Opt - Non R
Source: (1) P 7, 28; T 22
(2) P 8, 28

$$\left.\begin{array}{ll} (1) & VP + X_3 + {}_{NP}(X_4 + NP'_1{}^{\vee}com,prp^{\vee}\begin{bmatrix}\sim pos\\ pos\end{bmatrix}) + X_5 \\ (2) & X_1 + NP'_2{}^{\vee}com,prp + Mod + X_2 \end{array}\right\} \Longrightarrow$$

$$(3)\quad X_1 + NP'_2{}^{\vee}com,prp + VP + X_3 + {}_{NP}(X_4 + \begin{bmatrix}\overline{\quad}\\ Pro^{\vee}in\end{bmatrix}) + X_5 + X_2$$

$NP'_1 = NP'_2$ except that they may differ in $^{\vee}pos$

Mod following $NP'_2{}^{\vee}com,prp$ of sentence (2) can be replaced by sentence (1) less its NP'_1. Sentence (1) becomes a part of the same NP as NP' (since Mod which it replaces is a part of NP).

NP'_1 is identical to NP'_2 except that one may have the feature $^{\vee}pos$ and the other be without it. If NP'_1 has the feature $^{\vee}pos$ it is replaced by $Pro^{\vee}in$ -ši 'it'. Neither NP'_1 nor NP'_2 can be followed by $NP^{\vee}pos$ (provided for in the rule by NP'_1 being the last element of NP, and NP'_2 being followed by Mod).

(1) kù²ú dé²e tée
VP + NP' + NP'
be sick child man
'the man's child is sick'

(2) tée běši -dé
NP' + VP + Pro
man comes he
'the man is coming'

(3) tée kù²ú dé²e -ši běši -dé
$_{NP}$(NP' + VP + NP' + Pro$^{\vee}$in) + VP + Pro
man be sick child it comes he
'the man whose child is sick is coming'

28. sáá plus Sentence

Opt
Source: (1) P 1
(2) P 7

(1) SEN'
(2) X_1 + V$^{\vee}$tsa + X_2 + NP $\Big\} \Longrightarrow$
(3) X_1 + V$^{\vee}$tsa + X_2 + $_{NP}$(sáá + SEN')
where NP is dominated by SNUC

Substituting for NP object of V$^{\vee}$tsa (verb takes sáá) is sáá + SEN'. The NP is object since it is restricted to the last NP of SNUC. It is SEN' not SEN or S that enters this rule since Int (interrogative) and Imp (imperative) of SEN may not be part of a sentence embedded after V$^{\vee}$tsa and neither may Inj (interjection) of S.

(1) ndiši tucu -ndɨ
SEN'
return again we
'we return again'

(2)

		kwìní		-dé		šį̈ą̈
Cont	+	V˅tsa	+	NP	+	NP
cont		want		he		that

'he wants that'

(3)

		kwìní		-dé		sáá	ndíší	tùcu	-ndí
Cont	+	V˅tsa	+	NP	+	NP(sáá	+	SEN'	)
cont		want		he		that	return	again	we

'he wants us to return again'

29. Imperative

Obl
Source: P 3, 7, 12, 16, 17; T 19

(1) $\text{Imp} + X_1 + \langle \text{sa-} \rangle + \text{ASP} + X_2 + \text{V} + \langle \text{ADV} \rangle + \text{NP}^{\vee}\begin{bmatrix}\text{plu} \\ \sim\text{plu}\end{bmatrix} + X_3 \Longrightarrow$

(2) $X_1 + \begin{bmatrix}\text{čii} \\ \text{—}\end{bmatrix} + X_2 + \text{V} + \langle \text{ADV} \rangle + X_3$

If NP subject has the feature ˅plu (plural), čii 'imperative plural' replaces optional sa- 'proximate' and ASP (aspect) of an imperative sentence. If NP does not have the plural feature, optional sa- and ASP are simply deleted. In both cases Imp (imperative) and NP subject are deleted.

čii		kátá		sà?a
čii	+	VP	+	NP
imp		sing		leg

'dance! (you plural)'

kata		sa?a
VP	+	NP

'dance! (you singular)'

du?a			na-	ti?u		bè?e
PRV	+	Ptl	+ na-	+ V	+	NP
thus		ptl	rep	sweep		house

'sweep the house this way! (you singular)'

30. Pronoun Deletion

Obl
Source: P 4, 7; T 26, 27, 29

(1) $X_1 + {}_{SNUC}(X_2 + VP_1 + VP_2 + Pro + X_3) + X_4 \Longrightarrow$

(2) $X_1 + {}_{SNUC}(X_2 + VP_1 + VP_2 + X_3) + X_4$

A sentence which is subject to this obligatory transformation is one with a complex SNUC from T Rule 26 that has passed through either T Rule 27, where it must have been a noun phrase subject that was deleted (not NP object, etc.); or through T Rule 29, where only a noun phrase subject can have been deleted. As a result of the deletion of NP subject of a complex SNUC, two verb phrases will be juxtaposed. Immediately following the verb phrases is Pro which is obligatorily deleted by this rule. If there are other verb phrases with pronoun subjects (the result of repeated applications of the T Rule 26), each one of the pronouns will be deleted by repeated applications of this rule.

(1) ịị šéčí šìní -ši nǰìko -ši běši -ši
${}_{NP}(NP^1 + {}_{SNUC}(VP + pro + VP + Pro)) + VP + Pro$
one girl knows she grind she comes she

(2) ịị šéčí šìní nǰìko běši -ši
${}_{NP}(NP^1 + {}_{SNUC}(VP + VP)) + VP + Pro$
one girl knows grind comes she
'a girl who knows how to grind is coming'

(1) ngwíta kada čịų -ngi
${}_{SNUC}(VP + VP + Pro)$
begin do work you
'you will begin to work'

(2) ngwíta kada čịų
${}_{SNUC}(VP + VP)$
begin do work
'begin work'

31. Interrogative

Obl

31.1 Phrasal Interrogative

Source: P 3, 4, 5, 6, 7; T 8, 9

$$(1)\quad \text{Int} + X_1 + \begin{bmatrix} \text{NP}^{\vee}\text{in} \\ \text{TEM} \\ \text{LOC} \\ \langle \text{kwèndá} \rangle + \text{NP}^{\vee}\text{an} \\ \langle \text{ndéé} \rangle + {}_{\text{NP}}(\text{QUAN} + X) \end{bmatrix} + X_2 \Longrightarrow$$

$$(2)\quad \begin{bmatrix} \text{náá} \\ \text{náá} + \text{ama} \\ \text{ndèé} \\ \langle \text{kwèndá} \rangle + \text{žoo} \\ \text{ndéé dau} \end{bmatrix} + X_1 + X_2$$

This is the first of a five-part obligatory transformational rule which applies to a sentence with Int (interrogative). A sentence with Int must be transformed by this rule, but any one line of the five parts of the rule that matches the sentence may be taken.

In this first part, Int and some one phrase of the sentence is deleted, and in the place of Int is entered one of the following interrogatives:

náá	what
náá ama	when
ndèé	where
žoo	who
kwèndá žoo	for whom
ndéé dau	how much

náá kaši -o
náá + VP + NP
what will eat we
'what will we eat?'

náá ama ka-dú?a -dé mèsá
náá ama + VP + NP + NP
when will make he table
'when will he make the table?'

ndèé ní-nduá -ngí
ndèé + VP + NP
where fell you
'where did you fall?'

žoo ní-kide kwéči
žoo + VP + NP
who did wrong
'who did wrong?'

nděé dau ní-ngų?ų šé?é
nděé dau + VP + NP
how much cost this
'how much did this cost?'

31.2 Adverbial Interrogative

Source: P 3, 11, 12

(1) **Int + ⟨PRV⟩ + VNUC + ⟨ADV⟩ + X ⟹**

(2) **náá + saa + VNUC + X**

PRV (pre-verb phrase) and **ADV** (adverbial phrase) if present are deleted and **Int** is replaced by **náá saa** 'how'.

náá saa kàa -dį
náá saa + VNUC + NP
how is it (animal)
'how is it?'

31.3 Possessive Interrogative

Source: P 3, 7; T 22

(1) Int + X_1 + $_{NP}$(NP'$_1$ + NP'$_2$ˇpos) + X_2 ⟹

(2) žoo + NP'$_1$ + Proˇin + X_1 + X_2

Int can be applied to NP'$_2$ˇpos if NP'$_2$ˇpos is not preceded or followed by another NPˇpos. Int is replaced by žoo 'who', NP'$_2$ˇpos is replaced by Proˇin -ši 'it', and NP'$_1$ plus -ši are placed after žoo.

žoo dóó -ši kwǎ?a
žoo + NP' + NPˇin + VP
who cloth it being made
'whose clothing is being made?'

31.4 Adjectival Interrogative

Source: P 3, 7; T 20, 21

(1) Int + X_1 + $_{NP}$(N + Adj + ⟨Loc⟩) + X_2 ⟹

(2) náá + $_{NP}$(N + ⟨Loc⟩) + X_1 + X_2

Int is replaced by náá 'what, which', Adj which modifies N is deleted, and N plus optional Loc is transformed to follow náá.

The response to this interrogative is not necessarily a sentence containing the adjective deleted by this rule. If N is sufficiently general in meaning a noun more restricted in meaning is often given in response.

náá kiti ní-kuu nee
náá + N + VP
which animal became exhausted
'which animal became exhausted?'

31.5 Quantifying Interrogative

Source: P 3, 5, 6, 7, 9; T 8, 9

$$(1)\quad \text{Int} + \text{VP} + X_1 + \langle \begin{Bmatrix} \text{ndɛ̌ɛ́} \\ \text{kwèndá} \end{Bmatrix} \rangle + {}_{\text{NP}}(\text{QUAN} + X_2) + X_3 \Longrightarrow$$

$$(2)\quad \langle \begin{Bmatrix} \text{ndɛ̌ɛ́} \\ \text{kwèndá} \end{Bmatrix} \rangle + \text{náá} + \text{da?a} + {}_{\text{NP}}(X_2) + X_3$$

Int combines with QUAN to give náá da?a 'how much, how many'. Placed at the first of the sentence are optional ndɛ̌ɛ́ or kwèndá plus náá da?a plus the balance of the noun phrase which contained QUAN.

náá da?a njǔši nǐ-kee
náá da?a + NP + VP
how many chicken came out
'how many chicks hatched?'

32. Compound Phrase with ndi?i or àdi

Opt
Source: P 7; T 8

$$\left.\begin{array}{ll} (1) & Y_1 + \text{VP}_1 + Y_2 + \langle \text{kwèndá} \rangle_1 + \text{NP}_1{}^{\vee}\begin{bmatrix} \text{an, in} \\ \text{tem} \end{bmatrix} + Y_3 \\ (2) & X_1 + \text{VP}_2 + X_2 + \langle \text{kwèndá} \rangle_2 + \text{NP}_2{}^{\vee}\begin{bmatrix} \text{an, in} \\ \text{tem} \end{bmatrix} + X_3 \end{array}\right\} \Longrightarrow$$

$$(3)\quad X_1 + \text{VP}_2 + X_2 + \langle \text{kwèndá} \rangle_1 + \text{NP}_1{}^{\vee}\begin{bmatrix} \text{an, in} \\ \text{tem} \end{bmatrix} + \begin{Bmatrix} \text{ndi?i} \\ \text{àdi} \end{Bmatrix} + \langle \text{kwèndá} \rangle_2 + \text{NP}_2{}^{\vee}\begin{bmatrix} \text{an, in} \\ \text{tem} \end{bmatrix} + X_3$$

where $\text{VP}_1 = \text{VP}_2$, and X_1 need not equal Y_1

Noun phrases conjoined by T Rule 13 are phrases which function as subject before the verb and can be cross-referenced by Pro following the verb. Phrases conjoined by T Rule 32 have fewer co-occurrence restrictions: NP$^{\vee}$an,in can be conjoined to NP$^{\vee}$an,in, and NP$^{\vee}$tem to NP$^{\vee}$tem by ndi$^{?}$i 'with' or àdi 'or'.

ní-díkó -dě tí-kaží ndi$^{?}$i ɨɨ ǹjuši
VP + NP + NP$^{\vee}$in + ndi$^{?}$i + NP$^{\vee}$an
sold he charcoal with one chicken
'he sold charcoal and a chicken'

ku-ndeku -dé ñú-kò$^{?}$žó kwíá bitą ndi$^{?}$i ɨɨ-ká kwíá
VP + NP + LOC + TEM + ndi$^{?}$i + TEM
will be he Mexico City year now with one more year
'he will be in Mexico City this year and next'

It is possible to conjoin one or more noun phrases to a pronoun cross-referencing a noun phrase subject before the verb—a possibility provided for in the rule by the cover symbols X_1 and Y_1 which stand for strings that may be the same or different.

(1) tée-ą̈ kɨ$^{?}$ɨ́ -dé
NP + VP + Pro
man that will go he
'that man will go'

(2) kɨ$^{?}$ɨ́ ɨɨ kiti
VP + NP
will go one animal
'one animal will go'

(3) tée-ą̈ kɨ$^{?}$ɨ́ -dé ndi$^{?}$i ɨɨ kiti
NP + VP + Pro + ndi$^{?}$i + NP
man that will go he with one animal
'that man will go with one animal'

33. Compound Phrase with àdi

Opt
Source: P 4, 7; T 9

$$(1)\quad Y_1 + VP_1 + Y_2 + \left[\begin{array}{l} \text{ndéé} + NP^{\vee}\left[\begin{array}{l}\text{an, in}\\ \text{tem}\end{array}\right] \\ \text{LOC} \\ \text{TEM}\end{array}\right]_1 + Y_3$$

$$(2)\quad X_1 + VP_2 + X_2 + \left[\begin{array}{l} \text{ndéé} + NP^{\vee}\left[\begin{array}{l}\text{an, in}\\ \text{tem}\end{array}\right] \\ \text{LOC} \\ \text{TEM}\end{array}\right]_2 + X_3 \Longrightarrow$$

$$(3)\quad X_1 + VP_2 + X_2 + \left[\begin{array}{l} \text{ndéé} + NP^{\vee}\left[\begin{array}{l}\text{an, in}\\ \text{tem}\end{array}\right] \\ \text{LOC} \\ \text{TEM}\end{array}\right]_1 +$$

$$\text{àdi} + \left[\begin{array}{l} \text{ndéé} + NP^{\vee}\left[\begin{array}{l}\text{an, in}\\ \text{tem}\end{array}\right] \\ \text{LOC} \\ \text{TEM}\end{array}\right]_2 + X_3$$

where $VP_1 = VP_2$

ndéé plus NP$^{\vee}$an,in; ndéé plus NP$^{\vee}$tem; LOC; and TEM can be conjoined to another phrase of the same type by àdi 'or' (but not by ndi$^{?}$i̱ 'with, and' which was a part of the preceding rule).

ní-čá$^{?}$u -dé ndéé úší úú dį̱$^{?}$ų́ àdi ndéé ókó dį̱$^{?}$ų́
VP + NP + ndéé + NP + àdi + ndéé + NP
paid he to twelve money or to twenty money
'he paid one-and-a-half to two-and-a-half pesos'

kóó -dé čį̱ų̱ ii̱-ká žóó àdi ndéé ii̱-ká kwíá
VP + NP + NP + TEM + àdi + ndéé + TEM
will be he work one more month or until one more year
'he will become a town authority next month or next year'

ndá-dú?a -dé i?a àdi ndéé be?e -dé
VP + NP + LOC + àdi + ndéé + LOC
will repair he here or to house his
'he is going to fix things up here or at his house'

34. Listing

Source: P 5, 6, 7

$$\left.\begin{array}{l}(1)\quad Y_1 + VP_1 + Y_2 + NP_1{}^{\vee}\begin{bmatrix}an\\in\\tem\end{bmatrix} + Y_3\\ (2)\quad X_1 + VP_2 + X_2 + NP_2{}^{\vee}\begin{bmatrix}an\\in\\tem\end{bmatrix} + X_3\end{array}\right\}\Longrightarrow$$

$$(3)\quad X_1 + VP_2 + X_2 + NP_1{}^{\vee}\begin{bmatrix}an\\in\\tem\end{bmatrix} + NP_2{}^{\vee}\begin{bmatrix}an\\in\\tem\end{bmatrix} + X_3$$

where $VP_1 = VP_2$

Any number of NP$^{\vee}$an, NP$^{\vee}$in, or NP$^{\vee}$tem can occur in a series.

kwą̨ą̨ -o ñíí nduá ža?a kàféé
VP + NP + NP$^{\vee}$in + NP$^{\vee}$in + NP$^{\vee}$in + NP$^{\vee}$in
will buy we salt onion chile coffee
'we will buy salt, onion, chile, and coffee'

kiši dútú žǒó agòstó setièmbré òtúbré
VP + NP + TEM + TEM + TEM
will come priest month August September October
'the priest will come for the months of August, September, and October'

35. Appositional Phrases

Opt
Source: (1) P 7, 30
(2) P 5, 6, 7

$$\left.\begin{array}{lllll} (1) & VP^{\vee}equ & + & NP_1 & + & NP_2 \\ (2) & X_1 & + & NP_3 & + & X_2 \end{array}\right\} \Longrightarrow$$

$$(3) \quad X_1 + NP_3 + NP_2 + X_2 \qquad \text{where } NP_1 = NP_3$$

Two noun phrases which can be equated can also occur in apposition to each other in a sentence. NP_2, which is equated to NP_1, is placed after NP_3 (identical to NP_1).

(1) kùu tée sàdóó tée tú?a
VP + NP + NP
be man Sado man learned
'Sado is a learned man'

(2) tée sàdóó kači tų́?ų -dé náá saa kada -o
NP + VP + NP + NP
man Sado speak word he what thing do we
'Sado will tell us what to do'

(3) tée sàdóó tée tú?a kači tų́?ų -dé náá saa kada -o
NP + NP + VP + NP + NP
man Sado man learned speak word he what thing do we
'Sado, the learned man, will tell us what to do'

36. Emphatic Reordering

Opt
Source: P 3, 4, 7; T 10

$$(1) \quad \langle Neg \rangle + VP + NP_1 + X_1 + \begin{bmatrix} \langle šii \rangle + NP_2 \\ LOC \\ TEM \end{bmatrix} + X_2 \Longrightarrow$$

$$(2) \quad \langle Neg \rangle + \begin{bmatrix} NP_2 \\ LOC \\ TEM \end{bmatrix} + VP + NP_1 + X_1 + X_2$$

NP, LOC, and TEM can be transformed to precede VP and follow optional Neg (negative). If no Neg is present the phrase transformed to initial position is simply emphasized, but if Neg is present the phrase is negated. šii 'to', which precedes a noun phrase functioning as indirect object, is deleted if the noun phrase is transformed to precede the verb phrase.

(1) kį́ʔį́ -dé bitą
VP + NP + TEM
will go he today
'he will go today'

(2) bitą kį́ʔį́ -dé
TEM ++ VP + NP
today will go he
'today he will go'

(1) ña-túú ní-są̀ʔą́ -dé beʔe
Neg + VP + NP + NP
not went he house
'he didn't go home'

(2) ña-díú bèʔe ní-są́ʔą́ -dé
Neg + NP + VP + NP
not house went he
'it wasn't to his home he went'

(1) kàna ñaʔa -dé šii žòʔó
VP + NP + šii + NP
calling person he to you
'he is calling you'

(2) žòʔó kàna ñaʔa -dé
NP + VP + NP
you calling person he
'it's you he is calling'

37. ndi?i Reordered

Opt
Source: P 7; T 33

(1) X_1 + VP + NP + ndi?i + X_2 ⟹

(2) X_1 + $_{VP}$(VP + ndi?i) + NP + X_2

where ndi?i is part of SNUC

When ndi?i 'with' conjoins two NP subjects following VP, it may optionally be transformed to precede the first NP subject to become part of VP.

(1)	kwą?ą	-dé		ndi?i		ña-dì?í	-dé
	VP	+	NP	+	ndi?i	+	NP	
	go		he		with		wife	he
(2)	kwą?ą		ndi?i		-dé		ña-dì?í	-dé
	VP	+	ndi?i	+	NP	+	NP	
	go		with		he		wife	he

'he goes with his wife'

38. Stative Verb Deletion

Opt
Source: P 18, 31

(1) X_1 + Cont + V˘sta + X_2 ⟹

(2) X_1 + X_2

V˘sta (kaa 'be' permanent state or kuu 'be' temporary state) may optionally be deleted when it is in the continuative aspect.

(1)		kuu		bĭši		-dé
	Cont	+	V˘sta	+	Adj	+	NP
	cont		be		cold		he

(2) bíši -dé
Adj + NP
cold he
'he is cold'

39. kuu Placement

Obl
Source: P 16, 18

(1) X_1 + Ptl + X_2 + V˅tku + X_3 ⟹

(2) X_1 + Ptl + V˅ku + V˅tku + X_3

V˅ku (kuu 'be') is obligatorily introduced after V˅tku (verb takes kuu) when the latter is in the potential aspect.

(1) ndèku -dé be?e -dé
Ptl + V˅tku + NP + LOC
ptl be he house he

(2) kuu ndeku -dé be?e -dé
Ptl + V˅ku + V˅tku + NP + LOC
ptl be be he house he
'he will be in his house'

40. Emphatic Phrase Reordered

Obl
Source: P 9

(1) X_1 + QUAN + NNUC + EMP + X_2 ⟹

(2) X_1 + QUAN + EMP + NNUC + X_2

When both QUAN (quantifier phrase) and EMP (emphatic phrase) accompany NNUC (noun phrase nucleus), EMP is reordered to immediately follow QUAN.

(1) bài be?e -ká
QUAN + NNUC + EMP
many house more

(2) bài -ká be?e
QUAN + EMP + NNUC
many more house
'many more houses'

41. Sentence Conjunction

Opt
Source: (1) P 1
(2) P 1

$$\left.\begin{array}{ll}(1) & \text{SEN}' \\ (2) & \text{X} + \text{SEN}'_2\end{array}\right\} \Longrightarrow$$

$$(3)\quad \text{X} + {}_{\text{SEN}'}(\text{SEN}'_2 + \left\{\begin{array}{l}\langle\text{tee}\rangle + \langle\left\{\begin{array}{l}\text{diko}\\ \text{àdi}\end{array}\right\}\rangle \\ \langle\text{čii}\rangle\end{array}\right\} + \left\{\begin{array}{l}\langle\text{kwěi}\rangle \\ \langle\text{núú}\rangle\end{array}\right\} + \text{SEN}'_1)$$

SEN'_1 is conjoined to SEN'_2 by the conjunctions tee 'and', diko 'but', àdi 'or', čii 'because', kwěi 'although', or nuu 'if'.

SEN'_1 is placed at the end of sentence (3), and thus may be SEN'_2 on a subsequent application of the rule. SEN' which results from conjoining SEN'_1 and SEN'_2 is also sentence final, and thus may be SEN'_2 on a subsequent application of the rule to give further patterns of sentence conjunction.

(1) ní nduu kwè?é kwàžú -dé
SEN'
comp be injure horse he
'his horse was injured'

(2) kwą́ʔą́ -dé žáʔu ni kùu
SEN'
cont go he market comp be
'he was going to go to market'

(3) kwą́ʔą́ -dé žáʔu ni kùu dico ní nduu kwèʔé kwàžú -dé
SEN' + dico + SEN'
cont go he market comp be but comp be injure horse he
'he was going to go to market but his horse was injured'

42. Direct Quote

Opt
Source: (1) P 1
(2) P 7

(1) S

(2) $X_1 + V\check{}qu + X_2 + \left.\begin{matrix}NP\end{matrix}\right\} \Longrightarrow$

(3) $X_1 + V\check{}qu + X_2 + {}_{NP}(SEN)$

where NP is dominated by SNUC

Any S, including one with Inj (interjection), Imp (imperative), or Int (interrogative), may be a direct quote. S substitutes for NP object of V˘qu (verb quote).

(1) náá kaši -o
S
what ptl eat we
'what will we eat?'

(2) ní- kačí -dé šį́ą́
Comp + V˘qu + NP + NP
comp say he that
'he said that'

(3) ní- kačí -dé náá kaši -o
Comp + V˘qu + NP + S
comp say he what ptl eat we
'he said, "What will we eat?"'

4 LEXICON

The lexicon is intended to be only suggestive in the case of large classes (indicated by ellipses). Small classes are exhaustive or nearly so.

Entries in the lexicon are in the following order: nouns, verbs, other classes of more than one member, and single-membered classes. Within each of the divisions, entries are alphabetized by categories and features.

N˅cls

ndíi	dead
taa	feminine
žaá	divine

N˅com˅an˅aml

čìbá	goat
čótó	rat
iná	dog
kɨtɨ	animal
kwàžú	horse
kwéñu	squirrel
lí?i	rooster
mǐči	cat
mběé	sheep
ndɨ-šíí	buzzard
nǰuši	chicken
ndɨ-kutu	ox
tɨ-kúa	butterfly
tɨ́-laá	bird
tiñɨ	mouse
* * *	

N˅com˅an˅mf

ñá-žiu	people
ší-to?ó	owner
* * *	

N˅com˅an˅msc

ditó	uncle
dútú	priest
karpintèrú	carpenter
kùñádú	brother-in-law (Sp. *cuñado*)
kú?a	brother (female speaker)

mbǎá	co-godparent (Sp. *compadre*)
ñaní	brother (male speaker)
swěgrú	father-in-law (Sp. *suegro*)
šido	spouse of wife's brother
tă-măní	godfather
tătá	father
tătá čà?á	step-father

* * *

N˅com˅an˅msc˅cls

tée	man
šíí	grandfather

N˅com˅an˅fem

didí	aunt
díkú	niece
kùmárí	co-godparent (Sp. *comadre:* male speaker)
kú?a	sister (male speaker)
kú?ú	sister (female speaker)
kú?ú sănu	sister-in-law (spouse of husband's brother)
mbàlí	co-godparent (Sp. *comadre:* female speaker)
nă-măní	godmother
nănáá	mother
nănáá čà?á	step-mother
ña-dɨ̀?ɨ́	woman, wife
sánu	daughter-in-law
swěgrá	mother-in-law (Sp. *suegra*)
šído	spouse of husband's sister

* * *

N˅com˅an˅fem˅cls

šĭtą́	grandmother

N˅com˅in

be?e	house
čí-lé?é	armpit
dítá	tortilla
dį́?ų́	money
itá	flower
inu	cigarette
iñu	thorn
kúká	comb
kuñú	meat
núní	corn
nda-kǎá	key
ndute	water
ña?mí	yam
ñɨ̈ žu?u	lips
ñu-žɨ́ú	world
sá-bìdí	candy
tɨ́-kwéé	citrus fruit
tɨ́-kwéé žúú	guava
tutú	paper
tų-šìí	rifle
tų-tìči	avocado tree
tų-žoo	cane
žódó	grinding stone
žodo	valley
žúkú	herb
žuku	mountain
žutų	tree
žúú	rock

žuú	arroyo
žuu	straw mat
žú?á	ice
žú?á	thread

* * *

N˅com˅in˅cls

ñúú	town

N˅com˅in˅loc

šitɨ́	stomach, inside
sátá	back, behind
nuú	face, in front
ka?a	bottom, below
šio	side, beside
díkɨ́	head, on top

N˅pro˅an˅1st

žú?ú	I

N˅pro˅an˅1st˅2nd

nǰoo	we (inclusive)

N˅pro˅an˅2nd

žò?ó	you

N˅pro˅in

šíą̀	that
šé?é	this

N˅prp˅an˅dty

čó-díní	star
dáú	rain
dɨ?í	woman
kwe?é	illness
ndiǒší	God
nǰíka nǰii	sun
táčí	wind
žóó	moon

* * *

N˅prp˅an˅fem

bǐkí	Virginia (names all from Spanish)
bǐtó	Victorina
čěčá	Crecencia
kălá	Ricarda
kéta	Catalina
kămí	Carmela
kùlásá	Nicolasa
lěsá	Teresa
lǐčá	Alicia
líta	Margarita
mǐngá	Dominga
nătí	Natividad
ndòníná	Antonina
ngǐžé	Guillermina
tăšá	Anastacia

* * *

N˅prp˅an˅msc

čěé	José
čěmú	Anselmo
čěnčú	Inocencio
čèndí	Vicente
čǔčú	Jesús
kàmílú	Hermilo
kǐlí	Miguel
lăší	Nicolás
lětú	Anacleto
lèú	Diego
măší	Tomás
nătú	Donato
ndàvíí	Davíd
ndǒní	Antonio
ndrǐší	Andrés

šìkú	Francisco
šìndú	Jacinto
tànú	Calletano
tǎšú	Anastacio
tèrésú	Tereso
tɬą́	Sebastián
žěrmú	Guillermo

* * *

N˅prp˅in

čɬą	Santa Catarina Estetla
čó-ká$^{?}$nú	San Pedro Teozacoalco
míni tɥú	Black Spring
nú-ndùá	Oaxaca City
nú-ìtú ndɨɨ	Bare Hill
ndáka	San Andrés Zautla
ndúčí	San Agustín Etla
njí$^{?}$o lí$^{?}$li	San Pedro Cholula
nú-kò$^{?}$žó	Mexico City
sáká	Santiago Tlazoyaltepec
samilìpé	San Felipe Tejalapam
šíkɨ́ žùú ndùdí	Honey Ridge
žuku ža$^{?}$a	Eagle Mountain
žúte tasą	Lightning River

* * *

N˅tem˅com

kwíá	year
niú	night
samàná	week (Sp. *semana*)
sa-kwaa	afternoon
šito	time

N˅tem˅com˅cls

nduu	day
žóó	month

N˅tem˅prp (All words of this class are borrowed from Spanish)

lòné	Monday (*lunes*)
màrtí	Tuesday (*martes*)
mièrkú	Wednesday (*miércoles*)
hwèbéší	Thursday (*jueves*)
biàrné	Friday (*viernes*)
sàútú	Saturday (*sábado*)
ndumìngú	Sunday (*domingo*)
enèrú	January (*enero*)
febrèrú	February (*febrero*)
màrsú	March (*marzo*)
ǎbríl	April (*abril*)
màžú	May (*mayo*)
hùniú	June (*junio*)
hùliú	July (*julio*)
agòstó	August (*agosto*)
setièmbré	September (*septiembre*)
òtúbré	October (*octubre*)
nobièmbré	November (*noviembre*)
dicièmbré	December (*diciembre*)

V˅itr˅cs

čítú	fill
kaka	walk
ka$^{?}$ndɨ́	explode
kunu	run
kwíta	lose
ndɨ$^{?}$ɨ	finish
šìní	become drunk
tą́ą	tremble
tɥ́$^{?}$ɥ́	hurt
že$^{?}$é	dawn

* * *

V˅itr˅cs˅csn

ndaku	be able (have ability or permission)

V˅itr˅cs˅csn˅pst

kaa	go up
kee	go out
kée	go down
kene	come up
kiši	return
kụụ	come down
* * *	

V˅itr˅cs˅csn˅pst˅pre

kį́ʔį́	go

V˅itr˅cs˅cvn

kaku	be born

V˅itr˅nc

kaba	lie down
kee saʔa	begin
koo	sit
kúú	die
ndoo	be clean
ndúʔa	become well
ñáni	hit
tą́ʔą́	fit
* * *	

V˅itr˅nc˅tku

ndedí	close
nj̀ìí	open

V˅itr˅nc˅tku˅loc

ndeku	be (in space)

V˅itr˅sta

kaa	be (permanent state)

V˅itr˅sta˅cvn

kuu	be (temporary state)

V˅tr˅cs

dokó	carry on shoulder
duʔu	steal
kaʔmi	burn
kaʔni	kill
kaši	eat
koto	watch over
kunu	weave
kiti	boil
kwáʔa	give
tee dóʔo	listen
* * *	

V˅tr˅cs˅da

dada	do

V˅tr˅cs˅cvn

kiní	see, know

V˅tr˅equ˅ko

koo	be

V˅tr˅equ˅ku

kuu	be

V˅tr˅nc

čiʔi	put
daña	leave
dáʔu	cover
kadí	close
kani	hit, tell
kuʔu	sharpen
tava	take out
tee	write
* * *	

V˅tr˅nc˅lm

čáʔu	pay
diko	sell
kęʔę	take
kwąą	buy

V˅tr˅nc˅csn

ngwíta	begin

V˅tr˅nc˅csn˅tsa

kwiní	want

V˅tr˅nc˅tku

nde?e	see
ndetu	wait for

Adj

bá?a	good, well
bíšį	cold
dęę	sharp
díi	durable
dìtó	daylight
i?ni	hot
kà?nu	large
kòkǫ	thick
kùnu	deep
kwìi	green, blue
kwika	rich
kwìšį	white
kwi?na	evil, fierce
kwɨñɨ	narrow
nee	dark
ndà?ú	poor
tụụ	black
tɨ-kwè?é	red
žadi	thin

* * *

Adj˅ths

duką	thus

Adm

bì?i	very much
dụụ	once for all

Adv

bii	smoothly
dusą	noisily
kwèé	slowly
ní?i	forcefully
ndɨ́?ɨ	quickly

Comp

ní-	completive

Cont

ta-	process

Cont˅ta'

ta'-	continuative

Inj

á?a	ugh
àbíi	ummm
ái	oops
ái mbái	wow
ápale	ooh
diką	uh
eráa	wow
úči	ouch
úi	ow
útale	aah

* * *

Ins

bì?i	very (much)
dìi	alone, only
líí	very (little)
ndiki	very, very (little)

Loc

žàkáą	there
i?a	here

Neg

ña-dɨ́ú	not

Num˅un

ɨ̀ɨ́	one

Num˅hf

daba	half

Num˅plu˅fo

úú	two
úní	three
kúmí	four

Num˅plu˅ni

ų́ʔų́	five
íñú	six
úsá	seven
úná	eight
ɨ́ɨ́	nine

Num˅plu˅tf

úší	ten
są́ʔų́	fifteen

Num˅plu˅tw

ókó	twenty

Num˅plu˅hd

sièndú	hundred (Sp. *ciento*)

Num˅plu˅idf

ɨ̀ɨ́ úú	one or two, a few
úú uní	two or three, several
úní kúmí	three or four
kúmí ų́ʔų́	four or five
ų́ʔų́ íñú	five or six
úsá úná	seven or eight
úná úší	eight or ten
są́ʔų́ ókó	fifteen or twenty

* * *

Plu

kwee	plural

Pri

súú-ní	very much
ío	much, many

Pro˅aml

-dɨ	it (animal)

Pro˅dty

-ká	deity

Pro˅fem

-ši	she
-ą	she (respect)

Pro ĭn

-ši	it

Pro˅mf

-žu	people

Pro˅msc

-dé	he

Pro˅1st

-í	I

Pro˅2nd

-ngɨ	you

Pro˅1st˅2nd

-o	we

Prv

du?a	on this side
dàką́	on that side
dàtį	to the left
kù?a	to the right

Quan

dɨu	same
mee	only

Quanˇplu

nǰaa	all
títį́	numerous

Quanˇpluˇnv

bài	many, much
kwe?é	very many, very much
lu?a	small quantity
sakú	few, not much

Rsp

ą̀ą́	question marker
ráa	amazement

Tem

ama	at times
bitą	today
ìdá	day after tomorrow
iku	yesterday
káni	day before yesterday
tę́ę́	tomorrow
né?é	early
ndikį-kă	yet dark

Single-membered classes (Each class symbol is identical to the phonological representation of the corresponding morpheme.)

čii	imperative plural
-ká	more
kwèndá	on behalf of, in respect to
na-	repetitive
náá	what
na?i	probably
nd-	habitual
ndéé	to, until
ndèé	where
nděé dau	how much
-ni	definite
ndɨ?ɨ	with, and
ña?a	person
sa-	proximate
šii	to (indirect object)
tą̀?ą	also
tuku	again
žoo	who

Appendix A

TEXT [1]

ii tée ndà?ú bí?í
NP(Num + N + Adj + Ins)
one man poor very
There is a very poor man.

bě-dana túú na- ndèku ndi?i -dé
N + Neg + na- + V + ndi?i + Pro #
nothing not constraint be with him
He has nothing at all.

tee ndèku ña-di?i -dé
tee + Cont + V + N + Pro #
and cont be woman his
There is his wife.

tee ii nduu šèsí -žu
tee + TEM(Num + N) + Cont + V + Pro +
and one day cont eat people
One day they eat

tee ii nduu ñá- šéšĭ -žu
tee + TEM(Num + N) + Neg + Cont + V + Pro +
and one day not cont eat they
and one day they do not eat

1 The text is a summary by Raúl Alavez of a longer text by another Mixtec informant, Octaviano Ruiz.

čii ñá- nì?í -žu
čii + Neg + Cont + V + Pro #
because not cont find people
because they do not find (anything).

tee kwą?ą -dé žuku kìde čịụ -dé
tee + Cont + V + Pro + $_{LOC}$ (N + Cont + V + N + Pro) #
and cont go he mountain cont do work he
He goes to the mountain to work;

tee na- sàá -dé
tee + $_{TEM}$ (Cont + na- + V + Pro) +
and cont repeat arrive he
and (when) he returns

kwą?ą -dé kwá- ndúkú nùu -dé núní
$_{SNUC}$(Cont + V + Pro + Cont + V + V + N + Pro + N) #
cont go he cont go look for face his corn
he goes to borrow corn.

tee áma nì?í -dé
tee + Tem + Cont + V + Pro +
and at times cont find he
At times he finds (it)

tee áma ñá- nì?í -dé
tee + Tem + Neg + Cont + V + Pro #
and at times not cont find he
and at times he doesn't find (it).

tee duką -ni kùu -dé
tee + Adj + -ni + Cont + V + Pro +
and thus definite cont be he
So he is

ịị nduu ịị nduu
$_{TEM}$ (Num + N + Num + N) #
one day one day
day in and day out.

tee ịị -ná nduu ní- sani iní -dé
tee + $_{\text{TEM}}$(Num + -ná + N) + Comp + V + N + Pro +
and one now day comp put heart he
One day he thought,

kɨ̨ʔɨ̨ -í ndúkú -ǐ déʔbá kěe -í
Ptl + V + Pro + Ptl + V + Pro + N + Ptl + V + Pro +
ptl to go I ptl look for I precipice ptl go into I
"I will go look for a precipice to fall from

tee bá- kúú ndèku -ká -í
tee + Neg + Ptl + V + V + -ká + Pro +
and not ptl be be (in a place) more I
and I will not be around any more

ndé- duʔa ndoʔo -í dokó ñu-žɨ́ú -a
ndéé + Adj + Cont + V + Pro + N + N + Loc #
to thus cont suffer I hunger world here
to thus suffer hunger in this world."

duʔa ní- sani iní -dé
Adj + Comp + V + N + Pro #
thus comp put heart he
This is the way he was thinking.

tee kwą́ʔą́ -dé žuku
tee + Cont + V + Pro + $_{\text{LOC}}$(N) +
and cont go he mountain
He went to the mountain

tee ní- kèšio -dé ịị žuʔu děʔbá
tee + Comp + V + Pro + $_{\text{LOC}}$(Num + N + N) +
and comp arrive he one mouth precipice
and he arrived at the edge of the precipice

tee ñá- kúú žɨ̀ɨ -dé
tee + Neg + Cont + V + N + Pro +
and not cont be man he
but he is not man enough

ngau ni?nu -dé dé?bá -ą̌
Ptl + V + Pro + N + Loc #
ptl fall he precipice over there
to fall from the precipice.

tee kàčí -dé i?a koo -í
tee + Cont + V + Pro + Loc + Ptl + V + Pro +
and cont say he here ptl sit I
He says, "I will sit here

tį̱į̱ ña?a sàní šii -í
Ptl + V + ña?a + N + šii + Pro +
ptl take hold person sleep to me
(so that) sleep will overtake me

tee bá- kú- tùní iní -í
tee + Neg + Ptl + V + V + N + Pro +
and not ptl be understand heart my

ngau ni?nu -í kàčí -dé
TEM **(Ptl + V + V + Pro) + Cont + V + Pro #**
ptl fall I cont say he
and I will not know (when) I fall," he says.

tee šį́ą́ núú kǒo -dé
tee + LOC **(Pro) + Cont + V + Pro +**
and that cont sit he
There he was sitting

ní- kešìo į̱į̱ ndi-šíí
TEM **(Comp + V + Num + N) #**
comp arrive one buzzard
(when) a buzzard arrived.

šą̌?ą -di šii -dé
Comp + V + Pro + šii + Pro +
comp say it to him
It said to him,

náá kídé -ngɨ́ ì?a nuu kóo -ngɨ́
naa + Cont + V + Pro + Loc + Cont + V + Pro #
what cont do you here cont sit you
"What are you doing seated here?"

tee šą̌?ą -dé tee kwìní -í
tee + Comp + V + Pro + tee + Cont + V + Pro +
and comp say he and cont want I
He says, "I want

ngau ni?nu -í i?a
ptl + V + Pro + Loc +
ptl fall I here
to fall here

čii ío ndò?o -í dokó
čii + Pri + Cont + V + Pro + N +
because very cont suffer I hunger
because I suffer very much from hunger

ndékù -í ñu-žíú -a
LOC (Cont + V + Pro + N + Loc) #
cont be I world here
being in this world.

tee ndèku familiá -í
tee + Cont + V + NP(N + Pro) +
and cont be family my
There is my family,

tee ñá- nì?í -í kaší -žu
tee + Neg + Cont + V + Pro + Ptl + V + Pro +
and not cont find I ptl eat people
and I do not find (anything) for them to eat,"

šą̌?ą -dě
Cont + V + Pro #
cont say he
he says.

tee šą̈ʔą ndɨ̀-šíí
tee + Cont + V + N +
and cont say buzzard
And the buzzard says,

sáá bă- kàʔú -na kada -ngɨ
sáá + Neg + Adv + -na + Ptl + V + Pro +
thing not serious now ptl do you
"Don't do such a serious thing

čii kàa kwečí -ngɨ́
čii + $_{VP}$ (Cont + V + Adj) + Pro +
because cont be young you
because you are young,

tee kwìní -ngɨ́ kùú -ngɨ́
tee + Cont + V + Pro + Ptl + V + Pro #
and cont want you ptl die you
and here you are, wanting to die.

žáčí kwá- sàá sátà -í -a
Adv + Cont + V + V + $_{LOC}$ (N + Pro + Loc) +
fast cont go go up back my here
Quickly, climb on my back,"

šą̈ʔą -dɨ
Cont + V + Pro #
cont say it (animal)
it says.

tee kwá- saá -dé sátá -dɨ
tee + Cont + V + V + Pro + N + Pro +
and cont go go up he back it
And he got up on its back

tee ní- ndaba -dɨ
tee + Comp + V + Pro #
and comp fly it
and it flew away.

ta- šìko -dɨ ta- šìko -dɨ
Cont + V + Pro + Cont + V + Pro +
process turn it process turn it
Around and around

kwá- saá ndéé andɨu
Cont + V + V + LOC(ndee + N) #
cont go go up to sky
it goes up to the sky.

ní kešìo -dɨ
Comp + V + Pro +
comp arrive it
It came

ndéé núú žǎ- ndiǒší
LOC(ndee + N + NP(N + N)) +
to face deity God
up in front of God,

tee žá- ndiǒší ní- sá?a čɨ̨ų
tee + N + N + Comp + V + N +
and deity God comp give work
and God gave work

ña?a -ká úsá kwíá
ña?a + Pro + TEM(Num + N) #
person deity seven year
to him for seven years.

tee dá-tùní ní- sá- ña?a -kǎ
tee + da-tuni + Comp + V + ña?a + Pro +
and then comp give person deity
Then he (deity) gave

ɨɨ nǰuši šìi -dé
Num + N + šii + Pro #
one chicken to him
a chicken to him.

tee ní- nuu ndeka ña?a tùku ndi-šíí -ą̌
tee + Comp + V + ña?a + tuku + N + Loc #
and comp take downward person again buzzard over there
And the buzzard took him down again.

tee ní- na- saá -dé
tee + Comp + na- + V + Pro +
and comp repeat arrive he
He arrived

be?e -dé ndi?i ǹjušı̌ -ą̌
N + Pro + ndi?i + N + Loc +
house his with chicken over there
home with the chicken.

tee ní- či?i -dé -di šitɨ́ kɨ́di
tee + Comp + V + Pro + Pro + N + N #
and comp put he it stomach cooking pot
And he put it (animal) inside a cooking pot.

tee nduu tę̨́ę́ -ą́ nǐ- ší- ndé?é
tee + TEM(N + N + Loc) + Comp + V + V +
and day tomorrow there comp be see
The next day he saw

-dě čitu ndɨ̀ɨ́ dį́?ų́
Pro + Ptl + V + Adv + N #
he ptl be full completely money
(that) money was completely filling (the cooking pot).

tee súú-ní nǐ- kuu dɨ́ɨ́ ìní -dé
tee + Pri + Comp + V + Adv + N + Pro #
and very much comp be pleased heart he
He was extremely happy.

tee ní- sąą -dé kɨti -dé
tee + Comp + V + Pro + N + Pro +
and comp buy he animal he
He bought animals;

tee ní- sąą -dé núní -dě
tee + Comp + V + Pro + N + Pro #
and comp buy he corn he
he bought corn;

nǰaa sáá šíní ñù?u -dé ní- sąą -dé
Quan + sáá + Cont + V + Pro + Comp + V + Pro #
all that cont need he comp buy he
everything that he needed he bought.

tee ní- kuu kwika bì?i -dé
tee + Comp + V + Adj + Ins + Pro +
and comp be rich very he

ní- kide ndi-šíí
Comp + V + N #
comp do buzzard
He was made very rich by the buzzard.

Appendix B

SAMPLE OF SENTENCE GENERATION

From text on page 80, last line:	Rule Applied
# S #	
# SEN #	P 1
# SEN' #	P 2
# SNUC #	P 4
# VP + NPˇan #	P 7
# VP + NP'ˇan #	P 8
# VP + NNUCˇan #	P 9
# VP + Nˇan #	P 10
# VP' + Nˇan #	P 11
# VNUC + Nˇan #	P 12
# PRL + V + Nˇan #	P 16
# ASP + V + Nˇan #	P 17
# Comp + V + Nˇan #	P 18
# Comp + V + Nˇanˇcom #	P 28
# Comp + Vˇitr + Nˇanˇcom #	P 29
# Comp + Vˇitrˇcs + Nˇanˇcomˇaml #	Addition of Features
# Comp + Vˇitrˇcs + Proˇanˇproˇaml #	T 14
ní + ndaba + -di	Lexicon: Morphophonemic Change
comp fly it (animal)	
'It flew.'	

Derivation of embedding sentence (1) ⟨from lines 5 and 6 of text on page 81⟩:

# S #	
# SEN #	P 1
# SEN' #	P 2
# SNUC #	P 4
# VP + NP˅an + NP˅in #	P 7
# VP + NP'˅an + NP˅in #	P 8
# VP + NP'˅an + NP'˅in #	P 8
# VP + NNUC˅an + NP'˅in #	P 9
# VP + NNUC˅an + NNUC˅in #	P 9
# VP + N˅cls + N˅an + NNUC˅in #	P 10
# VP + N˅cls + N˅an + N˅in #	P 10
# VP' + N˅cls + N˅an + N˅in #	P 11
# VNUC + N˅cls + N˅an + N˅in #	P 12
# PRL + V + N˅cls + N˅an + N˅in #	P 16
# ASP + V + N˅cls + N˅an + N˅in #	P 17
# Comp + V + N˅cls + N˅an + N˅in #	P 18
# Comp + V + N˅cls + N˅an˅prp + N˅in #	P 28
# Comp + V + N˅cls + N˅an˅prp + N˅in˅com #	P 28
# Comp + V˅tr + N˅cls + N˅an˅prp + N˅in˅com #	P 29
# Comp + V˅tr˅cs˅da + N˅cls + N˅an˅prp˅dty + N˅in˅com #	Addition of Features

Derivation of frame sentence (2):

# S #	
# SEN #	P 1
# SEN' #	P 2
# SNUC + TEM #	P 4
# SNUC + NP˅tem #	P 6
# VP + NP˅an + NP˅in + NP˅tem #	P 7
# VP + NP'˅an + NP˅in + NP˅tem #	P 8
# VP + NP'˅an + NP'˅in + NP˅tem #	P 8
# VP + NP'˅an + NP'˅in + NP'˅tem #	P 8
# VP + NNUC˅an + NP'˅in + NP'˅tem #	P 9
# VP + NNUC˅an + NNUC˅in + NP'˅tem #	P 9
# VP + NNUC˅an + NNUC˅in + QUAN + NNUC˅tem #	P 9

# VP + N^an + NNUC^in + QUAN + NNUC^tem #	P 10
# VP + N^an + N^in + QUAN + NNUC^tem #	P 10
# VP + N^an + N^in + QUAN + N^tem #	P 10
# VP' + N^an + N^in + QUAN + N^tem #	P 11
# VNUC + N^an + N^in + QUAN + N^tem #	P 12
# PRL + V + N^an + N^in + QUAN + N^tem #	P 16
# ASP + V + N^an + N^in + QUAN + N^tem #	P 17
# Comp + V + N^an + N^in + QUAN + N^tem #	P 18
# Comp + V + N^an + N^in + NUM + N^tem #	P 20
# Comp + V + N^an + N^in + NUM' + N^tem #	P 22
# Comp + V + N^an + N^in + NN + N^tem #	P 23
# Comp + V + N^an + N^in + BT + N^tem #	P 25
# Comp + V + N^an + N^in + Num^ni + N^tem #	P 27
# Comp + V + N^an^com + N^in + Num^ni + N^tem #	P 28
# Comp + V + N^an^com + N^in^com + Num^ni + N^tem #	P 28
# Comp + V + N^an^com + N^in^com + Num^ni + N^tem^com #	P 28
# Comp + V^tr + N^an^com + N^in^com + Num^ni + N^tem^com #	P 29
# Comp + V^tr^cs + N^an^com^msc + N^in^com + Num^ni^plu + N^tem^com #	Addition of Features

Sentence (1) embedded into sentence (2) giving sentence (3):

(1) # $_{VP_1}$(Comp + V^tr^cs^da) + $_{NP_1}$(N^cls + N^an^prp^dty) + $_{NP_2}$(N^in^com) #

(2) # $_{VP_2}$(Comp + V^tr^cs) + $_{NP_3}$(N^an^com^msc) + $_{NP_4}$(N^in^com) + $_{TEM}$($_{NP}$(Num^ni^plu + N^tem^com)) #

(3) # $_{VP_2}$(Comp + V^tr^cs^da + V^tr^cs) + $_{NP_1}$(N^cls + N^an^prp^dty) + $_{NP_3}$(N^an^com^msc) + $_{NP_4}$(N^in^com) + $_{TEM}$($_{NP}$(Num^ni + N^tem^com)) # T 3

Further modification of sentence (3):

$_{VP}$(Comp + V˘tr˘cs˘da + V˘tr˘cs + ña?a) +
$_{NP_1}$(N˘cls + N˘an˘prp˘dty) + $_{NP_4}$(N˘in˘com) +
$_{TEM}$($_{NP}$(Num˘ni˘plu + N˘tem˘com)) # T 10

$_{NP_1}$(N˘cls + N˘an˘prp˘dty) + $_{VP}$(Comp +
V˘tr˘cs˘da + V˘tr˘cs + ña?a) + $_{NP_4}$(N˘in˘com) +
$_{TEM}$($_{NP}$(Num˘ni˘plu + N˘tem˘com)) # T 12

$_{NP_1}$(N˘cls + N˘an˘prp˘dty) + $_{VP}$(Comp + V˘tr˘cs˘da +
V˘tr˘cs + ña?a) + $_{NP_5}$(Pro˘an˘pro˘dty) + $_{NP_4}$(N˘in˘com)
+ $_{TEM}$($_{NP}$(Num˘ni˘plu + N˘tem˘com)) # T 15

$_{NP_1}$(N˘cls + N˘an˘prp˘dty) + $_{VP}$(Comp + V˘tr˘cs˘da +
V˘tr˘cs + N˘in˘com + ña?a) + $_{NP_5}$(Pro˘an˘dty˘pro) +
$_{TEM}$($_{NP}$(Num˘ni˘plu + N˘tem˘com)) # Optional Reordering

žaá + ndiǒší + ní- + kada + kwá?a + čį̨ų +
ña?a + -ká + úsá + kwia # Lexicon

žá-ndiǒší ní- sá?a čį̨ų ña?a -ká úsá kwíá Morphophonemic Changes
deity God comp give work person deity seven year

'God gave work to him for seven years.'

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