A SAMPLE TRANSFORMATIONAL GENERATIVE
GRAMMAR OF WEST-ARMENIAN

by

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ABSTRACT

The purpose of this thesis is to start a synchronic study of West-Armenian syntax. Of the various approaches to the description of syntax the transformational generative theory has been chosen to underlie this study. The grammar presented here then is a set of generative rules which produce a basic core of the sentences of West-Armenian and provide the structural descriptions of these sentences. The theory requires that these rules be simple, general, explicit, and concise. To meet these requirements has been the central concern of this study. But, since it was beyond the limits of this study to cover every structure in West-Armenian, all that it can claim to have achieved is that it has produced a first and a limited draft of a West-Armenian grammar. This draft may become the basis or the departure point for further work on West-Armenian syntax.

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CHAPTER I

INTRODUCTION

Armenian is one of the nine surviving daughter
branches of Indo-European. Its first written records appear
in the fifth century, A.D. This written form is believed to
have been much different from the spoken form of the time.
It is from the spoken form, of course, that the two major
dialects of present-day Armenian descend: East-Armenian and
West-Armenian. Each of these two has developed its own
standard written form and a number of colloquial forms.[1]
The subject of this thesis is West-Armenian. The written
form of this dialect and the various colloquial forms have
a high percentage of structures in common. This thesis tries
to provide a general description of these common structures
through a grammar that will generate both spoken sentences
(in the colloquial form found in Syria and Lebanon) and
written sentences taken out of a novel written in this dialect.

Armenian was the object of considerable attention and

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[1]For a full discussion of how this happened see S.S.
Shahbazian, Arevmtahay Ashkharhabarhi Arhachatsoumé [The
Advance of Modern West-Armenian] (Erevan: Haypethrat, 1963),
and for the relationship of Armenian and Indo-European see
S.E. Mann, Armenian and Indo-European (Historical Phonology)
(London: Lowe and Brydone (Printers) Ltd, 1963).

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discussion in nineteenth century historical and comparative linguistics and has been of interest to contemporary Indo-Europeanists. It has, however, been neglected in modern descriptive linguistics. The first and, to my knowledge, the only descriptive sketch of West-Armenian has been Fairbanks' dissertation[2], in which he attempts an objective study of the language, with no prescriptive biases or recourse to orthography. He describes the phonology and morphology of the language in the way this was usually done in the nineteen forties.

In the introduction of his dissertation, Fairbanks speaks only of two recent grammars of Modern West-Armenian: Abeghian, Neuarmenische Grammatik, and Feydit, Grammaire de la Langue Arménienne Moderne. Thus, he overlooks the grammars available in Armenian (probably because he had no access to them in the United States). In the one century during which it has been a standard language, Modern Armenian has been the subject of life-time studies for scholars like A. Aydenian, H. Adjarian, and M. Abeghian, who have produced works as immense and important as Jespersen's, Curme's, or Poutsma's in English. These works, however, and most other

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[2]G.H. Fairbanks, "Phonology and Morphology of West-Armenian" (unpublished Ph.D. dissertation, University of Wisconsin, 1947).

E. Stevick has a similar dissertation on East-Armenian and both men have published textbooks teaching these two dialects.

grammars of the language, are traditional in the same sense
as the others are in English. Moreover, like most such works,
they pay very little attention to syntax and one of the
pioneer scholars of East-Armenian syntax says in 1958:

> The syntax is the least studied part of Armenian grammar.
> Moreover ... syntax is the most neglected part of grammar.
> In this respect, the West-Armenian literary language is
> in a more hopeless situation and the classical build-up
> of its syntax has, so far, not been studied and waits for
> its explorer.[3]

This statement is as true in 1968 as it was ten years ago.
The works of any referential use for this thesis were limited
to M. Abeghian's traditional study of East-Armenian syntax,
written before 1912, and the elementary, mostly prescriptive,
discussion of the West-Armenian syntax in a recently published
high-school textbook.[4]

Abeghian's work is traditional. The discussions and
classifications in it are of the type usually described by
modern descriptive linguists as "loose" and "meaning-based."

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[3]V. Aṙhakʻelian, Hayerēni Sharhahousoutʻun [Armenian
Syntax] 2 Vols. (Erevan: Publ. of Armenian Academy of
Sciences, 1958), I, p. 7. [translation mine].

[4]M. Abeghian, Hayotʻs Lezoui Tesoutʻun [The Theory of
the Armenian Language] (Erevan: Mitk Publ., 1965), pp. 357-678.

S.G. Abrahamian, B.Y. Verdian, V.Y. Kʻosian, Hayerēn
Lezoui Dasagirkʻ [A Textbook of the Armenian Language] (Erevan:
Luys Publ., 1966), pp. 260-415.

Here I should add that scholars of East-Armenian have
lately produced many workd on its syntax and E. Stevick's
dissertation concentrates mostly on East-Armenian Syntax.

Thus, he classifies and discusses the case forms of Armenian
nouns on the basis of their different meanings. For him, there
is an accusative of place, an accusative of time, an accusative
of size, an accusative of aim, etc. Sentences are to be
classified according to the tenses and moods their verbs
take. In the textbook, a very recent work, the conjugation
of a verb is still given in long redundant paradigms. The
subject of a sentence is that which "does or undergoes" some-
thing. It answers "the questions who?, what?, and which one?"
and may even be an adjective, number, or gerund used as a
noun.[5]

This is the state of grammatical studies of West-
Armenian, on one hand. On the other hand, linguistics has
lately turned its attention to syntax. These two factors,
combined with my interest in syntax, have led me to attempt
a beginning in this challenging area. The area is a dif-
ficult one not only because syntax includes almost every
facet or branch of language study, but also because the
question of how best to describe the syntax of a language
is currently a subject of great controversy and, as a result,
the present state of the field is far from being clear.

Syntax in this thesis is understood as "the study of
the principles and processes by which sentences are constructed
in particular languages," and syntactic investigation as "the

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[5]Ibid., pp. 271-72.

construction of a grammar that can be viewed as a device of
some sort for producing the sentences of the language under
analysis."[6] Of the various approaches to the description
of syntax, the transformational theory has been chosen to
provide a model for this study. A comparison with other
theories or a discussion of the advantages or disadvantages
of this theory fall outside the scope of this introduction.
What this thesis tries to do is to apply the theory to one
language and establish the rules which produce a basic core
of the sentences of this language.

A Transformational generative grammar basically at-
tempts, as is repeated in almost every work on this theory,
to establish a finite number of rules, which will produce
an infinite number of the grammatical sentences of a lan-
guage and which will provide structural descriptions for
these sentences. In other words, the purpose of a grammar,
in this approach, is to provide the rules with which the
language operates, that is rules which "generate all and
only the grammatical sentences of the language" (instead
of classifying or analyzing given sentences). This much,
I might say, is what everyone in the field agrees upon.
But, there is as yet no decisive answer or conclusive model
for the questions that come up in the writing of a

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[6]N. Chomsky, Syntactic Structures (The Netherlands:
Mouton and Co., The Hague, 1957), p. 11.

particular grammar.

Chomsky's <u>Syntactic Structures</u> has provided the first model of a transformational grammar. Since its appearance, various modifications and different models have been proposed, but his statement of the theory is still basic for any work. "...We shall never consider," Chomsky says, "the question of how one might have arrived at the grammar ... Our ultimate aim is to provide an objective, non-intuitive way to evaluate a grammar once presented, and to compare it with other proposed grammars."[7] In other words, the theory is not concerned with a discovery procedure but with an evaluation procedure. This is why it refuses to discuss how to write a grammar. As for the evaluation of a grammar, it provides certain requirements that must be met by every grammar. These are the requirements of generality, simplicity, formality, conciseness, and explicitness. These requirements, the structure of the language under study, and some practical considerations have formed the basis for decisions made in the writing of the following sample grammar of West-Armenian. The particular parts of this grammar and the individual rules will be discussed with the grammar.

In <u>Linguistics and English Grammar</u>, H. A. Gleason says: "For any given language, grammars can be written at various levels of delicacy, that is, with various amounts of detail.

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[7]<u>Ibid.</u>, p. 56.

... Moreover, a more detailed grammar must be only an en-
largement and refinement of a less detailed."[8] If the
following grammar of West-Armenian succeeds only in being
the least delicate and the least detailed, I hope at least
that it will someday be enlarged and refined to become a
better grammar of Armenian.

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[8]H.A. Gleason, Jr., _Linguistics and English Grammar_
(New York: Holt, Rinehart and Winston, Inc., 1965), p. 205.

CHAPTER II

THE TRANSCRIPTION SYSTEM USED IN THE GRAMMAR

In a recent form, transformational theory sees
three major components of the grammar of a language:
semantic, phonological, and syntactic.[1] Without intending
to minimize the importance of the semantic and the phono-
logical components, my intention in the following grammar
is to concentrate mostly on the syntactic component. This
is why, although the phonological component functions "to
assign phonetic interpretation to a surface structure"[2] in
a grammar, and although this assignment should be done
with phonological features in the lexicon, I have chosen
to introduce a transcription system from the beginning,
and used it throughout the grammar. Thus, instead of
making the following sounds the end-products of the phono-
logical features and their rules in the language,[3] I

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[1]For a discussion of these components see N. Chomsky,
Aspects of the Theory of Syntax (Cambridge, Mass.: The M.I.T.
Press, 1965) and W.O.Dingwall, "Recent Developments in
Transformational Generative Grammar," Lingua, XVI, Nos. 3
and 4 (1964), 147-60.

[2]N. Chomsky, Topics in the Theory of Generative
Grammar (The Netherlands: Mouton and Co., The Hague, 1966), p. 16.

[3]See R. Jakobson and M. Halle, Fundamentals of Language
(The Netherlands: Mouton and Co., The Hague, 1956) and M. Halle,

have depended on a phonemic system and used the following symbols in my transcription.[4]

Symbol	Approximate phonetic value	Equivalent(s) in Armenian orthography
p	voiceless bilabial stop	*փ , փ*
b	voiced bilabial stop	*պ*
t	voiceless alveolar stop	*թ , ր*
d	voiced alveolar stop	*դ*
k	voiceless velar stop	*ք, կ*
g	voiced velar stop	*կ*
f	voiceless labio-dental fricative	*ֆ*
v	voiced labio-dental fricative	*վ , ու*
s	voiceless alveolar fricative	*ս*
z	voiced alveolar fricative	*զ*
c(t^s)	voiceless alveolar affricate	*ծ, ց*
ƶ(d^z)	voiced alveolar affricate	*ձ*
š	voiceless alveo-palatal fricative	*շ*
ž	voiced alveo-palatal fricative	*ժ*
č($t^š$)	voiceless alveo-palatal affricate	*ճ, չ*
ǰ($d^ž$)	voiced alveo-palatal affricate	*ջ*

"Phonology in Generative Grammar," in The Structure of Language, Readings in the Philosophy of Language, eds. J.A.Fodor and J.J.Katz (New-Jersey: Prentice-Hall, Inc., 1965), pp. 334-52.

[4]These symbols presuppose a study of the phonemic system of the language and were actually chosen after a comparison between Fairhanks' analysis of the phonology of West-Armenian and my phonemic analysis of my own idiolect.

Symbol	Approximate phonetic value	Equivalent(s) in Armenian orthography
x	voiceless velar fricative	խ
g	voiced velar fricative	ղ
h	voiceless glottal fricative	հ , յ
m	voiced bilabial nasal	մ
n	voiced alveolar nasal	ն
l	voiced alveolar lateral	լ
r	voiced alveolar trill	ր , ռ
y	voiced palatal glide	ե , յ
i	high front unrounded vowel	ի
e	mid front unrounded vowel	է , ե
ə	mid central unrounded vowel	ը
æ	low central unrounded vowel	ա
u	high back rounded vowel	ու
û	high front rounded vowel	իւ
o	mid back rounded vowel	ո , օ
´	strong accent on one syllable	´
/	terminal rise in pitch	՞
//	terminal fade in pitch	։ . ,

CHAPTER III

A SAMPLE GRAMMAR OF WEST-ARMENIAN

This is a sample transformational generative grammar of West-Armenian. It focuses on the syntactic component and tries to establish the base rules, the transformation rules, and the lexical rules that underlie the structure of a wide variety of the sentences of this language. It does not claim, however, to be capable of generating all the grammatical and no ungrammatical sentences of the language, because, by deliberate choice, certain structures have been left out of this sample grammar. Further discussion of these limitations will be presented in Chapter IV below.

As this thesis is an application of rather than an investigation into linguistic theory, I have used for the above mentioned rules the most generally accepted conventions and put them in a shape that has been tested by application to a number of natural languages. This means that instead of following Chomsky's recent model in *Aspects*[1] or attempting to exploit Fillmore's current

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[1] N. Chomsky, *Aspects of the Theory of Syntax.*

suggestion in "A Proposal Concerning English Prepositions,"[2]
I have depended more on Bach,[3] Koutsoudas,[4] and Gleason.[5]
This does not mean, however, that the latest discussions of
transformational theory havenot been taken into consideration.
That deep and surface structures in a language are "distinct
and that the surface structure is determined by repeated
application of certain formal operations called 'grammatical
transformations'"[6] has been the basis of this grammar, and
all rewriting rules are of the form $A \longrightarrow Z / Y$ — W.
Also, universals of the general theory of language[7] have
been observed throughout the work. But as this thesis can
be only a beginning in the study of the syntax of this
language, a model not yet tested against a number of natural
languages did not seem to be the right basis for this study.
Alternatively, to try the various possibilities the theory
provides and then choose one out of a number of grammars

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[2]C.J.Fillmore, "A Proposal Concerning English Prepo-
sitions," Report of the Seventeenth Annual Round Table
Meeting on Linguistics and Language Studies, ed. F.P.
Dineen, S.J. No. 19 (Washington, D.C.: Georgetown Un. Press,1966).

[3]E. Bach, An Introduction toTRansformational Grammars
(New York: Holt, Rinehart and Winston, Inc., 1964).

[4]A. Koutsoudas, Writing Transformational Grammars:
An Introduction (New York: Mcgraw-Hill Book Company, 1966).

[5]H.A.Gleason, Linguistics and English Grammar.

[6]Chomsky, Aspects, pp. 16, 138.

[7]Like those listed by W.O. Dingwall.

appeared to be too ambitious for this work. Thus, instead of doing a large but superficial work, I have tried to produce a limited but at least a well tested one.

Base Rules

Base rules constitute part of the deep structure of a language and determine its underlying grammatical relations.[8] It is on this basis that the following base rules have been written for West-Armenian. To make these rules easy to follow and understandable both for the reader who does not know the language and for the Armenian who does not know the linguistic terminology used here, I have presented these rules in small groups, added to each group explanations and sample sentences generated by the rules and translated into English. In order that the reader may keep track of the general picture of the relations between rules, I have also included with some examples their Phrase Markers. To make this general picture even clearer, these rules are listed at the end of this part in the necessary order. This order is indicated here with the left hand numbers. Any symbol not discussed here is explained in the glossary below:

1. **S** $\longrightarrow$ Mod + Prop
2. Mod $\longrightarrow$ Int (Neg) (Adverbial)

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[8] See Chomsky, _Topics_, p. 66.

3.   Prop ⟶ Nominative + Predicate Phrase

The first rule postulates that an Armenian sentence is composed of two obligatory elements: modality and proposition. Modality comprises an obligatory element, intonation, and two optional ones: negation and adverbial. The proposition is composed of a nominative and a predicate phrase. The nominative will later be rewritten as a noun phrase (see rule 21).

Examples:[9]

	S		
Mod		Prop	
Int Adverbial		Nominative	Predicate Phrase
Int + Adverbial	+	Nominative	+ Predicate Phrase
// + yereg	+	yes	+ ayt-kirke-gependreyi-gor
yesterday		I	that book was lookingfor
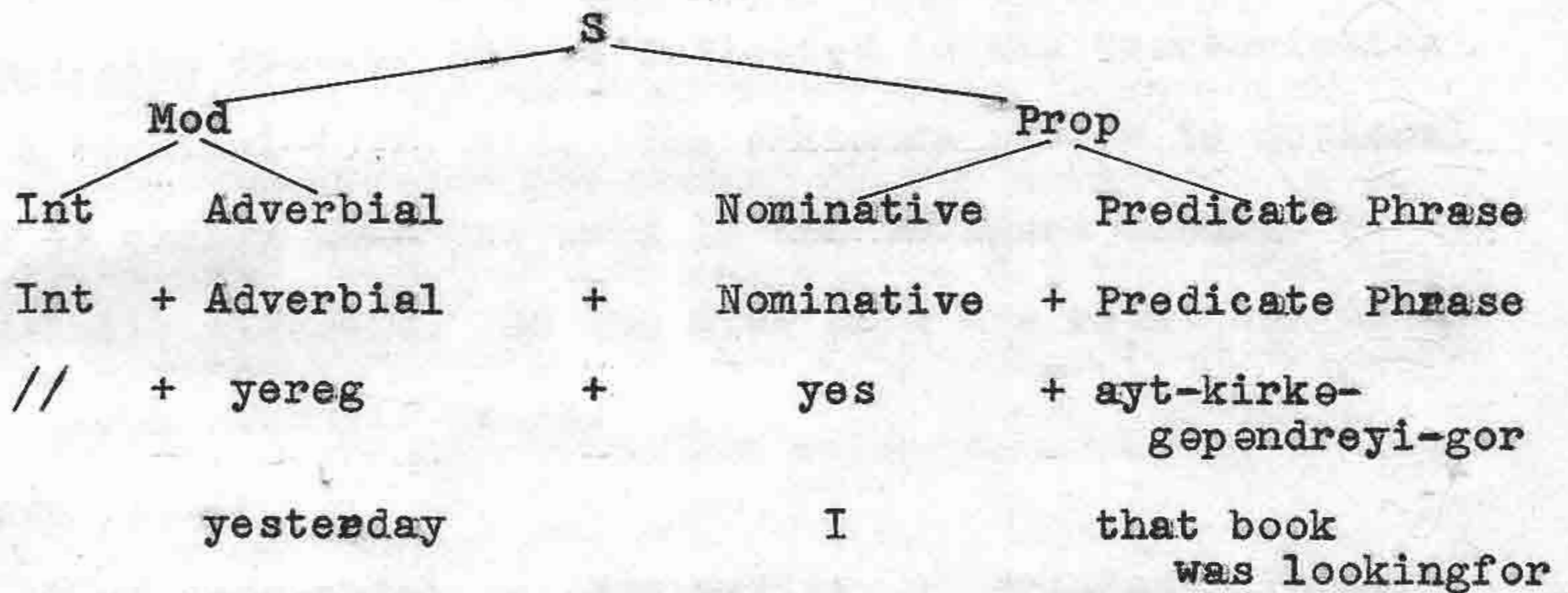
'Yesterday, I was looking for that book.'

Int + Neg + Nominative + Predicate Phrase

// + šahen + či-kenac

Shahe   not went

'Shahe did not go.'

For the place of the negative, see Transform rule 5.

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[9]In these examples some transformation and morphophonemic rules, not discussed until later in the grammar, will be assumed as having been applied. This seems necessary in order to make the illustrations meaningful to the less initiated reader.

Int + Nominative + Predicate Phrase

// + sonan + kenac

'Sona went.'

4.   Int ⟶ C(SS)

5.   C ⟶ $\begin{Bmatrix} \text{Stat} \\ \text{Q} \end{Bmatrix}$

In these two rules, intonation is rewritten as contour
and sentence stress. The contour can be a statement or
a question contour and is indicated in the transcription
by a terminal (//, /). The sentence stress is optional
and is chosen when one word in the sentence needs to be
unusually stressed. SS and Stat or Q are rewritten in
the morphophonemic rules.

Examples:

Q + Adverbial + Nominative + Predicate Phrase

/ + yereg + tun + ayt-kirke-
gependreyir-gor

    yesterday   you   that book were
looking for

'Were you looking for that book yesterday?'

Stat + SS + Adverbial + Nominative + Predicate
Phrase

// + ´ + yereg + tun + ayt-kirke-
gependreyir-gor

$$// + (+ \text{yereg} + \text{tun} + \text{ayt-kirke-}$$
$$\text{gependreyir-gor}$$
$$// + \text{yereg} + \text{tun} + \text{ayt-kirke-}$$
$$\text{gependreyir-gor}$$

'Yesterday, you were looking for <u>that</u> book.'

6. Predicate Phrase $\longrightarrow$ VP + pers$_V$ + no$_V$

7. VP $\longrightarrow$ Verb (Aux) Aspect

The predicate phrase is rewritten as a verb phrase plus the person and number of the verb. The verb phrase (VP) is composed of a verb and its aspect with an optional auxiliary. The person and number of the verb agree with the person and number of the nominative and are rewritten in a transformation rule. In the following examples they have the form they get after the morphophonemic rules. Examples:

```
                         S
          Mod                         Prop
   Int    Adverbial        Nominative      Predicate Phrase
    |                                        VP   pers_V   no_V
    C
    |                                      Verb  Aspect
   Stat

   Stat + Adverbial  +  Nominative  +Verb + Aspect
                                            + pers_V + no_V

   //   +   yereg      +   tasere     +  verčacan
           yesterday        the lessons    ended
```
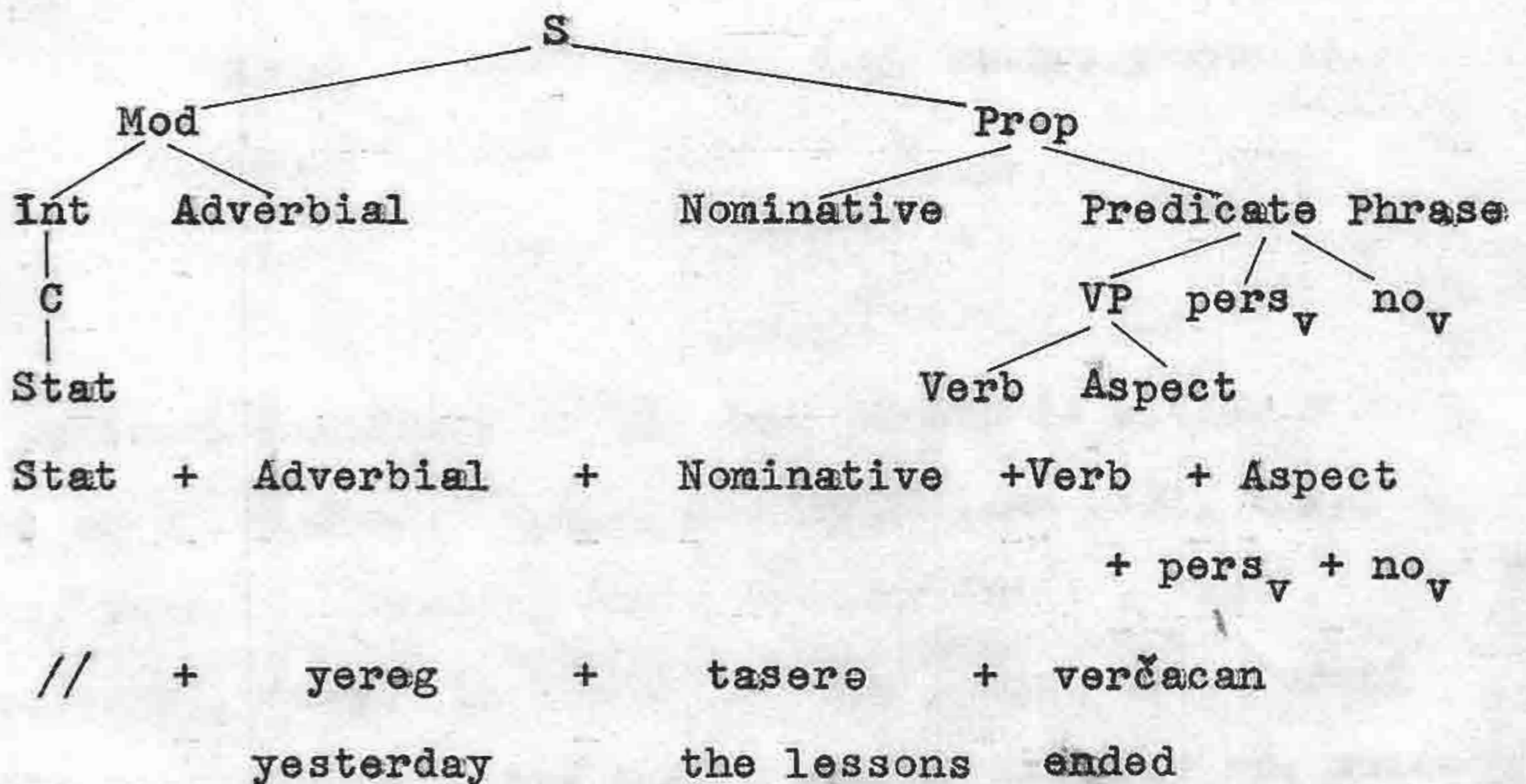
'School ended yesterday.'

Stat + Nominative + Verb + Aux + Aspect + pers$_v$

+ no$_v$

// + yes + ayt-kirkə + bidi + gartam

      I   that book   will   read

'I will read that book.'

8.   Aux   ⟶   (Modal) (Compound)

9.   Aspect ⟶ $\left\{ \begin{array}{l} \text{imperfect / Aux} \text{—} \\ \text{Mood + imperfect} \\ \text{perfect} \end{array} \right\}$

10.   Mood ⟶ $\left\{ \left\{ \begin{array}{l} \text{indicative} \\ \text{optative} \end{array} \right\} \text{(continuous)} \right\}$

11.   imperfect ⟶ $\left\{ \begin{array}{l} \text{present} \\ \text{past} \end{array} \right\}$

12.   Modal ⟶ bidi, tog, bətke, yeranite

13.   Compound ⟶ part + E$_{attr.}$

14.   part ⟶ $\left\{ \begin{array}{l} \text{prt-r} \\ \text{prt-}\emptyset \end{array} \right\}$

The optional auxiliary of the verb phrase is either a
modal or a compound. Modals are words like bidi, tog,
betke, yeranite (meaning approximately 'will', 'let',
'necessary', 'wish' in English). The compound is formed
by the participles of the verb (ending in -r or -∅, rules
13 and 14) and the verb E in its attributive form (see

rule 18). The aspect is mainly in two forms: perfect
and imperfect. The aspect has to be imperfect in the
context of Aux and is imperfect with the two moods:
indicative and optative. In the mood, there is also
the optional element of the continuous.

Examples:

Stat + Adverbial + Nominative + Verb + indicative
$$+ \text{past} + \text{pers}_v + \text{no}_v$$

// + entanrabes +   yes   + gašxadeyi

     usually   I   used to work

'I usually used to work.'

```
                          S
           Mod                        Prop
    Int       Adverbial    Nominative        Predicate Phrase
     C                                          VP persᵥ noᵥ
    Stat                                   Verb Aux Aspect
                                           Modal imperfect
                                            bidi   present
```
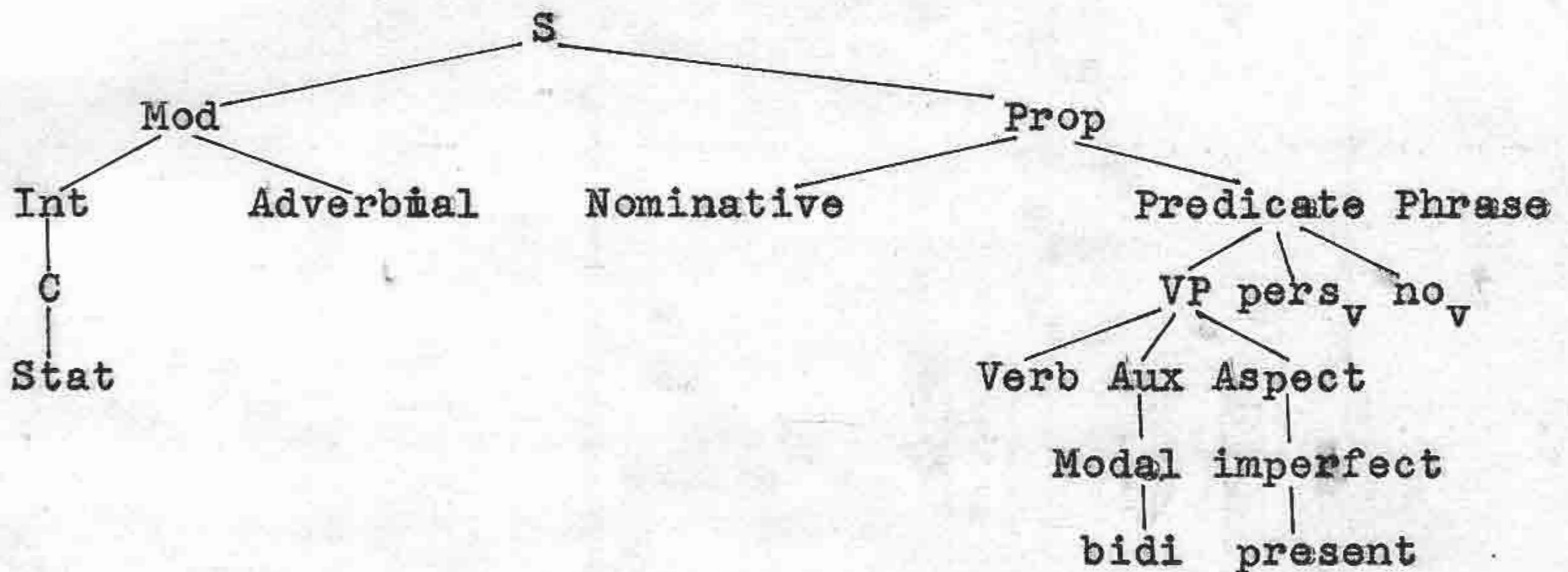
Stat + Adverbial + Nominative + Verb + bidi + present +
$$\text{pers}_v + \text{no}_v$$

// +   vage   + naxakahe   + jar-me-bidi-xosi

For the shifting of the modal bidi, see Transform rule 2.

    tomorrow   the president a speech will speak

'The president will make a speech tomorrow.'

Stat + Nominative + Verb + Compound + present + $pers_v$ + no_v

// + yes + ayt-kirkə-gartacaʑ-em

I that book have read

'I have read that book.'

Stat + Nominative + Verb + perfect + $pers_v$ + no_v

// + yes + nor-kirk-me-keneci

I new a book bought

'I bought a new book.'

15.   Verb $\longrightarrow$
$$
\begin{Bmatrix}
\text{Comp} + V_{link} \\
\text{Accusative} + V_{tr} \\
V_{int} \\
V_{pass} \\
V_{inf} + S'
\end{Bmatrix}
$$

16. $V_{tr} \longrightarrow$
$$
\begin{Bmatrix}
V_{t1} \\
\text{Dative} + V_{t2}
\end{Bmatrix}
$$

17. $V_{link} \longrightarrow$
$$
\begin{Bmatrix}
V_{seem} \\
VE
\end{Bmatrix}
$$

In rule 15 the verb is rewritten as linking verb, a
transitive verb, an intransitive verb, a passive verb,
and an infinitive requiring verb. A transitive verb is
of two types: V_{t1} which is preceded only by an accusative
(noun phrase) and V_{t2} which is preceded both by an accus-

ative and a dative (noun phrase). V_{inf} is followed by
another verb (see Transform rule 8). A linking verb is
either a verb like <u>seem</u> in English or E which is the
equivalent of <u>be</u> in English.

Examples:

Stat + Nominative + V_{int} + perfect + $pers_v$ + no_v

// + Šaken + kenacav

'Shake slept.'

Stat + Nominative + V_{pass} + bidi + present + $pers_v$ + no_v

// + nor-caynaseprum-me + bidi + dervi

      new a broadcasting will be given

'A new broadcasting will be given.'

Stat + Nominative + Comp + V_{seem} perfect + $pers_v$ + no_v

// + ink + teptegin + tarcav

      he   pale   turned

'He turned pale.'

Stat + Nominative + V_{inf} + S' + $pers_v$ + no_v

// + yes + gusem + desnel-zink

      I   want   to see him

'I want to see him.'

18.   VE $\longrightarrow$ $\begin{bmatrix} \text{əll- } / \underline{\quad} \begin{Bmatrix} \text{Modal} \\ \text{continuous} \end{Bmatrix} \\ E_{\text{attributive}} \\ E_{\text{existential}} \\ \text{əll-} \end{bmatrix}$
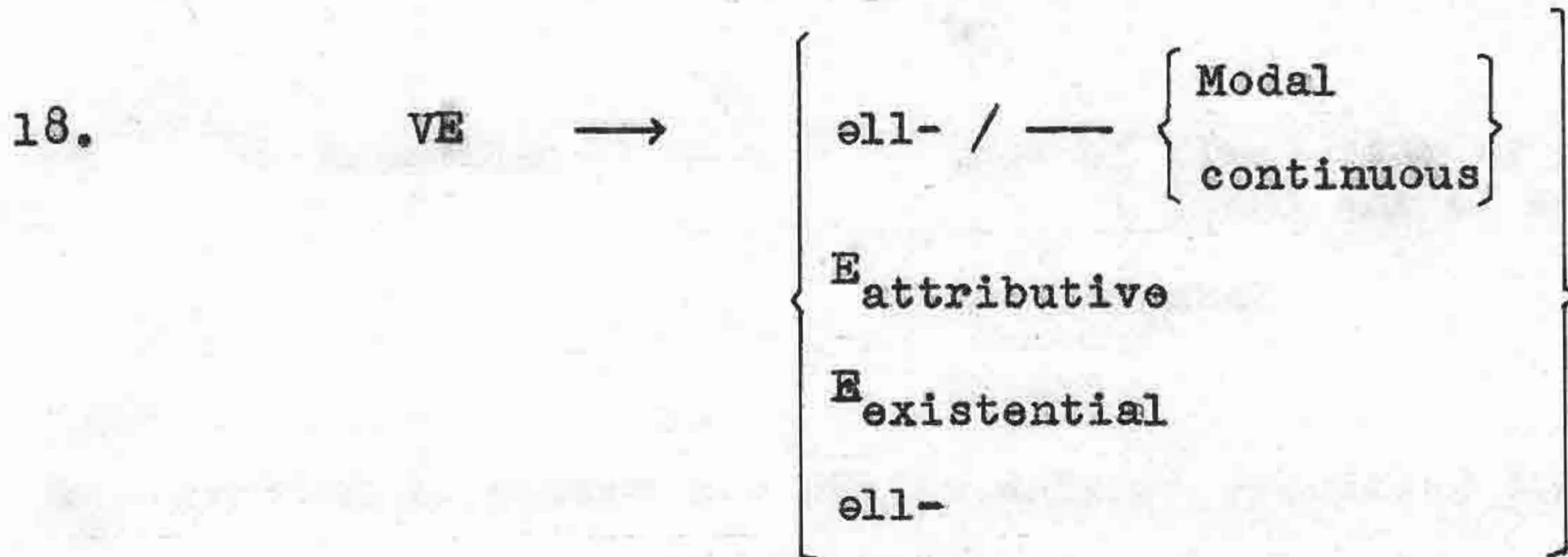
The verb E has to have the əll- form in the context of
modal and continuous. It can be əll- 'become', existential
'there is', and attributive in other contexts.

19.   Comp $\longrightarrow$ $\begin{bmatrix} \text{Nominative } / E_{\text{exist.}} \\ \text{Nominative} \\ \text{Adj} \\ \text{Adverbial} \end{bmatrix}$
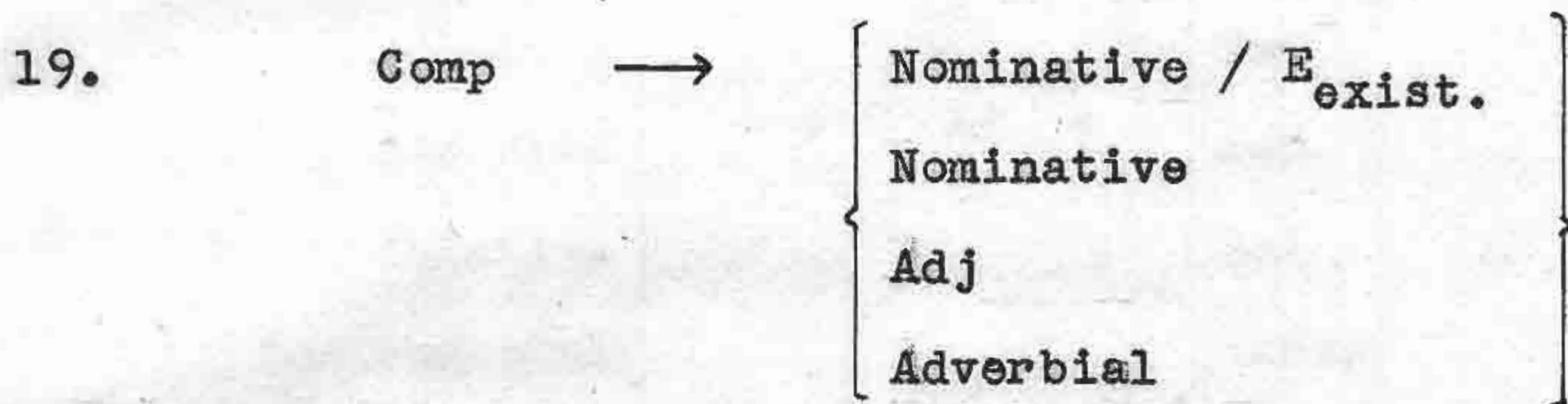
The complement of $E_{\text{exist.}}$ is a nominative, of the others
a nominative, an adjective, or an adverbial (rule 20).

Examples:

Stat + Nominative + Adj + $E_{\text{attr.}}$ + pres + pers_v + no_v

// +   kirke   + nor + e

       the book   new   is

'The book is new.'

Stat + Neg + Nominative + Adverbial + $E_{\text{attr.}}$ + past +
                                          pers_v + no_v

// +   madidə   +   hos   + č̌-er

            the pencil   here   not was

'The pencil was not here.'

20.   Adverbial $\longrightarrow$

$$\left\{ \begin{array}{l} \text{(Adv of time) (Adv of place)} \\ \qquad\quad \text{((int) Adv of manner)} \\ \text{Instrumental} \\ \text{Ablative} \end{array} \right\}$$

An adverbial is either one of the adverbs specified in the rule or an instrumental or ablative (noun phrase).

21.
$$\left[\begin{array}{c} \text{Nominative} \\ \text{Accusative} \\ \text{Dative} \\ \text{Genitive} \\ \text{Ablative} \\ \text{Instrumental} \end{array} \right] \longrightarrow \text{NP} + \left[\begin{array}{c} \text{Nom} \\ \text{Acc} \\ \text{Dat} \\ \text{Gen} \\ \text{Abl} \\ \text{Instr} \end{array} \right]$$

22.   NP $\longrightarrow$
$$\left\{ \left\{ \begin{array}{c} \left\{ \begin{array}{c} \text{N} \\ \text{S}^{\text{!`}} \end{array} \right\} + \text{(article)} \\ \text{pronoun} \end{array} \right\} + \text{pers} + \text{no} \right\}$$

In rule 21 the nominative, accusative, dative, genitive, ablative, and instrumental are joined to be rewritten as noun phrase plus an affix for each. That is, nominative is rewritten as noun phrase plus a nominative affix abbreviated as nom, the accusative as noun phrase plus acc, and so on. The square brackets condition the choice from left to right. The noun phrase (NP) is then rewritten as N or S' plus an optional article or a pronoun. Any NP should also have, in its rewriting, person and number.

For the nominalization of S' see Transform rule 8.

Examples:

$$S$$

Tree diagram:

Mod — Int, Adverbial
Int — C — Stat
Adverbial — Instrumental — NP Instr
NP Instr — N pers no

Prop — Nominative, Predicate Phrase
Nominative — NP Nom — N pers no
Predicate Phrase — VP $pers_v$ no_v
VP — Verb Aspect
Verb — Accusative V_{tr} — NP Acc — N pers no
V_{tl}
Aspect — perfect
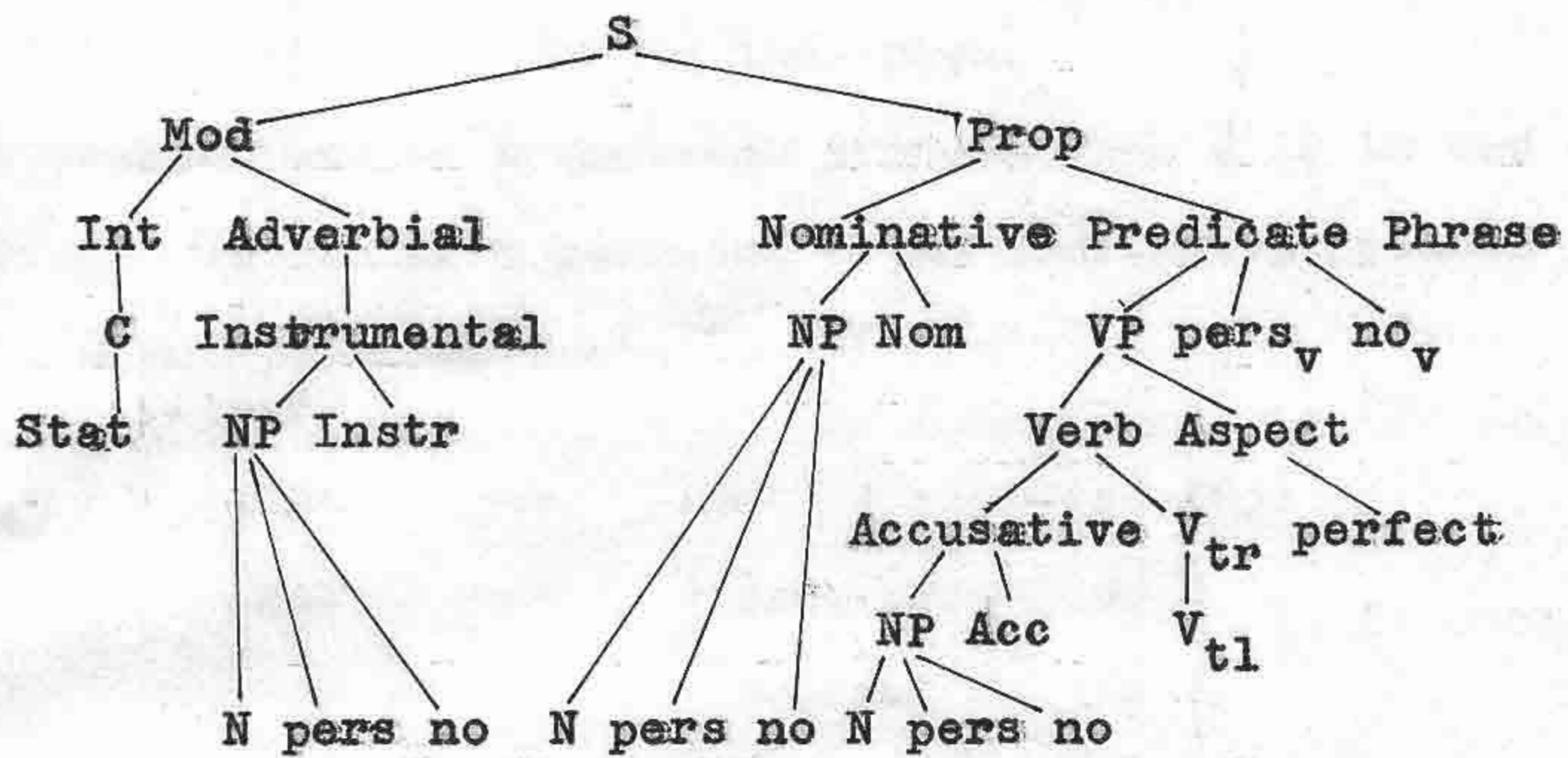
$$Stat + N + pers + no + Instr + N + Pers + no + Nom + N +$$

$$pers + no + Acc + V_{tl} + perfect + pers_v + no_v$$

// +	tanag-ov	+		yes	+
	ayt gədorə	+ gədreci			
	with a knife			I	
	that piece		cut		

'I cut that piece with a knife.'

23.   N $\longrightarrow$ $\left\{ \begin{array}{l} \text{proper noun} \\ \text{(prenom) noun} \end{array} \right\}$

The noun (N) is either a proper noun or a noun preceded by optional prenominals. For examples of all these formatives see the lexicon.

24. pronoun ⟶ $\left\{\begin{array}{l} \text{Q pron. / Q ——} \\ \text{pers. pron.} \\ \text{ind. pron.} \end{array}\right\}$

The pronoun can be a question pronoun when Q is in the string. It can be a personal or an indefinite pronoun with Q and in other contexts.

25. prenom ⟶ (Det) ((intens) Adj)

26. Det ⟶ $\left\{\begin{array}{l} \text{Demonstrative} \\ \text{Numeral} \\ \text{Genitive} \end{array}\right\}$

The prenominal is a determiner and/or an adjective. The adjective may be preceded by an intensifier. The determiner can be a demonstrative, a numeral, or a genitive.

27. no ⟶ $\left\{\begin{array}{l} \emptyset \text{ / cardinal . . . ——} \\ \text{sg} \\ \text{pl} \end{array}\right\}$

28. person ⟶ $\left\{\left\{\begin{array}{l} 1 \\ 2 \\ 3 \end{array}\right\} \text{ / pers. pron.——} \atop 3\right\}$

29. article ⟶ $\left\{\begin{array}{l} \text{definite} \\ \text{indefinite} \end{array}\right\}$

30.   numeral $\longrightarrow$ $\left\{\begin{array}{l} \text{ordinal} \\ \text{cardinal} \\ \text{nondefinite} \end{array}\right\}$

The number of a noun is $\emptyset$ when it is preceded by a
cardinal numeral; when not, it is either singular or
plural. The pronouns have three persons, the nouns
are all in the third person. An article can be definite
or indefinite. A numeral can be ordinal, cardinal, and
nondefinite. To know what is meant by these terms turn
to the lexicon or the morphophonemic rules.

A List of the Base Rules

$$S \longrightarrow \text{Mod} + \text{Prop}$$

$$\text{Mod} \longrightarrow \text{Int (Neg) (Adverbial)}$$

$$\text{Prop} \longrightarrow \text{Nominative} + \text{Predicate Phrase}$$

$$\text{Int} \longrightarrow \text{C (SS)}$$

$$C \longrightarrow \left\{\begin{array}{l} \text{Stat} \\ Q \end{array}\right\}$$

$$\text{Predicate Phrase} \longrightarrow \text{VP} + \text{pers}_V + \text{no}_V$$

$$\text{VP} \longrightarrow \text{Verb (Aux) Aspect}$$

$$\text{Aux} \longrightarrow \text{(Modal)(Compound)}$$

$$\text{Aspect} \longrightarrow \left\{\begin{array}{l} \text{imperfect / Aux ---} \\ \text{Mood + imperfect} \\ \text{perfect} \end{array}\right\}$$

$$\text{Mood} \longrightarrow \left\{\left\{\begin{array}{l} \text{indicative} \\ \text{optative} \end{array}\right\} \text{(continuous)} \right\}$$

$$\text{imperfect} \longrightarrow \begin{Bmatrix} \text{present} \\ \text{past} \end{Bmatrix}$$

$$\text{Modal} \longrightarrow \text{bidi, tog, betke, yeranite}$$

$$\text{Compound} \longrightarrow \text{part} + E_{attr.}$$

$$\text{part} \longrightarrow \begin{Bmatrix} \text{prt-r} \\ \text{prt-}\not{z} \end{Bmatrix}$$

$$\text{Verb} \longrightarrow \begin{Bmatrix} \text{Comp} + V_{link} \\ \text{Accusative} + V_{tr} \\ V_{int} \\ V_{pass} \\ V_{inf} + S' \end{Bmatrix}$$

$$V_{tr} \longrightarrow \begin{Bmatrix} V_{t1} \\ \text{Dative} + V_{t2} \end{Bmatrix}$$

$$V_{link} \longrightarrow \begin{Bmatrix} V_{seem} \\ VE \end{Bmatrix}$$

$$VE \longrightarrow \begin{Bmatrix} \text{ell- / ---} \begin{Bmatrix} \text{Modal} \\ \text{Continuous} \end{Bmatrix} \\ E \text{ attributive} \\ E \text{ existential} \\ \text{ell-} \end{Bmatrix}$$

$$\text{Comp} \longrightarrow \begin{Bmatrix} \text{Nominative / } E_{exist} \\ \text{Nominative} \\ \text{Adjective} \\ \text{Adverbial} \end{Bmatrix}$$

$$
\text{Adverbial} \longrightarrow
\begin{Bmatrix}
\text{(Adv of time) (Adv of place)} \\
\qquad \text{((int) Adv of manner)} \\
\text{Instrumental} \\
\text{Ablative}
\end{Bmatrix}
$$

$$
\begin{bmatrix}
\text{Nominative} \\
\text{Accusative} \\
\text{Dative} \\
\text{Genitive} \\
\text{Ablative} \\
\text{Instrumental}
\end{bmatrix}
\longrightarrow
\text{NP} \quad +
\begin{bmatrix}
\text{Nom} \\
\text{Acc} \\
\text{Dat} \\
\text{Gen} \\
\text{Abl} \\
\text{Instr}
\end{bmatrix}
$$

$$
\text{NP} \longrightarrow
\left\{
\left\{
\begin{bmatrix}
\text{N} \\
\text{S}^{\text{i}}
\end{bmatrix}
+ \text{(article)}
\right\}
+ \text{pers} + \text{no}
\atop
\text{pronoun}
\right\}
$$

$$
\text{N} \longrightarrow
\begin{Bmatrix}
\text{Proper noun} \\
\text{(prenom) noun}
\end{Bmatrix}
$$

$$
\text{pronoun} \longrightarrow
\begin{Bmatrix}
\text{Q pron. / Q} \text{------} \\
\text{pers. pron.} \\
\text{ind. pron.}
\end{Bmatrix}
$$

$$
\text{prenom} \longrightarrow \text{(Det) ((intens) Adj)}
$$

$$
\text{Det} \longrightarrow
\begin{Bmatrix}
\text{Demonstrative} \\
\text{Numeral} \\
\text{Genitive}
\end{Bmatrix}
$$

$$
\text{no} \longrightarrow
\begin{Bmatrix}
\emptyset \text{ / cardinal ...} \text{------} \\
\text{sg} \\
\text{pl}
\end{Bmatrix}
$$

$$\text{pers} \longrightarrow \left\{ \begin{bmatrix} 1 \\ \left\{ \begin{matrix} 2 \end{matrix} \right\} \ / \ \text{pers. pron.} \ \overline{} \\ 3 \\ 3 \end{bmatrix} \right\}$$

$$\text{article} \longrightarrow \left\{ \begin{matrix} \text{definite} \\ \text{indefinite} \end{matrix} \right\}$$

$$\text{numeral} \longrightarrow \left\{ \begin{matrix} \text{ordinal} \\ \text{cardinal} \\ \text{nondefinite} \end{matrix} \right\}$$

Transformation Rules

The following transformations are mainly the
obligatory unitary transformations, that is, those
that map the underlying Phrase Markers, derived from
the base rules, into surface structures. The role of
transformations is not, of course, limited to this
mapping. Most of the non-simple sentences of a language
are the results of generalized (double-base) transform-
ations. This grammar, however, does not include many
of these for reasons to be explained in Chapter IV below.

T_1, agreement

SD: N + pers-no + X - VP + pers_v-no_v

SC: 1   2   3   4 $\Longrightarrow$ 1 2 3 2

Where N is a cover symbol herefor what precedes pers-no

and it is a rewrite of Nominative in Nominative plus
Predicate Phrase.

This rule means that there must be agreement of number
and person between the subject and the verb of a sentence
(nominative and predicate phrase).

Examples:

Stat - ašagerd + 3 - pl + art - int - Adj - E_{attr} + $pers_v$ - no_v

             1   2   3   4 $\Longrightarrow$

Stat + ašagerd + 3 + pl + art + int + Adj + E_{attr} + 3_v + pl_v

  // + ašagerdnere   +   šad + ƶuyl + en

      the students   very lazy are

'The students are very lazy.'

T_2, Aux

1. SD: X + V + indicative + Y

       X + V + Modal   + Y

  SC: 1 2   3   4 $\Longrightarrow$ 1 3 2 4

2. SD: V - X + continuous + imperfect - $pers_v$ - no_v + Y

  SC: 1   2   3   4 $\Longrightarrow$

                            1 3 2 4

The base rules do not generate the formatives for indicative,
modal, and continuous in the right position. These rules
shift them to the right place in the sentence.

Examples:

Stat - lora - 3 - sg - art + kər- + ind + pres - 3_v - sg_v

                    1   2   3   4 $\Longrightarrow$

Stat + lora + 3 + sg + art + ind + kər- + pres + 3_v + sg_v

//   loran   + kər- + gə- + -e $\Longrightarrow$

      loran   gə-kər-e //

'Lora writes.'

T_3, Article

SD: X - N + article + pers - no - case affix + Y

SC: 1   2   3   4 $\Longrightarrow$

                                      1 3 2 4

The article, as generated by the base rules, precedes the
affixes for person, number, case, when it should follow
them. This rule puts it in the right place.

T_4, deletion of NP

Nominative + Predicate Phrase $\Longrightarrow$ Predicate Phrase

Examples:

menk   +   gəmeseyink // $\Longrightarrow$ gəmeseyink //

'We used to feel cold.'   used to feel cold

T_5, negation

1. SD: Neg + X + E + Y

         Neg + X + V + $\begin{Bmatrix} \text{modal} \\ \text{optat.} \\ \text{perfect} \end{Bmatrix}$ - Y

   SC: 1   2   3   4 $\Longrightarrow$ 21 3 4

2. SD: Neg + X + V + indicative + imperfect - pers$_v$ - no$_v$

   SC: 1 2 3   4   5   ⟹

                2 1 E$_{attr}$ 5 3 prt-r

These two rules produce all the negative forms of the verb phrase. The formative Neg is placed before E$_{attr}$. and the V when these are accompanied by modal, optative, perfect. When the mood is indicative, Neg precedes E which now precedes the V put in its r particle form. For the rewriting of Neg and the r particle see the morphophonemic rules. Examples:

  Neg + yes + ayt + namage + bidi + kerem // ⟹

      yes + ayt + namage + čibidi + kerem //

      I   that letter not will write

'I won't write that letter.'

  Neg + yes + ayt + hotvaźe + gekerem // ⟹

      yes + ayt + hotvaźe + čem kerer //

      I   that article don't write

'I don't write that article.'

T$_6$, adverbial shift

  SD: X + Adverbial + Y + Predicate Phrase ⟹

  SC: X + Y + Adverbial + Predicate Phrase

The adverbial is very often put between the nominative and the predicate phrase. This rule places the adverbial in that position.

Examples:

hos + hagope + bidi + ka // $\implies$

hagope + Hos + bidi + ka

Jack   here   will   come

'Jack will come here.'

T_7, question

$Q + X + Qpron + Y \implies X + Qpron + Q + Y + Q$

$Q + X + Y \implies X + Y + Q$

Optional: $Z + X + Y + Q \implies Z + Q + X + Y$

$$Z + X + Q + Y$$

The question contour usually means a rise in pitch at the
end of a sentence. Different words in the sentence can
also be questioned by carrying this rise to the end of the
word. When a question pronoun is present, there must be
a rise at the end of the pronoun.

T_8, S' or T_{emb}

SD: 1. $X + V_{inf} + S' \implies$

2. $X + S' + Y + V \implies$

Where S' has the following structure:

S': $X + N + pers + no + Nom + Verb (Aux) + Aspect +$

$$pers_V + no_V$$

SC(1):1. $X + V_{inf} + Verb + inf. suff.$

2. $X + Verb + inf. suff. + Y + V$

In an embedded sentence the Aux, Aspect, and $pers_v$ and no_v are dropped and replaced by the infinitive suffix. This rule takes care of the two S'-s generated by the base rules. When the nominative (N + pers + no + Nom) of the S' is not the same as that of the matrix sentence, it is possible to keep it in the second type only by changing it from a nominative to a genitive:

SC(2): 2. X + N + pers + no +Gen + Verb + inf suff + Y + V

Examples:

Stat - Adverbial - Nominative + V_{inf} + S'

S': Stat - Nominative + Verb + ind. + pres. + $pers_v$ + no_v

$//$ + vage + yes + gernam + S'

$//$ + yes + geheracaynem +iren $\Longrightarrow$

$//$ + vage + yes + gernam + heracaynel + iren

Lexicon

The base rules in this grammar do not rewrite any formative as a complex of syntactic features. Consequently, no syntactic features appear in the lexicon.[10] But, to simplify both the base rules and the morphophonemic rules, nouns are accompanied here by declension indicators. These make the selection of the case endings in the morphophonemic rules automatical. Verbs, on the other hand, are specified for the kind of roots they are. This specification deter-

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[10]To include semantic features is even out of the question because, as was said before, there is no attempt here to deal with the semantic component of a grammar.

mines the affixes they get in the morphophonemic rules.
The meanings in English given here are only approximate
translations.

proper noun	$\longrightarrow$	hagop + dec$_1$	'Jack'
		sona + dec$_1$	'Sona'
		lora + dec$_1$	'Lora'
		garbis + dec$_1$	'Garbis'
		yeprad + dec$_1$	'Euphrates'
		anahid + dec$_1$	'Anahid'
		harutûn + dec$_1$	'Harout'un'
noun	$\longrightarrow$	kirk + dec$_1$	'book'
		parutûn + dec$_3$	'goodness'
		axčig + dec$_7$	'girl'
		tebroc + dec$_1$	'school'
		usucič + dec$_1$	'teacher'
		ašagerd + dec$_1$	'student'
		namag + dec$_1$	'letter'
		šuga + dec$_1$	'market place'
		naxakah + dec$_1$	'president'
		jar + dec$_1$	'speech'
		tur + dec$_7$	'door'
		kuyr + dec$_6$	'sister'
		dal + dec$_6$	'sister-in-law'
		hayr + dec$_5$	'father'
		mayr + dec$_5$	'mother'
		yexpayr + dec$_5$	'brother'

noun $\longrightarrow$	dun + dec$_4$	'house'
	šun + dec$_4$	'dog'
	hotvaž + dec$_1$	'article'
	haydararutûn + dec$_3$	'anouncement'
	žam + dec$_2$	'hour'
	žov + dec$_2$	'sea'
	kerataran + dec$_1$	'library'
	senyag + dec$_1$	'room'
	bardaganutûn + dec$_3$	'task'
	šenk + dec$_1$	'building'
	mangabardez + dec$_1$	'kindergarten'
	ažagan + dec$_1$	'adjective'
	par + dec$_1$	'word'
	koknoc + dec$_1$	'uniform'
	hakust + dec$_1$	'dress'
	gedav + dec$_1$	'material'
	yeraz + dec$_1$	'dream'
	lat + dec$_1$	'material'
	dapad + dec$_1$	'trousers'
	cayn + dec$_L$	'voice'
	pan + dec$_1$	'thing'
	gošig + dec$_1$	'shoe'
	tey + dec$_1$	'tea'
	mayrig + dec$_1$	'mother'
	šerep + dec$_1$	'ladle'

noun $\longrightarrow$

hok + dec$_1$	'worry'
ačk + dec$_1$	'eye'
hac + dec$_1$	'bread'
razmavarutûn + dec$_3$	'strategy'
porcutûn + dec$_3$	'temptation'
vax + dec$_1$	'fear'
ges + dec$_1$	'half'
gacutûn + ded$_3$	'situation'
agmug + dec$_1$	'noise'
həsgič + dec1	'proctor'
bahag + dec$_1$	'guard'
gašark + dec$_1$	'bribe'
xosdum + dec$_1$	'promise'
astecutûn + dec$_3$	'influence'
hačogutûn + dec$_3$	'success'
badneš + dec$_1$	'impediment'
xentir + dec$_1$	'problem'
papak + dec$_1$	'wish'
kavat + dec$_1$	'cup'
cerk + dec$_1$	'hand'
harvaž + dec$_1$	'stroke'
partutûn +dec$_3$	'complication'
gurck + dec$_1$	'chest'
gogort + dec$_1$	'throat'
bərgum + dec$_1$	'tenseness'
pɒr + dec$_1$	'belly'

noun	$\longrightarrow$	źung + dec_1	'leg'
		artûnk + dec_1	'result'
		pazmutûn + dec_3	'crowd'
		haxtanag + dec_1	'joy'
		herĵvank + dec_1	'victory'
		geriv + dec_1	'fight'
		šarźum + dec_1	'movement'
Q pron.	$\longrightarrow$	ov	'who'
		inč	'what'
		vor	'which'
ind. pron.	$\longrightarrow$	šad + dec_χ	'a lot'
		kič + dec_1	'a little'
Demonstrative	$\longrightarrow$	ays	'this' (close)
		ayt	'this' (remote)
		ayn	'that' (absent)
V_{int}	$\longrightarrow$	yert- + Ra	'go'
		yerk- + Re	'sing'
		ašxad- + Ri	'work'
		kenan- + Ra	'sleep'
		men- + Ra	'remain'
		ĵaš- + Re	'eat'
		mes- + Ri	'feel cold'
		iyn- + Ra	'fall'
		hačog + Ri	'succeed'
		ler- + Re	'shut up'
		entan- + Ra	'go on'

V_{int}	$\longrightarrow$	žak- +Ri	'come out'
		iyn- + Ra	'fall'
		nesd- + Ri	'sit'
		dev- + Re	'continue'
		azad- + Ri	'get free'
V_{tl}	$\longrightarrow$	ud- + Re	'eat'
		desn- + Re	'see'
		ken- + Re	'buy'
		ker- + Re	'write'
		gart- + Ra	'read'
		tid- + Re	'watch'
		haxt- +Re	'beat'
		~~davan wab~~	~~was~~
		xos- + Ri	'talk'
		es- + Re	'say'
		kidn- + Ra	'know'
		verčacn- + Re	'finish'
		havn- + Ri	'like'
		kež- + Re	'draw'
		badrasd- + Re	'prepare'
		ten- + Re	'put'
		henazant- + Ri	'obey'
		unen- + Ra	'have'
		lecn- + Re	'fill'
		diran- + Ra	'obtain'
		xem- + Re	'drink'

V_{t1}	$\longrightarrow$	žagr- + Re	'mimic'
		sbarn- + Ra	'threaten'
		arn- + Re	'take'
		žež- + Re	'hit'
		han- + Re	'take out'
		hantiman- + Re	'scold'
		kerav- + Re	'get hold of'
		hark- + Re	'respect'
		cek- + Re	'let fall'
V_{t2}	$\longrightarrow$	per- + Re	'bring'
		gerg- + Re	'send'
		badm- + Re	'tell'
		harcn- + Re	'ask'
V_{pass}	$\longrightarrow$	udv- + Ri	'be eaten'
		kerv- + Ri	'be written'
		kežv- + Ri	'be drawn'
		pažnev- + Ri	'be separated'
		gorsv- + Ri	'be lost'
		havakv- + Ri	'be gathered'
V_{seem}	$\longrightarrow$	yerev- + Ri	'appear'
		tev- + Ri	'seem'
		tarn- + Ra	'turn'
V_{inf}	$\longrightarrow$	gern- + Ra	'be able'
		merž- + Re	'refuse'
		uz- + Re	'want'
		xosdan- + Ra	'promise'

V$_{inf}$	$\longrightarrow$	hamarcag- + Ri	'dare'
		sges- + Ri	'start'
		garen- + Ra	'be able'
Adj	$\longrightarrow$	garmir	'red'
		tȟrûn	'easy'
		gegź	'fake'
		nor	'new'
		hin	'old'
		źuyl	'lazy'
		težvar	'difficult'
		andaneli	'unbearable'
		hivant	'sick'
		gertagan	'educational'
		parag	'thin'
		meź	'big'
		užov	'strong'
		hedevyal	'following'
		zinvoragan	'military'
		mokagan	'miraculous' or 'magical'
		gadaryal	'perfect'
		anagengal	'surprising'
		garǰ	'short'
ordinal	$\longrightarrow$	aračin	'first'
		yergrort	x'second'
cardinal	$\longrightarrow$	meg	'one'
		yergu	'two'

nondefinite	→	kanime	'afew'
		šadme	'a lot'
Intendifier	→	šad	'very'
		kič	'little'
		pavagan	'enough'
Adv of time	→	hima	'now'
		vage	'tomorrow'
		yereg	'yesterday'
Adv of place	→	hos	'here'
		hon	'there'
Adv of manner	→	šud	'fast'
		arak	'quickly'
		tantag	'slowly'
		miyasin	'together'

Morphophonemic Rules

As this grammar does not include phonology as such
and uses a phonemic transcription system (see Chapter 2),
the following rules can best be called morphophonemic.
Here, the formatives generated by the base rules, put
in order by the transformational rules, and given lexical
entity by the lexicon, take their final shape. These
rules provide the phonemic variants of every grammatical
category and join the bound forms in the strings to make
them free forms. The rules should be applied in the order
given so that no wrong choices are made.

$$\text{sg} \longrightarrow \emptyset$$

$$\begin{Bmatrix} \text{ov} \\ \text{vor} \end{Bmatrix} + \text{pl} \longrightarrow \text{voronk}$$

$$\text{mart} + \text{pl} \longrightarrow \text{martik}$$

$$\text{dega} + \text{pl} \longrightarrow \text{degak}$$

$$\text{pl} \longrightarrow \begin{Bmatrix} \text{-er} \not{/} \text{ C } \underline{\quad} / \text{ M} \\ \text{-yer} / \text{ Vw } \underline{\quad} / \text{ M} \\ \text{-ner} \end{Bmatrix}$$

Where M is a monosyllabic word

$$\text{def} \longrightarrow \begin{Bmatrix} \text{-n} / \text{ Vw } \underline{\quad} \\ \underline{\quad} \begin{Bmatrix} \text{al} \\ \text{E}_{\text{attr.}} \end{Bmatrix} \\ \text{-e} \end{Bmatrix}$$

$$\text{indef} \longrightarrow \begin{bmatrix} \text{men} / \underline{\quad} \begin{Bmatrix} \text{al} \\ \text{E}_{\text{attr.}} \end{Bmatrix} \\ \text{me} \end{bmatrix}$$

These first rules indicate that the singular of a noun has no special suffix ($\emptyset$), the plural is -er for a monosyllabic word ending in a consonant, -yer for one ending in a vowel. It is -ner with polysyllabic words. The definite article is -n after vowels and before two words: al ('too') and $E_{\text{attr.}}$. Otherwise, it is -e. The indefinite article is men before al and $E_{\text{attr.}}$ and me everywhere else.

$$\text{voronk} + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow \text{voronc}$$

$$XVwC + \text{dec}_7 + sg + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow X\text{ə}C\text{-an} + sg$$

Examples: axčig $\longrightarrow$ axčəgan, tur $\longrightarrow$ təran

$$CVwC + \text{dec}_6 + sg + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow C \begin{Bmatrix} Vw \\ \text{ə} \end{Bmatrix} C\text{-oč} + sg$$

Examples: kuyr $\longrightarrow$ kəroč, dal $\longrightarrow$ daloč

$$XayC + \text{dec}_5 + sg + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow XoC + sg$$

Examples: hayr $\longrightarrow$ hor, yexpayr $\longrightarrow$ yexpor

$$CuC + \text{dec}_4 + sg + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow CaC + sg$$

Examples: dun $\longrightarrow$ dan, šun $\longrightarrow$ šan

$$X\hat{u}n + \text{dec}_3 + sg + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow Xyan + sg$$

Examples: parutûn $\longrightarrow$ parutyan

$$\begin{Bmatrix} N + \text{dec}_2 + sg \\ V + \text{inf. suff} \end{Bmatrix} + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow N + sg + \begin{Bmatrix} \text{-yu} / Vw \text{——} \\ \text{-u} / C \text{——} \end{Bmatrix}$$

Examples: ⱬov $\longrightarrow$ ⱬovu, ci $\longrightarrow$ ciyu, kərel $\longrightarrow$ kərelu

$$N + \text{dec}_1 + sg + \begin{Bmatrix} \text{Gen} \\ \text{Dat} \end{Bmatrix} \longrightarrow N + sg + \begin{Bmatrix} \text{-yi} / Vw \text{——} \\ \text{-i} / C \text{——} \end{Bmatrix}$$

Examples: kar $\longrightarrow$ kari, mekena $\longrightarrow$ mekenayi

$$N + dec_n + pl + \begin{Bmatrix} Gen \\ Dat \end{Bmatrix} \longrightarrow N + pl + \begin{Bmatrix} \text{-yu} / Vw\text{ ---} \\ \text{-u} / C\text{ ---} \end{Bmatrix}$$

$$\begin{Bmatrix} N + dec_n + X \\ V + \text{inf. suff} \end{Bmatrix} + \begin{Bmatrix} Nom \\ Acc \end{Bmatrix} \longrightarrow N + X + \emptyset$$

$$voronk + Abl \longrightarrow voroncme$$

$$X\hat{u}n + dec_3 + sg + Abl \longrightarrow Xene + sg$$

$$\begin{Bmatrix} N + dec_n + X \\ V + \text{inf. suff} \end{Bmatrix} + Abl \longrightarrow N + X + \begin{Bmatrix} \text{-ye} / Vw\text{ ---} \\ \text{-e} / C\text{ ---} \end{Bmatrix}$$

$$voronk + Instr \longrightarrow voroncmov$$

$$X\hat{u}n + dec_3 + sg + Instr \longrightarrow Xyamp + sg$$

$$\begin{Bmatrix} N + dec_n + X \\ V + \text{inf. suff} \end{Bmatrix} + Instr \longrightarrow N + X + \begin{Bmatrix} \text{-yov} / Vw\text{ ---} \\ \text{-ov} / C\text{ ---} \end{Bmatrix}$$

C is used for any consonant in the above rules, Vw for any vowel. In these rules nouns are given their case endings according to the declension endings they carry from the lexicon. When the type of the declension is not indicated (n), the rule applies to any noun.

$$\text{indicative} \longrightarrow \begin{Bmatrix} \emptyset / \text{ --- } E(\text{attr. or exist.}) \\ \text{ge-} / \text{ ---} C \\ \text{g-} / \text{ --- } Vw \end{Bmatrix}$$

$$\text{optative} \longrightarrow \emptyset$$

$$\text{continuous} \longrightarrow gor$$

$$V + \begin{bmatrix} Re \\ Ri \\ Ra \end{bmatrix} + pres \longrightarrow V + \begin{bmatrix} \text{-e} \\ \text{-i} \\ \text{-a} \end{bmatrix}$$

$$\begin{bmatrix} E_{attr.} \\ E_{exist.} \\ \text{əll-} \end{bmatrix} + \text{pres} \longrightarrow \begin{bmatrix} \text{e-} \\ \text{ga-} \\ \text{əlla-} \end{bmatrix}$$

$$V + \begin{bmatrix} Re \\ Ri \\ Ra \end{bmatrix} + \text{past} +3_V +sg_V \longrightarrow V + \begin{bmatrix} \text{-e} \\ \text{-e} \\ \text{-a} \end{bmatrix} + 3_V + sg_V$$

$$V + \begin{bmatrix} Re \\ Ri \\ Ra \end{bmatrix} + \text{past} \longrightarrow V + \begin{bmatrix} \text{-eyi} \\ \text{-eyi} \\ \text{-ayi} \end{bmatrix}$$

$$\begin{bmatrix} E_{attr.} \\ E_{exist.} \\ \text{əll-} \end{bmatrix} + \text{past} + 3_V + sg_V \longrightarrow \begin{bmatrix} \text{e-} \\ \text{ga-} \\ \text{əlla-} \end{bmatrix}$$

$$\begin{bmatrix} E_{attr.} \\ E_{exist.} \\ \text{əll-} \end{bmatrix} + \text{past} \longrightarrow \begin{bmatrix} \text{eyi} \\ \text{gayi} \\ \text{əllayi} \end{bmatrix}$$

$$V + \begin{bmatrix} Re \\ Ri \\ Ra \end{bmatrix} + \text{perf} +3_V +sg_V \longrightarrow V + \begin{bmatrix} \text{-ec} \\ \text{-ecav} \\ \text{-ac} \end{bmatrix} + 3_V + sg_V$$

$$V + \begin{bmatrix} Re \\ Ri \\ Ra \end{bmatrix} + \text{perf} \longrightarrow V + \begin{bmatrix} \text{-eci} \\ \text{-eca} \\ \text{-aci} \end{bmatrix}$$

$$\begin{Bmatrix} E_{attr.} \\ E_{exist.} \\ \text{əll-} \end{Bmatrix} + \text{perf} +3_V + sg_V \longrightarrow \text{(y)egav}$$

$$\left\{\begin{array}{l} E_{attr.} \\ E_{exist.} \\ ell- \end{array}\right\} + perf \longrightarrow (y)ega$$

$$\left\{\begin{array}{l} V \\ VE \end{array}\right\} + pres + \left[\begin{array}{l} 1_v \\ 2_v \\ 3_v \end{array}\right] + sg_v \longrightarrow \left\{\begin{array}{l} V \\ VE \end{array}\right\} + pres + \left[\begin{array}{l} -m \\ -s \\ \emptyset \end{array}\right]$$

$$\left\{\begin{array}{l} V \\ VE \end{array}\right\} + past + \left[\begin{array}{l} 1_v \\ 2_v \\ 3_v \end{array}\right] + sg_v \longrightarrow \left\{\begin{array}{l} V \\ VE \end{array}\right\} + past + \left[\begin{array}{l} \emptyset \\ -r \\ -r \end{array}\right]$$

$$\left\{\begin{array}{l} V \\ VE \end{array}\right\} + perf + \left[\begin{array}{l} 1_v \\ 2_v \\ 3_v \end{array}\right] + sg_v \longrightarrow \left\{\begin{array}{l} V \\ VE \end{array}\right\} + perf + \left[\begin{array}{l} \emptyset \\ -r \\ \emptyset \end{array}\right]$$

$$\left\{\begin{array}{l} V \\ VE \end{array}\right\} + \left\{\begin{array}{l} perf \\ imp \end{array}\right\} + \left[\begin{array}{l} 1_v \\ 2_v \\ 3_v \end{array}\right] + pl_v \longrightarrow V + \left\{\begin{array}{l} perf \\ imp \end{array}\right\} + \left[\begin{array}{l} -nk \\ -k \\ -n \end{array}\right]$$

$$V + \left\{\begin{array}{l} Re \\ Ri \end{array}\right\} + part-r \longrightarrow V + -er$$

$$V + \left\{\begin{array}{l} Re \\ Ri \end{array}\right\} + part-z \longrightarrow V + -az$$

$$V + Ra + \left\{\begin{array}{l} part-r \\ part-z \end{array}\right\} \longrightarrow V + \left\{\begin{array}{l} -acer \\ -azaz \end{array}\right\}$$

$$\left\{\begin{array}{l} E_{attr.} \\ E_{exist.} \\ ell- \end{array}\right\} + \left\{\begin{array}{l} part-r \\ suff-r \end{array}\right\} \longrightarrow (y)eger$$

$$\left\{\begin{array}{l} E_{attr.} \\ E_{exist.} \\ ell- \end{array}\right\} + part-z \longrightarrow (y)egaz$$

The above rules rewrite whatever appears in the Aux
and the Aspect of a verb phrase (VP). The following
rules rewrite the negative and give the various forms
of the verb with the negative.

$$\text{betke + Neg} \longrightarrow \text{betkče}$$

$$\text{Neg + e + 3 + sg + pres + V + suff-r} \longrightarrow \text{Neg + -i + V + suff-r}$$

$$\text{Neg} \longrightarrow \left\{ \begin{array}{l} \text{č} \; / \; \underline{\quad} \; \text{Vw} \\ \begin{array}{l} \text{či} \\ \text{čə} \end{array} \; / \; \underline{\quad} \text{C} \end{array} \right\}$$

$$\text{V} + \begin{bmatrix} \text{Re} \\ \text{Ri} \\ \text{Ra} \end{bmatrix} + \text{suff-r} \longrightarrow \text{V} + \begin{bmatrix} \text{-er} \\ \text{-ir} \\ \text{-ar} \end{bmatrix}$$

$$\text{V} + \begin{bmatrix} \text{Re} \\ \text{Ri} \\ \text{Ra} \end{bmatrix} + \text{inf. suff} \longrightarrow \text{V} + \begin{bmatrix} \text{-el} \\ \text{-il} \\ \text{-al} \end{bmatrix}$$

The following rules rewrite the personal pronoun on
the basis of the person, number, and case chosen with
it.

$$\text{pers. pron.} + \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} + \text{sg + Nom} \longrightarrow \begin{bmatrix} \text{yes} \\ \text{tun} \\ \text{an, ink} \end{bmatrix}$$

$$\text{pers. pron.} + \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} + \text{pl + Nom} \longrightarrow \begin{bmatrix} \text{menk} \\ \text{tuk} \\ \text{anonk, irenk} \end{bmatrix}$$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ + sg + Acc $\longrightarrow$ $\begin{bmatrix} zis \\ kez \\ zink \end{bmatrix}$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ + pl + Acc $\longrightarrow$ $\begin{bmatrix} mez \\ cez \\ zirenk \end{bmatrix}$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ + sg + Dat $\longrightarrow$ $\begin{bmatrix} inzi \\ kezi \\ iren, anor \end{bmatrix}$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ + pl + Dat $\longrightarrow$ $\begin{bmatrix} mezi \\ cezi \\ irenc, anonc \end{bmatrix}$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ + sg + Abl $\longrightarrow$ $\begin{bmatrix} incme \\ kezme \\ irme, ange \end{bmatrix}$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ + pl + Abl $\longrightarrow$ $\begin{bmatrix} mezme \\ cezme \\ irencme, anoncme \end{bmatrix}$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ +sg + Instr $\longrightarrow$ $\begin{bmatrix} incmov \\ kezmov \\ irmov, anov \end{bmatrix}$

pers. pron. + $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ +pl+ Instr $\longrightarrow$ $\begin{bmatrix} mezmov \\ cezmov \\ irencmov, anoncmov \end{bmatrix}$

$$\text{pers. pron.} + \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} + \text{sg} + \text{Gen} \ldots + \text{noun} \longrightarrow$$

$$\text{pers. pron.} + \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} + \text{pl} + \text{Gen} \longrightarrow \begin{bmatrix} \text{im} \ldots \text{noun} + \text{-s} \\ \text{ku} \ldots \text{noun} + \text{-t} \\ \text{anor, iren} , \ldots \text{noun} + \emptyset \end{bmatrix}$$

$$\begin{bmatrix} \text{mer} \\ \text{cer} \\ \text{irenc, anonc} \end{bmatrix}$$

$$N + \text{no} \longrightarrow N + \emptyset$$

$$\text{Stat} + X \longrightarrow X + //$$

$$Q \longrightarrow /$$

$$SS + X + Y \longrightarrow X' + Y$$

A Sample Derivation

(Derivation tree)

S

Mod

Int — C — Q

Prop

Nominative — Predicate Phrase

NP — Nom   VP

pronoun pers no   Verb Aspect   pers_v   no_v

pers pron 2 sg   Accusative V_{tr} perfect

Acc V_{tl}

NP article pers no

N def. 3 sg

Q+pers pron + 2 +sg+ Nom +noun +def. + 3 +sg +Acc +V_{tl} + perfect + $pers_v$ + no_v

T_1: Q+pers pron + 2 +sg+ Nom +noun +def. + 3 +sg +Acc +V_{tl} + perfect + 2_v + sg_v

T_4: Q + +sg+ Nom +noun +def. + 3 +sg +Acc +V_{tl} + perfect + 2_v + sg_v

T_3: Q + noun +def. + 3 +sg +Acc +V_{tl} + perfect + 2_v + sg_v

L: Q + Noun + 3 + sg +Acc +def.+V_{tl} + perfect + 2_v + sg_v

kirk + dec_l kirk + 3 + sg +Acc +def.+Ken—+Re +perfect + 2_v + sg_v

M: kirk + ∅   kirk + + ∅ + —e + ken— + —eci + —r /

Output: kirke kenecir /

the book you bought

'Did you buy the book?'

CHAPTER IV

THE LIMITATIONS OF THE GRAMMAR

Since this thesis presents only a sample grammar of West-Armenian and is a first attempt to describe it in other than purely traditional terms, it cannot claim to be more than a start on this topic. The sample grammar presented here is not only limited to the syntactic component of the grammar of this language (thus excluding phonology and semantics) but also to certain parts in that syntactic component. The basic purpose of this work is to describe the deep and surface structures of a number of sentences in this language, that is, to establish the rules that generate the underlying strings of the sentences of the language. But, limitations of time inherent in an MA thesis have enforced the omission of a number of basic and significant categories in the syntactic structure.

Thus, the base leaves out the category of prepositions and postpositions. These govern different cases in the nouns they accompany and will result in a revision of the noun phrase rules. As this category is excluded from the base rules, no prepositions or postpositions appear in the lexicon. Also, composite (two word) verbs

are not included in the lexicon merely to make the presentation simpler. The transformation rules are mainly obligatory unitary transformations. Only Transform rule 8 works on two strings. Other transformations of this type (combining two sentences or embedding one into another) can be written to produce what are usually referred to as compound or complex sentences (relative clauses, conjunctions of all sorts, sentence modifiers, etc.). Moreover, there is also the possibility of an order shift transformation to give the necessary positional flexibility to certain categories in a sentence. Also, a number of nominalization transformations can be written to nominalize demonstratives, numerals, adjectives, postpositions, and verbs. These are, however, subjects of extensive study which will probably take years of work to incorporate effidently into a transformational grammar.

To evaluate this grammar, a set of sentences was used. One half of these was produced by myself, the other half taken out of a novel written in West-Armenian.[1] The evaluation was performed by trying to produce these grammatical sentences by means of the rules of this grammar. Two thirds of these sentences were generated perfectly well. The generation of the other third was not completely

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[1] A. Tsaroukian, _Mankout'un Chounetsogh Mardik_ [People Without Childhood] (Beirut: Hamazgayin, 1955).

accomplished by this grammar, but it was evident that the
missing structures result from the omissions described
in the preceding paragraph.

The result of this evaluation may lead, if it is
to lead to anything, to the conclusion that this grammar,
imperfect and the least detailed in itself, does, at least,
provide the beginnings for the grammarian to build upon.
Omissions and simplifications can be identified and the
grammar extended and reformed to remedy them. Presumably,
it is only in this way that a satisfactory description
of West-Armenian syntax can be achieved.

GLOSSARY

$\longrightarrow$	Rewritten as
+ -	Concatenated with
$\Longrightarrow$	Changed into
( )	Optional element
{ }	A choice between two or more
/ / —— / / / ... ——	In the context of this slot
S'	A new sentence
[] []	A choice conditioned on the input
∅	No phonetic equivalent
SD	Structural description
SC	Structural change
X Y Z W	Cover symbols
C	Consonant
Vw	Vowel
V	Any verb
emb	Embedding

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