0. Introduction

This thesis is an attempt to formulate a transformational generative grammar[1] of Korean. Since no extensive and reliable description of the Korean language has been made, it has been difficult for me to find reference materials for this paper. Being a native speaker of Korean was a great advantage and most of the data has been collected through introspection and the small number of books listed in the bibliography.

As indicated in the title of the paper, I have formulated an outline of Korean syntax, concentrating in particular on the verb morphology and inflection of the language. Accordingly, in most cases, the subclassification of elements (especially 'verb') has not been made on the basis of co-occurrence restrictions but rather on the basis of morphological differences. See the rules 1.12, 1.16.

Some of the features of the Korean language are the honorific sytem (Cf. 1.3, 1.4, 3.27 - 3.32), numeral classifiers (Cf. 1.38, 1.41, 4.3) and extensive verbal and adjectival conjugations.

There are three different styles in the Korean language; namely, epistolary, literary and colloquial. Nevertheless, they are not different from each other, they differ mainly in sentence endings. The epistolary and literary styles are the remains of the earlier form of the language, while the colloquial style is what has come to be the current everyday language. The language I handled in this paper is primarily the colloquial Korean.[2]

Since Korea is one of the oldest countries in the world and there has been a clear classification between people in their social, religious and political lives throughout its history, there still exist five language distinctions in the language, even if there is a tendency to abolish these under the influence of western civilization. The level (or class) of the language distinction described in the phrase structure is the lowest.

With respect to the numeral classifiers, there is a problem in the subclassification of nouns. There are at least more than fifty different noun classes which require different

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(1) As to the general theory of 'transformational generative grammar', I refer to Noam Chomsky, *Syntactic Structures*, Mouton & Co., The Hague, 1957.

(2) By 'Korean' here I mean the language spoken in Seoul area, the so-called *Standard Dialect of Korean.*

counting classifiers: e.g., three students="haksæŋ se myəŋ", three pigs="tweci se mali", three books="chæk se kwən" and three pencils="yənpʰil secalu". However, only ten classes of nouns (Cf. 1.38, 1.40, and 1.41) were illustrated as to their co-occurrence with the most widely current counting classifiers.

Another problem was in the analysis of auxiliary predicate. Sometimes, the formatives of a construction which has an auxiliary predicate is almost identical with the construction involving compound or complex verbs; e.g., "tol a ka(ta)"= 'to go around' and "ka a po(ta)"= 'to try to go'. (Cf. 1.14, 1.43, — 1.47). In the above example, I set up the morpheme "po(ta)" as the tentative auxiliary verb, even though the morpheme "po(ta)" appears as a verb with the meaning 'to see' or 'to look at'. The main reason is that, in Korean, modifiers always come before the elements modified, but in the construction including auxiliary predicate the auxiliaries come after the predicate.

$V_1+IS+ka$ $V_{mot}+IS+$ Aux

The Korean examples are presented phonemically, but no suprasegmental phonemes are marked. As a general rule, Koreans usually put stress on the first syllable of a word or phrase. The phonemic system of the language employed in this paper is a modified version of Samuel Martin's *Korean Phonemics.*(3)

Consonants

		bilabial	dental	palatal	velar	glottal
Stops	simple	p	t		k	
	aspirated	p^h	t^h		k^h	
	glotalized	pq	tq		kq	
Aff.	simple			c		
	aspirated			c^h		
	glotalized			cq		
Fric.	simple	s				h
	glotalized		sq			
Lat.			l			
Nasals		m	n		ŋ	
Med.		w			y	

(3) *Language* 27, pp. 519—33.

Vowels

	i	ɨ	u	
ö	e	ə	o	
	æ	a		/ö/ is mid-front rounded vowel.

Significant allophones

	Initially (or after pause)	Intervocalically (or between voiced sounds)
/p/	p	b
/t/	t	d
/k/	k	g
/c/	c	j
	(or before consonants)	(only intervocalically)
/l/	l	ř

Long consonants and vowels occur in contrast with short consonants and vowels, respectively, and are treated as dyads of the same phonemes. The advantage of the treatment of /pq, tq, kq, cq, sq/ as single phonemes lies in the phonotactics of the language – in Korean no consonant clusters ever occur initially in a word or phrase or after pause. The phonemes /l, ŋ/ do not occur in word or phrase initial position. Between two uninterrupted (i.e., non-interruption by open juncture or pause) syllabic nuclei, no more than two consonants ever occur. (For exceptions, see p. 8).

Since in the phonemic transcription of the Korean examples I use the base form of a morpheme, the transcription itself is not readable, unless we understand the morphophonemic changes illustrated in the following tables. Table-1 and Table-2 show the possible consonant phoneme clusters (indicated by the symbol "o" at the point of intersection), and the dyads show that the expected sequence does not occur, but is automatically replaced by the given dyads. The top-most row shows the end of the preceding syllable, and the extreme left-hand column shows the beginning of the following syllable. The extreme right-hand column shows the morphophonemic change of a given phoneme when it is the last sound of a word or phrase before pause. The last row shows that a syllable begins with the consonant whenever possible. The symbol "x" means impossible.

	-p	-pʰ	-pq	-t	-tʰ	-tq	-k	-kʰ	-kq	-c	-cʰ	-cq	-s	-sq	-h	-l	-m	-n	-ŋ
p-	pq	pq	x	pq	pq	x	o	kp	kp			pq			pʰ	o	o	o	o	-p
pʰ-	pʰ	pʰ	x	pʰ	pʰ	x	o	kpʰ	kpʰ			pʰ			pʰ	o	o	o	o	-p
pq-	pq	pq	x	pq	pq	x	o	kpq	kpq			pq			pʰ	o	o	o	o	x
t-	ptq	ptq	x	tq	tq	x	o	kt	kt			tq			tʰ	o	o	o	o	-t
tʰ-	o	ptʰ	x	tʰ	tʰ	x	o	ktʰ	ktʰ			tʰ			tʰ	o	o	o	o	-t
tq	o	ptq	x	tq	tq	x	o	ktq	ktq			tq			tʰ	o	o	o	o	x
k-	pkq	pkq	x	kq	kq	x	kq	kq	kq			kq			kʰ	o	o	o	o	-k
kʰ-	o	pkʰ	x	kʰ	kʰ	x	kʰ	kʰ	kʰ			kʰ			kʰ	o	o	o	o	-k
kq-	o	pkq	x	kq	kq	x	kq	kq	kq			kq			kʰ	o	o	o	o	-k
c-	pcq	pcq	x	cq	cq	x	kcq	kc	kc			cq			cʰ	o	o	o	o	-t
cʰ-	o	pcʰ	x	cʰ	cʰ	x	o	kcʰ	kcʰ			cʰ			cʰ	o	o	o	o	-t
cq-	o	pcq	x	cq	cq	x	o	kcq	kcq			cq			cʰ	o	o	o	o	-t
s-	psq	psq	x	sq	sq	x	ksq	ksq	ksq			sq			s	o	o	o	o	-t
sq-	o	psq	x	sq	sq	x	o	ksq	ksq			sq			sq	o	o	o	o	-t
h-	pʰ	pʰ	x	tʰ	tʰ	x	kʰ	kʰ	kʰ	cʰ	cʰ	cʰ	s	sq	h	o	o	o	o	-h
l-	x	x	x	x	x	x	x	x	x			x			x	o	mn	nn	nn	-l
m-	mm	mm	x	nm	nm	x	ŋm	ŋm	ŋm			mm			o	o	o	o	o	-m
n-	mn	mn	x	nn	nn	x	ŋn	ŋn	ŋn			nn			o	ll	o	o	o	-n
ŋ-	x	x	x	x	x	x	x	x	x			x			x	x	x	x	x	-ŋ
	p-	pʰ-	pq-	p-	tʰ-	tq-	k-	kʰ-	kq-	c-	cʰ-	cq-	s-	sq-	h-	x	m-	n-	x	

Table-1

Complex Syllabic Nuclei

ii	ɨɨ	uu	wi				yu
ee	əə	oo	we	wə	ye	yə	yo
ææ	aa		wæ	wa	yæ	ya	

Dyads of the same vowel indicate long syllabic nuclei. In the Korean language, there are no phonemic off-glides except in /iy/.

The following table shows a few possible clusters of three consonants in phonemic transcription. The top row again shows the end (consonant cluster) of the preceding syllable. The phonemes /t,c,n,k/ in the extreme left-hand column are the only phonemes which can follow immediately the clusters in the top row. The cells of the matrix contain the resultant morphophonemic sequences.

	-lm	-nc	-lk	-pl	-ps	-nh
t-	mt	ntq	lktq	lptq	ptq	-nt^{h}
c-	mc	ncq	lkcq	lpcq	pcq	-nc^{h}
n-	mn	nn	ŋn	mn	mn	-nn
k-	mk	ŋkq	lkq	lpkq	pkq	-ŋk^{h}

Table-2

An explanation of the symbols employed in this grammar is as follows: "⟶" is the rewrite sign for phrase structure rules and morphophonemic rules in footnotes, and "⋯⟶" is the rewrite sign for transformational rules. Parentheses "( )" indicate optional elements, braces "{ }" denote the choice of one out of several elements, and brackets "[ ]" denote elements which must match in the input and in the output. The symbol "#" denotes sentence boundary, "/" indicates phrase boundary, and "+" indicates concatenation.

The phrase boundary "/" is postulated for several reasons. A phrase boundary must be a syllabic boundary, and open juncture occurs in the position of phrase boundary. That is to say, the tables for the morphophonemic changes can not be applied across phrase boundaries. Another reason is to be found in the transformational rule 3.34 yielding emphatic phrase order.[4]

The cover symbols X,Y,Z and W have been used to designate any occurring sequence, including null.

(4) Also see the discussion in E. Bach, *An Introduction to Transformational Grammars*, pp. 111—2.

Chapter I

Phrase Structure

Some, but not all, rules in this chapter are followed by examples in order to simplify comprehension. The translation of the examples into English is not always literally correspondent with Korean; that is, no matter how well we translate Korean into English, the English translation cannot express the real properties of the Korean language; and, some -times, the literal description does not make sense in English at all. For instance, the sentence "ton i na eke isq ta". means "I have money.", but literally "Money is to me." which is not well-formed and not an acceptable English sentence.

The rules described below must be applied in the order indicated. These rules, together with the operation of the obligatory transformation, will generate the sentences of the language which, for reasons of over-all economy, I have chosen to view as kernel or non-derived sentences.

Given the sequence #S#S#S#S#S.....

1.1

$$S \longrightarrow (/NP+SM)\ (/Adv)/Pred(+isi)\ (+IS+Aux)\ (+ci+Neg)\left\{\begin{array}{l}(+T)+\left\{\begin{array}{l}ta\\nya\\kuna\end{array}\right\}\\la^{(5)}\\ca\end{array}\right\}/$$

apəci kqesə yəlsimhi c^{h}æk il ilk isi ko kesi ci aniha yəsq ta.
/NP+SM / Adv / Pred +isi+IS+Aux+ci+Neg +T +ta/

Father was not reading a book assiduously.

This rule will generate all and only grammatically simple (i.e., nonderived) sentences, and all complex (i.e., derived) sentences of the language can be derived from it by means of relatively simple transformations.

The optional symbol "NP" here denotes noun phrase and indicates the grammatical subject of a sentence, and "SM", which is expanded in the next rule, denotes subject

(5) "la" becomes "əla" under the condition that the preceding "NP" ends in a consonant; i.g., la ⟶əla in envir. XC_____.

markers. "Adv" denotes adverbs, adverbial complexes and a postpositional phrase. The obligatory element "Pred" indicates predicate, and "ta", "nya", "kuna", "la" and "ca" denote declarative, interrogative, exclamatory, imperative and hortative sentence endings, respectively.[6]

The optional morpheme "isi" is an honorific infix for the subject noun phrase. Since not all NPs may occur with this honorific morpheme, a context sensitive rule is necessary (see 1.4). "IS", which will be expanded in 1.46, denotes the various inflectional suffixes of predicate which must always co-occur with "Aux", indicating auxiliary predicate. Another context sensitive rule is required to handle the fact that certain auxiliary predicates have to take certain inflectional suffixes (see 1.46).

The morpheme "ci" is a special inflectional suffix of predicate or auxiliary predicate characteristic of their negations (see 1.32). "Neg" denotes three negative morphemes (see (1.32).

1.2

$$SM \longrightarrow \left\{ \begin{matrix} ka^{(7)} \\ esə \\ kqesə \end{matrix} \right\}$$

Among three subject markers, the distribution of "esə" and "kqesə" is highly restricted, while "ka" may co-occur with any kinds of subject noun phrases (see the next rule.)

1.3

$$NP + \left[\begin{matrix} esə \\ \\ kqesə \end{matrix} \right] \longrightarrow \left[\begin{matrix} \left\{ \begin{matrix} D \\ \left\{ \begin{matrix} ProNom \\ N_{human} \end{matrix} \right\} + (iy) \end{matrix} \right\} + N_1 \\ \left\{ \begin{matrix} ProNom \\ N_{human} \end{matrix} \right\} \end{matrix} \right] + \left[\begin{matrix} esə \\ \\ kqesə \end{matrix} \right]$$

ki haksæŋ iy pyən esə kyəŋki lil iki əsq ta.
/ N_{human} +iy+N_1+ esə/ Pred + T+ta/

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(6) In the Korean language, the sentence types are determined in most cases by the sentence endings, and each type has its own typical terminal juncture. So, even though in the half language level (cf. 3.31) the declarative, the interrogative, the imperative and the hortative sentences end in the same segmental phoneme /ə/, they have different terminal junctures; namely, the pitch for the declarative sentence is from 'mid' to 'low', from 'mid' to 'high' for the interrogative, from 'high' to 'low' for the imperatieve, and the sustained pitch for the hortative sentnce. (cf. 3.27—31)

(7) ka⟶i in envir. XC_____

The student's side won the game.

apəci kqesə samusil e ka isi nya?
/N_{human}+kqesə+ Pred +isi +nya/

Does father go to (his) office?

"D" deonotes determiners, "N_{human}" deonotes nouns of human (i.e., nouns used for human beings), and the optional morpheme "iy", meaning 'of' in English, is used to make the possessive construction of its preceding noun phrase; namely, "N_{human} iy N_1" is "N_1 of N_{human}" or "N_{human} 's N_1" in English. As indicated in the above rule, since the subject marker "kqesə" contains some form of a respectful expression in itself, only "N_{human}" and "ProNom", which is expanded in 1.35, may have it as their subject marker. "N_1", which is referred to the lexicon, denotes a very small class of nouns.

1.4

$$NP+ka/(Adv)/Pred+isi \longrightarrow \left\{ \begin{matrix} N_{human} \\ ProNom \end{matrix} \right\} +ka/(Adv)/Pred+isi$$

The rule signifies that, when the honorific morpheme for the subject noun phrase "isi" is chosen, "N_{human}" or "ProNom" must be selected as the subject of a sentence.

1.5

$$\left\{ \begin{matrix} \left[\begin{matrix} NP+ka \\ ProNom+(iy)+N_1+esə \end{matrix} \right] \\ NP+ka \end{matrix} \right\} +X+ \left\{ \begin{matrix} la \\ ca \end{matrix} \right\} \longrightarrow \left\{ \begin{matrix} \left[\begin{matrix} ne+ka \\ ne+(iy)+N_1+esə \end{matrix} \right] \\ uli+ka \end{matrix} \right\} +X+ \left\{ \begin{matrix} la \\ ca \end{matrix} \right\}$$

X is abbreviation of (/Adv)/Pred(+IS+Aux) (+ci+Neg).

Note: X does not contain "isi".

The above rule generates imperative sentences and hortative sentences. Since the imperative and the hortative forms in this level (the language level described in phrase structure) are used only in the lowest level of the language; that is to say, the person spoken to must be younger or socially lower than the speaker, the morpheme "isi" can not co-occur with "la" and "ca". The morpheme "ne" means 'you', and "uli" means 'we', in English.

1.6

$$Pred \longrightarrow \left\{ \begin{matrix} \left\{ \begin{matrix} Adj \\ V_c \end{matrix} \right\} \text{ in envir. } \underline{\quad} + \ldots\ldots + \left\{ \begin{matrix} ta \\ nya \\ kuna \end{matrix} \right\} / \\ (Adjunct/)VP \end{matrix} \right\}$$

ki yə haksæŋ i tosəkwan esə koŋpuha ko isq ta.
/ NP +ka/ Adjunct+ VP+ IS+Aux+ta/

ki yə haksæŋ i cən e ipqi əsq kuna!
/ NP +ka/Adv/ Adj+T+kuna/

ki yə haksæŋ i cʰəncæ i əsq nya?
/ NP +ka/ V_c+T+nya/

The girl student is studying at the library.

How pretty the girl student was before!

Was the girl student a genius?

The above rule classifies "Pred" into three subclasses - "VP" (verbal predicate), "Adj" (adjectival predicate) and "V_c"(copulative predicate). This classification is necessary since they perform quite different roles in the transformational level of grammar and even in the phrase structure component. (See the rules 1.8, 1.17, 1.18, 3.2 and 4.2)

The optional element "Adjunct", composed of a noun plus a certain kind of postposition, denotes various verbal predicate modifiers. We may therefore give a rule for this as follows:

1.7

Adjunct ⟶ NP+PostP

"PostP" denotes postpositions.

1.8

$$\text{Aux} \longrightarrow \left\{ \begin{array}{ll} \text{Aux}_v & \text{in envir. VP...}\_\_\_\_ \\ \text{Aux}_a & \text{in envir. Adj...}\_\_\_\_ \\ \text{Aux}_c & \text{in envir. } V_c\text{....}\_\_\_\_ \end{array} \right\}$$

There are three kinds of auxiliary predicates: auxiliary for verbal predicate "Aux_v", auxiliary for adjectival predicate "Aux_a" and auxiliary for copula "Aux_c". (See 1.43—5).

1.9

$$\text{VP} \longrightarrow \left\{ \begin{array}{l} \text{NP+lil}^{(8)}/V_{tr} \\ V_{in} \end{array} \right\}$$

ki i ka cənyək il mək əsq ta.
/NP+ka/ NP+lil / V_{tr}+T+ ta/

əməni ka o si əsq ta.
/NP+ka/V_{in}+isi+T+ta/

He ate supper.

(8)lil⟶il in envir. XC____.

Mother came.

The dichotomy of "VP" into transitive verb "V_{rt}" and intransitive verb "V_{in}" is required for the passive transformation, that is, a transitive verb may undergo the passive transformation, but an intransitive verb may not.

"lil" denotes the object marker.

1.10

$$V_{tr} \longrightarrow \left\{ \begin{array}{l} NP+e/V_{tr-3} \\ V_{trx} \end{array} \right\}$$

sənsæŋ i yəŋə lil uli eke kalic^{h}i si ko isq$_2$ ta.
/N_{human}+SM/NP+lil / NP+e/ V_{tr-3}+isi+IS+Aux+ta. /

The teacher is teaching us English.

nœ ka c^{h}æk il sa asq ta.
/NP+SM/NP+lil/V_{trx}+T+ta/

I bought a book.

The morpheme "e" denotes the indirect object marker (Cf. 4.1) in a sentence which has two objects, and "V_{tr-3}" denotes dative transitive verbs. "V_{trx}", which is expanded in the next rule, represents miscellaneous transitive verbs.

1.11

$$V_{trx} \longrightarrow \left\{ \begin{array}{ll} \text{capsu} & \text{in envir. } \_\_ +\text{isi} \\ \left\{ \begin{array}{l} V_{tr-1} \\ V_{tr-2} \end{array} \right\} & \text{anywhere} \\ V_{ti} & \end{array} \right\}$$

The morpheme "capsu", meaning 'to eat', always occurs with the honorific morpheme "isi". "V_{tr-1}", which is referred to the lexicon, denotes a class of transitive verbs which can not undergo the dative transitive transformation but can undergo one of the three kinds of passive transformations. (Cf. 3.5, 3.33.)

"V_{tr-2}" has been specified since it may undergo the dative transitive and two of the three kinds of passive transformations. (See 3.5, 3.33). "V_{ti}", which is referred to the lexicon and is specified in order to give a co-occurrence restriction between "Adjunct" and "VP", denotes verbs which mean the transportation of something, work using instruments, etc. (Cf. 1.28, 1.29).

1.12

$$V_{tr-2} \longrightarrow \begin{Bmatrix} V_{tr-21} \\ V_{tr-22} \\ V_{tr-23} \\ V_{tr-24} \\ V_{tr-25} \end{Bmatrix}$$

The above division of "V_{tr-2}" into five subclasses, which are all referred to in the lexicon, is made because each subclass must have different 'dative transitive formatives (affixes)' in the dative transformation. (Cf. 3.5)

1.13

$$V_{in} \longrightarrow \begin{Bmatrix} NP+ka_1{}^{(9)}/t\ddot{o} \\ V_{intr} \end{Bmatrix}$$

ki i ka haksæŋ i_1 tö əsq ta.
/NP+SM/NP $+ka_1$/ tö+T+ta/

He became a student.

The morpheme "tö", meaning 'to become' in English, occurs with the construction "NP $+ka_1$" (here the subscript is employed in order to distinguish "ka_1" from the subject marker "ka"). "V_{intr}" denotes intransitive verbs except "tö".

1.14

$$V_{intr} \longrightarrow \begin{Bmatrix} V_h & \text{in envir. } \_\_\_\_\_ + isi \\ \left.\begin{Bmatrix} V_{mot} \\ V_{dup} \\ V_{inx} \\ V_1+ə+\begin{Bmatrix} ka \\ o \end{Bmatrix}{}^{(10)} \\ isq \end{Bmatrix}\right\} & \text{anywhere} \end{Bmatrix}$$

(9) $ka_1 \longrightarrow i_1$ in envir. XC___.

(10) By giving an example, I would like to explain why I handle the construction "V_1+ə+{ka, o}" in this way, even though it is morphologically a combination of two verbs; in other words, it might be handled in the transformational component. The sentence "næ ka paŋ e_1 til ə ka ta." 'I go in the room.' might be transformed from the following two sentences;

/NP+SM/Adjunct/V_1+ə+ka +ta/

næ ka paŋ e til ta.
/NP+SM/Adjunct/V_1+ta/ 'I enter the room.' and

næ ka ka ta.
/NP+SM/ka+ta/ 'I go.'

But the latter treatment looks uneconomical, and it is hardly acceptable to our common sense "ə" becomes "a" when its immediately preceding last vowel is /a,o/.

"V_h", which includes only three morphemes, must occur with "isi" like "capsu"(see 1.11).

"V_{mot}", which is specified to give a co-occurrence restriction between "Adjunct" and "VP" and is referred to the lexicon, represents verbs of motion, and "V_{dup}" denotes the verbs which can occur with the duplicative adverb "Dup" (see 1.22).

The morphemes "ka" and o", meaning 'to go' and 'to come' respectively, make some special verbal complexes with certain inflected verbs "V_1+ə". "V_1" denotes a small class of verbs. "isq", meaning 'there is' or 'there are' in English, is the so-called 'verb of existence or location' (see 1.20). "V_{inx}", which is expanded in the next rule, denotes miscellaneous intransitive verbs.

1.15

$$V_{inx} \longrightarrow \left\{ \begin{matrix} V_{in-1} \\ V_{in-2} \end{matrix} \right\}$$

"V_{in-1}" denotes a class of intransitive verbs which may not be transformed into transitive verbs, while "V_{in-2}" is a large class of intransitive verbs that may be transformed into transitive verbs by means of a certain 'transitive formative'. (see 3.4).

1.16

$$V_{in-2} \longrightarrow \left\{ \begin{matrix} V_{in-21} \\ V_{in-22} \\ V_{in-23} \\ V_{in-24} \\ V_{in-25} \end{matrix} \right\}$$

The classification of "V_{in-2}" into five subclasses, which are all referred to the lexicon, is needed since each one must have different 'transitive formatives(affixes)' in order for each of them to be inflected as transitive verbs. (Cf. 3.4).

1.17

Adj⟶(PreAdj)+Adj_1(+ə[11]+ci)

nalsqi **ka** cʰup ta.
/NP+SM/Adj_1+ta/ It(The weather) is cold.

nalsqi ka mœu cʰuu ə ci ta.
/NP+SM/PreAdj+Adj+ə+ci+ta/

The weather becomes very cold.

(11) ə⟶a when its immediately preceding last vowel is /a,o/.

"PreAdj", abbreviated from 'preadjectival', denotes a small class of adverbs which can modify only adjectival predicate, but not "VP" or "V_c". The morpheme "ci", which is never used independently, occurs with only inflected adjectivals "$Adj_1+ə$" and means roughly 'to become'.

1.18

$$V_c \longrightarrow \begin{Bmatrix} NP \\ N_3+cək \end{Bmatrix} +i$$

cə kəs i namu i ta.
NP + SM/ NP + i+ta/ 'That is a tree.'

ki i ka cinc^{h}wi cək i ta.
NP+SM/N_3 +cək+i+ta/ 'He is progressive.'

The morpheme "cək", meaning probably '-ive' in English if it is considered a morpheme, makes an adjectival type construction with a small class of nouns "N_3". However, this construction, unlike adjectivals, always occurs with the copula verb "i", meaning 'to be' in English.

1.19

$$\begin{Bmatrix} N_{human} \\ ProNom \end{Bmatrix} +SM(/Adv)/NP+ \begin{bmatrix} i \\ ka_1/tö \end{bmatrix} \longrightarrow \begin{Bmatrix} N_{human} \\ ProNom \end{Bmatrix} +SM(/Adv)$$

$$/\begin{Bmatrix} N_{human} \\ Numeral_a+sal \\ Numeral_o+cqæ+(pən) \\ Numeral_c+pən \end{Bmatrix} + \begin{bmatrix} i \\ ka_1/tö \end{bmatrix}$$

næ ka haksæŋ i ta.
/ProNom+SM/N_{human}+i+ta I am a student.

apəci kqesə swin sai i_1 tö si əsq ta.
/N_{human}+SM /$Numeral_a$+sal+ka_1/tö+isi+T+ta/

(My) father became fifty years old.

ki i ka yəl cqæ pən i ta.
/ProNom+SM/$Numeral_o$+cqæ pən+i+ta

He is the tenth.

The above rule is not sufficient to give full restriction to the co-occurrence of "i" and "tö" (see 1.13) with other items. For instance:

*haksæŋ i haksæŋ i ta."
N_{human}+SM/N_{human}+i+ta/ *'The student is a student.'

*apəci ka tqal i tö əsq ta.
N_{human}+SM/N_{human}+ka_1+tö+T+ta/ *'Father became a daughter.'

However, it shows the primary distributions of the morphemes "i" and "tö" in the language.

The symbol "ProNom" is the abbreviation of pronominal (see 1.35). "$Numeral_a$" denotes adjectival numerals, "$Numeral_c$" denotes the so-called Sino-Korean numerals (numerals borrowed from Chinese) and "$Numeral_o$" denotes ordinal numerals. The morpheme "sal" means 'age', "cqæ" means the morpheme '-th', and "pən" means 'number', in English.

1.20

NP+PostP/isq——NP+e_1/isq

cʰæk i cʰæksaŋ wi e_1 isq ta.
/NP+SM/ NP +e_1/isq+ta/

A book is on the desk.

haksæŋ i kyosil e_1 isq əsq ta.
/NP +SM/NP+e_1/isq+T+ta

(There) was a student in the class.

The above rule shows the co-occurrence restriction between Adjunct and the verb of existence or location "isq". (see 1.14). See rule 1.26 for further restrictions. "e_1" means 'at', 'in', or 'on' in English.

1.21

$$(/NP+ka)(/Adv)/\begin{bmatrix}V_{mot}\\ V_1+ə+\begin{Bmatrix}ka\\ o\end{Bmatrix}\end{bmatrix}\longrightarrow(/\begin{Bmatrix}N_{an}\\ N_t\\ ProNom\end{Bmatrix}+ka)(/Adv)/\begin{bmatrix}V_{mot}\\ V_1+ə+\begin{Bmatrix}ka\\ o\end{Bmatrix}\end{bmatrix}$$

The above rule specifies that, when "V_{mot}" or "V_1+ə+{ka, o}" is chosen as a predicate, the subject noun may be an animate noun "N_{an}" or a noun of transportation "N_t", or "ProNom"

1.22

$$Adv\longrightarrow\begin{Bmatrix}Dup & \text{in envir. } \_\_\_\_\ V_{dup}\\ \begin{Bmatrix}N_{time}+PostP\\ N_{adj}+hi\\ Adj+ke\\ Adv_x\end{Bmatrix} & \text{anywhere}\end{Bmatrix}$$

Tne inclusion of "N_{time}+PostP" in "A_{dv}" but not in "Adjunct" like other "NP+PostP's"

is made in order that it may occur with "V_c" and "Adj". "hi" is the morpheme which makes adverbials from "N_{adj}". By putting the particle "ke", which is almost equivalent to the English morpheme '-ly', after "Adj_1" (Cf. 1.17), we can make adverbs from "Adj_1". Dup denotes reduplicated adverbs, and most of them are onomatopoetic. The Koreans often use different adverbs with the same verbs where the Americans use different verbs; 'piŋkil-piŋkil us ta' (to smile) 'paŋsitpaŋsit us ta' (to chuckle) 'kʰikkʰik us (ta)' (to giggle), and 'həhə us (ta)' (to laugh heartily). "Adv_x" denotes miscellaneous adverbs.

1.23

$$Adv_x \longrightarrow \begin{Bmatrix} Adv_{x1} \\ Adv_{past} \end{Bmatrix}$$

The above dichotomy has been made in order to restrict the co-occurrence of tense with "Adv", namely, "Adv_{past}" must occur with past tense. (Cf. 1.31). "Adv_{x1}" denotes miscellaneous adverbs except "Adv_{past}".

1.24

$$N_{time}+PostP \longrightarrow N_{time}+\begin{Bmatrix} e_1 \\ putə \\ kqaci \\ toŋan \end{Bmatrix}$$

acʰim e_1; 'on the morning'
yəl si kqaci; 'until 10 o'clock'
$N_{time}+PostP$

"e_1" together with "N_{time}" means 'at', 'on', or 'in', "putə" means 'from', or 'since', and "kqaci" means 'until' or 'to', in English. "toŋan" means 'during'.

The rules from 1.25 to 1.29 will be given to restrict the co-occurrence of "Adjunct" with various verb classes.

1.25

$$PostP+\begin{Bmatrix} V_{mot} \\ V_1+ə+\begin{Bmatrix} ka \\ o \end{Bmatrix} \end{Bmatrix} \longrightarrow \begin{Bmatrix} kqaci \\ esə_1 \\ e_1 \\ lo^{12} \end{Bmatrix} + \begin{Bmatrix} V_{mot} \\ V_1+ə+\begin{Bmatrix} ka \\ o \end{Bmatrix} \end{Bmatrix}$$

"kqaci" means 'to', "$esə_1$" means 'from', "e_1" means 'to', 'at', or 'in', and "lo" means

(12) lo⟶ilo in envir. XC_____.

'toward', in English.

1.26

$$NP+\begin{Bmatrix}kqaci\\ es\text{ə}_1\\ e_1\\ lo\end{Bmatrix}\longrightarrow N_2+\begin{Bmatrix}kqaci\\ es\text{ə}_1\\ e_1\\ lo\end{Bmatrix}$$

1.27

$$N_2\longrightarrow\begin{Bmatrix}N_{loc}\\ N_{an}\end{Bmatrix}+(N_d)$$

"N_d" denotes nouns of direction.

1.28

$PostP/NP+lil/V_{ti}\longrightarrow lo(sq\text{ə})^{(13)}/NP+lil/V_{ti}$

"lo(sqə)" means 'by', 'with', or 'by means of' in English.

The selection of either "lo" or "losqə" is stylistic.

1.29

$NP+lo(sq\text{ə})\longrightarrow N_{ti}+lo(sq\text{ə})$

"N_{ti}" denotes nouns of transportation and instrument.

1.30

$PostP\longrightarrow kwa^{(14)}$

"kwa" means '(together) with' in English.

1.31

$Adv_{past}+X+T\longrightarrow Adv_{past}+X+(\text{ə}sq_1)+\text{ə}sq$

X is abbreviation of the nodes developing from Pred (+isi) (+IS+Aux) (+ci+Neg).

The above rule means that "Adv_{past}" always occurs with the past tense marker "əsq" and optionally with the perfect tense marker "$\text{ə}sq_1$".

1.32

$$ci+Neg+\left(\begin{matrix}(T)+\begin{Bmatrix}ta\\ nya\\ kuna\end{Bmatrix}\\ \begin{Bmatrix}la\\ ca\end{Bmatrix}\end{matrix}\right)\longrightarrow ci+\left(\begin{matrix}\begin{Bmatrix}aniha\\ motha\end{Bmatrix}\\ mal\end{matrix}\right)+\left(\begin{matrix}(T)+\begin{Bmatrix}ta\\ nya\\ kuna\end{Bmatrix}\\ \begin{Bmatrix}la\\ ca\end{Bmatrix}\end{matrix}\right)$$

(13) lo(sqə)⟶ilo(sqə) in envir. XC_____.

(14) kwa⟶wa in envir. XV_____.

ki i ka hakkyo e_1 ka ci aniha yəsq ta.
/D+i+ka/N_{loc} +e_1/ V_{mot}+ci+aniha+T+ta/

ki i ka hakkyo e_1 ka ci motha kesq nya?
/D+i+ka/N_{loc} +e_1/ V_{mot}+ci+motha+T+nya/

hakkyo e_1 ka ci mal la.
N_{loc} +e_1/ V_{moc}+ci+mal+la/

He did not go to school.

Won't he go to school?

Don't go to school.

"aniha" means 'do not', and "motha" means 'cannot' in English. "mal" is the special negative morpheme for the imperative and hortative sentences.

1.33

$$T \longrightarrow (\text{əsq}_1) + \begin{Bmatrix} \text{əsq} \\ \text{kesq} \end{Bmatrix}$$ (15)

"kesq" denotes future tense.

1.34

$$NP \longrightarrow \begin{Bmatrix} (D) + (PreNom) + N \\ ProNom \\ D + \text{kəs} \end{Bmatrix}$$

"PreNom" denotes attributive adjectives, viz, the adjectives which are never used as predicate adjectivals,(16) and "N" denotes nouns. "ProNom" indicates pronouns and some other pronoun-type noun phrases (see the next rule). "D+kəs" represents a small and special class of noun-like constructions, composed of determiner plus the particle "kəs", which are widely used in Korean. The particle "kəs" never appears as an independent word:

For example, i kəs i na iy kəs i ta.
D+kəs+ka/NP +V_c+ta. 'This is mine.'

---

(15) $\begin{bmatrix} \text{əsq}_1 \\ \text{əsq} \end{bmatrix} \longrightarrow \begin{bmatrix} \text{asq}_1 \\ \text{asq} \end{bmatrix}$ when its penultimate vowel is /a,o/.

(16) W. Winter indicated the possible necessity of such as distinction for English adjectives in "Transforms without kernels?", *Language* 41, pp. 484-9.

1.35

$$\text{ProNom} \longrightarrow \left\{ \begin{matrix} \text{Pronoun} \\ \text{D} + \left\{ \begin{matrix} \text{i} \\ \text{pun} \end{matrix} \right\} \end{matrix} \right\}$$

In Korean, the distribution of the pronoun is restricted to the description of human beings, but is not used to describe animals or other things. The morphemes "i" and "pun" for which there are no adequate English morphemes do not appear as independent words like "kəs" in the language. They also are used only for human beings like pronouns. "pun" is more polite than "i".

ki pun kqesə sənsæŋ i si ta.
/D+pun+SM/N_{human} + i+isi+ta/

He (That person or man) is a teacher.

1.36

$$\text{Pronoun} \longrightarrow \left\{ \begin{matrix} \text{kitil in envir. \_\_\_\_+kqesə and +SM.....+isi+.....} \\ \text{pronoun elsewhere} \end{matrix} \right\}$$

This rule is presented in order to specify that "pronoun" never has "kqesə" as its subject marker and never occurs in a sentence in which the subject honorific morpheme "isi" appears. Only the morpheme "kitil", which is also a member of "pronoun" and means 'they', can have "kqesə" as its subject marker and appear in the construction which contains "isi".

1.37

$$\text{N} \longrightarrow \left\{ \begin{matrix} N_{an} \\ N_{in} \end{matrix} \right\}$$

"N_{an}" denotes animate nouns, and "N_{in}" denotes inanimate nouns.

1.38

$$N_{an} \longrightarrow \left\{ \begin{matrix} N_{human} \\ N_{am} \end{matrix} \right\} + (\text{Numeral}_a + \text{COUNTER})$$

"N_{am}" denotes nouns of animal. The dummy symbol "COUNTER", which will be handled in the obligatory transformation (see 4.3), means 'numeral classifiers'.

1.39

$$N_{human} \longrightarrow \left\{ \begin{matrix} N_{huamn-1} \\ N_{human-2} \end{matrix} \right\}$$

This dichotomy is necessary for the optional transformation of 'noun honorific "nim"' (see 3.32).

1. 40

$$N_{in} \longrightarrow \left\{ \begin{array}{l} N_{count} + (Numeral_a + COUNTER) \\ N_{time} \\ N_{loc} \\ N_{ti} \\ N_{tr} \\ N_{intr} \\ N_{adj} \\ N_{inx} \end{array} \right\}$$

"N_{time}", which will be expanded in 1. 42, denotes nouns of time, and "N_{loc}" denotes nouns of location and also includes the things which we can approach or run away from. "N_{ti}" denotes nouns of transportation and instrument, and "N_{count}" represents countable inanimate nouns, and will be subcategorized in the next rule, based on co-occurrence with COUNTER. "N_{tr}" and "N_{intr}" are classes of nouns which can undergo the transformation of 'denominal verbalization', and "N_{adj}" denotes a class of nouns which can undergo the transformation of 'denominal adjectivalization.' (cf. 3. 1, 3. 3) "N_{inx}" indicates miscellaneous inanimate nouns.

1. 41

$$N_{count} \longrightarrow \left\{ \begin{array}{l} N_{count-1} \\ N_{count-2} \\ N_{count-3} \\ N_{count-4} \\ N_{count-5} \\ N_{count-6} \\ N_{count-7} \\ N_{count-8} \end{array} \right\}$$

As mentioned in the introduction (cf. p. 2), in Korean there are more than fifty noun subclasses each of which requires a different counting classifier. However, in this paper only ten, the most productive classes including "N_{human}" and "N_{am}", are presented. (See 4. 3).

1.42

$$N_{time} \longrightarrow \begin{cases} N_{time-1} \\ \text{Numeral}_c + \begin{Bmatrix} \text{seki} \\ \text{nyən} \\ \text{pun} \\ \text{c}^{\text{h}}\text{o} \end{Bmatrix} \\ \text{Numeral}_a + \begin{Bmatrix} \text{si} \\ \text{sikan} \\ \text{hæ} \end{Bmatrix} \\ \text{Numeral}_o + \text{cqæ} + \begin{Bmatrix} \text{sikan} \\ \text{hæ} \end{Bmatrix} \end{cases}$$

This rule is presented in order to show the distribution of three kinds of numerals together with time units. "seki" means 'century', both "nyən" and "hæ" mean 'year', "si" means 'o'clock', "sikan" means 'hour', "pun" means 'minute', and "c$^{\text{h}}$o"means 'second'. "Numeral$_c$" is Sino-Korean numerals, "Numeral$_a$" is adjectival numerals, and "Numeral$_o$" is ordinal numerals.

1.43

$$\text{Aux}_v \longrightarrow \begin{cases} \begin{Bmatrix} \text{ha}_1 \\ \text{Aux}_p \\ \text{sip}^{\text{h}} \\ \text{manha} \end{Bmatrix} \text{ in envir. } \_\_\_ \begin{Bmatrix} \text{ta} \\ \text{nya} \\ \text{kuna} \end{Bmatrix} \\ \text{po} \\ \text{pəli} \\ \text{ha}_2 \\ \text{ha}_3 \\ \text{sqah} \\ \text{c}^{\text{h}}\text{eha} \end{cases}$$

1.44

$$\text{Aux}_a \longrightarrow \begin{cases} \begin{Bmatrix} \text{ha}_1 \\ \text{manha} \end{Bmatrix} \text{ in envir. } \_\_\_ \begin{Bmatrix} \text{ta} \\ \text{nya} \\ \text{kuna} \end{Bmatrix} \\ \text{ha}_3 \\ \text{c}^{\text{h}}\text{eha} \end{cases}$$

1. 45

$$\text{Aux}_c \longrightarrow \left\{ \begin{array}{l} \left\{ \begin{array}{l} ha_1 \\ sip^h \\ manha \end{array} \right. \\ ha_3 \\ c^heha \end{array} \right. \quad \text{in envir.} \_\_\_\_ \left\{ \begin{array}{l} ta \\ nya \\ kuna \end{array} \right\}$$

1. 46

$$IS + \left\{ \begin{array}{l} ha_1 \\ ha_2 \\ ha_3 \\ manha \\ c^heha \\ \left\{ \begin{array}{l} Aux_p \\ si^h \end{array} \right. \\ \left\{ \begin{array}{l} po \\ pəli \\ sqah \end{array} \right. \end{array} \right. \longrightarrow \left\{ \begin{array}{l} əya^{(17)} \\ kon \\ kin \\ l^{(18)} \\ nin \\ ko \\ ə^{(19)} \end{array} \right. + \left\{ \begin{array}{l} ha_1 \\ ha_2 \\ ha_3 \\ manha \\ c^heha \\ \left\{ \begin{array}{l} Aux_p \\ sip^h \end{array} \right. \\ \left\{ \begin{array}{l} po \\ pəli \\ sqah \end{array} \right. \end{array} \right.$$

Shown in this rule is the fact that a given auxiliary must have the corresponding inflectional suffix of a predicate. "ha_1" is the obligatory auxiliary, "ha_2" is the iterative, "ha_3" is the admissive, "c^heha" is the pretensive, "Aux_p" is the progressive, "sip^h" is the desiderative, "po" is the tentative, "pəli" is the completive, "sqah" is the emphatic, and "manha" is the auxiliary for worth.

Examples:

onil hakkyo e_1 ka ya ha ta.
/Adv_{xl}/ N_{loc}+ $e_1+V_{mot}+$əya$+ha_1+$ta/

(I) must go to school today.

ki i ka nac e_1 ca kon ha_2 nya?
/D+i+SM/$N_{time}+e_1/V_{in-21}+$kon$+ha_2+$nya/

Does he (always) sleep in the daytime?

---

(17) əya——→aya in envir. the penultimate vowel is /a, o/.
əya——→yəya in envir. Xha

(18) l——→il in envir. XC

(19) ə——→a in envir. the penultimate vowel is /a, o/.

cip e_1 o kin ha_3 ta.
/N_{loc}+e_1/V_{mot}+kin+ha_3+ta/

He is coming home, (although he is late.)

ton il kaci l manha kuna!
/N_{in}+lil/V_{tr-1}+1+manha+kuna/

(Oh!) It is worth while to have money.

cuk in c^heha la!
/V_{in-21}+nin+c^heha+la/

(Keep still as if) you were dead.

ai ka nol ko isq_2 ta.
/N_{human}+SM+V_{in-25}+ko+isq_2+ta/

The baby is playing (now).

næ ka silkwa lil mək ko sip^h ta.
/NP+SM/N_{in}+lil/V_{tr-21}+ko+sip^h+ta/

I want to eat fruit.

i mun il yəl ə po ca.
/D+N_{in}+lil/V_{tr}+ə+po+ca/

Let's try to open this door.

ki pun kqesə pəlsqə ka a pəli əsq ta.
/D+pun+SM/Adv_{past}/V_{mot}+ə+pəli+T+ta/

He has already left.

ai ka sqau ə sqah ta.
/NP+SM/V_{in}+ə+sqah+ta/

The children are fighting (repeatedly).

1.47

$$Aux_p \longrightarrow \begin{cases} \text{kesi in envir. isi.....} + \_\_\_\_ \\ isq_2 \text{ elsewhere} \end{cases}$$

Chapter II

Sample Lexicon

In the sample lexicon, especially in verbs and adjectives, "ta" in parentheses does not belong by itself to the verbs or adjectives at all. However, since no Korean ever understands verbs or adjectives without "ta", I put it in parentheses in order to make them easier to understand. "ta" here is exactly equal to "ta" which indicates the declarative sentence ending.

Adj: c^hup(ta)—cold
təp(ta)—hot
ipqi(ta)—pretty
mip(ta)—ugly
alimtap(ta)—beautiful
k^hi(ta)—large
cak(ta)—little
manh(ta)—many, much
cək(ta)—small
nilk(ta)—old
cəlm(ta)—young
coh(ta)—good
napqi(ta)—bad

Adv_{past}: imi—already
pəlsə—already
akqa—a while ago
əce—yesterday
kice—the day before yesterday

Adv_{xl}: ama—perhaps, probably
cacu—often
cal—well
tasi—again
onil—today

Adv_{xl}: ilcqik—early
yəki—here
cəki—there

D: i—this
cə—that
yo—the very
ətqən—a certain
ki—the, that

Dup: culcul: of the flowing of a stream
colcol: the same as preceding but in a small scale

Dup: pəncqəkpəncqək—of shining
pancqakpancqak—twinkle

N_3: yəŋuŋ—hero
kamsaŋ—impression
cinc^{h}wi—progressiveness

N_1: p^{h}yən—side
t^{h}im—team
hakkyo—school
nala—country, nation

N_{adj}: koyo—calmness
sunkyəl—chastity
c^{h}oŋmyəŋ—brightness

Nadj: kyəlpæk—innocence
minc^{h}əp—quickness

N_{am}: kæ—dog
koyaŋi—cat
so—cattle
mal—horse
kaŋaci—puppy
maŋaci—foal
soŋaci—calf

$N_{human-1}$: salam—human beings, man
apəci—father
əməni—mother
halapəci—grandfather
halməni—grandmother
haksæŋ—student
ai—child
namp^{h}yən—husband
puin—wife

$N_{human-2}$: atil—son
tqal—daughter
sənsæŋ—teacher
kyocaŋ—superintendent of school
tæt^{h}oŋlyəŋ—President
sacaŋ—President of business
kyosu—professor
caŋkyo—officer

$N_{count-1}$: saŋca—box
talkyal—egg
sakwa—apple
poksuŋa—peach
kwaca—candy

$N_{count-2}$: c^{h}æk—book

$N_{count-3}$: talkyal—egg
kwasil—fruit
k^{h}oŋ—bean
sqal—rice
koksik—grain

$N_{count-4}$: sin—shoes
kutu—shoes
yaŋmal—socks
pəsən—socks
caŋkap—gloves

$N_{count-5}$: pi—broom
maktæki—stick
k^{h}al—knife, sword
tokqi—axe
yənp^{h}il—pencil

$N_{count-6}$: sul—whiskey, all drinking alcohol
p^{h}otocu—wine
mul—water

$N_{count-7}$: coŋi—paper
tamyo—blanket

$N_{count-8}$: kqoc^{h}—flower
caŋmi—rose

COUNTER: myəŋ—for N_{human}
mali—for N_{am}
kæ—for $N_{count-1}$
kwən—for $N_{count-2}$
al—for $N_{count-3}$
k^{h}yəllæ—for $N_{count-4}$
calu—for $N_{count-5}$
can—for $N_{count-6}$
caŋ—for $N_{count-7}$
soŋi—for $N_{count-8}$

N_{intr}: koŋpu—study
il—work
silpʰæ—failure
swetwe—corruption
pap—cooked rice
koki—meat
pi—rain
sæŋmyəŋ—life
yoŋki—courage

N_{loc}: səul—Seoul
hakkyo—school
cip—house
mikuk—America
tosəkwan—library
samusil—office

N_t: pæ—ship, boat
kicʰa—train
catoŋcʰa—automobile
cəncʰa—street car

N_{ti}: (includes N_t)
tokqi—axe
tʰop—saw
kʰal—knife

N_{time-1}: cəŋo—noon
cənyək—evening
acʰim—morning
nac—daytime
pam—night

$Numeral_a$: han—one
tu—two
se—three
ne—four
tasəs—five
yəl—ten
simu—twenty
pæk—hundred

$Numeral_c$: il—one
ii—two
sam—three
sa—four
o—five
sip—ten
iisip—twenty
pæk—hundred

$Numeral_o$: cʰəs(20)—first
tul—second
ses—third
nes—fourth
tasəs—fifth
yəl—tenth
simul—twentieth

N_{tr}: hunke—advice
punhæ—analysis
səlke—design
into—lead
mocip—collection
cosa—investigation
salin—murder

N_d: öncqok—left
olincqok—right

(20) The morphemes do not mean ordinal numerals by themselves. Except "cʰəs", all morphemes must have the morpheme "cqæ" in order to be ordinal numerals (see 1.19) and (1.42).

ap^h—front
twi—behind
wi—above
mit^h—beneath
taim—next
yəp^h—side
sok—inside
pakq—outside

PreAdj: mæu—very
p^{h}ək—very much
kacaŋ—best, most

PreNom: sæ—new
nal—raw
c^{h}am—true
ön—whole
p^{h}us—fresh

Pronoun: na—I
uli(til)—we
ne—you
nəhi(til)—you(plural)
kitil—they
ce—I(humble)

V_1: til(ta)—enter
na(ta)—exit
tol(ta)—turn
kəl(ta)—walk
tqwi(ta)—run

V_{mot}: ka(ta)—go
o(ta)—come
tqwi(ta)—run

V_{dup}: us(ta)—laugh
hili(ta)—flow
pic^{h}na(ta)—twinkle

V_{ti}: unpanha(ta)—carry
susoŋha(ta)—transport
kqakq(ta)—cut, slice off
cqali(ta)—cut

V_{in-1}: ka(ta)—go
o(ta)—come

V_{in-21}: ca(ta)—sleep
nok(ta)—melt
sak(ta)—be digested
sok(ta)—be cheated
cul(ta)—lessen, decrease
nil(ta)—increase

V_{in-22}: nok(ta)—melt
ik(ta)—be ripe
mac(ta)—be beaten

V_{in-23}: namta—be left over, stay
sum(ta)—hide
us(ta)—laugh
kulm(ta)—starve

V_{in-24}: il(ta)—happen
t^{h}a(ta)—burn
c^{h}a(ta)—fill
sə(ta)—stand
t^{h}a(ta)—ride

V_{in-25}: nal(ta)—fly
tol(ta)—spin
nol(ta)—play
hili(ta)—flow
mali(ta)—become dry

V_{tr-1}: sa(ta)—buy
mit(ta)—believe

masi(ta)—drink

tənci(ta)—throw

V_{tr-3}: cu(ta)—give

kalic^{h}i(ta)—teach

V_{tr-21}: mək(ta)—eat

po(ta)—see

pak(ta)—print

hal(ta)—lick

nak(ta)—catch fish

sqi(ta)—write

V_{tr-22}: cap(ta)—hold, catch

əp(ta)—carry(baby on one's back)

tat(ta)—close

ip(ta)—dress

V_{tr-23}: mat^{h}(ta)—keep

sin(ta)—put on (shoes)

an(ta)—embrace

pəs(ta)—undress

cqic(ta)—tear

V_{tr-24}: ci(ta)—carry(something on one's back)

p^{h}i(ta)—fire

Vt_{r-25}: kili(ta)—bring up

pul(ta)—whistle

cqali(ta)—cut

til(ta)—lift

mul(ta)—bite

mal(ta)—roll

V_{h}: cumu(si+ta)—sleep

ke(si+ta)—be

tolaka(si+ta)—die

Chapter III

Optional Transformations

In this chapter, three kinds of optional transformations will be discussed: embedding transformations (3.1, 3.3—3.20), simplex transformations (3.2, 3.21—3.34), and conjoining transformations (3.35—3.41).

Each rule will be stated as follows: 1) The transformational rule, 2) Restriction, if necessary, 3) Examples, followed by the corrpesponding symbols in order to show the relationships of the elements of the examples to the transformational rule, 4) The translation of the example string into English, and 5) A brief explanation of the rule.

The insertion of the simplex transformation 'Progressive', 3.2, among embedding transformations has been made because the progressive morpheme "nin_1" is necessary for the tense restriction of embedding transformations.

3.1 Denominal Adjectivalization

$$\begin{matrix} X+V_{intr}+Y \\ X'+N_{adj}+Y' \end{matrix} \cdots\rightarrow X+N_{adj}+ha+Y$$

Restriction: X does not contain "Adjunct".

Y does not contain the auxiliaries "isq_2", "sip^h", "po", "pəli", "ha_2" "and" "sqah". (Cf. 1.43)

ki i ka ca ta.
X +V_{intr}+Y/

$\cdots\rightarrow$ ki i ka kyəlpæk ha ta.
X +N_{adj} + ha+Y/

ki i ka kyəlpæk il cohaha ta.
X′ + N_{adj} + Y′

Matrix: He sleeps.

Constituent: He likes innocence. $\cdots\rightarrow$ He is innocent.

The above rule yields denominal adjectivals by adding the particle "ha" to "N_{adj}" and by embedding in the restricted matrix environment. The reason that I have not given the environment of "Adj" to the matrix string is that these denominal adjectivals can occur in the imperative and the hortative sentences. (Cf. 1.6)

3.2 Progressive

$$X+\begin{bmatrix}VP\\(PreAdj)+Adj_1+ə+ci\end{bmatrix}+Y+(T)+ta/ \cdots\rightarrow$$

$$X+\begin{bmatrix}VP\\(PreAdj)+Adj_1+ə+ci\end{bmatrix}+Y+nin_1{}^{(21)}+ta/$$

Restriction: Y does not contain the progressive auxiliary "isq_2" and the auxiliary for worth "manha".

VP here does not contain the verb of existence "isq".

ki i ka hakkyo e_1 ka ta. $\cdots\rightarrow$ ki i ka hakkyo e_1 ka n_1 ta.
/NP+SM/$N_{loc}+e_1$/VP+ta/ X +VP+nin_1+ta/
X

He goes to school. $\cdots\rightarrow$ He is going to school.

nalsqi ka təu ə ci ta. $\dashrightarrow$ nalsqi ka təu ə ci n_1 ta.
X +Adj_1+ə+ci+ta/ X +Adj_1+ə+ci+nin_1+ta/

The weather becomes warm. $\cdots\rightarrow$ The weather is getting warm.

The distribution of the progressive morpheme "nin_1" is limited in the language; it occurs only before the declarative sentence "ta". As indicated above, whenever "Adj" occurs with the progressive morpheme "nin_1", "ə+ci" must be chosen. (Cf. 1.17). The subscript is used in order to distinguish it from the absolute/oppositive subject marker "nin" (see 3.18.)

Note that the optional "T" of the input string is obligatorily deleted.

3.3 Denominal Verbalization

$$X+\begin{bmatrix}V_{in}\\V_{tr}\end{bmatrix}+Y$$

$$X'+\begin{bmatrix}N_{intr}\\N_{tr}\end{bmatrix}+Y' \cdots\rightarrow X+\begin{bmatrix}N_{intr}\\N_{tr}\end{bmatrix}+ha+Y$$

na nin ka n_1 ta.
X +V_{in} +Y

$\cdots\rightarrow$ na nin koŋpu ha n_1 ta.
X +N_{intr}+ha+ Y

na nin koŋpu lil cohaha n_1 ta.
X +N_{intr}+ Y′

Matrix: I am going.

$\cdots\rightarrow$ I am studying.

Constituent: I like to study (the study).

---

(21) $nin_1 \longrightarrow n_1$ in envir. XV_____. From now on "T" will include "nin_1"

ki i ka ki yəca lil aa n_1 ta.
X $+V_{tr}+Y$

$\cdots\rightarrow$ ki i ka ki yəca lil salaŋ ha n_1 ta.
X $+N_{tr}+$ha$+$ Y

salaŋ in alimtap ta.
N_{tr} + Y′

Matrix: He knows the girl.

$\cdots\rightarrow$ He loves the girl.

Constituent: Love is beautiful.

This rule generates denominal verbs by means of addition of the particle "ha" to "N_{intr}" and "N_{tr}" (Cf. 1.40) and by embedding these nouns plus the particle "ha" in the environment of the matrix string.

3.4 Transitive

$$X+V_{trx}+Y$$

$$X'+\begin{pmatrix}V_{in-21}\\V_{in-22}\\V_{in-23}\\V_{in-24}\\V_{in-25}\end{pmatrix}+Y' \cdots\rightarrow X+\begin{pmatrix}V_{in-21}\\V_{in-22}\\V_{in-23}\\V_{in-24}\\V_{in-25}\end{pmatrix}+\begin{pmatrix}i\\hi\\ki\\u\\li\end{pmatrix}+Y$$

yəl i c^həl il p^hakö ha yəsq ta.
$\underline{NP+SM/NP+lil/V_{trx}}$ + Y
X

$\cdots\rightarrow$ yəl i c^həl il nok i əsq ta.
X $+V_{in-21}+i+$ Y

c^həl i nok ta.
$NP+SM/V_{in-21}+Y'$

Matrix: Heat destroyed iron.

$\cdots\rightarrow$Heat melted iron.

Constituuent: Iron melts.

This rule specifies that the subclasses of "V_{in-2}" (Cf. 1.16) may be embedded in the environment of the matrix string of "V_{trx}" by means of the addition of the various derivational suffixes as indicated above.

3.5 Dative Transitive

$$X+V_{tr-3}+Y$$

$$X'+\begin{pmatrix}V_{tr-21}\\V_{tr-22}\\V_{tr-23}\\V_{tr-24}\\V_{tr-25}\end{pmatrix}+Y' \cdots\rightarrow X+\begin{pmatrix}V_{tr-21}\\V_{tr-22}\\V_{tr-23}\\V_{tr-24}\\V_{tr-25}\end{pmatrix}+\begin{pmatrix}i\\hi\\ki\\u\\li\end{pmatrix}+Y$$

apəci kqesə pap il ai eke cu si ko isq_2 ta.

$\underbrace{NP+SM/NP+lil/NP+e}_{X}$ $V_{tr-3}+\underbrace{isi+IS+Aux_v+ta/}_{Y}$

$\cdots\rightarrow$

ai ka pap il mək ta.

$\underbrace{NP+SM/NP+lil/V_{trx}+Y'}_{X'}$

apəci kqesə pap il ai eke mək i si ko isq_2 ta.

X $+V_{tr-21}+i+$ Y

Matrix: The father is giving the child food.

$\cdots\rightarrow$ The father is feeding the child food.

Constituent: The child eats food.

This transformation generates dative transitive verbs from "V_{tr-2}" (Cf. 1.12) through the addition of the derivational suffixes to the subclasses of "V_{tr-2}", as indicated above, and by means of embedding them in the matrix string provided by "V_{tr-3}" (Cf. 1.10).

3.6 Causative-1

$X+V_{trx}+Y$

$X'+\begin{bmatrix}V_{in}\\N_{intr}\end{bmatrix}+Y'$ $\cdots\rightarrow X+\begin{bmatrix}V_{in}+ke+ha\\N_{intr}+siki\end{bmatrix}+Y$

əməni ka ai lil cohaha ta.

X $+V_{trx}$ + Y

$\cdots\rightarrow$ əməni ka ai lil ca ke ha ta.

X $+V_{in}+ke+ha+Y$

ai ka ca ta.

$X'+V_{in}+Y'$

Matrix: Mother likes the child.

$\cdots\rightarrow$ Mother makes the child sleep.

Constituent: The child sleeps.

The above rule produces causative verbs from "V_{in}" and "N_{intr}" through the addition of "ke+ha" to "V_{in}" and "siki" to "N_{intr}", and embedding both "$V_{in}+ke+ha$" and "$N_{intr}+siki$" in the matrix string of "V_{trx}".

3.7 Causative-2

$X+V_{tr-3}+Y$

$X'+\begin{bmatrix}V_{tr}\\N_{tr}\end{bmatrix}+Y'$ $\cdots\rightarrow X+\begin{bmatrix}V_{tr}+ke+ha\\N_{tr}+siki\end{bmatrix}+Y$

ki i ka yəŋə lil uli eke kalic^{h}i əsq ta.

X $+V_{tr-3}$ + Y

$\cdots\rightarrow$ ki i ka yəŋə lil uli eke koŋpu siki əsq ta.

X $+N_{tr}$ $+siki+Y$

koŋpu ka himtil ta.

N_{tr} + Y'

Matrix: He taught us English.
Constituent: Studying is hard. ⋯→ He made us study English.

This rule generates causative verbs from transitive verbs and "N_{tr}" by means of the addition of "ke+ha" to "V_{tr}" and "siki" to "N_{tr}," and by embedding "V_{tr}+ke+ha" and "N_{tr}+siki" in the environment of the matrix string provided by "V_{tr-3}".

3.8 Conditional

$$\begin{matrix} NP+SM+Y+Pred+W+(T)+Z \\ NP'+SM'+Y'+Pred'+W'+(T')+Z' \end{matrix} \cdots\rightarrow NP'+SM'+Y'+Pred'+W'$$

$$+\left\{\begin{matrix} (T'+Z')+(manyak)+\left\{\begin{matrix} myən \\ kətin \end{matrix}\right\} \\ l+tqæ \\ l+cəke \end{matrix}\right\}/NP+SM+Y+Pred+W+(T)+Z$$

Restriction: NP+...+Pred ≒ NP′+...+Pred′

When "kətin" is chosen, NP+SM=NP′+SM′.

When T′+Z′ is not chosen, T ≒ "əsq".

When NP+SM=NP′+SM′ and T="əsq", T′="əsq".

Z′ does not contain {nya, kuna, la, ca}.

ne ka cösu lil tqalaka kesq nya?
NP+ka+ Pred + T+ Z ⋯→
cösu ka talana asq_1 ta.
NP′+ka+Pred′+T′+Z′

cösu ka talana asq_1 ta myən ne ka cösu lil tqalaka kesq nya?
NP′+SM′/Pred′ +T′+Z′+myən/NP+SM/ Pred + T+Z

Matrix: Will you chase the criminal?
Constituent: The criminal has escaped. ⋯→
When the criminal has escaped, will you chase him?

This transformation generates the conditional form of a constituent string by optionally adding the morpheme "manyak", 'if', as well as the obligatory "myən", "kətin", "l+tqæ", "l+cəke". The choice among them is not a stylistic problem, but in most cases "l+tqæ" and "l+cəke" are translated as 'when', and "myən" and "kətin", as 'if'. See the obligatory transformational rule, 4.4, for the actual position of "manyak".

3.9 Simultaneous

$$\begin{matrix} NP+SM+Y+VP+Z \\ NP'+SM'+Y'+VP'+Z' \end{matrix} \cdots\rightarrow NP+SM+Y'+VP'+myənsə/Y+VP+Z$$

Restriction: NP+SM=NP′+SM′

VP≒VP′

Z=Z′

kɨ i ka tampæ lil pʰi n_1 ta.
NP+SM +Y +VP+Z

⋯→ kɨ i ka kələka myənsə tampæ lil pʰi n_1 ta.
NP+SM+VP′+myənsə/ Y +VP+Z

kɨ i ka kələka n_1 ta.
NP′+SM′+VP′+Z′

Matrix: He is smoking.
⋯→While he is walking, he is smoking.
Constituent: He is walking:

This rule combines any number of strings by inserting the morpheme "myənsə", meaning roughly 'while' in English, as indicated above, in which an actor (the subject) performs various number of actions simultaneously.

3.10 Causality

$$\begin{matrix} X+Pred+Y+(T)+Z \\ X'+Pred'+Y'+(T')+Z' \end{matrix} \cdots\rightarrow X'+Pred'+Y'+(T')+\left\{\begin{matrix} \text{əsə} \\ \text{nikqa} \\ \text{milo} \end{matrix}\right\}/X+Pred+Y+(T)+Z$$

Restriction: X+Pred≒X′+Pred′

T=T′

kɨ yəca ka kɨ i wa kyəlhon ha yəsq ta.
NP + ka / Pred +T+Z

⋯→

kɨ i ka puca i əsq ta.
NP′+ka/Pred′+T′+Z′

kɨ i ka puca i əsq milo kɨ yəca ka kɨ i wa kyəlhon ha yəsq ta.
NP′+ka / Pred′ +T′+milo/NP +ka/ Pred + T+Z

Matrix: She got married with him.
⋯→ Because he was rich, she got married with him.
Constituent: He was rich.

This rule yields causative subordinate clauses by means of the morpheme "əsə, nikqa, or milo" meaning 'because' or 'since' in English. The choice among "əsə, nikqa, milo" is stylistically determined.

3.11 Purposive

$$\begin{matrix} X+NP+SM+Y+VP+W+(T)+Z \\ X'+NP'+SM'+Y'+VP'+W'+(T')+Z' \end{matrix} \cdots\rightarrow X+NP+SM+Y'+VP'+W'+\text{lə(ko)}^{(22)}/Y+VP+W+(T)+Z$$

(22) ləko⟶lyəko

Restriction: NP+SM=NP′+SM′

VP≒VP′

T=T′

li kun i yəlsim hi koŋpu ha ko isq ta.
NP +SM+Y +VP + W +Z

⋯→

li kun i pilaun tæhak e_1 til ə ka ta.
NP′ +SM′ + Y′ + VP′ +Z′

li kun i pilaun tæhak e_1 til ə ka lyəko yəlsim hi koŋpu ha ko isq ta.
NP +SM+ Y′ +VP′ +ləko/ Y +VP + W +Z

Matrix: Mr. Lee is studying hard.

⋯→

Constituent: Mr. Lee enters Brown University.

Mr. Lee is stuyding hard in order to enter Brown University.

This transformation yields the purposive subordinate clause of a constituent string by adding "lə" or "lyəko" as described above. The choice between "lə" and "lyəko" is stylistic.

3.12 Transcendental

NP+SM+Y+Pred+W+(T)+Z

⋯→

NP′+SM′+Y′+Pred′+W′+(T′)+Z′

$$NP'+SM'+Y'+Pred'+W'+(əsq)+\begin{Bmatrix}tilato\\ilcilato\end{Bmatrix}\ /NP+SM+Y+Pred+W+(T)+Z$$ (23)

Restriction: NP+SM+Y+Pred≒NP′+SM′+Y′+Pred′

If "əsq" is chosen, T="əsq".

If "əsq" is not chosen, T+"əsq".

When NP=NP′, NP+SM or NP′+SM′ must be deleted in the resultant string.

na nin ki kəs il ha yə po kesq ta.
NP+SM+Pred +IS+Aux + T+Z
W

⋯→

na nin cuk ta.
NP′+SM′+Pred′+Z′

na nin cuk tilato ki kəs il ha yə po kesq ta.
NP′+SM′+Pred′+tilato/Pred + W +T +Z

Matrix: I will try it.

⋯→ Even if I should die (for it), I will try it.

Constituent: I die.

(23) ilcilato⟶lcilato in envir. XV_____.

In this rule, the tense (T′) of the constituent string can be rewritten as "əsq", but not as "nin$_1$" or "kesq". Through the addition of "tilato" or "ilcilato", which is stylistically determined, the constituent string may be transformed into a transcendental subordinate clause.

3.13 Contrastive

$$NP+SM+Y+Pred+W+(T)+Z$$

$$\cdots\rightarrow$$

$$NP'+SM'+Y'+Pred'+W'+(T')+Z'$$

$$NP'+SM'+Y'+Pred'+W'+\begin{Bmatrix}(kesq)+kətin_1\\(əsq)+ninte\end{Bmatrix}/NP+SM+Y+Pred+W+(T)+Z$$

Restriction: When NP+SM=NP′+SM′, Pred≠Pred′, "ninte" must be chosen, and NP+SM or NP′+SM′ must be deleted.

If "kesq" is chosen, T="kesq".

If "əsq" is chosen, T="əsq".

If neither "kesq" nor "əsq" is chosen, T≠"əsq".

ki ai ka ki kəs il ha kesq nya?
NP+SM+ Pred +T+Z

$\cdots\rightarrow$

ne ka ki kəs il ha ci motha ta.
NP′+SM′+Pred′ +W′ +Z′

ne ka ki kəs il ha ci motha kətin ki ai ka ki kəs il ha kesq nya?
NP′+SM′+Pred′ +W′ +kətin/NP+SM+Pred +T+Z

Matrix: Will (can) that child do it?

$\cdots\rightarrow$

Constituent: You cannot do it.

If even you cannot do it, (how) can that child do it?

kim yaŋ in milən ha ta.
NP +SM+Adj +Z

$\cdots\rightarrow$ kim yaŋ in ipqi nte milən ha ta.
NP′ +SM′+Pred′+ninte+Pred +Z

kim yaŋ in ipqi ta.
NP′ +SM′+Pred′+Z′

Matrix: Miss Kim is stupid.

$\cdots\rightarrow$ Miss Kim is beautiful but stupid.

Constituent: Miss Kim is beautiful.

This contrastive transformational rule is somewhat involved. The contrastive morpheme "kətin" may occur optionally with the future tense marker "kesq", while "ninte" may occur with the past tense marker "əsq". The choice between "kətin" and "ninte" is sometimes stylistically determined, but not always. The subscript in "kətin$_1$" has been employed in

order to distinguish it from the conditional morpheme "kətin". (Cf. 3.8)

3.14 Sequential

$$NP+SM+Y+Pred+W+(T)+Z$$
$$\cdots\rightarrow$$
$$NP'+SM'+Y'+Pred'+W'+(T')+Z'$$
$$NP'+SM'+Y'+Pred'+W'+ca(maca)/NP+SM+Y+Pred+W+(T)+Z$$

Restriction: W′ does not contain IS+Aux+ci+Neg.

$T=T_1$

When NP+SM=NP′+SM′, Pred≠Pred′, and NP+SM or NP′+SM′ must be deleted.

ki i ka ka si əsq ta.
NP+SM+Pred+W+T+Z

$\cdots\rightarrow$ ki i ka o si camaca ka si əsq ta.
NP′+SM′+Pred′+W′+camaca/Pred+W+T+Z

ki i ka o si əsq ta.
NP′+SM′+Pred′+W′+T′+Z′

Matrix: He went.

$\cdots\rightarrow$ As soon as he came, he left.

Constituent: He came.

This transformation generates the sequential subordinate clause by means of embedding the morpheme "ca" or "camaca", both meaning roughly 'as soon as' in English, between the matrix string and the constituent string as indicated in the rule. The choice of the optional "maca" is stylistically determined.

3.15 Attributive Adjectivalization

$$X+\left(\begin{array}{l} N \\ D+\left(\begin{array}{l} i \\ pun \\ kəs \end{array}\right) \end{array}\right)+Y \quad \cdots\rightarrow \quad X+Adj'+n+\left(\begin{array}{l} NP \\ (D)+\left(\begin{array}{l} i \\ pun \\ kəs \end{array}\right) \end{array}\right)+Y$$
$$NP'+SM'+Adj'+ta\#$$

Restriction:

$$NP'=\left(\begin{array}{l} N \\ D+\left(\begin{array}{l} i \\ pun \\ kəs \end{array}\right) \end{array}\right)$$

When Y includes Adj, Adj≠Adj′.

kyosu nim kqesə cip il kaci ko isq ta.
X + N + Y

cip i alimtap ta.
NP′+SM′+Adj+ta#

⋯→

kyosu nim kqesə alimtau n cip il kaci ko isq ta.
X +Adj′+n+NP+ Y

Matrix: The professor has a house.
Constituent: The house is beautiful.

⋯→ The professor has a beautiful house.

ki yəca ka ki kəs il cohaha n_1 ta.
X D+kəs+ Y

ki kəs i ipqi ta.
NP′+SM′+Adj′+ta#

⋯→ ki yəca ka ipqi n kəs il cohaha n_1 ta.
X +Adj_1+n+kəs Y

Matrix: She likes it.
Constituent: It is pretty.

⋯→ She likes the pretty one.

In the output string "D" (determiner) becomes an optional element. When "D" is chosen, the output string is "X+Adj′n+D+ {i, pun, kəs} +Y".

However, the meaning of the latter is different from the string without D. For example, "ipqi n kəs" means 'the pretty one', but "ipqi n ki kəs" means 'the pretty one' with heavy stress on 'pretty', in English. As described in the rule, all predicate adjectives can be transformed into attributive adjectives by means of the addition of the morpheme "n".
Adj′+n+kəs Adj′+n+D+kəs

3.16 Subordinators "nin_2", "n" and "l" (relative pronouns)

$$X+\left\langle\begin{matrix}NP\\ D+\begin{pmatrix}i\\ pun\\ kəs\end{pmatrix}\end{matrix}\right\rangle^{1}+Y+(T)+Z$$

⋯→

$$X'+NP'+P+Y'+V+W+\left\langle\begin{matrix}(nin_1)\\ əsq\\ kesq\end{matrix}\right\rangle^{2}+Z$$

$$X+X'+Y'+V+W+\left\langle\begin{matrix}nin_2\\ n\\ l^{(24)}\end{matrix}\right\rangle^{2}/\left\langle\begin{matrix}NP\\ l\\ pun\\ kəs\end{matrix}\right\rangle^{1}+Y+(T)+Z$$

(24) $\begin{bmatrix}n\\ i\end{bmatrix}$ — $\begin{bmatrix}in\\ il\end{bmatrix}$ in envir. XC_____.

Restriction:

$$NP' = \left\{ \begin{array}{l} NP \\ D + \left\{ \begin{array}{l} i \\ pun \\ kəs \end{array} \right\} \end{array} \right\}$$

V is "V_{intr}", "twe", "V_{trx}", or "V_{tr-3}".

The dummy symbol "P" is used only once here and may include SM, "lil", "e" and "PostP"

li yaŋ i ki namca lil salaŋ ha n_1 ta.
NP +ka/ NP +lil/N_{tr}+ha+T+Z
X Y

....→

kim yaŋ i ki namca lil salaŋ ha ta.
NP′ +ka/ NP′ +lil/ V +Z′
X′ P

li yaŋ i kim yaŋ i salaŋ ha nin namca lil salaŋ ha n_1 ta.
X + X′ + V +nin_2+NP + Y +T+Z

Matrix: Miss Lee loves that man.

....→ Miss Lee loves that man whom Miss Kim loves.

Constituent: Miss Kim loves that man.

ki salam i na iy apəci i ta.
NP +ka/NP +V_c+Z
Y

....→

ki salam i cəki kəl ə ka ko isq_2 ta.
NP +ka/Adv+V +IS+Aux+Z′

cəki kəl ə ka ko isq_2 nin_2 ki salam i na iy apəci i ta.
Y′+ V + W +nin_2+ NP + Y +Z

Matrix: The man is my father.

....→

Constituent: The man is walking over there.

The man who is walking over there is my father.

The rule presented in the above is somewhat involved. The morphemes generated on the right of the rule have two grammatical meanings: one is tense, and another is the function of relative pronouns. "nin_2" must be chosen, when the tense of the constituent string is simple present, "ϕ", or present progressive "nin_1"; "n" must be chosen when the tense of the constituent string is "əsq", and "l" must be chosen when the tense of the constituent string is "kesq".

3.17 Demonstrative "kəs"

$$X+NP+i+Z \qquad \cdots\rightarrow X+Y+\begin{pmatrix}VP\\Adj\\V_c\end{pmatrix}+W+l+kəs+i+Z$$

$$X'+Y+\begin{pmatrix}VP\\Adj\\V_c\end{pmatrix}+W+Z'$$

Restriction: Z does not contain (+isi)(+IS+Aux)(+ci+Neg).

W is (+isi)(+IS+Aux)(+ci+Neg)(+T).

Here T≠"kesq". X=X'

ki i ka na iy apəci i ta.
X + NP +i+Z

$\cdots\rightarrow$ ki i ka samusil e_1 ka si l kəs i ta.
X + Y +VP+W+l+kəs i+Z

ki i ka samusil e_1 ka si ta.
X' + Y +VP+W+Z'

Matrix: He is my father.

Constituent: He goes to his office. $\cdots\rightarrow$ (It is the fact that) he will go to (his) office.

This transformation signifies that the constituent string may be embedded in the position of the last NP in a copulative sentence (the matrix string) through the addition of "l", implying the future tense meaning like the subordinator "l"(see 3.16), and "kəs". So, the sentence "næ ka ka l kəs i ta". means '(It is the fact that) I will go'.
X +VP+l+kəs+i+Z

3.18 Appositive

$$X+NP+Y \qquad \cdots\rightarrow X+NP'+i+n+NP+Y$$

$$NP+SM+NP'+i+ta/$$

Restriction: NP≠NP'

NP' does not include "D+kəs".

li yaŋ i yəlsim hi il ha ko isq_2 ta.
NP + Y

$\cdots\rightarrow$

li yaŋ i $t^haip^hisit^h$ i ta.
X' + NP' +i+ta/

$t^haip^hisit^h$ i n li yaŋ i yəlsim hi il ha ko isq_2 ta.
NP' +i+n+ NP+ Y

Matrix: Miss Lee is working hard.

Constituent: Miss Lee is a typist. $\cdots\rightarrow$ The typist, Miss Lee is working hard.

This rule generates nouns in apposition. The constituent string is a sentence which has the copula as its predicate.

3.19 Nominalization

$$X+NP+Y \quad X'+Pred'+Y'+ta/ \quad \cdots\rightarrow \quad X+X'+Pred'/Y'+\begin{Bmatrix}im\\ki\end{Bmatrix}^{(25)}+Y$$

Restriction: Y′ is(+isi). When X=X′, X′ must be deleted.

li kun i NP lil coaha ci aniha n_1 ta.
NP +SM/NP+lil/ V_{tr}+ci+Neg+T+ta/
X Y

$\cdots\rightarrow$

li kun i koŋpu ha ta.
X′ +Pred′ +ta/

li kun i koŋpu ha $\begin{Bmatrix}m\\ki\end{Bmatrix}$ lil coaha ci aniha n_1 ta.
X +Pred′ + $\begin{Bmatrix}im\\ki\end{Bmatrix}$ + Y

Matrix: Mr. Lee does not like NP.
Constituent: Mr. Lee studies. $\cdots\rightarrow$ Mr. Lee does not like to study.

The choice between "im" and "ki" is not stylistically determined; they have slightly different meanings—"im" is chosen for the description of notional facts, while "ki" is chosen for real facts which are progressing at that time.

3.20 Possessive Construction

$$X+NP+Y \quad NP'+SM+NP''+lil+kaci+ta/ \quad \cdots\rightarrow \quad X+NP'+iy+NP+Y$$

Restriction: NP≒NP′

NP=NP″ When NP=D+kəs, D must be deleted in the resultant string.

NP does not include "ProNom". NP′ does not contain "D+kəs".

$c^hæk$ i $c^hæksaŋ$ wi e_1 isq ta.
NP+ Y

$\cdots\rightarrow$ na iy $c^hæk$ i $c^hæsaŋ$ wi e isq ta.
NP′+iy+NP + Y

na ka $c^hæk$ il kaci ta.
NP′+SM+NP″+lil+kaci+ta/

Matrix: There is a book on the desk.
Constituent: I possess a book. $\cdots\rightarrow$ There is my book on the desk.

This rule can concatenate any number of nouns by means of the possessive morpheme "iy", meaning 'of'; i.e., "na iy puin iy yə toŋsæŋ iy $namp^hyən$ i na iy toŋsə i ta.
NP+iy+NP+iy+ NP +iy+ NP +SM+NP+iy+NP+i ta/

---

(25) im⟶m in envir. XV_____.

(My wife's sister's husband is my brother-in-law). The morpheme "kaci(ta)" may be glossed 'to have, to own, or to possess' in English.

3.21 'also, only', and Absolute/Oppositive Subject Marker

$$X+NP+SM+Y \cdots\rightarrow X+NP+\left\{\begin{matrix}to\\man\\nin^{(26)}\end{matrix}\right\}+Y$$

ki yəca ka ipqi ta. ····→ ki yəca to ipqi ta.
NP +ka/Adj_1+ta NP +to/Adj_1+ta/

She is beautiful. ····→ She is beautiful, too.

ne ka ka nya? ····→ nə to ka nya?
NP+ka/V_{in}+nya/ NP+to/V_{in}+nya/

Do you go? ····→ Do you go too?

næ ka koŋpu ha ci aniha yəsq ta. ····→ na man koŋpu ha ci aniha yəsq ta.
NP+ka/N_{verb}+ha+ci+Neg+T+ta/ NP+man/N_{verb}+ha+ci+Neg+T+ta/

I did not study. ····→ Only I did not study.

salam i yoŋki lil kaci əya ha n_1 ta. ····→ salam in yoŋki lil kaci əya ha n_1 ta.
NP+ka/NP+lil/V_{tr}+IS+Aux+nin_1+ta/ NP+nin/NP+lil/V_{tr}+IS+Aux+nin_1+ta

The man must have courage. ····→ A man must have courage.

næ ka hakkyo e_1 ka n_1 ta. ····→ na nin hakkyo e_1 ka n_1 ta.
NP+ka/N_{loc} +e_1+V_{in}+nin+ta/ NP+nin/N_{loc} +e_1+V_{in}+nin+ta/

I am going to school. ····→ I am going to school, (but you are not).

The translations do not show the exact meaning of the Korean sentences. When translated, "to" and "man", meaning 'also' and 'only' respectively, look rather like adverbs, but in the position which they are in, they are rather postpositions. Often they take the place of subject markers.

The absolute and oppositive subject marker "nin" is sometimes hardly distinguishable from the normal subject marker "ka". In other words, semantically, in Korean they are not clearly distinctive from each other. **"nin"** is frequently used as a normal subject marker when the predicate of a sentence is emphasized or thought to be a more important expression than the subject.

---

(26) nin——→in in envir. XC_____.
From now on SM will include "nin".

3.22 Admissive

$$X+\begin{pmatrix} V_c \\ V_{in} \\ V_{tr} \\ Adj \end{pmatrix}+Z \cdots\rightarrow X+\begin{pmatrix} V_c \\ V_{in} \\ V_{tr} \\ Adj \end{pmatrix}+kin+\begin{pmatrix} V_c \\ *V_{in} \\ *V_{tr} \\ Adj \end{pmatrix}+Z$$

Restriction: $*V_{in}$ does not contain "NP+ka_1" (see 1.11).

$*V_{tr}$ does not contain "NP+e" (see 1.8).

ki kəs i kqoc^h i ta. ····→ ki kəs i kqoc^h i kin kqoc^h i ta.
X + V_c +Z X + V_c +kin+ V_c +Z

It is a flower. ····→ (Anyway) it is a flower.

ki i ka kyosu ka_1 tö əsq ta. ····→ ki i ka kyosu ka_1 tö kin tö əsq ta.
X + V_{in} + Z X + V_{in} +kin+V_{in} +Z

He became a professor. ····→ (Anyway I admit) that he became a professor.

By simply repeating a verb, copula or adjective, the Koreans make admissive sentences just as they do by use of the admissive auxiliary. Between the repeated elements, the same inflectional suffix "kin" as the admissive auxiliary must be inserted. The restriction indicated that the elements "NP+ka_1" and "NP+e" cannot be repeated.

3.23 Potential

$$X+\begin{pmatrix} VP \\ V_c \\ N_{adj}+ha \end{pmatrix}+Y+(T)+\left\{\begin{pmatrix} ta \\ nya \\ kuna \end{pmatrix}\right\}/ \cdots\rightarrow$$

$$X+\begin{pmatrix} VP \\ V_c \\ N_{adj}+ha \end{pmatrix}+Y+lsu^{(27)}+isq_3{}^{(28)}+(T)+\left\{\begin{pmatrix} ta \\ nya \\ kuna \end{pmatrix}\right\}/$$

Restriction: "Y" is "(+isi) (IS+Aux) (+ci+Neg)."

"Aux" does not include "ha_1", "isq", "sip^h", and "manha".

næ ka ki yəca wa kyəlhon ha tə. ····→ næ ka ki yəca wa kyəlhon ha lsu isq_3 ta.
X + VP +ta/ X + VP +lsu+isq_3+ta/

I get married with that girl. ····→ I can get married with that girl.

The above rule yields a potential construction by means of embedding the potential suffix (which is my arbitrary term) "lsu" and the morpheme "isq_3" as presented. "lsu+isq_3"

(27) lsu——→ilsu in envir. XV_____.

(28) Three homophonous "isq" s have been introduced so far; the verb of existence "isq", the progressive auxiliary "isq_2" and the morpheme for potential construction "isq_3". See the rules, 1.14, 1.14, 3.23, 3.24, and 3.26.

means roughly 'can' in English. As shown in the rule, only an "N_{adj}+ha" type adjectival predicate can undergo this potential transformation.

3.24 Negation[29] of Potential

$$X+\left\{\begin{matrix}VP\\V_c\\N_{adj}+ha\end{matrix}\right\}+Y+lsu+isq_3+(T)+\left\{\left\{\begin{matrix}ta\\nya\\kuna\end{matrix}\right\}\right\}/\cdots\rightarrow$$

$$X+\left\{\begin{matrix}VP\\V_c\\N_{adj}+ha\end{matrix}\right\}+Y+lsu+əps_3+(T)+\left\{\left\{\begin{matrix}ta\\nya\\kuna\end{matrix}\right\}\right\}/$$

Restriction: Same as those of 3.23.

Neg does not contain "motha".

na nin coyoŋ ha lsu isq ta. ⋯→ na nin coyoŋ ha lsu əps$_3$ ta.
X +N_{adj}+ha+lsu+isq$_3$+ta/ X +N_{adj}+ha+lsq+əps$_3$+ta/

I can be quiet. ⋯→ I cannot be quiet.

ai ka nol ci aniha lsu isq$_3$ nya? ⋯→ ai ka nol ci aniha lsu əps$_3$ nya?
X +VP+ Y +lsu+isq$_3$+nya/ X +VP+ Y +lsu+əps$_3$+nya/

Cannot the child play? ⋯→ Cannot the child help but play?

By replacing the potential "isq$_3$" with the special negative morpheme "əps$_3$" (see also the next rule), this rule produces a negative[30] construction from the 3.23 resultant string.

---

(29) By 'negation' here I do not mean 'negative' versus 'affirmative', because, by choosing the element "Neg" in 1.1, the rule 3.24 may yield a negative potential sentence.

The rules presented so far may produce four kinds of negative potential sentences and a double negative sentence. For instance,

næ ka ka ta. 'I go.'
NP+SM/V$_{in}$+ta/

næ ka ka ci motha ta. 'I cannot go.' (Both are from phrase structure rules.)
NP+SM/V$_{in}$+ci+Neg+ta/

næ ka ka ci motha lsu isq$_3$ ta. '(Probably, there will be the case that) I cannot go.'
NP+SM/V$_{in}$+ci+Neg+lsu+isq$_3$+ta/
Y

næ ka ka ci aniha lsu isq$_3$ ta. 'I can not go, (if I do not want to).' (Both are from 3.23)
NP+SM/V$_{in}$+ Y +lsu+isq$_3$+ta/

næ ka ka lsu əps$_3$ ta. 'I cannot go.'
NP+SM/V$_{in}$+lsu+əps$_3$ ta/

næ ka ka ci aniha lsu əps$_3$ ta. 'I cannot help but go.' or 'I have to go.'
NP+SM/V$_{in}$+ Y +lsu+əps$_3$+ta/

(30) The term 'negative' is used as the same sense as in the above footnote.

3.25 Negative

$$X+Pred+Z \cdots\rightarrow X+\left\{\begin{array}{l} an+\left\{\begin{array}{l}Adj_1\\ i\end{array}\right\} \\ \left\{\begin{array}{l}an\\ mot\end{array}\right\}+\left\{\begin{array}{l}V_{intr}\\ t\ddot{o}\\ V_{trx}\\ V_{tr-3}\end{array}\right\}\end{array}\right\}+Z$$

Restriction: Z does not contain {la/, ca/}.

onil c^hup ta. $\cdots\rightarrow$ onil an c^hup ta.
Ad/Adj_1+Z $\cdots\rightarrow$ $Adv/an+Adj_1+Z$

It is cold today. $\cdots\rightarrow$ It is not cold today.

apəci kqesə ca si n_1 ta. $\cdots\rightarrow$ apəci kqesə an ca si n_1 ta.
NP +SM /V_{intr}+si+nin_1+ta/ NP +SM /an+V_{intr}+isi+nin_1+ta/
X Z

Father is sleeping. $\cdots\rightarrow$ Father is not sleeping.

The meanings of the negative morphemes "an" and "mot" are hardly distinguishable from the other negative morphemes "aniha" and "motha", respectively. (See 1.32). Since they are also in complementary distribution in large context: that is to say, the former set occurs only before predicate, while the latter occur after predicate, the former are definitely the allomorphs of the latter. However, two reasons; namely, the restricted distribution of the former as described in the rule and the occurrence of both the former and the latter in a sentence, force me to handle them in this way. The sentence "næ ka an ka ci aniha n_1 ta." means 'I am going.' in which the verb 'go' is strongly emphasized (or has very heavy stress).

3.26 Negation of "isq"

$X+isq+Z \cdots\rightarrow X+əps+Z$

Restriction: Z does not contain {la/, ca/} and "motha".

$c^hæk$ i $c^hæksaŋ$ wi e_1 isq nya? $\cdots\rightarrow$ $c^hæk$ i $c^hæksaŋwi$ e_1 əps nya?
X +isq+Z X +əps+Z

Is there a book on the desk? $\cdots\rightarrow$ Isn't there a book on the desk?

The above restriction means that the imperative or hortative sentence which has the verb "isq" as its predicate cannot be transformed into a negative sentence by this rule, and that the negative morpheme "motha" (see 1.32) may not occur with "əps".

3.27 Honorific[31] for "ta/" (Declarative)

$$X+ta/ \cdots\rightarrow X+ \left\{ \begin{matrix} ne \\ o \\ mnita \end{matrix} \right\}^{(32)} /$$

ki i ka koki lil cap asq ta. ⋯→ ki i ka koki lil cap asq ne.
D+i+ka/NP+lil/V_{tr}+T+ta/ ⋯→ D+i+ka/NP+lil/V_{tr}+T+ne/

He caught fish.

apəci kqesə ka si əya ha ta. ⋯→ apəci kqesə ka si əya ha mnita.
NP+kqesə/V_{in}+isi+IS+Aux+ta ⋯→ NP+kqesə/V_{in}+isi+IS+Aux+mnita/

Father must go.

This is the honorific for the declarative sentence. "ne" is higher in level than "ta", but lower than "o". "mnita" is the highest honorific expression for declarative sentences.

3.28 Honorific for "nya" (Interrogative)

$$X+nya/ \cdots\rightarrow X+ \left\{ \begin{matrix} ninka \\ o \\ mnika \end{matrix} \right\} /^{(33)}$$

aitil i nol ko isq nya? ⋯→ aitil i nol ko isq ninka?
NP+ka/V_{in}+IS+Aux+nya/ ⋯→ NP+ka/V_{in}+IS+Aux+ninka/

Are the children playing?

ki yəca ka ipqi nya? ⋯→ ki yəca ka ipqi o?
D+N+ka/Adj+nya/ ⋯→ D+N+ka/Adj+o/

Is she pretty?

ki i ka haksæŋ i nya? ⋯→ ki i ka haksæŋ i mnika?
D+i+ka/N_{human}+V_c+nya/ ⋯→ D+i+ka/N_{human}+V_c+mnika/

Is he a student?

The degree of the honorificability of interrogative sentences increases from top to bottom. In other words, "nya" is the lowest interrogative sentence ending, while "mnika" is the highest.

---

(31) The honorific transformations described in 3.27—3.31 are those for the person spoken to, but not for the subject of a sentence. In Korean, there are still at least five language distinctions to honor people, especially, elders and strangers. In order to describe this honorific system of the language, I will present the rules seperately according to the sentence types.

(32) $\begin{bmatrix} o \\ mnita \end{bmatrix} \longrightarrow \begin{bmatrix} so \\ simnita \end{bmatrix}$ in envir. XC_____.

(33) $\begin{bmatrix} o \\ mnika \end{bmatrix} \longrightarrow \begin{bmatrix} so \\ simnika \end{bmatrix}$ in envir. XC_____.

3.29 Honorific for "la" (Imperative)

$$(NP+SM)+Y+la/ \cdots\rightarrow \left(\begin{array}{l}\left\{\begin{array}{l}cane\\ tapsin\end{array}\right\}+ka\\ N_{human-2}+\left\{\begin{array}{l}ka\\ kqesə\end{array}\right\}\end{array}\right)+Y+\left(\begin{array}{l}\left\{\begin{array}{l}ke\\ o^{(34)}\end{array}\right\}\\ psiyo\end{array}\right)/$$

Restriction: If "ke" is chosen, Y does not contain "isi".

If "psiyo" is chosen, Y must contain "isi".

cane ka sinæ e_1 ka la. $\cdots\rightarrow$ cane ka sinæ e_1 ka ke.
$NP+ka/N_{loc}+e_1+V_{mot}+la/$ $\cdots\rightarrow$ $cane+ka/N_{loc}+e_1+V_{mot}+ke/$

sənsæŋ nim kqesə sinæ e_1 ka la $\longrightarrow$ sənsæŋ nim kqesə sinæ e_1 ka si psiyo.
$N_{human-2}+kqesə/N_{loc}$ $e_1+V_{mot}+la$ $\longrightarrow$ $N_{human-2}+kqesə/$ Y $+psiyo/$

'You go to town!'

'(Teacher) go to town!'

The morpheme "ne", meaning 'you' (see 1.5), cannot occur in the imperative sentence which ends in "ke", "o", or "psiyo". "ne" must be replaced by "cane" or "tapsin" in the sentence which ends in "ke" or "o", both meaning 'you'. In the highest level where the sentence ending is "psiyo", no pronoun can be used, but the personal name or the title of the social position of the person spoken to must be used.

3.30 Honorific for "ca" (Hortative)

$$X+(uli+ka)+Y+ca/ \cdots\rightarrow X+(uli+ka)+Y+\left\{\begin{array}{l}se\\ psita\end{array}\right\}/$$

Restriction: If "se" is chosen, Y does not contain "isi".

ka ca. $\cdots\rightarrow$ ka se.
$Y+ca/$ $\cdots\rightarrow$ $Y+se/$

ka psita.
$Y+psita$

ka si psita. 'Let(us) go.'
$\underbrace{VP+isi}_{Y}+psita/$

As shown in the example, when "Y" contains the honorific morpheme "isi" in the environment "____+psita/", the resultant string becomes the highest hortative expression.

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(34) o$\longrightarrow$so in envir. XC_____.

3.31 Half Language[35]

$$X+\begin{Bmatrix} ta \\ nya \\ la \\ ca \end{Bmatrix} / \cdots\rightarrow X+\begin{Bmatrix} ə \\ \{ə,ci,ni\} \\ ə \\ ə \end{Bmatrix} /$$

In the Korean half language, there are three kinds of sentence endings for the interrogative sentence, namely "a/", "ci/" and ni which are chosen stylistically. Since all sentence types except the exclamatory sentence may end in "ə/", the sentence "hakkyo ka a." may mean '(I) am going to school.', 'Are (you) going to school?', 'Go to school!', or "(Let us) go to school.' The distribution of different clause terminals has been discussed in the footnote 6 on p. 10.

3.32 Noun Honorific "nim"

$$X+N_{human-2}+Y \cdots\rightarrow X+N_{human-2}+nim+Y$$

haksæŋ i sənsæŋ il coaha n_1 ta, $\cdots\rightarrow$ haksæŋ i sənsæŋ nim il coaha n_1 ta.
X $+N_{human-2}+$ Y X $+N_{human-2}+$nim+ Y

The student likes the teacher.

By adding the noun honorific morpheme "nim" after $N_{human-2}$ the Koreans usually express their respect for the person about whom they are talking.

3.33 Passive

$$X+NP+ka+Y+NP'+lil+\begin{Bmatrix} V_{tr} \\ V_{tr-2} \\ N_{tr}+ha \end{Bmatrix}+Z \cdots\rightarrow$$

$$X+NP'+ka+Y+(NP+e+iyhayə)+\begin{Bmatrix} V_{tr}+ə+ci \\ V_{tr-2}+hi \\ N_{tr}+tö \end{Bmatrix}+Z$$

(35) The term 'half language' was translated literally from Korean "panmal" in which "pan" means 'half', "mal" means 'language'. The honorific degree of half language, which is the most familiar form and used more than any other levels of the language, is not clear. Sometimes it appears as the intermediate between "ta" and "ne" or between "ne" and "mnita". In any case it is not higher than "mnita", and not lower than "ta". (Cf. 3.27).

In this level, the Koreans usually delete most function words, for example, SM, the object marker "lil", the indirect object marker "e", and some postpositions in "Adjunct". Instead of saying, for instance,

"næ ka hakkyo e_1 ka n_1 ta." they may say,
"na hakkyo ka a." '(I am going to school.)'

However, this problem (namely, deletion of function words) will not be formulated in this grammar.

ə⟶a when its penultimate vowel is /a, o/.

Restrictions: "Z" does not contain {la, ca}.

nu ka p^hyənci e_1 ki sasil il cək əsq ta. ⋯→ ki sasil i p^hyənci e_1 cək hi əsq ta.
NP+ka/ Y +NP′ +lil/V_{tr-2}+Z NP′ +ka/ Y +V_{tr-2}+hi+ Z

Someone wrote that fact in the letter. ⋯→ That fact was written in the letter.

ainstain i saŋtæ səŋ wəlli lil palmyəŋ ha yəsq simnika? ⋯→
NP +ka/NP′ +lil/N_{tr} +ha+T+mnika/

saŋtæsəŋ wəlli ka ainstain e iyhayə palmyəŋ tö əsq simnika?
NP +ka/ NP +e+iyhayə+N_{tr} +tö+T+mnika/

Did Einstein develop the principle of relativity? ⋯→
Was the principle of relativity developed by Einstein?

As shown in this rule, the object noun phrase "NP" in the active sentence becomes the subject in the passive construction, and the subject "NP" in the active sentence with the passive agent "e+iyhayə", meaning 'by' in English, occurs optionally in the passive sentence. "V_{tr}" including all transitive verbs except "N_{tr}+ha" type verbs may undergo the passive transformation by means of the addition of "ə+ci". In the Korean language, the active sentences which have dative transitive verbs "V_{tr-3}" (which are a subclass of "V_{tr}") as their predicates may not be transformed into passive sentences in two ways (unlike English). In other words, no indirect object may become the subject of passive sentences. For example,

ki i ka na eke immu lil cu əsq ta.
NP+SM/NP+e +NP′+lil/V_{tr-3}+T+ta/

immu ka na eke (ki i e iyhayə) cu ə ci əsq ta.
NP′+SM/NP+e / NP+e+iyhayə+V_{tr-3}+ə+ci+T+ta/

He gave me duty. ⋯→ Duty was given to me (by him).

However, there is no literal translation of 'I was given duty by him.' in the Korean language.

By adding the particle "hi"[36], "V_{tr-2}" may be transformed into a passive verb. "tö" replaces "ha" in the passive transformation of the denominal verb "N_{tr}+ha".

3.34 Emphatic Phrase Order

$$/X_1/X_2/X_3/X_4/\begin{pmatrix} V \\ Adj \\ V_c \end{pmatrix}+Z \cdots\rightarrow /X_1/X_3/X_2/X_4/\begin{pmatrix} V \\ Adj \\ V_c \end{pmatrix}+Z$$

Restriction: Neither X_2 nor X_3 contains #, the elements used in embedding transformation.

---

(36) hi⟶ki when its immediately preceding sound is /n, m, s, c^h, kq, t/.

V contains V_{intr}, tö, V_{trx}, V_{tr-3}, $N_{intr}+ha$, $N_{tr}+ha$.

sənsæŋ nim kqesə əce hakkyo e_1 ka si əsq ta. ⋯→
X_2 / X_3 /Pred+Z

hakkyo e_1 sənsæŋ nim kqesə əce ka si əsq ta.
X_3 / X_2 /Pred+ Z

· The teacher went to school yesterday.

li kun in kim yaŋ il salaŋ ha n_1 ta. ⋯→ kim yaŋ il li kun in salaŋ ha n_1 ta.
X_2 / X_3 / V + Z X_3 / X_2 / V + Z

Mr. Lee loves Miss Kim.

This rule is specified to show any items bounded by the phrase boundary "/", except verbs, adjectives and copula, may be inserted at the position of another phrase boundary. The above restrictions show that a phrase from other clauses cannot be embedded in a given clause.

3.35 Discontinuous Conjunction of Predicate.

$$NP+SM+Z \cdots\rightarrow NP'+SM'+Y+\left\langle\left\langle\begin{matrix}V\\Adj_1\\i\end{matrix}\right\rangle_2+\begin{matrix}N+ha\end{matrix}\right\rangle_1+\left[\begin{matrix}(kə)na\\tənci\end{matrix}\right]_3$$

$$NP'+SM'+Y+\left\langle\left\langle\begin{matrix}V\\Adj_1\\i\end{matrix}\right\rangle_2+\begin{matrix}N+ha\end{matrix}\right\rangle_1+Z'$$

$$+\left\langle\begin{matrix}an+\left\langle\begin{matrix}V\\Adj_1\\i\end{matrix}\right\rangle_2\\N+an+ha\end{matrix}\right\rangle_1+\left[\begin{matrix}(kə)na\\tənci\end{matrix}\right]_3/NP+SM+Z$$

Restriction: V contains "V_{intr}", "twe", "V_{trx}" and "V_{tr-3}".

"N+ha" contains "$N_{intr}+ha$", "$N_{tr}+ha$" and "$N_{adj}+ha$".

When NP+SM=NP′+SM′, NP+SM or NP′+SM′ must be deleted.

næ ka saŋkwan ha ci aniha n_1 ta.
NP+SM/ Z

⋯→

ne ka ka ta.
NP′+SM′+V+Z′

ne ka ka kəna an ka kəna næ ka saŋkwan ha ci aniha n_1 ta.
NP′+SM′+V+kəna+an+V+kəna+NP+SM/ Z

Matrix: I do not care.

⋯→ I do not care whether you go or not.

Constituent: You go.

This transformation conjoins two strings by means of discontinuous conjunctives "na.....

an.....na," kəna.....an.....kəna", or "tənci..... an.....tənci", all meaning 'whether.....or not.' The choice of one among three is stylistically determined. Sometimes, instead of "an +Pred" (here Pred is V, Adj_1, i, or "N+ha"), antonyms of Pred are used. For instance,

cuk na sa na ne ka ki kəs il ha yəya ha yəsq ta.
V+na+V′+na+NP+SM+NP+lil/V_{tr}+IS+Aux+T+ta
Z

You had to do that whether you lived or died.

3.36 Noun Conjunction "wa"(37)

X+NP+Y
X′+NP′+Y′ ⋯→ X+NP′+wa+NP+Y

Restriction: X=X′
NP≠NP′

so ka til $esə_1$ nol ko isq ta.
NP+ Y
⋯→ moktoŋ kwa so ka til $esə_1$ nol ko isq ta.
NP′ +wa+NP+ Y

moktoŋ i til $esə_1$ nol ko isq ta.
NP′+ Y′

Matrix: Cattle are playing on the ranch.
⋯→ A cowboy and cattle are playing on the ranch.
Constituent: A cowboy is playing on the ranch.

Since in the optional 'Emphatic phrase order' transformation 3.34 the Adjunct, NP+kwa, may come before the subject, the resultant string of this transformation is ambiguous in English translation. For instance, the above example may mean 'A cowboy is playing with cattle on the ranch.'. However, in most cases, they are distinctive by juncture: e.g. the pause between Adjunct and the subject is much longer than that between NP′+wa and NP.

This rule adds the morpheme "wa", which serves as a co-ordinating additive conjunctive, between nouns, and is translated by 'and'. Any number of nouns may be concatenated by means of "wa" between them.

3.37 Co-ordinate Clause

NP+SM+Y+Pred+W+(T)+Z
⋯→
NP′+SM′+Y′+Pred′+W′+(T′)+Z′

(37) wa⟶kwa /XC_____.

$$NP'+SM'+Y'+Pred'+W'+(T')+\left\{\begin{matrix}ko\\myə\\na\end{matrix}\right\} / NP+SM+Y+Pred+W+(T)+Z$$

Restriction: When NP+SM=NP′+SM′, T=T′, Z=Z′, and NP+SM must be deleted. Pred≒Pred′ (See the next rule).

salam in il ha n_1 ta.
NP+SM+Pred+T+Z

$\cdots\rightarrow$ so nin sə isq ko mal in
NP′+SM′+Pred′+W′+ko/NP′+SM′

so nin sə isq ta.
NP′+SM′+Pred′+W′+Z′

mal in tali n_1 ta.
NP′+SM′+Pred′+T′+Z′

tali na salam in il ha n_1 ta.
Pred′+na/NP+SM+Pred+T+Z

Matrix: A man is working.
Constituent: A cow is standing.
A horse is running.

$\cdots\rightarrow$

A cow is standing, and a horse is running, but a man is working.

This transformation can concatenate any number of strings by adding the morpheme "ko" or "myə", which is stylistically determined and is translated as 'and' in English, or by adding "na", meaning 'but'. In most cases, but not always the absolute/oppositive subject marker "nin" is used.

3.38 'both.....and'

$$\begin{matrix}X+NP+Y+(T)+Z\\X'+NP'+Y'+(T')+Z'\end{matrix}\cdots\rightarrow X'+NP'+to+(Y'+(T')+\left\{\begin{matrix}ko\\myə\end{matrix}\right\})+X+NP+to+Y+(T)+Z$$

Restriction: NP+NP′

$$\left\{\begin{matrix}X\\T\\Z\end{matrix}\right\}=\left\{\begin{matrix}X'\\T'\\Z'\end{matrix}\right\}$$ T′≒"nin_1" in the resultant string.

apəci ka sinæ e_1 ka si n_1 ta.
NP+ Y +T+Z

$\cdots\rightarrow$

əmənəi ka sinæ e_1 ka si n_1 ta.
NP′+ Y′ T′+Z′

əməni to (sinæ e_1 ka si ko) apəci to sinæ e_1 ka si n_1 ta.
NP′+to (Y +ko) NP+to+ Y +T+Z

Matrix: Father is going to town.
Constitutuent: Mother is going to town.

$\cdots\rightarrow$ Both father and mother are going to town.

The title given to this rule does not seem to be adequate, since any number of strings may be concatenated by means of "to.....({ko, myə}).....to", meaning roughly 'both..... and' in English. As indicated in the rule, the subject markers of both strings (or any number of strings which we want to conjoin by this rule) must be replaced by "to" (see 3.21).

3.39 Conjunction "**sə**"

$$\begin{matrix} X+VP+Y \\ X'+VP'+Y' \end{matrix} \quad \cdots\rightarrow \quad X+VP'+sə+VP+Y$$

Restriction: $VP \neq VP'$

$$\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} X' \\ Y' \end{bmatrix}$$

haksæŋ i koŋpuha yəsq ta.
X + VP Y

$\cdots\rightarrow$ haksæŋ i tosəkwan e_1 ka sə koŋpu ha yəsq ta.
X + VP′ +sə+ VP + Y

haksæŋ i tosəkwan e_1 ka asq ta.
X′ + VP′ + Y′

Matrix: The student studied.

Constituent: The student went to the library. $\cdots\rightarrow$ The student went to the library and then studied.

Also, any number of strings may be concatenated by means of the morpheme "sə", which means roughly 'and then'.

3.40 Multiple Adjuncts

$$\begin{matrix} X+Adjunct+Y \\ X'+Adjunct'+Y' \end{matrix} \quad \cdots\rightarrow X+Adjunct+Adjunct'+Y$$

Restriction: $Adjunct \neq Adjunct'$

$$\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} X' \\ Y' \end{bmatrix}$$

na nin kicʰa lo o asq ta.
X +Adjunct+ Y

na nin cʰinku wa o asq ta. $\cdots\rightarrow$
X′ +Adjunct′ + Y′

na nin positʰon $esə_1$ o asq ta.
X′ +Adjunct″ + Y′

na nin p^hilopitəns e_1 o asq ta.
X′ +Adjunct‴ + Y′

na nin kic^{h}a lo c^{h}inku wa posit^{h}on es$ə_1$ p^{h}lopitəns e_1 o asq ta.
X +Adjunct+Adjunct′+Adjunct″ +Adjunct‴ + Y

Matrix: I came by train.
⋯→
Constituent: I came with (my) friend.

I came from Boston.

I came to Providence.

I came by train from Boston to Providence with (my) friend.

The above rule can also concatenate any number of Adjuncts. In Korean, there is no strict order for the arrangement of multiple adjuncts. So the decision is arbitrary as to which one is the matrix string and which one is the constituent string.

3.41 'as.....as' and Comparative

$$\begin{matrix} X+NP+SM+Y+Adj+Z \\ X'+NP'+SM'+Y'+Adj'+Z' \end{matrix} \cdots\rightarrow X+NP+SM+NP'+\left\{\begin{matrix} pota+(tə) \\ \left\{\begin{matrix} mank^h im \\ c^h ələm \end{matrix}\right\} \end{matrix}\right\}+Y+Adj+Z$$

Restriction: $NP \neq NP'$

$$\begin{pmatrix} Adj \\ X \\ Y \end{pmatrix} = \begin{pmatrix} Adj' \\ X' \\ Y' \end{pmatrix}$$

li yaŋ i alimtap ta.
NP+SM/Adj +Z

kim yaŋ i alimtap ta.
NP′ +SM′/Adj′+Z′

⋯→ li yaŋ i kim yaŋ pota (tə) alimtap ta.
NP+SM+NP′ +pota (tə)+Adj +Z

Matrix: Miss Lee is pretty.
⋯→ Miss Lee is prettier than Miss Kim.
Constituent: Miss Kim is pretty.

pak kun i ki ta.
NP +SM/Adj+Z

an kun i ki ta.
NP′ +SM′/Adj′+Z′

⋯→ pak kun i an kun mank^{h}im ki ta.
NP/SM/NP′ +mank^{h}im+Adj+Z

Matrix: Mr. Park is tall.
⋯→ Mr. Park is as tall as Mr. Ahn.
Constituent: Mr. Ahn is tall.

In this transformation we have to be careful that the subject marker of the constituent string is deleted. The morphemes "pota + (tə)" mean 'more.....than' '-or er than', and both "mankʰim" and "cʰələm" mean 'as.....as' in English. The choice between "mankʰim" and "cʰələm" is stylistically determined.

Chapter IV

Obligatory Transformation

4.1 "eke" and "eke_1"

$$X+\begin{pmatrix}NP+e\\N_2+e_1\end{pmatrix}+Y \cdots\rightarrow X+\begin{pmatrix}\begin{Bmatrix}N_{an}\\ProNom\end{Bmatrix}+eke\\N_{an}+eke_1\end{pmatrix}+Y$$

ki i ka ton il na e cu əsq ta. $\cdots\rightarrow$ ki i ka ton il na eke cu əsq ta.
X +NP+e+ Y X +ProNom+eke+Y

He gave me money.

Whenever animate nouns and pronominal occur with the indirect object marker "e_1", and animate nouns occur with the postposition "e_1", "e" and "e_1" must be replaced by "eke" and "eke_1", respectively.

4.2 Negation of the copula "i"

$$X+\begin{pmatrix}NP\\N_3+cək\end{pmatrix}+an+i+Y \cdots\rightarrow X+\begin{pmatrix}NP\\N_3+cək\end{pmatrix}+ka_2{}^{(38)}+an+i+Y$$

ki pun i sacaŋ an i ta. $\cdots\rightarrow$ ki pun i sacaŋ i_2 an i ta.
X +NP +an+i+Y X +NP+ka_2+an+i+Y

He is not a president.

The input string can be derived from the optional transformational rule, 3.25 'Negative'. Whenever the copula "i" has the negative morpheme "an" before it, its preceding complements must have the particle "ka_2", in which the subcript has been employed in order to distinguish "ka_2" from the subject marker "ka" and the particle "ka_1" (see 1.13).

---

(38) $ka_2 \longrightarrow i_2$ in envir. XC_____.

4.3 Numeral Classifiers

$$X+\begin{Bmatrix} N_{human} \\ N_{am} \\ N_{count-1} \\ N_{count-2} \\ N_{count-3} \\ N_{count-4} \\ N_{count-5} \\ N_{count-6} \\ N_{count-7} \\ N_{count-8} \end{Bmatrix} +Numeral_a+COUNTER+Y \cdots\rightarrow$$

$$X+\begin{Bmatrix} N_{human} \\ N_{am} \\ N_{count-1} \\ N_{count-2} \\ N_{count-3} \\ N_{count-4} \\ N_{count-5} \\ N_{count-6} \\ N_{count-7} \\ N_{count-8} \end{Bmatrix} +Numeral_a+\begin{Bmatrix} myəŋ \\ mali \\ kæ \\ kwən \\ al \\ k^hyəllæ \\ calu \\ can \\ caŋ \\ soŋi \end{Bmatrix} +Y$$

$c^hæk$ tu kwən i $c^hæksaŋ$ wi e_1 isq ta.
$N_{count-4}+Numeral_a+kwən+$ Y

(There) are two books on the desk.

As presented in the rule, each subclass of nouns must have different counting classifiers. (Cf. 1.38, 1.40, 1.41.)

4.4 Position of "manyak"

$$X+(manyak)+\begin{Bmatrix} myən \\ kətin \end{Bmatrix} +Y \cdots\rightarrow (manyak)+X+\begin{Bmatrix} myən \\ kətin \end{Bmatrix} +Y$$

The input of this rule is the output of the 'conditional' transformation, 3.8. This rule means that the morpheme "manyak" must come at the beginning of the conditional clause.

APPENDIX

Sample Derivations

A.

#S#

(1. 1) #/NP+SM/Pred+isi+T+ta/#

(1. 2) #/NP+kqesə/Pred+isi+T+ta/#

(1. 3) #/ProNom+kqesə/Pred+isi+T+ta/#

(1. 6) #/ProNom+kqesə/VP+isi+T+ta/#

(1. 9) #/ProNom+kqesə/V_{la}+isi+T+ta/#

(1. 13) #/ProNom+kqesə/V_{intr}+isi+T+ta/#

(1. 14) #/ProNom+kqesə/V_{mot}+isi+T+ta/#

(1. 33) #/ProNom+kqesə/V_{mot}+isi+əsq+ta/#

(1. 35) #/D+i+kqesə/V_{mot}+isi+əsq+ta/#

(Lexicon) #/ki+i+kqesə/o+isi+əsq+ta/#

(Morphophonemic rules) #ki i kqesə osiətqa.#

'He came.'

B.

#S#

(1. 1) #/NP+SM/Pred+T+ta/#

(1. 2) #/NP+ka/Pred+T+ta/#

(1. 6) #/NP+ka/VP+T+ta/#

(1. 9) #/NP+ka/NP+lil/V_{tr}+T+ta/#

(1. 10) #/NP+ka/NP+lil+V_{trx}+T+ta/#

(1. 11) #/NP+ka/NP+lil/V_{tr-2}+T+ta/#

(1. 12) #/NP+ka/NP+lil/V_{tr-21}+T+ta/#

(1. 33) #/NP+ka/NP+lil/V_{tr-21}+əsq+ta/#

(1. 34) #/ProNom+ka/NP+lil/V_{tr-21}+əsq+ta/#

(1. 34) #/ProNom+ka/ProNom+lil/V_{tr-21}+əsq+ta/#

(1. 35) #/ProNom+ka/D+i+lil/V_{tr-21}+əsq+ta/#

(1. 36) #/Pronoun+ka/D+i+lil/V_{tr-21}+əsq+ta/#

(Lexicon) #/na+ka/ki+i+lil/po+əsq+ta/#

(Morphophonemic rules) #næ ka ki i lil poatqa.#

'I saw him.'

C.

#S#

(1. 1) #/NP+SM/Adv/Pred+T+ta/#

(1. 2) #/NP+ka/Adv/Pred+T+ta/#

(1. 6) #/NP+ka/Adv/VP+T+ta/#

(1. 9) #/NP+ka/Adv/V_{in}+T+ta/#

(1. 13) #/NP+ka/Adv/V_{intr}+T+ta/#

(1. 14) #/NP+ka/Adv/V_{mot}+T+ta/#

(1. 22) #/NP+ka/Adv_x/V_{mot}+T+ta/#

(1. 23) #/NP+ka/Adv_{x_1}/V_{mot}+T+ta/#

(1. 33) #/NP+ka/Adv_{x_1}/V_{mot}+əsq+ta/#

(1. 34) #/ProNom+ka/Adv_{x_1}/V_{mot}+əsq+ta/#

(1. 35) #/Pronoun/ka/Adv_{x_1}/V_{mot}+əsq+ta/#

(1. 36) #/Pronoun+ka/Adv_{x_1}/V_{mot}+əsq+ta/#

(Lexicon) #/na+ka/yəki/o+əsq+ta/#

(Morphophonemic rules) #næ ka yəki watqa.#

'I came here.'

D.

(3. 11) #næ ka yəki watqa.#

#næ ka ki i lil poatqa.# ⋯→ #næ ka ki i lil po lyəko yəki watqa.#

'I came here to see him.'

E.

(3. 10) #næ ka ki i lil po lyəko yəki watqa.#

#ki i kqesə osiətqa.# ⋯→

#ki i kqesə osiəsq imilo næ ka ki i lil po lyəko yəki watqa.#

'I came here to see him, because he was here.'

F.

(3. 27) #ki i kqesə osiəsq imilo næ ka ki i lil po lyəko yəki watqa. ⋯→

#ki i kqesə osiəsq imilo næ ka ki i lil po lyəko yəki wasqimnita.#

'I came here to see him, because he was here.'

G.

#S#

(1. 1) #/NP+SM/Pred+ta/

(1. 2) #/NP+ka/Pred+ta/#

(1. 6) #/NP+ka/Adjunct/VP+ta/#

(1. 7) #/NP+ka/NP+PostP/VP+ta/#

(1. 9) #/NP+ka/NP+PostP/V_{in}+ta/#

(1. 13) #/NP+ka/NP+PostP/V_{intr}+ta/#

(1. 14) #/NP+ka/NP+PostP/isq+ta/#

(1. 20) #/NP+ka/NP+e_1/isq+ta/#

(1. 26) #/NP+ka/N_2+e_1/isq+ta/#

(1. 27) #/NP+ka/N_{loc}+N_d+e_1/isq+ta/#

(1. 34) #/N+ka/N_{loc}+N_d+e_1/isq+ta/#

(1. 37) #/N_{in}+ka/N_{loc}+N_d+e_1/isq+ta/#

(1. 40) #/N_{count}+ka/N_{loc}+N_d+e_1/isq+ta/#

(1. 41) #/$N_{count-2}$+ka/N_{loc}+N_d+e_1/isq+ta/#

(Lexicon) #/cʰæk+ka/cʰæksaŋ+wi+e$_1$/isq+ta/#

(Morphophonemic rules) #cʰæk i cʰæksaŋ wie$_1$ itqa.#

'There is a book on the desk.'

H.

#S#

(1. 1) #/NP+SM/Pred+ta/#

(1. 2) #/NP+ka/Pred+ta/#

(1. 6) #NP+ka/V$_c$+ta/#

(1. 18) #/NP+ka/NP+i+ta/#

(1. 34) #D+kəs+ka/NP+i+ta/#

(1. 34) #/D+kəs+ka/N+i+ta/#

(1. 37) #/D+kəs+ka/N$_{in}$+i+ta/#

(1. 40) #/D+kəs+ka/N$_{count-2}$+i+ta/#

(1. 41) #/D+kəs+ka/N$_{count-2}$+i+ta/#

(3. 25) #/D+kəs+ka/N$_{count-2}$+an+i+ta/#

(4. 2) #/D+kəs+ka/N$_{count-2}$+ka$_2$+an+i+ta/#

(Lexicon) #/ki+kəs+ka/cʰæk+i$_2$+an+i+ta/#

(Morphophonemic rules) #kikəs i cʰæki anita.#

'It is not a book.'

I.

(3. 20) #kikəs i cʰæk i anita.#

#næ ka cʰæk il kaci ta.# ····→ #kikəs i na iy cʰæki anita.#

'It is not my book.'

J.

(3. 16) # ki kəs i na iy cʰæki anita.#

#cʰæk i cʰæksaŋ wie$_1$ itqa.# ····→ #cʰæksaŋ wie$_1$ in nin$_2$ kəs i na iy cʰæki anita.#

'The book on the desk is not mine.'

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A Transformational Outline of Korean

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A TRANSFORMATIONAL OUTLINE OF KOREAN

by

Hong Bae Lee

Preface

In this paper an effort has been made to formulate certain syntactic rules of Korean and to show the applicability of transformational theory to the Korean language. This is a revision of the article, *A Transformational Outline of Korean*, which was written as a Master's thesis at Brown University in the United States of America in June, 1966. I do not think that this present article is a readable and scientific paper in every respect; much more revision should have been made before it is released to the public. However, it is my hope that I can receive much valuable criticism about this paper from my senior linguists.

I wish to thank Prof. C. H. Whang at Language Research Center of Seoul National University for his help with this publication. My special thanks are due to Mr. S. J. Chang of Language Research Center and Major C. H. Lee of the Korean Military Academy, who have given me invaluable help for the revision.

Hong Bae Lee

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變形文法에 의한 國語分析

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