This is to certify that the

thesis entitled

AGRAMMATIC PRODUCTION IN KOREAN

presented by

John F. Halliwell

has been accepted towards fulfillment
of the requirements for

M. A. degree in Linguistics

Major professor

Date December 8, 1998

AGRAMMATIC PRODUCTION IN KOREAN

By

John F. Halliwell

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Linguistics and Germanic, Slavic, Asian, and African Languages

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ABSTRACT

AGRAMMATIC PRODUCTION IN KOREAN

By

John F. Halliwell

This thesis examines the general characteristics of agrammatic production in Korean. Using the methodology found in Menn and Obler (1990) for collecting, analyzing, and presenting data, the thesis provides a describes the patterns of sparing and loss based on the narratives of two patients. The Korean patients were seen to display the general properties associated with clinical descriptions of agrammatism: nonfluent, effortful, and dysprosodic. They spoke in very short phrases, and there was a tendency to omit or substitute functional elements. Additionally, the patients showed a preference for content over function elements, for simple syntactic constructions, and for canonical word order.

The findings are also considered in light of Menn and Obler's (1990) summary findings and current linguistic accounts (Grodzinsky 1990, 1997; Friedmann and Grodzinsky 1997). It is concluded that, like characteristics reported for other languages, Korean agrammatism involves similar basic production parameters as well as language-specific characteristics. It is also concluded that current accounts for these patterns are insufficient.

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ACKNOWLEDGMENTS

As with any major project, this was not an individual effort. Many people contributed, all in significant ways. I would like to express my gratitude to my committee: Professor Alan Beretta, Professor Cristina Schmitt, and Professor Barbara Abbott. Their expertise, guidance, critical comments, and patience along the way have been invaluable. I also wish to thank all of the participants for their generosity in giving us so much of their time and effort. I would never have met any of them had it not been for the help of Sang-Hoon Park and Mr. Jong-Kwan Park, who introduced us to Dr. Seung-Hyun Kim and Dr. Ju-Han Kim at Hanyang University hospital. These wonderful doctors not only helped us with patients but also introduced us to many important people in the field. Two of these people are Su-Jung Kim at Kyunghee University hospital and Dr. Hyang-Hee Kim at Samsung Medical Center, to whom I am very much indebted for their help, advice, generosity, and friendship. My deepest gratitude, though, goes out to my wife Boseung, who selflessly devoted her whole summer setting up meetings and acting as facilitator, experimenter, and transcriber. Her support all these years has meant everything. Thanks also to Jin-Young Jung for her help and Jung-Ae Oh and Ki-Sung Jung for their love and support. Finally, thanks to my parents Jack and Darlene Halliwell for their never-ending love and encouragement. This study was funded in part by grants from the College of Arts and Letters and The Graduate School, Michigan State University.

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LIST OF SYMBOLS AND ABBREVIATIONS

PRED	Predicate	PRES	Present Tense
PAST	Past Tense	HON	Honorific
DEC	Declarative	MOD	Modal
GER	Gerund	PASS	Passive
NEG	Negative	CONJ	Conjunction
QUOT	Quotative	COMP	Complementizer
AUX	Auxiliary	ADNZ	Adnominalizer
ADVZ	Adverbalizer		
VFE	Verb-Final Element		
INTER	Interrogative	INT	Intimate Level
SUPP	Suppositive	PLA	Plain Level
PROM	Promisory	POL	Polite Level
EMPH	Emphatic	FOR	Formal Level
PTL	Particle		
NOM	Nominative	TOP	Topic
CON	Contrastive	ACC	Accusative
LOC	Locative	LOCd	Locative Dynamic
GL	Goal	ABL	Ablative
SRC	Source	TEMP	Temporal
POSS	Possessive	PL	Plural
CLASS	Classifier	COM	Comitative
ADV	Adverb	OPTL	Optional
N	Noun	V	Lexical Verb
v	'Empty' Verb	aux	Auxiliary
Adv	Adverb	Adj	Adjective
ptl	Particle		
[ ]	Omission		

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ROMANIZATION GUIDE

The romanization system used in this study is primarily the Yale system. However, a few changes have been made in order to make it less cumbersome.

Consonants

Hangul	Phonetic	Romanization
ㄱ	k, g	k
ㅋ	k^h	k^h
ㄲ	k'	kk
ㄷ	t	t
ㅌ	t^h	t^h
ㄸ	t'	tt
ㅂ	p	p
ㅍ	p^h	p^h
ㅃ	p'	pp
ㅈ	c, j	j
ㅊ	c'	jj
ㅉ	c^h	c
ㅅ	s	s
ㅆ	s'	ss
ㅎ	h	h
ㅇ	ŋ	ng
ㄴ	n	n
ㄹ	l, r	l
ㅁ	m	m

Vowels

Hangul	Phonetic	Romanization
아	a	a
어	ə	e
오	o	o
우	u	u
으	ɨ	ŭ
이	I	i
애	ae	ae
에	e	ey
외	o	we
야	^{y}a	ya
여	^{y}ə	ye
요	^{y}o	yo
유	^{y}u	yu
얘	^{y}ae	yae
예	^{y}ey	yey
와	^{w}a	wa
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INTRODUCTION

The goal of neurolinguistics is to build a picture of how language is instantiated in the brain. It is generally believed that language is an independent module separate from other modules (e.g., visual perception) and general cognition. One source of data source useful for investigating the language module is aphasia, impairment of language caused by damage to specific areas of the brain. That is, studying speakers whose language deviates from the norm provides a window through which the structure of language may be viewed.

Paradis (Menn et. al. 1995) draws on a corollary of Murphy's Law (i.e., only that which can go wrong will go wrong) to illustrate how an impaired language system can provide us with this unique view of language. In any system, only that which is susceptible to breakdown can break down and only in ways that are compatible with the constraints of that system. Thus, the types of speech error in a given language are constrained by the structure of that language. Aphasic errors, then, can provide much information about various language systems and their structural constraints, thereby moving us closer to the ultimate goal of understanding the human language faculty.

Not only do linguistic studies of aphasia provide information on the language module and the structure of the various languages but also on the representation of language in the brain. Caplan (1987) points out that

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deficit analysis helps to build theories of language representation by linking damage to specific brain structures with impairment of specific aspects of language. Thus, linguistic aphasiology holds the promise of linking syntactic representation and neural representation.

In order to build better theories of language representation and link neural representation with syntactic representation, it is necessary to look at and compare aphasia in many languages. Linguistic aphasia studies have indeed been conducted in many languages; however, only one has been conducted on Korean. Yet, Korean has several theoretically interesting syntactic properties, and an investigation of these properties will provide us a unique view of aphasia. Thus, this thesis is concerned with agrammatic aphasia in Korean.

Grodzinsky (1990) points out that the first step in constructing and testing theories is to collect, examine and describe a set of data. This thesis is therefore based on Menn and Obler's (1990) compilation of agrammatic aphasia production studies. Menn and Obler provide a consistent format for collecting, analyzing and presenting data. Although this series contains data on fourteen languages, it does not include Korean. Thus, the first step in neurolinguistic studies in Korean is to begin to create a linguistic description of Korean agrammatism. The goal of this thesis, then, is to provide a description of the general characteristics of Korean agrammatic production based on two case studies, source data for future cross-linguistic

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The thesis is organized in the following manner. In Chapter 1, I briefly discuss the generally accepted characteristics of aphasia and agrammatism. I then review modern linguistic accounts for these patterns in production. Based on this review and the structure of the Korean language, I present predictions for Korean agrammatic production. Chapter 2 discusses the methods and materials used for testing the predictions. In addition, the types of analyses that were performed on the data is discussed. Chapter 3 presents the results of these analyses. Chapter 4 provides a discussion of the results yielding the general characteristics of Korean agrammatic production. Additionally, Chapter 4 compares the results to the predictions for Korean and to those of Menn and Obler's (1990) summary findings. Also, Chapter 4 discusses how the data bear on the most current linguistic account for aphasic production patterns. Chapter 5 concludes the thesis with a summary of findings.

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1.1 Review

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CHAPTER 1

BACKGROUND

This chapter provides the general background for the thesis. Section 1.1 discusses aphasia in general, as well as modern linguistic accounts for aphasic production. Section 1.2 provides the need of the thesis and sets out the predictions to be tested.

1.1 Review of Literature

1.1.1 Aphasia and Agrammatism

Aphasia is impairment of language caused by damage to specific areas of the brain. There are several types of aphasia: Broca's aphasia, Wernicke's aphasia, conduction aphasia, anomic aphasia, transcortical aphasia, and global aphasia. This study deals with patients who suffer from an impairment of language as a result of focal damage to some part of Broca's area. Broca's area is in the left hemisphere in the opercular part of the third convolution forward from the Rolandic fissure and adjacent to the Sylvian fissure. The etiologies of Broca's aphasia include stroke (ischemic cerebrovascular accident), intracranial hemorrhage (hemorrhagic cerebrovascular accident), trauma, and tumor.

A subset of Broca's aphasia is agrammatism. Agrammatism was first reported by Deleuze (1819, cited in Kean 1985) in an aphasic patient who used the infinitive form of verbs and never used pronouns. Kussmaul (1876, cited in Grodzinsky 1990) later reported on brain-damaged patients who

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could not form words or arrange phrases grammatically. However, it was Pick (1913, cited in Grodzinsky 1990) who noted that the patterns of production in some Broca's aphasics were ungrammatical. Although not specific in his description, Pick was the first to note that there was selective syntactic impairment. That is, he was the first to note that the pattern of sparing and loss was to the system of grammar. He concluded that even though these patients knew what they wanted to say, they could not construct grammatical sentences. Pick thus termed this phenomenon *agrammatism*.

Although agrammatism is commonly found in patients suffering from Broca's aphasia, not all Broca's aphasics present the characteristics of agrammatism. In fact, Kirshner (1995a) points out that agrammatic speech is observed in not only Broca's aphasia but also transcortical motor aphasia and global aphasia. Thus, rather than corresponding to a certain type of aphasia, agrammatism has been defined by its own characteristics. These characteristics include nonfluent, effortful speech at a slow rate; dysprosody; and telegraphic speech style characterized by a lack of functional elements such as auxiliaries, pronouns, determiners, prepositions and inflectional affixes, a preference for content words, and a lack of complex sentence structure (Goodglass 1968, Tissot et. al 1973, Grodzinsky 1990, Fromkin 1995).

1.1.2 Dissociation of Production and Comprehension

Traditionally, agrammatism was seen as a production deficit in which grammatical morphemes (bound and free) were impaired and in which

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comprehension was thought to be normal. Caramazza and Zurif's (1976) experimental study on comprehension in agrammatics changed this view. They found that agrammatic comprehension of semantically reversible passives was at chance level (i.e., random guessing). This led to the view that the underlying deficit in agrammatism was a central deficit of the syntax that affects both production and comprehension.

Most researchers currently reject this Overarching Hypothesis, for results continue to point to a dissociation in many (though not all) cases (Linebarger et. al. 1983, Miceli et. al. 1983, Schwartz et. al. 1985, Menn and Obler 1990, Grodzinsky 1990, Friedmann and Grodzinsky 1997, Rispens 1997, etc.). That is, results have shown that it is possible that production is impaired while comprehension remains relatively intact or that both production and comprehension are impaired while the ability to judge sentences grammatically remains intact (Miceli et. al. 1983). It appears, then, that production and comprehension must be separated.

1.1.3 Linguistic Descriptions of Agrammatic Production

Menn and Obler's Cross-Linguistic Description

Given the above description of agrammatism and the dissociation of production and comprehension, this thesis will focus only on agrammatic production. A major contribution to the agrammatic production literature is Menn and Obler's (1990) cross-language study of agrammatic production. This compilation presents studies of fourteen languages. It is the first attempt to look at several languages and compare linguistic characteristics.

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Each study used the same format for data collection and presentation, which produced a consistency that allowed for a survey of the characteristics across languages. Each study thus presented the basic properties of agrammatism in several areas: behavior of free and bound grammatical morphemes, use of syntactic structures, choice of verb tense, ratios of content/function word, rate of speech, and phrase length. In addition, these studies include transcripts of the narratives, morphemic translations of the transcripts, and analyses of morphological and syntactic errors. This database is important in that not only does it provide the basic properties of agrammatism in many languages but it also provides data for further analyses or for testing accounts of agrammatic patterns.

In their comparison of data from the fourteen languages, Menn and Obler report the following summary results. (1) The clinical definition of short phrase length, slow speech rate, reduced syntactic variety, and simplified syntax occurred in all of the languages studied. (2) Most free grammatical morphemes were omitted. (3) Bound morphemes were rarely omitted even in languages where omission was possible but were instead substituted. (4) Certain free grammatical morphemes, mostly clause-initial "additive" conjunctions (e.g., "*and*," "*and then*," "*and so*") and, in Japanese, sentence-final particles were used heavily. (5) Modifiers of nouns were omitted. (6) There was a reliance on canonical word order; in languages with relatively free word order, patients adopted a favorite word order.

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Case Markers in Korean Agrammatic Production

Of course there have been studies in languages that were not presented in the Menn and Obler volumes. Korean is one such language; however, there has been only one linguistic study of Korean agrammatic production. Kim, S.H. (1997) conducted two experiments with four agrammatic patients in order to examine the patterns of sparing and loss in Korean Case markers. She obtained spontaneous speech data from two types of narratives in the first experiment and experimental data from a cloze task (i.e., fill in the correct Case marker) in the second experiment.

In the first experiment, she found across patients that 11% of nominative markers were omitted and 15% of accusatives were omitted. In terms of substitution, she found that 2% of nominatives were incorrect and 11% of accusatives were incorrect. Although she did not report the percentage of omissions in the normal controls, she pointed out that omissions are possible in normal speech. Thus, she focused on substitution errors in the second experiment.

In the second experiment she found that both types of substitutions occurred: nominative for accusative and accusative for nominative. However, there was a tendency for patients to substitute accusative for nominative markers more often in certain verb types: unaccusative, passive and adjective predicate.

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She concluded that Korean patients do show a pattern of sparing and loss in Case morphology. Additionally, these patients appear not to rely on a default Case morpheme but rather substitute incorrectly.

1.1.4 Linguistic Accounts of Agrammatic Production

The above descriptions are important contributions to the linguistic study of aphasia. However, although descriptions do allow for comparison of characteristics and possibly for classification of patients, they do not explain *why* some properties of the language system are impaired and some are not. Grodzinsky (1990) points out that understanding why involves several steps. The first step involves collecting and examining a data set, describing it, and stating generalizations over the data. The second step is to use the description to derive predictions for the pattern of sparing and loss and to state these predictions within a theoretical framework (i.e., with reference to a normal language system). By modifying the normal system in specific ways, an explanation of the impaired system can be derived. Without reference to a normal system, a description would simply be an unrelated and unnecessary theory of deficits, as there is no need to develop theories of systems that are broken. The third step is to test the predictions to further refine the description and to motivate further constraints on the theory.

Accounts of agrammatism, then, are attempts to explain the seemingly chaotic pattern of variation across patients and across languages. These accounts can be grouped into two general areas: psycholinguistic processing

accounts and linguistic accounts. As this study deals with the structural aspects of Korean agrammatic production, I will discuss only the linguistic accounts and, more specifically, only those accounts based on modern (i.e., generative) linguistic theory.

Goodglass and Hunt's Transformational Account

Goodglass and Hunt (1958) used Chomsky's (1957) theoretical framework of generative syntax to account for agrammatics in English who showed a dissociation of plural and possessive morphemes. They found that these patients omitted fewer plural morphemes than possessive morphemes, even though the two morphemes sound alike. They proposed that sentences containing possessive morphemes were derived by transformations, whereas sentences containing plural morphemes were not. Thus, the pattern of agrammatic production in English depends on transformations: transformationally derived *-s* is omitted, while base-generated *-s* remains intact. Although the theory did not consider other patterns of agrammatic production, this was an important contribution because it was an attempt to provide a linguistic account of an observed pattern of sparing and loss within a theoretical framework.

Kean's Phonological Account

Kean (1977) was one of the first to account for the omission of function words as a class. She proposed that an account for agrammatism should be made at the phonological level. According to her theory, agrammatics reduce sentence structure to minimal strings of elements which

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are considered phonological words in their language. A phonological word is a "string of segments, marked by boundaries, which function in the assignment of stress to a word" (p. 22). For example, in '*definiteness*' the word '*definite*' is a phonological word as it is important for stress assignment, but '*-ness*' is not a phonological word, as it plays no part in stress assignment. Thus, phonological words are spared, while phonologically dependent words are omitted.

There are three problems with this account. First, Kean's theory does not provide an explanation for why function words are not always omitted. That is, phonological theory cannot account for the inconsistent pattern of omissions. Second, the theory cannot account for patterns in languages that do not assign stress in the same manner as English. For example, languages like Korean are syllable-timed, in which each syllable receives the same stress. As each syllable plays a part in stress assignment, the theory incorrectly predicts that production would be normal. Third, cross-linguistic data show that in many languages (e.g., Hebrew and Turkish) inflectional affixes are substituted rather than omitted. This substitution cannot be accounted for by Kean's phonological theory.

Lapointe's Morphological Account

Lapointe (1983) applied Kean's analysis at the morphological level. The distinction between function and content words was seen as dependent on morphological construction rather than phonological construction. Similar to Kean, Lapointe claimed that functional elements were omitted,

while content elements were spared. However, the morphological account is inadequate because it cannot account for the inconsistent pattern of omissions and substitutions of bound morphemes.

Grodzinsky's Underspecification Account

Grodzinsky (1990, 1997) sought to place the agrammatic deficit at the level of syntactic representation. He proposed that errors in agrammatic production occur because nonlexical (functional) elements are underspecified. Specifically, the terminal features of nonlexical categories (e.g., inflections, complementizers, auxiliaries, determiners) are not represented, and thus are empty and not pronounced. This omission occurs as long as it does not lead to a non-word. If omission would lead to a non-word, the element is substituted. In this account, then, agrammatic syntactic representation is not as constrained as a normal representation. This difference in representation yields the consequence of the agrammatic grammar allowing as grammatical the omission/substitution of morphemes which the normal representation would not allow as grammatical. Thus, agrammatic grammar can be seen as larger than the normal. Although this theory is generalizable and testable, it cannot account for the inconsistent pattern of omission of certain elements, such as prepositions. This is a problem that has plagued all of the above accounts.

Hagiwara's Accessibility Hypothesis

Hagiwara (1995) attempted to account for the inconsistent pattern of omission of morphemes. Like Grodzinsky (1990), she suggests that patterns

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of agrammatic production are due to deficits in syntactic representation. She looked at sensitivity to grammatical violations involving the functional projection of IP compared to that of CP and DP. She reports that morphological elements in IP are relatively spared, while elements in CP and DP are lost. This difference is due to the height of an element within a syntactic structure. That is, the lower the position of a functional head in a tree, the more accessible it is to an agrammatic patient. Thus, since CP is the highest node in the tree, it is more likely to be impaired than IP, which is lower in the tree. Although not specific in her analysis, DP is considered separate from IP and is seen to have the same accessibility hierarchy. Hagiwara's proposal, then, was an important contribution because it was an attempt to account for not only the dissociation of functional morphemes in agrammatic speech but also to account for the variation in severity seen across patients by reference to hierarchical structure.

However, there are at least two problems with her hypothesis. First, Hagiwara bases her results on a small number of observations, one of which involves a crossed-aphasic, in which language impairment is caused by damage to the right hemisphere rather than the left. Second, her hypothesis does not account for cross-linguistic data. Reznik (1995) points out that Hagiwara cannot account for verbal morphological and clitic pronoun errors in Spanish. Both of these elements are functional categories in IP and are thus incorrectly predicted to be spared. Similarly, Friedmann and Grodzinsky (1997) provide data of a patient who shows impairment of tense

but not agreement, both functional categories within IP. Thus, Hagiwara's account is inadequate.

The Tree-Pruning Hypothesis

The most recent account proposed is the Tree-Pruning Hypothesis (Friedmann and Grodzinsky 1997). Like Hagiwara (1995), Friedmann and Grodzinsky attempt to account for the selective impairment of verbal inflections in agrammatic production by reference to hierarchical structure. In their one Hebrew patient they report a dissociation of tense and agreement morphology. Specifically, the ability to produce tense inflections was impaired, while the ability to produce agreement was intact. Friedmann and Grodzinsky assume, as Grodzinsky has all along, that the underlying deficit lies within syntactic representation. That is, they assume that the tense (T) node is impaired, whereas the agreement (Agr) node is preserved.

They define "impaired" in two ways. The first assumes incorporation, in which lexical items move to functional nodes for affixation (Pollock 1989). Friedmann and Grodzinsky claim that this process of affixation is what is impaired in agrammatic speech, and how much affixation is impaired is a function of the level of impairment in the tree. That is, "whenever a node is impaired, the tree cannot be constructed any higher..." (p.420), and consequently all functional nodes above it will be impaired. Thus, lexical items will not be able to move to the appropriate nodes to obtain their affixes. They state the Tree-Pruning Hypothesis more formally in (1).

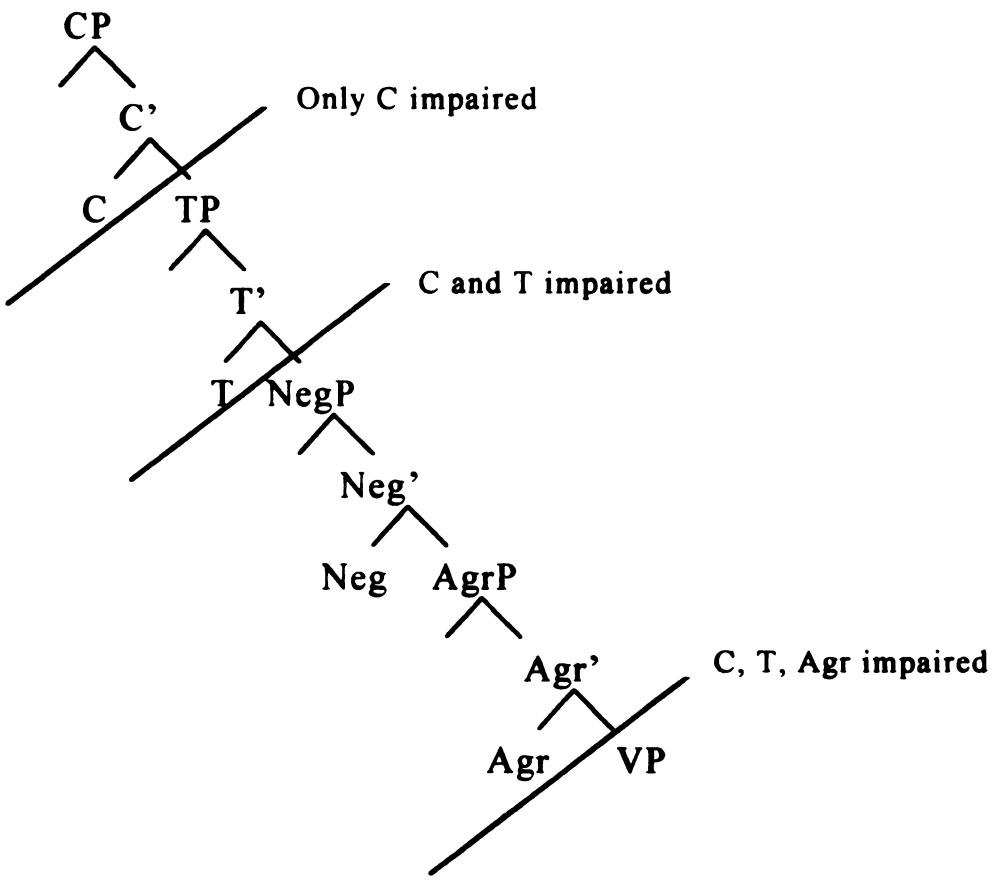
(1) a) C, T, or Agr is underspecified in agrammatism.

b) An underspecified node cannot project any higher.

(p. 420)

This is represented structurally in (2).

(2)



The second definition of impairment is based on minimalist checking theory (Chomsky 1992). Within this approach, lexical items enter the phrase marker fully inflected. Thus, movement is not motivated by affixation but by the checking requirements of lexical items. Friedmann and Grodzinsky

claim that items need to check their features in the appropriate nodes. Therefore, inflectional nodes serve as check points in which features of the verb are required to match features of the affix. If there are no mismatches between the constituent and the features, then the derivation converges (i.e., is grammatical). An impaired node, then, is the inability to check proper affixation. Thus, if a verb comes into the phrase marker incorrectly inflected and moves to an impaired tense node to check its features, the features cannot be checked and the verb will pass through as grammatical. Impairment in this approach was not stated more formally.

Additionally, Friedmann and Grodzinsky point out that this hypothesis also accounts for the variation of impairment across patients. The severity of impairment is based on the level of impairment in the syntactic tree. The tree is pruned from the top down to the level of the lowest impaired node, affecting all functional categories in between. Thus, the lower the impaired node, the more severe the impairment is. Conversely, the higher the impaired node is, the less severe the impairment is.

This account is an important contribution to linguistic aphasia studies because it provides an account of the pattern of sparing and loss in bound inflectional morphemes that is based on current syntactic theory. In addition, it provides a clear hypothesis upon which predictions can be made and easily tested.

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1.2 Korean Agrammatic Production

This section presents the need for the current study. It also provides a brief discussion of the syntactic framework assumed in the discussion, as well as an overview of some basic aspects of the Korean language. This overview is intended to provide a general background and reference for interpretation of the transcripts, as well as to provide the descriptive framework within which the results will be discussed. Finally, predictions for Korean agrammatic production are presented.

1.2.1 Need

As noted above, the first step in accounting for the patterns in agrammatism involves collecting and examining a data set, describing the data, and stating generalizations over these data. There has been only one linguistic investigation of Korean agrammatism; and, although significant, its focus was quite narrow. Additionally, neither Menn and Obler (1990) nor any other study has provided a broad linguistic description of Korean agrammatism. Thus, the goal of this thesis is to provide a description of general agrammatic characteristics in Korean and source data for cross-linguistic comparisons.

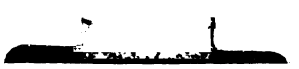
As Menn and Obler (1990) provide a consistent format for collecting, analyzing and presenting data, the Menn and Obler methodology will be used in this thesis. In addition to the description, the thesis will compare findings in Korean with the summary findings in Menn and Obler.

Furthermore, there is a need to look at how data from various languages bear on current accounts of agrammatic patterns. Thus, although this study is primarily descriptive in nature, a secondary goal of this thesis is to consider the accounts proposed by Grodzinsky (1997) and Friedmann and Grodzinsky (1997) in light of the Korean data.

1.2.2 Syntactic Framework

Although the goal of the present study is to provide basic characteristics of Korean agrammatism and is thus descriptive in nature, data will be discussed in terms of the most current account of agrammatism. Therefore, the data will need to considered within a particular syntactic framework. This section will briefly discuss the syntactic framework that is assumed in the discussion: the Minimalist Program (Chomsky 1993).

The Minimalist Program attempts to reduce the grammar to a minimum, assuming only those things that must necessarily be assumed. One of these necessary elements is the lexicon, from which lexical items are selected. Since these lexical items have both meaning and sound, it is also necessary to assume that there are at least two places or levels that act as interfaces: Logical Form (LF) for the semantic/conceptual (meaning) interface and Phonetic Form (PF) for the pronunciation/production (sound) interface. In addition, since we do not speak in disjointed lexical items, there must be some syntactic mechanism that constructs the structures that end up at the interface levels: a computational system. This Minimalist



model, then, can represented as the following (with the lines taken to be the computational system):

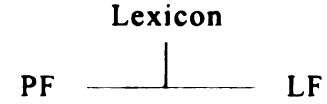


Figure 1.2.1. The Minimalist model.

In this model, the grammar begins by selecting a set of lexical elements. This set is called the Numeration, and the structural description (SD) will only be well-formed if each element from the Numeration is used the appropriate number of times. In other words, no lexical items can be left over. In addition, all lexical items placed into the Numeration are completely formed morphologically (e.g., verbs with their inflections and nouns with their Case markings).

The computational system then builds structures by selecting items from the Numeration and combining them. The process consists of two operations: Merge and Move. Merge is a process that creates partial trees from elements in the Numeration and subsequently combines these trees into one SD. Move is an operation which moves lexical items and creates landing sites in trees, if necessary. Elements are merged and moved as needed until the Numeration has used up all the lexical items and has formed one tree.

As lexical items merge and move they also check their specifier-features and complement-features against head-features of the specifiers and complements. Once checked, uninterpretable features are erased and interpretable features remain for interpretation at LF or PF.

At this point, the derivation splits into two representations: one containing phonetically relevant information and one containing semantically relevant information. These two representations will then be interpreted at the two interface levels. A derivation is marked as grammatical (i.e., converges) at each of the interface levels if the appropriate (interpretable) information is present and inappropriate (uninterpretable) information does not appear. Thus, the Minimalist Program provides a constraint-based model in which many conditions must be met in order for a derivation to converge.

1.2.3 Korean Grammatical Sketch

This section serves primarily as background for the predictions of the study and analyses of the data. It should be noted that this not an exhaustive summary but is simply a way to enable the reader who is unfamiliar with Korean to read the transcripts and better appreciate the patients' deficiencies. That is, although there are a number of aspects that could be discussed in much greater detail, the aspects and elements within those aspects presented here are only representative of those that will be addressed in the thesis. Thus, this section provides the general descriptive framework within which the data will be described.

Orthography

Korean has a mixed system of writing that contains Hangul and Hanja. Hangul is the native Korean phonemic alphabet developed in the 14th century, and Hanja is the Sino-Korean set of ideographs (characters) borrowed from classical Chinese and Sino-Japanese. More than half of all Korean words are borrowings from Chinese and represented by Hanja (Chang 1996).

Verb Morphology

Korean is an agglutinating language with rich verbal inflections. The affixes attach to a verbal stem in a fixed order: honorification, tense, aspect, verb-final element.

(4) ka-si-ess-keyss-ta
go-HON-PAST-MODAL-DEC/PL
"(He) might have gone"

Verb stems are bound morphemes and, thus, cannot stand alone. The stems must be bound by a verb-final element such as a declarative, interrogative, propositive, or imperative morpheme. Levels of politeness are also indicated in the verb-final element. These are provided in Table 1.3.1.

Table 1.3.1
Levels of Politeness and Sentence Type

		Sentence Type			
		Declarative	***Interrogative***	***Imperative***	***Propositive***
Level of Politeness	***Formal***	-supnita	-supnika	-sipsio	-upsita
	Polite	-eyo	-eyo	-eyo	-eyo
	Blunt	-so	-so	-so	-so
	Familiar	-ney	-na	-key	-sey
	Intimate	-e	-e	-e	-e
	Plain	-ta	-ni/nya	-la	-ja

Chang (1996:191)

However, verbs may or may not have the other elements. Absence of honorification, tense or aspect results in a present tense verb. Syntactically, however, it will be assumed that tense cannot omitted but is a zero (null) morpheme. The verb-final element is used in tensed clauses, as opposed to attributive particles which are used with tenseless clauses to create attributive adjectives. In other words, the verb-final element selects tense as its complement, and as a tense must thus exist, a zero-morpheme (null) tense is assumed to exist.

Word Order

Korean is an SOV language. Subjects normally come at the beginning of the sentence and are marked with the nominative Case markers *-i/-ka* (depending on the preceding phoneme). Objects normally follow the Subject and are marked with the accusative markers *-ul/-lul* (depending on the preceding phoneme). Verbs come at the end of a sentence or clause.

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(5) jelsu-ka ceyk-ʉl ilk-ess-ta
Chelsu-NOM book-ACC read-PAST-DEC/PL
"Chelsu read a book."

In general, preverbal constituents can be moved around (scrambled) as long as the verb is in final position (Sohn 1994).

(6) ceyk-ʉl jelsu-ka ilk-ess-ta
book-ACC Chelsu-NOM read-PAST-DEC/PL
"Chelsu read a book"

Attributive adjectives, adverbs, and relative clauses precede the element they modify.

(7) [jelsu-ka yelsimi ilk-nʉn] ceyk-i iss-ta
Chelsu-NOM diligently read-ADNZ book-NOM be-DEC/PL
"(There) is a book Chelsu that reads a lot."

Question words appear in the position of the questioned constituent (i.e., *in situ*).

(8) jelsu-ka mues-ʉl ilk-ess-ni?
Chelsu-NOM what-ACC read-PAST-Q
"What did Chelsu read?"

Case Markers

As seen in (5) through (8) above, Case markers appear at the end of their respective phrases. Choice of Nominative marker *-ka* or *-i* depends on the preceding phoneme: *-ka* following a vowel, *-i* in all other environments. The Accusative markers are *-lʉl* following a vowel and *-ʉl* in all other environments.

Postpositions

Another group of markers that affix to nominals are postpositions. Postpositions function in much the same way that English prepositions do. Some examples are: *-ey* ("*in*" or "*to*" a place), *-eys'* ("*at*" or "*from*" a place), *-hant^{h}ey* ("*to*" a person), and *-hant^{h}eyse* ("*from*" a person).

(9) jelsu-ka jip-ey ka-ess-ta.
Chelsu-NOM home-to go-PAST-DEC/PL
"Chelsu went home."

(10) jelsu-ka yenghi-hant^{h}ey ceyk-ul ju-ess-ta.
Chelsu-NOM Yonghee-to book-ACC Give-PAST-DEC/PL
"Chelsu gave a book to Yonghee."

There are also postnominal or postclausal "adverbial particles" that are placed in this group. These consist of such markers as *-man* "*only*" and *-to* "*also.*"

(11) jelsu-man ceyk-ul ilk-ess-ta
Chelsu-only book-ACC read-PAST-DEC/PL
"Only Chelsu read a book."

(12) jelsu-to ceyk-ul ilk-ess-ta
Chelsu-also book-ACC read-PAST-DEC/PL
"Chelsu also read a book."

Negation

There are two types of negative constructions in Korean. They are referred to by different names but will be called short and long negation in this study. Examples of these two types are (13) and (14).

(13) jelsu-ka an ka-ess-ta.
Chelsu-NOM not go-PAST-DEC/PL
"Chelsu did not go."

(14) jelsu-ka ka-ji an ha-ess-ta.
Chelsu-NOM go-NEG do-PAST-DEC/PL
"Chelsu did not go."

In the short version (13), the negative element precedes the verb; in the long version, the negative element plus a particle affix to the verb and require "do-support." There is a difference in meaning in these examples due to the difference in scope of the negative operator. That is, the negative element

in long negation has scope over the entire clause, whereas the short version has scope only over the verb to which it is attached.

Attributive Adjectives

Most adjectives in Korean are derived from adjectival-verbs. Modification is achieved by affixing adnominalizer particles (ADNZ) to the verb and placing the verb before the noun it modifies.

(15) jelsu-ka kippu-ta.
Chelsu-NOM happy-DEC/PL
"Chelsu is happy."

(16) kippu-n jelsu-ka ka-ess-ta.
happy-ADNZ Chelsu-NOM go-PAST-DEC/PL
lit: "Happy Chelsu went."

Subordination

Like attributive adjectives, other verbs may become modifiers. These subordinate clauses are also constructed by affixing subordinate particles to verbs. Some examples of these particles are the adnominalizer (ADNZ) *-nun/-un*, adverbializer (ADVZ) *-key*, and the complementizers (COMP) *-nun/-un ji* and *-ki*.

(17) [[jip-ey ka-nun] salam-i] jelsu i-ta.
home-to go-ADNZ person-NOM Chelsu be-DEC/PL
"Chelsu is [the person [who is going home]]."

(18) [jip-ey ka-key] haksaeng-i
home-to go-ADNZ student-NOM

sukjae-lul ha-ess-ta
homework-ACC do-PAST-DEC/PL
"(In order to go home,) the student did the homework."

(19) [jelsu-ka jip-ey ka-ess-nun ji]
Chelsu-NOM home-to go-PAST-COMP

al-ess-ta
know-PAST-DEC/PL
"I knew that Chelsu went home."

(20) [jelsu-ka jip-ey ka-ki] ha-ess-ta.
Chelsu-NOM home-to go-COMP do-PAST-DEC/PL
"It was go home that Chelsu did."

Coordination

Sentences may be conjoined by affixing a coordinating particle to a verb, such as *-ko "and"* and *-jiman "but."*

(21) jelsu-ka jip-ey ka-ess-ko
Chelsu-NOM home-to go-PAST-CONJ

yenghi-ka hakyo-ey ka-ess-ta.
Yonghi-NOM school-to go-PAST-DEC/PL
"Chelsu went home and Yonghi went to school."

(22) jelsu-ka jip-ey ka-ess-jiman
Chelsu-NOM home-to go-PAST-CONJ

yenghi-nun hakyo-ey ka-ess-ta.
Yonghi-CON school-to go-PAST-DEC/PL
"Chelsu went home but Yonghi went to school."

Discourse-based Elements

Korean is often called a discourse-oriented language. An illustration of this is that elements understood from the context are often left unexpressed (Sohn 1994). This can be seen in (23) and (24), both of which lack subjects and objects.

(23) cal mek-ess-supnita.
well eat-PAST-DEC/FOR
"I had a wonderful dinner."

(24) cal mek-ess-e.
well eat-PAST-DEC/INT
"I had a wonderful dinner."

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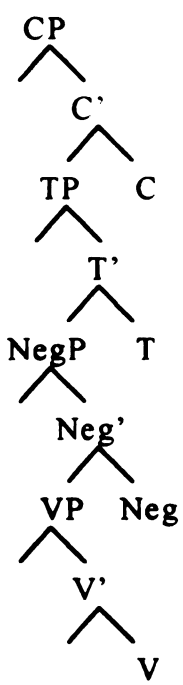
(25) cal ha-si-ess-eyo?
well do-PAST-INTER/POL
"Did you do well?"

Also apparent in (23) and (24) is the level of politeness. Which verb-final element is chosen (i.e., formal or intimate) depends very much on the context. Another example of context-dependence is honorification. Honorification is reflected in the choice of verb, as in (25), pronouns, nouns, and the verbal infix *-si*.

Korean Clause Structure

The standardly assumed structure for Korean that is assumed in this thesis is the following (Cho 1994).

(26)



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1.2.4 Predictions for Korean Agrammatic Production

As noted earlier, the first step in properly accounting for the patterns in agrammatism involves describing and stating generalizations over data, and Menn and Obler (1990) provide a consistent format for collecting, analyzing and presenting data. Thus, this section presents the predictions for Korean agrammatic production based on the structure of Korean discussed in the grammatical sketch and the summary findings of Menn and Obler.

Production

As in all fourteen languages presented in Menn and Obler, Korean patients are predicted to produce short phrases at slow speech rates.

Bound Grammatical Morphemes

Bound grammatical morphemes were rarely omitted in the fourteen languages; substitution was most common, even in languages where omission was possible. In addition, the substitution was not random but involved a consistent misselection of morphemes. Thus, although omission of tense, Case and postposition morphemes is possible in Korean, these morphemes are predicted to be substituted. Similarly, as verb-final elements cannot be omitted, these too are predicted to be substituted.

Sentence Conjunctions and Particles

Menn and Obler report that clause-initial conjunctions (*'and,' 'and then,' 'and so'*), and, in Japanese, sentence-final particles were used quite

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heavily. It is thus predicted that these items will be used heavily in Korean agrammatic speech.

Lexical Omission

It was also reported that the less contentful a lexical item is, the more prone it is to omission. Thus, 'empty' verbs (i.e., copula, auxiliary) were omitted more often than content verbs. In addition, more verbs were omitted than nouns, except in languages with heavy nominal inflections. Thus, for Korean it is predicted that more verbs than nouns will be omitted and that among the verbs, identification, existential, and auxiliary verbs will be omitted the most.

Function and Content Words

Cross-linguistically patients tended to rely more heavily on content words than their controls. For Korean, then, it is predicted that a majority of speech will consist of content words.

Syntactic Complexity

Reduced variety and simplification of syntax is reported across languages. At the sentence-level, relative clauses were almost never produced and other subordinate clauses were either not produced or produced incorrectly. Within the clause, there was simplification of all constituents. It is predicted that Korean agrammatic patients will rely on simple structures that do not employ modification.

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Word Order

Patients in the cross-linguistic studies relied heavily on canonical word order. Thus, although it is possible to scramble the subject and the object in Korean, the prediction is that patients will rely heavily on the SOV order.

The following chapters present the procedures used to test these predictions in Korean, as well as describe the results of the tests and how they relate to the predictions and the linguistic current accounts.

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CHAPTER 2

METHODS AND MATERIALS

This chapter provides background information on the two patients and two controls used in the study. It also provides the specific methods and materials used to test the patients and controls, as well as the analyses that were used to interpret the data.

2.1 Subjects

2.1.1 General Background

Two aphasic patients (one female and one male) and two controls matched in age, education, job level, and sex served as subjects for the present study. All live in Seoul, Korea and speak the Seoul dialect. A background information summary for all subjects is presented in Table 2.1.1.

Table 2.1.1
Background Information Summary

	Patients		Controls	
	CYS	KKM	JYK	CKY
Age	35	56	34	58
Occupation	fashion sales	manager	cosmetologist	manager
Literacy	adequate	adequate	adequate	adequate
Years of Education	12	16	12	16
Language	Korean (monolingual)	Korean (monolingual)	Korean (monolingual)	Korean (monolingual)
Handedness				
Subject	right	right	right	right
Family	right	right	right	right

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2.1.2 Neurological Status

Both patients were diagnosed as aphasic by clinical standards. Both presented unilateral, left-sided, cortical lesions that involved the third convolution (Broca's area) anterior to the Rolandic fissure. Additionally, although both patients had severe right hemiplegia, neither had severe dysarthria (articulatory impairment).

Case 1: CYS

Due to complications following eye surgery in March 1996, CYS suffered an ischemic cerebral vascular accident (i.e., stroke) resulting in an infarction. The CT-scan revealed an area of hypodensity in the left temporofrontal lobe. She was diagnosed as having Broca's aphasia. Table 2.1.2 summarizes the major findings from the neurological examination.

Table 2.1.2
Neurological Status

	CYS	KKM
Etiology	ischemic stroke	ischemic stroke
Onset date (post-onset/months)	March 1996 (27 pom)	August 1989 (105 pom)
Aphasia Type	Broca's	Transcortical Motor
Motor Deficit	severe	severe
Sensory Deficit	mild	mild
Visual Deficit	corrected	corrected

Case 2: KKM

KKM had diabetes for 20 years. This is believed to have led to a seizure and ischemic cerebral vascular accident in August 1989. The

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CT-scan revealed a large, low attenuation in the left parietal and posterior frontal region. Although this area does include part of Broca's area, he was diagnosed as Transcortical Motor Aphasia due to an intact repetition ability.

2.2 Methods and Materials

In order to properly describe agrammatic aphasia in Korean, it is necessary to obtain data. Therefore, specific methods and materials are needed to elicit, describe, and analyze the data. The methods and materials used in this study come directly from "Methodology: Data Collection, Presentation and Guide to Interpretation" (Menn and Obler 1990). This methodology provides a consistent format to describe agrammatic production in Korean, and will facilitate future cross-linguistic comparison.

2.2.1 Tasks

The data for each subject were obtained in a single recording session. These data are in the form of narratives elicited by a native speaker through four tasks: (1) *description of history of illness;* (2) *telling of a popular folktale* (Appendix A); (3) *description of a complex action picture* (Appendix B); and (4) *description of a sequence of pictures* (Appendix C). These four types of narratives differ in such aspects as personal relevance, amount of visual support, amount of formulaic support, and amount of temporal structure. If subjects could not produce a particular narrative, the experimenter suggested a different yet equivalent one.

The recordings were then transcribed by a native speaker according to the guidelines in Menn and Obler. Primary transcriptions for each narrative

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focus on production aspects: rate, fluency, self-corrections, retracings and phonemic errors. Interlinear Morphemic Translations focus on morphology, syntax, and errors of lexical choice.

2.2.2 Analyses

A set of five analyses were conducted. (1) *Morphological Patterns.* Three types of morphological analyses were performed and tabulated, each comparing the results to those of the controls: (i) *errors of omission* of grammatical morphemes in obligatory contexts; (ii) *errors of substitution;* and (iii) *distribution patterns.*

(2) *Syntactic Complexity.* Patterns of word-order, subordination and coordination, and modification were tabulated.

(3) *Lexical Resources.* Lexical choices were examined, looking at token:type ratios for nouns, verbs, and adjectives.

(4) *Discourse Parameters.* Analysis of the discourse were conducted focusing on the choice of politeness levels and patterns of reliance on or avoidance of certain structures.

(5) *Production Parameters.* Two aspects of production were examined: (i) *distribution of phrase lengths* were tabulated for each of the four discourse types and (ii) *speaking rates* were tabulated based on the time elapsed for each narrative in terms of (orthographic) words per minute. These analyses are presented in Chapter 3 and discussed in Chapter 4.

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Section 3

CHAPTER 3

RESULTS

The goal of this thesis is to describe the general characteristics of Korean agrammatic production, while at the same time contributing to the database of information on aphasia in different languages. The first step towards this goal involves collecting, examining, and describing a set of data. Using the methodology provided in Chapter 2, this chapter presents the results of the five types of analyses of Korean agrammatic narratives. The narratives of the patients and controls are provided in Appendix D. Note that the primary transcription provides the primary production data: phonemic errors and corrections, number of words, number of phrases, and amount of time; the Interlinear Morphemic Translation provides a morpheme by morpheme translation consisting of five lines: (from the top to bottom) line 1) morpheme error corrections, line 2) what was actually produced, line 3) morpheme by morpheme parse, line 4) colloquial English translation, and line 5) major lexical category parse. The analysis for each patient is presented separately so as to provide a detailed picture of that individual's language production.

Section 3.1 discusses the general production parameters of the narratives. Section 3.2 provides the distribution of morpheme errors. Section 3.3 gives the distribution of major lexical categories in the texts.

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Section 3.4 presents the analysis of syntactic complexity. Section 3.5 provides an analysis of the levels of politeness.

3.1 Production Parameters

This section discusses the central tendencies in the production patterns of the two patients. The production data for these analyses is provided in Appendix E.

Case 1: CYS

3.1.1 Rate of Production

CYS produced 196 words in 16:57. Her control JYK produced 241 words in 2:28. This resulted in a speaking rate of 11.6 words per minute for CYS and 97.7 for JYK. Thus, CYS produced fewer words in a longer period of time and was nearly 12 times slower than her control.

CYS produced 121 'syntactic' phrases, with an average of 7.1 phrases per minute. JYK produced 17 'syntactic' phrases, with an average of 6.9 phrases per minute. Note that 'syntactic phrase' is not the normal use of the phrase but is a convention used in Menn and Obler (1990) for comparability. A syntactic phrase boundary is marked by a pause of two seconds or more, falling intonation or the end of a sentence, the beginning and end of a parenthetical remark, omission of a major class (lexical) word, or a retracing of two or more words.

Both rates of production (words and phrases) are variable across the different narrative tasks for both CYS and JYK. In both rates, CYS was slowest in the history and work description tasks, slightly faster in the

picture description tasks, and fastest in daily life description and the story. JYK was fastest in the picture and work description tasks and slowest in the story.

3.1.2 Phrase Length

In terms of phrase length, CYS produced a mean of 1.6 words per phrase. The longest phrases were produced in the story (1.8) and history (2) description tasks, and the shortest phrases were in the work description (1.4). There was very little difference between work and the picture description tasks; all were around 1.5 words per phrase. For JYK, the mean was 14.2 words per phrase, with the phrases in the story being the longest and the work and picture descriptions being the shortest.

Thus, CYS shows a severe decrease in the rate of production. Not only did she speak much more slowly than her control, she also used much shorter phrases.

Case 2: KKM

3.1.1 Rate of Production

KKM produced 171 words in 10:12, with a rate of 16.8 words per minute. His control produced 304 words in 3:25, with a rate of 89 words per minute. KKM produced a smaller number of words in a much longer time. The rate of production for KKM was more than 5 times slower than that of CKY.

KKM produced 67 phrases, with a mean of 6.6 phrases per minute. CKY supplied 30 phrases, with a mean of 8.8 phrases per minute. The rate

of production is variable across the different tasks. Both KKM and CKY were slowest in the picture descriptions and faster in the personal narratives.

3.1.2 Phrase Length

KKM produced 2.6 words per phrase, with the longest phrases produced in the family and action picture description tasks. The other tasks were only slightly slower. CKY produced a mean of 10.1 words per phrase, with the phrases in the action picture description being the longest and the picture sequence and work description tasks being the shortest.

Thus, KKM is clearly slower in his rate of production. Not only did he speak much more slowly than his control, but he also used much shorter phrases.

3.2 Morpheme Errors and Omissions

Appendix F provides the morpheme error and distribution data for the two patients and their controls. This section presents results only for bound morphemes. Free morphemes are discussed in Section 3.3. Although control data is provided, as there are very few errors and omissions and as these errors are not the focus of the study, they will not be analyzed or discussed in detail. Thus, control data will only be referred to when relevant to certain aspects of patient data.

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Case 1: CYS

3.2.1 Verbs

Lexical Verbs

CYS supplied 42 verbs but should have produced 53 verbs in context. That is, she produced 42 (79%) possible lexical verbs and omitted 6 (11%). Of those 42, she produced 5 (9%) inappropriate verbs. These errors in selection will be discussed section 3.3.3.

In terms of tense morphology, CYS correctly supplied 35 of 47 (74%) possible tense morphemes. Note that tense errors were not recorded for omitted verbs and reflect only errors in those verbs actually produced. Of the 12 (26%) incorrect tense substitutions, 3 of 12 (25%) were present tense (zero) morpheme substitutions for the past morpheme and 9 (75%) past morphemes substituted for the present (zero) morpheme. Her control, JYK, made no errors in 38 lexical verbs produced.

Note that it is difficult to discern errors in verbs with present (zero) morphology. That is, it is impossible to tell whether patients are using a zero morpheme or missing tense altogether. As stated in the Korean grammatical sketch, I will assume that no tense morpheme in a verb is a present (zero) morpheme. That is, because a verb-final element is used in a tensed clause, it selects a tense as its complement. Therefore, some sort of tense must exist; and the present tense must then be a zero morpheme. Fortunately, this problem does not apply to past tense morpheme errors, as a

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zero morpheme/no morpheme substitution for a past or vice versa is easily discernible.

In addition to tense morphology, CYS correctly supplied 5 negative constructions. In these, she made no errors or omissions. It is interesting that she only produced the short form of negation. In other words, all 5 negative constructions involved correctly placing the free morpheme *'an'* before the matrix verb. In contrast, her control supplied 3 negative constructions: 2 long and 1 short.

CYS correctly supplied 96% of the verb-final elements required in sentence final environments and correctly omitted the morpheme in all non-final environments. She did omit 2 (4%) of these in obligatory contexts, but both were due to stopping production in order to retrace or self-correct. Thus, she made no errors in verb-final elements.

Auxiliary Verbs

Of the 15 auxiliary verbs required in her text, CYS omitted 11 (73%), supplied 3 (20%) correctly, and supplied 1 (7%) incorrectly. Further analysis of the omissions reveals that 8 were of the 'do/AUX' type used in noun or adjective predication and 2 of the 'be/AUX' type used in the progressive aspect. It is important to note that the nouns and adjectives used in combination with the 'do/AUX' verbs were correctly supplied; only the auxiliary verb was omitted. Her control supplied 34 auxiliary verbs: 9 'be/AUX', 14 'do/AUX', and 11 other (e.g., passive).

As with lexical verbs, CYS is impaired in auxiliary tense morphology. In the 4 auxiliary verbs she produced, 2 (50%) tense morphemes were supplied correctly and 2 (50%) incorrectly. Of the 2 correct morphemes, 1 was a present (zero) morpheme and 1 was a past morpheme. Both of the incorrect were past morphemes substituted for present (zero) morphemes. Her control supplied 34 correct tense morphemes and made no errors.

Verb-final elements were intact. CYS correctly supplied 4 (100%) of the required elements and avoided use of the morpheme elsewhere.

Total Verbs

A summary of verbal morphology is provided in Table 3.2.1. Overall, CYS' text required 78 verbs; she produced 59 (76%) and omitted 19 (24%). Of the verbs that she actually produced, 53 of 59 (90%) were correct and 6 of 59 (10%) were incorrect.

Table 3.2.1
CYS: Verbal Morpheme Errors and Distributions

	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
TOTAL Verbs	53	68	6	8	19	24	78
TOTAL Tense	45	76	14	24	0	0	59
TOTAL VFE	59	97	0	0	2	3	61

45 of 59 (76%) tense morphemes were correct and 14 (24%) incorrect. Her control, as is normal, made no errors or omissions. Tense morphology for CYS, then, is clearly impaired.

An analysis of the direction of tense errors indicates that 11 of 14 (79%) errors consist of a past morpheme substituted for a present (zero) morpheme. 3 of 14 (21%) errors consist of a present (zero) morpheme substituted for a past. These errors in morphology are important because they reveal the extent to which CYS is impaired, for the control correctly supplied tense 100% of the time.

It is interesting to note that not only was the direction of error not toward the zero morpheme but also that the tense errors in the picture description tasks were not random. That is, the errors in these tasks (9 of 15 or 60%) were consistently past for present (zero) substitutions.

CYS correctly supplied 59 of 61 (97%) verb-final elements. Again, the 2 (3%) errors were sudden stops in production and not really errors.

3.2.2 'Particles'

A common feature prone to omission in agglutinating languages is the particle. 'Particle' is the term often used in traditional grammar for bound morphemes that serve a particular grammatical function. This term is misleading, however, as particles often behave differently and have different grammatical functions. I will divide them into two major classes: Case (i.e., Nominative, Accusative, and Genitive) and Postposition (i.e., elements similar to English prepositions).

Case 'Particles'

CYS omitted 11 of 12 (92%) Nominative Case particles and correctly supplied 1 (8%). In her text, though, 4 of the 12 were optional. Thus, 7 of

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12 (58%) required Nominative particles were omitted. Her control JYK omitted only 1 (8%) Nominative particle overall.

In terms of Accusative Case particles, CYS supplied none and omitted 33. Whether this omission is appropriate or not is difficult to judge because most, if not all, Accusative particles are optional. However, the rate of omission for CYS is much higher than for her control, who supplied 28 (93%) Accusative particles and omitted only 2 (7%). In fact, it seems that in formal situations the tendency is to supply optional material.

CYS supplied no Topic/Contrast particles and omitted 1. She also supplied no Genitive particles. Her control supplied a total of 13 Topic/Contrast and 6 Genitive particles.

Postposition 'Particles'

CYS supplied 1 of 8 (13%) possible postpositions and omitted 7 (88%). She supplied only 1 dynamic locative and omitted 3 locatives, 1 dynamic locative 1 goal and 2 ablative postpositions. Her control, however, not only supplied more postpositions (25) but also a wider range.

Overall 'Particles'

Overall, CYS produced 5 of 57 (9%) particles, omitted 52 of 57 (91%) and incorrectly substituted none. Comparing Case and postposition particles, CYS supplied 1 of 46 (2%) Case particles and omitted 45 of 46 (98%); for postpositions, she produced 1 of 8 (13%) and omitted 7 (88%).

Again her control produced 84 (97%) total particles and omitted only 3 (3%). 59 of 62 (95%) Case particles were produced and 3 of 62 (5%) were

omitted. For postpositions, 100% were supplied and none were omitted. Thus, although Case particles can be optionally omitted, the rate of omission is higher for CYS than the control.

3.2.3 Subordinate 'Particles'

CYS is clearly impaired in her ability to use subordinate particles. She produced no attributive adjectives (adnominalizer particles) or attributive adverbs (adverbializer particles). In addition, she supplied no complementizers, coordinate conjunctions or subordinate particles. Her control, of course, did supply these morphemes: 7 attributive adjectives, 2 attributive adverbs, 4 complementizers, 24 coordinate conjunctions and 16 subordinate particles.

Case 2: KKM

3.2.1 Verbs

Lexical Verbs

KKM supplied 30 of 31 (97%) possible lexical verbs and omitted only 1 (3%). Of those 30, he produced 4 (13%) inappropriate verbs.

In terms of tense morphology, he correctly supplied 23 of 30 (77%) possible tense morphemes. Again, note that tense errors were not recorded for omitted verbs. Of the 7 (23%) incorrect tense substitutions, 4 of 7 (57%) were present tense (zero) morpheme substitutions for the past morpheme and 3 of 7 (43%) were past morphemes substituted for present (zero) morphemes. His control CKY made no errors in tense morphology in 57 lexical verbs.

In addition to tense morphology, KKM correctly supplied 2 negative constructions, making no errors or omissions. Like CYS, both negatives involved the short and not the long form. His control also supplied 2 negative constructions, both short.

In terms of verb-final elements, he correctly supplied 100% of the morphemes required in sentence-final environments and correctly omitted the morpheme in all non-final environments.

Auxiliary Verbs

KKM supplied 15 of 21 (71%) auxiliary verbs correctly, supplied none incorrectly, and omitted 6 (29%). Of the omissions, 5 were of the 'do/AUX' type and 1 was a passive. Again, while the nouns and adjectives were supplied, in all cases it was the auxiliary verb that was omitted. His control supplied 36 auxiliary verbs: 12 'be/AUX' and 24 'do/AUX'.

In terms of auxiliary tense morphology, KKM is also impaired. He supplied 10 of 15 (67%) correctly and 5 of 15 (33%) incorrectly. 3 of the 5 (60%) errors involved substitution of a past morpheme for a present (zero) morpheme, 1 error (20%) involved a present (zero) morpheme for a past, and 1 error (20%) consisted of a past perfect morpheme for a past. Again, his control supplied 36 correct tense morphemes and made no errors.

Verb-final elements were intact. He correctly supplied 14 (93%) of the required elements and incorrectly supplied the morpheme once (7%) in a non-final environment (i.e., before a coordinate conjunction, which requires a zero morpheme).

Total Verbs

A summary of verbal morphology is provided in Table 3.2.2. Overall, KKM's text required 61 verbs. He produced 52 of 61 (85%) and omitted 9 of 61 (15%). Of the verbs actually produced, 48 of 52 (92%) were correct and 4 of 52 (8%) incorrect.

Table 3.2.2
KKM: Verbal Morpheme Errors and Distributions

	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
TOTAL Verbs	48	79	4	7	9	15	61
TOTAL Tense	39	75	13	25	0	0	52
TOTAL VFE	51	98	1	2	0	0	52

Overall, 39 of 52 (75%) tense morphemes were correct and 13 (25%) incorrect. His control made no errors or omissions. Tense morphology, like that for CYS, is definitely impaired. These errors in morphology are quite pronounced, as the control CKY correctly supplied tense morphemes 100% of the time.

An analysis of the direction of tense errors indicates that 7 of 13 (54%) errors involved a past morpheme substituted for a present (zero) morpheme. 5 of 13 (38%) errors involved a present (zero) morpheme substituted for a past. 1 of 13 (8%) errors involved a past perfect morpheme substituted for a past. Overall, then, non-zero morphemes substituting for

zero morphemes comprised 62% of the errors, and zero morphemes substituting for non-zero morphemes comprised 38% of the errors.

It is interesting to note that 5 of 13 (38%) tense errors occurred in the picture description tasks and were all past for present morphemes. Thus, not only was the direction of error not toward the zero morpheme but also the tense errors in the picture description tasks were not random; they were consistent.

In terms of overall verb-final elements, KKM supplied 51 of 52 (98%) correctly. Of course, his control correctly supplied it 100% of the time.

3.2.2 'Particles'

Case 'Particles'

KKM omitted 6 of 14 (43%) Nominative Case particles, correctly supplied 7 (50%), and incorrectly used 1 (7%). His control CKY correctly produced 18 and omitted none.

In terms of Accusative Case particles, KKM correctly supplied 18 (86%), incorrectly supplied 3 (14%), and omitted 9 (30%). Again, Accusative particles may be omitted. However, the rate of omission for KKM is higher than for his control, who supplied 31 (89%) particles and omitted only 4 (11%).

KKM correctly supplied 6 (67%) Topic/Contrast particles and omitted 3 (33%). He supplied no Genitive particles. His control supplied a total of 23 Topic/Contrast and 4 Genitive particles.

Postpositional 'Particles'

KKM supplied all 21 (100%) possible postpositions. 5 (24%) of those produced were incorrect while 16 (76%) were correct. Of the correct postpositions, 6 were locative, 1 temporal, 6 conjunctions, and 3 adverbial. Of the incorrect, 2 were locative, 1 dynamic locative, 1 plural, and 1 honorific. His control, however, not only supplied more postpositions (37) but also a wider range.

Overall 'Particles'

Overall KKM produced 48 of 76 (63%) particles, omitted 19 (25%) and incorrectly substituted 9 (12%). Comparing Case and postposition particles, KKM correctly supplied 31 of 53 (58%) Case particles, incorrectly supplied 4 of 53 (8%) and omitted 18 of 53 (34%); for postpositions, he correctly produced 16 of 21 (76%), incorrectly produced 5 of 21 (24%).

Again his control produced 113 (93%) total particles and omitted 8 (7%). 76 of 82 (93%) Case particles were supplied and 6 of 82 (7%) were omitted. For postpositions, 37 of 39 (95%) were supplied and 2 of 39 (5%) were omitted. Thus, although Case particles can be optionally omitted, the rate of omission is higher for KKM than the control.

3.2.3 Subordinate 'Particles'

KKM correctly produced 1 attributive adjective (adnominalizer particle) and 1 attributive adverb (adverbializer particle). In addition, he supplied 2 complementizers, 15 coordinate conjunctions and no subordinate particles. In contrast, his control supplied 15 attributive adjectives and 5

attributive adverbs, as well as 15 complementizers, 30 coordinate conjunctions and 8 subordinate particles. Thus, as with CYS, KKM is impaired in terms of subordination.

3.3 Distribution of Grammatical Categories in the Texts

Appendix G provides the distribution of lexical items produced. Note that the 'actual' column reflects the elements actually produced, along with that element's percentage of total speech. The 'context' column is what the subject should have produced in the context of the narrative, along with the percentage of that element in relation to the total text. A comparison of the two controls reveals that the distribution of grammatical categories actually produced and categories which should have been produced (i.e., context) are almost identical, as would be expected. Thus, they will not be analyzed in detail. On the other hand, there are important differences between actual and context in the patients, as well as differences between the patients and their respective controls. The results of these analyses are presented here.

Case 1: CYS

3.3.1 Part of Speech Distribution

Major Class Lexical Items

The morpheme error distribution (Appendix G) revealed that CYS actually produced a total of 43 of 59 (73%) nouns and omitted 16 (27%). Of the 43 nouns, 41 of 59 (68%) were appropriate and 2 (5%) inappropriate.

Table 3.3.1 provides the grammatical function distribution of these nouns. In terms of the ratio of nouns supplied, CYS supplied more nouns

when they were the object of a postposition ('other') than when the nouns were in subject or object position. In addition, she supplied more nouns when they were subjects (75%) than objects (61%).

Table 3.3.1
CYS: Nominal Grammatical Function Errors and Distributions

	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
Subject	9	75	0	0	3	25	12
Object	20	61	1	3	12	36	33
Other	12	86	1	7	1	7	14

Conversely, she omitted more objects (36%) than subjects (25%) and, overall, more nouns in subject/object position (33%) than in other positions (7%). But this may simply be a reflection of the fact that it is easier to see omissions in grammatical function than in other positions because those others are adjunct positions. That is, as the postposition nouns are not required elements in the sentence (i.e., null elements), they may be omitted without syntactic consequence. JYK, on the other hand, produced a total of 84 nouns: 31 subject, 29 object and 22 other. She omitted none. She did, however, inappropriately substitute 2 objects.

Thus, although CYS omits many nouns in subject and object position, she made only 2 substitution errors. As noted, it is common to omit optional nouns, but the rate of omission is much higher for CYS than for JYK. The

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findings here, together with those in Section 3.2, suggest that CYS' use of nouns is relatively unimpaired but that omission is much higher than normal.

In relation to other categories in her speech, nouns comprised 33% of her total text. In what she should have produced (context), nouns would have comprised 27%. Thus, although she omitted many nouns, the proportion of what she actually produced is similar to what she should have produced. JYK's nouns comprised 21% of her total speech. Thus, CYS tended to rely more on nouns in her speech (33% vs. 21%).

As for the distribution of verbs, CYS produced a total of 59 verbs. In relation to other categories in her text, the 59 verbs made up 45% of her total text. In context, she should have produced 78 verbs (36%). The high percentage of verbs actually produced is a function of the number and length of phrases, as discussed in Section 3.1. That is, rather than produce one long sentence to express an idea, CYS produced many short phrases, thereby increasing the number of verbs in relation to other categories in her text. In contrast, her control produced 84 verbs comprising 21% of her total text.

Further analysis shows that for CYS lexical verbs actually produced were 36%; for JYK it was 10%. Identification verbs were 2% and existential 4% for CYS compared to 2% and 1% for JYK. Auxiliary verbs for CYS were 3% while 9% for JYK. Overall, then, CYS relied more heavily on lexical verbs than JYK.

CYS produced only 2 adjectives in her texts, and she did so without error. As noted in the grammatical sketch, Korean has two types of

adjectives: lexical adjectives, which combine with auxiliary verbs, and attributive adjectives, which are derived from verbs by adding an adnominalizer. CYS supplied 2 lexical and no derived adjectives. This is understandable because derived adjectives involve subordination, and, as discussed in Section 3.2, these subordinate particles are impaired. Her control produced 8 lexical and 7 derived adjectives.

In terms of overall distribution, adjectives for CYS accounted for 2% of her text. For JYK, adjectives accounted for 2% and derived adjectives 2%. Interestingly, although the number of adjectives produced is different, the relative percentage of production is quite similar.

Like the adjectives, adverbs are either lexical or attributive. CYS supplied 8 lexical adverbs (6%) and no derived ones. JYK supplied 34 lexical adverbs (9%) and 2 attributive adverbs (1%). Again, the difference is in the actual number of adverbs produced and not in the percentage of text.

Overall, there is not much difference in actual/context or patient/control in terms of free morphemes. Although there is a difference in the number of attributive adjectives and adverbs, this can be attributed to the impairment of the subordination particles. The main difference, then, is not the extent to which the patient relies on a particular category but rather the actual numbers produced.

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Content vs. Functional Elements

Content 'words' comprised 79% of CYS' total production while functional 'words' were 21%. In context, CYS should have produced 58% content and 42% functional. JYK produced 42% content and 58% functional. CYS relied more heavily on content 'words.'

Overall, the distribution of grammatical categories revealed an asymmetrical pattern of sparing and loss. This section has shown that lexical items are relatively intact, with very few errors and mostly omissions. Section 3.2 showed that bound (functional) morphological items are impaired. These two results are corroborated by the content versus functional analysis.

3.3.2 Token/Type Analysis

Appendix H provides the token/type data for the two patients and their controls. Note that there is a different convention in Menn and Obler (1990) for stating ratios. A token/type ratio of 1:1 is represented as 1.0, and 2:1 as 2.0.

As noted in both the morpheme error and grammatical distribution sections, CYS produced 43 nouns, which comprised 33% of her speech. Of these 43, she produced 31 different nouns. In other words, there were 43 tokens of 31 types of nouns, yielding a token/type ratio of 1.4. This indicates that for every type of noun produced, she used it 1.4 times. Her control JYK was about the same with a ratio of 1.7.

In terms of verbs, CYS produced 59 tokens of 26 types. This is a ratio of 2.3. Although JYK produced a larger number of verbs, the ratio was about the same.

The adjective ratio for CYS was 1, with 2 tokens of 2 types. JYK had slightly higher ratio of 1.6.

Overall, this token/type analysis corroborates the findings in the grammatical distribution section. Free morphemes were fairly well preserved, and, although the number of total words produced is different in each lexical category, the ratios are very similar. This also holds across task types, as the analysis does not reveal any consistent difference among tasks.

3.3.3 Lexical Selection

CYS made only 6 errors in lexical selection. 1 of 43 (2%) nouns and 5 of 59 (8%) verbs were inappropriate. The noun error was produced in response to the picture in which a woman is knitting. In Appendix D1 item (57), CYS provided the noun *'string,'* which, although very similar semantically to the correct noun *'yarn,'* does not satisfy the coocurrence restriction of the verb.

The 4 verb errors are as follows. In (57) CYS supplied *'hang'* for *'knit.'* In (4) she used a verb with the appropriate meaning, *'wear,'* but used the wrong verb. That is, she supplied the verb for *'wear'* as in *'wear a ring'* instead of *'wear glasses.'* In (51) she used the auxiliary verb *'do'* instead of *'call out.'* Although this is a common substitution, it is inappropriate here. Finally, in (61) and (66) she incorrectly uses *'come'* for *'smoke'* and *'sit.'*

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Her control also makes errors (2%), both substitutions of the wrong noun for the same object: '*plant*' for '*stalk*.' Overall, then, CYS is not impaired in terms of lexical selection.

Case 2: KKM

3.3.1 Part of Speech Distribution

Major Class Lexical Items

The morpheme error distribution (Appendix F) revealed that KKM supplied a total of 87 of 89 (98%) nouns and omitted 2 (2%). Of the 87, 84 (94%) were appropriate and 3 (3%) inappropriate. Table 3.3.2 provides the distribution of these nouns in terms of grammatical function.

Table 3.3.2
KKM: Nominal Grammatical Function Errors and Distributions

	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
Subject	30	100	0	0	0	0	30
Object	30	86	3	9	2	6	35
Other	24	100	0	0	0	0	24

30 of 89 (34%) nouns supplied were subjects, 30 of 89 (34%) were objects, and 24 of 89 (27%) were objects of postpositions. He omitted only 2 of 35 (6%) objects and no subjects or other nouns. He incorrectly substituted only 3 nouns, and these were all objects. CKY, on the other hand, produced a total of 140 nouns: 43 (31%) subject, 35 (25%) object and

62 (44%) other. Thus, KKM is normal in the distribution of nouns in terms of grammatical function.

In the distribution of nouns in relation to other categories in his speech (Appendix G), he is also relatively unimpaired. Nouns comprised 37% of his total text. In what he should have produced (i.e., context), nouns would have comprised 34%. Thus, the percentage of what he actually produced is similar to what he should have produced. His control's nouns comprised 28% of his total speech. Like the other patient CYS, then, KKM showed little difference between what he produced and what he should have produced, indicating little if any impairment. Also, like CYS, KKM tended to rely more heavily on the nouns in his speech (KKM 37%, control 27%).

As for the distribution of verbs, KKM produced a total of 52 verbs. In relation to other categories in his text, the 52 verbs made up 22% of his actual text. In context, he should have produced 61 verbs (23%). His control CKY supplied 108 verbs (21%).

Further analysis shows that lexical verbs actually produced were 13% for KKM and 11% for CKY. Identification verbs for KKM were 1% and existential were 2% compared to 2% and 1% for CKY. Finally, auxiliary verbs for KKM were 6% and for CKY 7%.

Overall, then, there is very little difference between what KKM actually produced and what he should have produced. Additionally, there seems to be little difference between KKM and his control in the distribution of verbs.

KKM produced 6 adjectives in his texts, and he did so without error. He supplied 3 lexical adjectives and 1 attributive adjective. As with the other patient CYS, this low occurrence of attributive adjectives is understandable because this construction involves subordinate particles, which were seen to be impaired in Section 3.1. His control produced 15 lexical adjectives and 8 attributive adjectives.

In terms of distribution, lexical adjectives for KKM comprised 1% of his text and attributive adjectives .4%. For CKY, adjectives comprised 3% and derived adjectives 2%. Interestingly, although the number of adjectives produced is different, the relative percentage of production is about the same.

KKM supplied 6 lexical adverbs (3%) and 1 attributive one (1%). CKY supplied 39 lexical adverbs (8%) and 5 attributive adverbs (1%). Again, the difference is in the actual number of adverbs produced and not in the percentage of text.

As with the other patient CYS, overall there is not much difference in the free morphemes. That is, the differences in lexical items is the actual numbers produced and not the extent to which the patient relies on a particular category.

Content vs. Functional Elements

Content 'words' comprised 56% of KKM's total production and functional 'words' 44%. In context, KKM should have produced 50% content and 50% functional. CKY produced 52% content and 48% functional. Thus,

in terms of the content versus functional, KKM is not much different from his control, except in number of items produced. That is, unlike CYS, KKM does not rely more heavily on content words.

Thus, free morphemes are relatively spared, and bound morphemes are relatively impaired. However, the distribution of both free and bound morphemes is normal. That is, KKM is not relying on one category more than another. This does not suggest that he is not impaired but that he is less severe in his impairment than CYS.

3.3.2 Token/Type Analysis

Appendix H provides the token/type data for KKM and his control. As noted in both the morpheme error and grammatical distribution sections, KKM produced 87 nouns, which comprised 37% of his speech. He produced 87 tokens of 66 types, yielding a token/type ratio of 1.3. His control CKY was about the same with a ratio of 1.5.

In terms of verbs, KKM produced 53 tokens of 27 types. This is a ratio of 2. His control was a bit higher with a ratio of 2.9.

In adjectives, KKM's ratio was 1, with 4 tokens of 4 types. His control had a slightly higher ratio of 1.4.

Overall, this token/type analysis corroborates the findings in the grammatical distribution section that free morphemes are fairly well preserved, and although the number of total words produced is different in each lexical category, the ratios are very similar. This also holds across task types, as the analysis does not reveal any consistent difference among tasks.

3.3.3 Lexical Selection

Overall, KKM made only 6 errors in lexical selection. 2 of 87 (2%) nouns and 4 of 53 (8%) verbs were inappropriate. In terms of nouns, the two errors occurred in (40f) and (42a). In (40f), he uses *'telephone receiver'* rather than *'telephone,'* which is required for the noun+AUX combination. In (42a), he incorrectly uses *'plant'* for *'stalk,'* which is an error that the other control JYK made as well.

In terms of verbs, the first error was in (26b). He used *'walk'* for the auxiliary *'do,'* which is used in constructing the verb *'driving.'* In (29c), the intended verb was *'went'* (to the in-law's house) but he supplied the verb *'bring,'* which has the same base verb *('go')*. The last 2 errors occurred in (37) and (40d) where he substituted *'eat'* for *'drink.'*

Overall, KKM is not impaired in terms of lexical selection. In fact, he makes mistakes that even the controls made. This finding confirms that of other sections: lexical items are relatively spared.

3.4 Syntactic Complexity

Case 1: CYS

As noted in earlier sections, CYS used no subordinate or coordinate particles. She, thus, produced no complex syntactic constructions. An analysis of sentence complexity reveals that she used, maximally, SOV constructions. Of 70 her 'sentences,' 2 (3%) were SOV, 11 (16%) were SV, 27 (39%) were single verbs, 13 (19%) only single nouns, and 4 (11%) were other constructions (such as a combination of nouns). It is interesting to

note that when she produced an SOV construction, she used no particles. This analysis also reveals that she did not deviate from the canonical SOV word order (e.g., scramble, topicalize, contrast).

Case 2: KKM

Like CYS, KKM produced no subordinate particles, though he did supply 15 sentential coordinate constructions. Yet, looking at the complexity of these constructions, he also tended to use simple SOV constructions. Of 58 'syntactic' phrases, 4 (7%) were SOV, 27 (47%) were SV or OV, 6 (10%) were single verbs, 4 (7%) were single nouns, and 4 (29%) were other constructions. This also shows that KKM also did not deviate from the canonical SOV word order.

3.5 Discourse Patterns: Level of Politeness

As noted in the grammatical sketch, Korean is often referred to as a discourse-oriented language. As such, there are a number of parameters that could be analyzed in this section. However, the reduced language capacity of the patients combined with the relatively simple tasks tend to result in quite simple texts that are not characteristic of Korean discourse. Thus, the following is a presentation of only one element that was evident in the texts: levels of politeness.

Case 1: CYS

CYS produced 15 of 55 (27%) levels correctly, 2 (4%) incorrectly, and omitted 38 (69%). 14 of the 15 correct levels occurred with past tense verbs. Note that the number of omissions may be misleading. CYS used the

intimate level on 38% of her verbs, omitting the polite *'-yo.'* This omission could also be analyzed as an incorrect substitution of intimate for polite. That is, by leaving the *'-yo'* off the end of the verb, the patient constructs the intimate form; and this may actually be a wrong substitution of the intimate for the polite level form. Regardless of how it is analyzed, though, CYS correctly supplied only 27% of the levels. The use of the intimate level form is very unusual given the formality of the situation, for this was the first time we had met; and in any formal situation meeting for the first time, the polite or formal level is required. In contrast, her control correctly supplied 12 of 13 (92%) and omitted only 1 (8%). Thus, CYS seems to be impaired in her ability to use levels of politeness.

Case 2: KKM

KKM supplied 25 of 32 (78%) levels correctly and omitted 7 (22%). His control supplied 10 of 25 (40%) and omitted 15 (60%). This is a high rate of omission for the control, but it is appropriate given that the control is much older than and familiar with the experimenter. Compared to the other control JYK, however, KKM seems relatively unimpaired.

CHAPTER 4

DISCUSSION

As noted above, the goal of this thesis is to describe the general characteristics of Korean agrammatic production and that the first step towards this goal involves collecting, describing, and stating generalizations over a set of data. Chapter 2 described the methods and materials used to collect the data, and Chapter 3 described these data. This chapter summarizes the patterns that emerge from the data. These patterns are then compared to the predictions made for Korean (Section 1.2.4) and to the summary findings of the fourteen languages in Menn and Obler (1990). In addition, this chapter discusses the theoretical implications of the data for the most current linguistic account (Grodzinsky 1990, 1997; Friedmann and Grodzinsky 1997).

4.1 Symptom Patterns in Korean

4.1.1 Production

Both patients produced short phrases and had very slow rates of speech. In fact, although CYS appears to be more impaired than KKM in most areas, the rates and lengths for both patients were about the same (Figures 4.1.1 and 4.1.2). In addition, both patients lacked normal intonation patterns, speaking only in a very monotone manner.

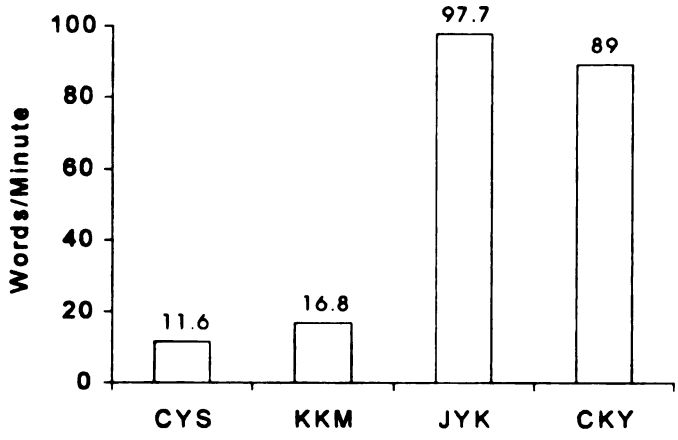


Figure 4.1.1. Summary of Rate of Production.

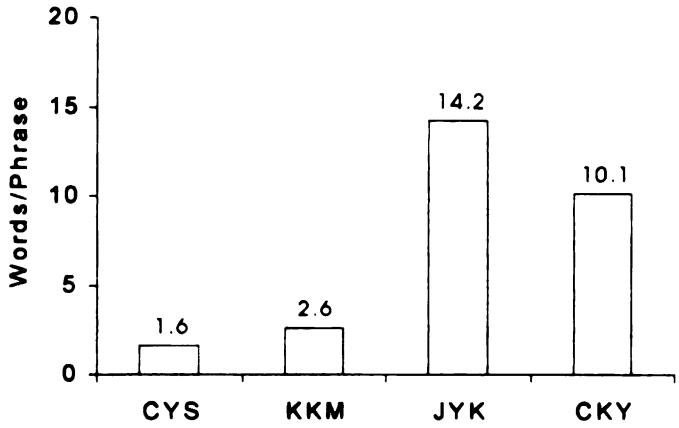


Figure 4.1.2. Summary of Phrase Length.

4.1.2 Morphemes

First, morphemes that were most liable to substitution were verb tenses. Approximately a quarter of each patient's speech contained tense substitution errors (Figure 4.1.3). The controls, of course, produced tenses without error. Further analysis revealed that for both patients there was a

high tense error rate for lexical verbs in relation to other verbs; however, this may be a function of the number of lexical verbs produced in relation to other verbs.

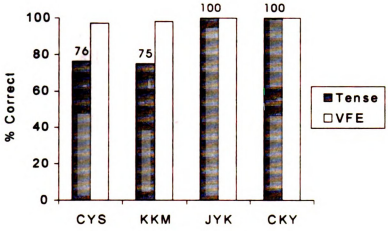


Figure 4.1.3. Summary of Verbal Morpheme Errors.

In terms of the direction of these tense errors, neither patient consistently omitted the tense morpheme. From another perspective, if a zero morpheme can be considered as a substitutable morpheme, neither patient relied on a default zero morpheme (Figure 4.1.4). In fact, the majority of errors were consistently in the opposite direction: a past morpheme substituted for a zero morpheme. Not only were the errors more often substitution errors, they were also not random. That is, neither patient was randomly selecting tense morphemes from a set of available tense morphemes. Both patients consistently used the past morpheme when present or present progressive was required in the picture description tasks

and consistently used the present (zero) morpheme for past in the personal narratives.

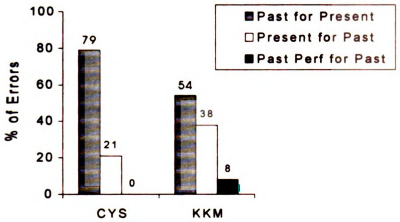


Figure 4.1.4. Summary of Direction of Tense Errors.

Second, morphemes that were most liable to omission were particles. Although KKM produced more particles and had a slightly lower omission rate than CYS, both patients omitted at least a third of their particles (Figure 4.1.5). In addition, the omissions involved more Case particles than postpositions. Again, the controls omitted very few of either.

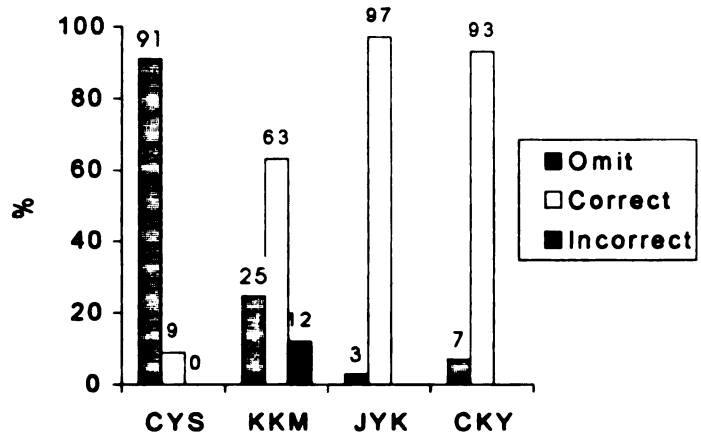


Figure 4.1.5. Summary of Particle Errors and Omissions.

Third, morphemes that were better-preserved included verb-final elements (Figure 4.1.3) and negatives. In both patients, verb-final elements were intact, with the only errors being a sudden stop in production. Negatives were also preserved in both patients. It is interesting to note, though, that neither patient produced the long form of the negative, in which the negative morpheme is a bound rather than free.

4.1.3 Lexical Distribution

In contrast to bound morphemes, lexical items in general were well preserved (Figure 4.1.6). In nouns, the error rate was very low for both patients. The rate of omission was also relatively low, though higher than the controls. This finding is corroborated by the token/type analyses, in which the ratios for patients and controls were very similar.

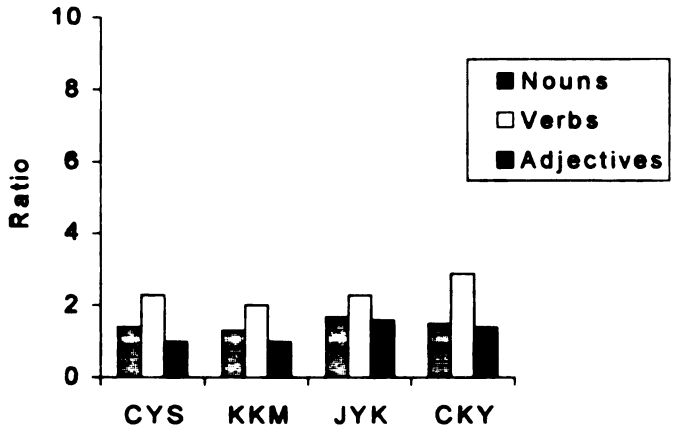


Figure 4.1.6. Summary of Token/Type Ratios.

For verbs, neither patient made many errors. Again, for both patients the rate of omission was high. Both patients omitted more auxiliary verbs than other types of verb. Again, the verbs are relatively intact, and this is supported by the similar token/type ratios. In addition, the rate of omission for verbs was higher than that for nouns. Thus, except for the variation in omission of verbs, in terms of lexical items, there was not much difference between the patients and the controls.

There was a difference between patients in the ratio of content to function words (Figure 4.1.7). CYS relied more heavily on content words than KKM, and, in fact, KKM was very similar to the controls. Although both patients are impaired in bound morphemes, KKM does not seem to be as impaired as CYS in lexical items.

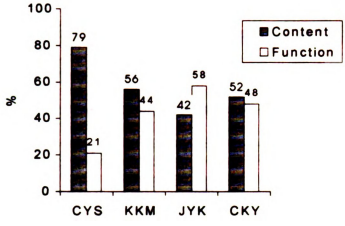


Figure 4.1.7. Summary of Content/Function Ratios.

In terms of modifiers, neither patient produced a great number of adjectives or adverbs. In fact, only KKM produced these items, and in very small numbers. In addition, only KKM produced an attributive adjective or adverb, with only one token of each. As noted, the ability to construct attributives is dependent upon the use of the adnominalizer and adverbializer particles, and these were impaired in both patients.

4.1.4 Syntactic Complexity

Syntactic structures produced by both patients were very simple. Neither patient produced embedded clauses. In addition to simplification, there was a severe reduction in the variety of syntactic constructions used. This is also reflected in both patients' reliance on canonical word order.

4.1.5 Discourse

The morphemes most closely related to discourse, levels of politeness, were misused often by both patients (Figure 4.1.8). However, it is difficult

to judge whether they are omissions or substitutions. That is, the polite form is *'-eyo'* whereas the intimate is *'-e'* (i.e., drop the *'yo'*). Errors in this area could be analyzed as either omissions of the *'-yo'* or substitutions of *'-e'* for *'-eyo.'* Regardless, both patients used these morphemes inappropriately.

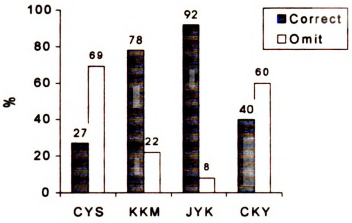


Figure 4.1.8. Summary of Level of Politeness Errors.

4.1.6 Summary

Overall, the Korean patients did display the general properties associated with clinical descriptions of agrammatism. There was a tendency to omit or substitute grammatical elements (e.g., auxiliaries, postpositions, inflectional affixes), a preference for content over function words, production of simplified syntax, and production of nonfluent, effortful, dysprosodic speech. Thus, as in the fourteen languages reported in Menn and Obler, Korean agrammatic production involves selective impairment. The impaired items sometimes involve omission and sometimes substitution,

and like other languages, there is a pattern to these omissions and substitutions. In the next section the Korean results will be compared to the findings reported in Menn and Obler and the predictions for Korean.

4.2 Comparison of Korean Data and Cross-Linguistic Findings

4.2.1 Production

Menn and Obler report that in all fourteen languages studied, patients produced short phrases at slow speech rates, and this was also predicted for Korean. As expected, both patients produced speech that was considerably shorter and slower than the controls.

4.2.2 Bound Grammatical Morphemes

Bound grammatical morphemes were rarely omitted in the fourteen languages; substitution was most common, even in languages when omission was possible. In addition, the substitution was not random but involved a consistent misselection of morphemes. Omission, in contrast, occurred only in free grammatical morphemes. Korean tense morphemes were thus predicted to be substituted, even though omission of a tense morpheme is possible, yielding a zero morpheme (present tense). As noted earlier, present tense can be analyzed as either having a zero morpheme or having no tense; thus, it is impossible to tell whether a patient is using present tense (zero morpheme) or has omitted the tense marker. Regardless, the prediction obtained, as substitution occurred more often than inappropriate use of the present (zero morpheme) tense.

As bound grammatical morphemes were rarely omitted in the fourteen languages but were substituted (even in languages where omission was possible), Korean particles were also predicted to be substituted. However, patients very rarely inappropriately substituted particles, instead omitting them.

A final prediction for bound morphemes in Korean was that verb-final elements would be incorrectly substituted. This morpheme was intact. In fact, there was only one instance of error.

4.2.3 Sentence Conjunctions and Particles

Menn and Obler reported that clause-initial conjunctions (*'and,' 'and then,' 'and so'*) and, in Japanese, sentence-final particles were used quite heavily. It was thus predicted that Korean patients would produce these items as well. However, neither patient used sentence-final particles. Also contrary to the predictions, there was no overuse of sentence initial conjunctions, although KKM did seem to rely on these coordinate conjunctions in the picture description tasks.

4.2.4 Lexical Omission

It was also reported that the less contentful a lexical item is, the more prone it is to omission. Thus, 'empty' verbs (i.e., copula, auxiliary) were omitted more often than content verbs. In addition, more verbs were omitted than nouns, except in languages with heavy nominal inflections. Thus, for Korean it was predicted that more verbs than nouns would be omitted and

that among the verbs, identification, existential, and auxiliary verbs would be omitted the most. In general the results match these predictions.

4.2.5 Function and Content Words

Cross-linguistically patients tended to rely more heavily on content words than their controls. For Korean, then, it was predicted that the majority of speech would consist of content words. This prediction held for CYS but not KKM. This seems to be an indication of the severity of impairment. That is, KKM seems to be less impaired in his ability to employ both grammatical and content words and, thus, relies less on content words than CYS.

4.2.6 Syntactic Complexity

Reduced variety and simplification of syntax is reported across languages. At the sentence-level, relative clauses were almost never produced, and other subordinate clauses were either not produced or produced incorrectly. Within the clause, there was simplification of all constituents. In VPs, for example, mood and modality were absent, as were auxiliary verbs. NP modifiers were nearly always absent. The prediction for Korean, then, was that patients would rely on simple structures that do not employ modification.

These predictions held, as syntactic structures produced by both patients were very simple and drew on only a small set of syntactic constructions. VPs were as empty as possible, with little or no modification. The NPs also had little or no modification.

4.2.7 Word Order

In addition to simplified syntax, and related to reduced variety, patients in the cross-linguistic studies also relied heavily on canonical word order. Although it is possible to scramble the subject and the object in Korean, the prediction was that patients would rely heavily on the SOV order. As predicted, neither Korean patient deviated from the canonical word order. In addition, SOV constructions were very few; both patients tended to produce constructions such as SV, OV, N or V.

4.2.8 Summary

Overall, the results from Korean seem to pattern well with the summary findings reported in Menn and Obler. In addition, the Korean results match the predictions based on the summary findings and the structure of Korean. However, there is one finding that does not fit the pattern: bound morphemes. It was predicted that all bound morphemes would be substituted, yet it was found that the verbal inflections were substituted while particles were omitted. This dissociation does not fit their pattern. The next section will discuss how this data fits in with linguistic accounts for agrammatic patterns such as the ones described here.

4.3 Theoretical Implications

Although descriptions of patterns are a necessary first step, they do not explain *why* some properties of the language system are impaired and some are not. The next step is to account for the pattern of sparing and loss within a theoretical framework (i.e., with reference to a normal language system). This account can then be used to derive and test further predictions. Accounts of agrammatism, then, are attempts to explain the pattern of variation across patients and across languages. Although the primary goal of this study was not to test the linguistic accounts reviewed in Section 1.1.4, it is appropriate to look at how these preliminary data from Korean bear on the most current accounts. This section discusses the theoretical implications of the data for the underspecification of functional elements (Grodzinsky 1990, 1997) and the Tree-Pruning Hypothesis (Friedmann and Grodzinsky 1997).

4.3.1 Underspecification of Functional Elements

As noted in Section 1.1.4, Grodzinsky (1990, 1997) attempts to account for patterns in agrammatic omission and substitution in functional elements by referring to parametric variation. He posits underspecification in representation for nonlexical items, and the consequences of this underspecification depend on the inflectional morphology of the language. He claims that for +zero-morphology languages (i.e., languages in which omission of an inflectional morpheme will not result in a non-word), underspecified features will lead to the omission of morphemes. For

-zero-morphology languages (i.e., languages in which omission of an inflectional morpheme will result in a non-word), underspecified features will lead to substitution. Two examples of +zero-morphology languages he provides are the following.

(27a) *English*: ...my mother pass away.

(27b) *Japanese*: inorimasu (correct: inorimasu*shita*)
'I pray.' ('I pray*ed*.")

In English, the inflection may be omitted and the result, as in (27a), is still a word (i.e., infinitive). Similarly, he claims, in Japanese the omission of the past tense morpheme still results in a word (i.e., a present tense verb). Thus, as both languages are +zero-morphology languages, they both display omission in agrammatic aphasia.

The Korean data pose several problems for this account. The first is that the account predicts that Korean patients will omit inflectional morphemes, and this is not consistent with the Korean data described in Chapter 3. Like in Japanese, in Korean the omission of the past tense morpheme still results in a word (i.e., zero-morpheme present tense). Grodzinsky's account thus predicts that impaired tense nodes will be underspecified leading to omission of tense morphemes. In other words, there will be a preference for patients to rely on a default zero morpheme. However, this prediction does not hold for the Korean data. Patients do not rely on the zero morpheme. In fact, both patients substituted a past morpheme for a zero morpheme substantially more often than a zero morpheme for a past. Thus, underspecification cannot account for the

substitution of inflectional morphemes in a language where omission is possible.

The second problem that arises is that even if substitution were predicted for Korean, the account predicts that the substitution will be random. An underspecified node in a system that requires a morpheme to form a word will force patients to substitute by "guessing." That is, patients will choose a morpheme from a set of possible tense morphemes. In the substitution that occurs in Korean, there is no guessing. The Korean patients show a clear preference for one morpheme or another, depending on the task.

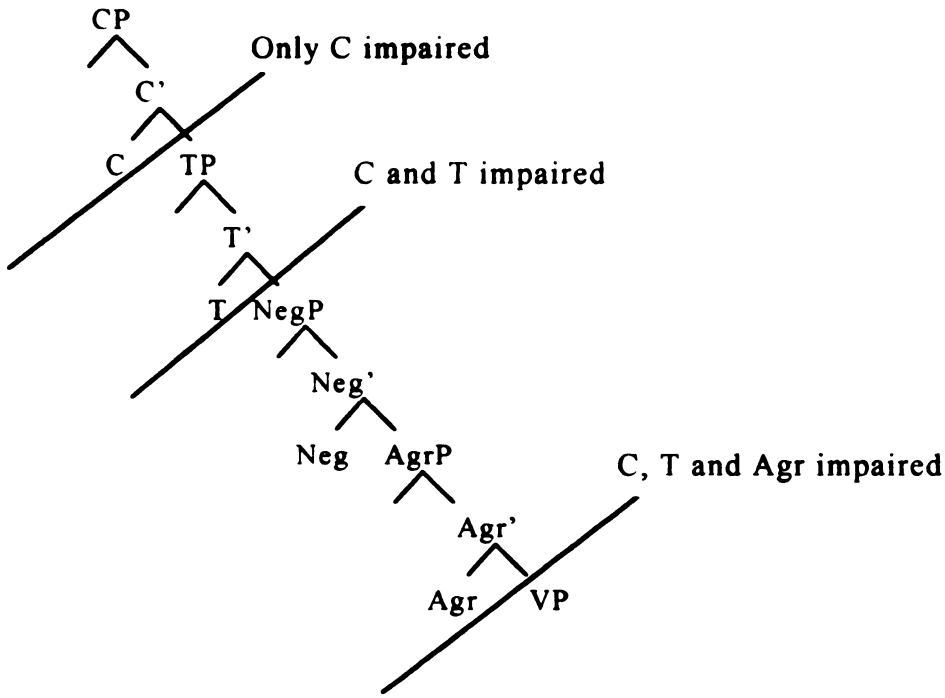
Finally, the underspecification account is not consistent with the relative percentage of errors. It is obvious by looking at the controls that errors in inflectional morphology are rare and that an error rate of 10% or more is clearly abnormal. However, as noted, if a category is impaired and if omission of the morpheme still results in a legitimate word, the morpheme should *never* be produced. Conversely, if omission of the morpheme results in a non-word and substitution occurs, random substitution should *always* occur. Grodzinsky's account then predicts that an impaired category should either not exist in production or should be entirely random. For example, if tense is impaired, it should either never show up on a verb or show up randomly on all verbs. Given this characterization, the underspecification account cannot explain why errors in Korean inflectional morphology amount to only approximately 25%. That is, tense in Korean should either

never show up (i.e., omission) or should show up randomly (i.e., substitution) and yield a 50% error rate. Thus, regardless of how Korean is classified, the pattern of omission and substitution that emerge from the data poses serious problems for the underspecification account of agrammatic production.

4.3.2 The Tree-Pruning Hypothesis

The Tree-Pruning Hypothesis (Friedmann and Grodzinsky 1997) attempts explain why the breakdown is not the same across all grammatical morphemes. As noted in Section 1.1.4, Friedmann and Grodzinsky claim that impairment in agrammatic speech is a function of the level of impairment in the patient's syntactic representation. That is, "whenever a node is impaired, the tree cannot be constructed any higher..." (p.420), and consequently all functional nodes above it will be impaired. This was represented graphically in (2), repeated here as (28) .

(28)



The predictions that this hypothesis makes are very clear. The tree is pruned from the top down to the level of the lowest impaired node, affecting all functional categories in between. Thus, regardless of where the "line of impairment" is, all functional elements above that line will be impaired and all elements below will be spared. Assuming the Minimalist syntax discussed briefly in section 1.3.1, the verb enters the computational system fully inflected and raises to check functional features. According to Friedmann and Grodzinsky, in agrammatism an impaired category is seen to involve the inability to check features, thereby incorrectly allowing an otherwise ungrammatical construction to converge.

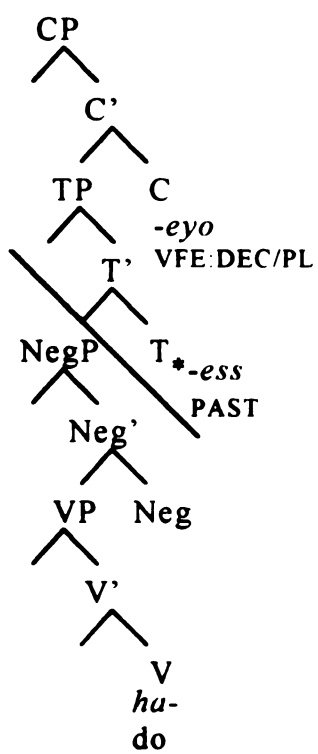
The data in Korean do support the idea that the impairment is at the syntactic level and not the phonological or morphological level of

representation. Patients did not randomly choose affixes and place them in any order. They chose appropriate morphemes from the set of possible morphemes and placed them in appropriate positions. For example, although the past morpheme was an incorrect choice for tense, it was a selection from the set of tense morphemes and it showed up in the correct position in the verb (i.e., between the root and the verb-final element). This indicates that the morphology or the lexical phonology is intact, but the syntax is somehow impaired.

However, the Korean data pose two problems for the syntactic explanation offered by Friedmann and Grodzinsky. The first is carried over from Grodzinsky's underspecification account, for the Tree-Pruning Hypothesis is an extension proposed to account for not only omission and substitution but also for the dissociation of elements in a hierarchical structure. Friedmann and Grodzinsky argue that verbs come into the phrase marker fully inflected and raise to various nodes in order to check features and that impaired nodes cannot check features, allowing an otherwise ungrammatical string to converge. Tense errors are thus predicted to be random. Although it does appear that TP is impaired in both patients, as they consistently made errors in tense, the errors were not random. Thus, Friedmann and Grodzinsky thus have the same problems as those mentioned in the previous section: they cannot account for substitution in a language that allows omission, for substitution that is not random, and for the relatively low error rate.

The second problem is that the hypothesis predicts C to be impaired. According to the Tree-Pruning Hypothesis, it can be assumed that as T is impaired, all functional categories above are predicted to be impaired. Given the clause structure assumed for Korean, presented in Section 1.2.3, C must also be impaired (29). Note that placement of elements in the tree is only illustrative of where items/features move for checking purposes.

(29)



This prediction holds for complementizers and attributive particles, as neither patient produced embedded clauses or attributive adjectives.

However, it is widely argued in the Korean syntax literature that the verb-final element is in C position (Kang 1988, Ahn 1990, Yoon 1990, Cho 1994). Yet, if elements in C are impaired, verb-final elements should also be impaired. In fact, the prediction for Korean would be that verb-final

morphemes would be incorrectly substituted, for omission would result in a non-word. This is clearly not the case. Both patients were perfect in their production of these elements. Again, the data in Korean do not support the hypothesis.

One counter-argument may be that these verb-final morphemes are not in C (or rather that they are not checked in C). In fact, this issue has been raised by Cho (1994), who argues that the verb-final element is a functional category that heads its own projection, called Mood and MoodP, respectively. He also argues that MoodP is above TP but lower than CP. Regardless of what the verb-final element is called (i.e., C or M), it is clear that it is a functional morpheme affixed to the final verb (i.e., an inflectional morpheme), that it is higher in the structure than tense, and that it is either in the same position as or in the node immediately below C. Therefore, this element is either above an impaired node or between two impaired nodes. If an unimpaired node exists above and impaired node or between two impaired nodes, the hierarchical model cannot be an adequate description.

Thus, the Korean data do support the claim that the pattern of breakdown in inflectional morphemes is not the same across the board. However, although Friedmann and Grodzinsky have made an important contribution by proposing an account of this pattern of breakdown, their Tree-Pruning Hypothesis is inconsistent with the Korean data. Even in the uncontrolled environment of spontaneous speech, where patients are

provided the opportunity for avoidance, errors and intact elements that are inconsistent with the hypothesis emerge. This is the strongest type of evidence against an hypothesis, for spontaneous speech errors are more difficult to elicit than experimental manipulations, which are designed to force production errors that may otherwise be avoided.

4.4 Limitations and Further Research

Although the data and the patterns that emerge from those data presented in this thesis are significant and provide much information about Korean agrammatism, the major limitation of the study is that it is based on only two patients; more patients are needed in order to get a fuller picture. Thus, further research is needed to refine the description of impairment in Korean.

As stated previously, descriptions alone are not sufficient, for they are only a first step toward understanding. It was seen that the current linguistic accounts are inconsistent with the data presented in this study. Although this is an important finding, more important is the need to find an explanation. Further research will need to not only collect more data and conduct experimental manipulations in order to tease apart subtle patterns in agrammatic speech, but also construct a more plausible account for the patterns.

Finally, as agrammatic speech inevitably involves production, further investigations and accounts will need to take into consideration how the

various components of language processing interact in a normal system and relate that interaction to the impaired system.

CHAPTER 5

CONCLUSION

The goal of this thesis was to describe the general characteristics of Korean agrammatic production, while at the same time contributing source data for cross-linguistic comparisons. It was noted that no other study has provided a broad linguistic description of Korean agrammatism and that to begin neurolinguistic studies in Korean, such a description is required. Using the methodology found in Menn and Obler (1990) for collecting, analyzing, and presenting data, the thesis provided a description of the patterns of sparing and loss through the narratives of two patients.

The Korean patients were seen to display the general properties associated with clinical descriptions of agrammatism. Their speech was nonfluent, effortful, and dysprosodic. They spoke in very short phrases, and there was a tendency to omit or substitute grammatical elements (e.g., auxiliaries, postpositions, inflectional affixes). Additionally, the patients showed a preference for content over function words, for simple syntactic constructions, and for canonical word order. It was also seen that the impairment is grammatical and not lexical, as lexical selection and token/type analyses revealed little difference between patients and controls.

In relation to the general patterns of agrammatism reported for the fourteen languages in Menn and Obler (1990), Korean patients generally pattern the same. However, it was noted that there were some

language-specific differences. One important difference was that impaired bound morphemes sometimes involved omission and sometimes substitution. For example, based on Menn and Obler, it was predicted that all bound morphemes would be substituted; however, it was found that verbal inflections were substituted, while particles (i.e., Case markers and postpositions) were omitted. Overall, the findings in this study are compatible with those of other studies in that agrammatic aphasia in Korean involves some similar production characteristics (e.g., slow, effortful speech with no production of non-words) and some different language-specific characteristics (substitution or omission of elements).

Although descriptions of patterns are a necessary first step, they do not explain *why* some properties of the language system are impaired and some are not. The next step is to account for the pattern of sparing and loss within a theoretical framework. A secondary goal of this thesis, then, was to consider the findings in light of the linguistic accounts proposed by Grodzinsky (1990, 1997) and Friedmann and Grodzinsky (1997). In terms of Grodzinsky (1990, 1997), it was argued that the underspecification account of omission and substitution results in predictions for Korean that were not consistent with the data. For example, the theory predicted that impaired tense nodes would result in the omission of tense morphemes, and yet substitution occurred. It was concluded that underspecification cannot account for the substitution of inflectional morphemes in a language where omission is possible. It was also argued that even if substitution could be

accounted for, the substitution is predicted to be random. Again, this is inconsistent with the Korean data, for the direction of error was found to be consistent. Finally, it was argued that the underspecification account is not consistent with the relative percentage of errors in the data. That is, it is not obvious why the error rate in impaired categories should be 25% rather than random.

In terms of Friedmann and Grodzinsky's (1997) Tree-Pruning Hypothesis, it was argued that, like the underspecification account, it cannot account for substitution in a language that allows omission, for substitution that is not random, and for the relatively low error rate. Additionally, it was argued that their hypothesis cannot account for the presence of an intact node (i.e., C) higher than an impaired node (i.e., T), for all functional categories above an impaired node are predicted to be impaired as well. The data clearly show that both patients were impaired in tense but not in verb-final elements. It was thus concluded that the Tree-Pruning Hypothesis is inconsistent with the Korean data.

Overall, the findings of this study are consistent with the findings of other studies in that they confirm that not all functional categories are equally impaired and that error types vary from language to language, but in very systematic and highly constrained ways. Further research is required to investigate this range of this variation and to refine explanations for that variation.

APPENDICES

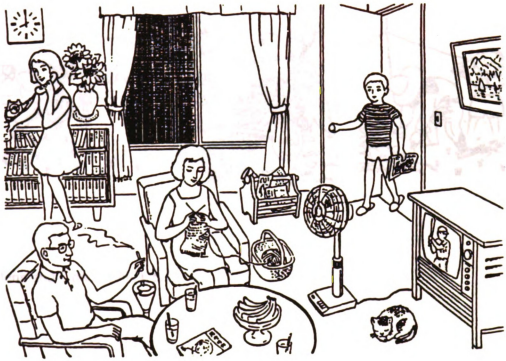
APPENDIX A

KOREAN FOLKTALE NARRATIVE

A long, long time ago, there were two brothers: Nolbu and Hungbu. Nolbu was mean, greedy, and selfish. Hungbu was nice, generous, and caring. After their parents passed away, both brothers inherited the family property, but Nolbu took all of it and kicked Hungbu out. One day, Hungbu found a bird with a broken leg inside his house. He took good care of the bird, and the next year the bird brought Hungbu a gourd seed in appreciation. Hungbu planted the seed and took good care of it. Many gourds grew from that seed. When Hungbu opened each of the gourds, he was surprised to find all kinds of jewelry, silk and gold. As a result, Hungbu became a very rich man. Nolbu, however, heard the news of his brother's fortune and wanted to become richer than him. So, Nolbu found a bird, broke one of the bird's legs, and the next year made the bird bring him a gourd seed. Nolbu planted the seed and waited. The next year Nolbu was very excited about opening the new gourds. When he opened the gourds, however, he didn't find anything like what Hungbu found. In fact, he found all kinds of monsters that came out and punished him.

APPENDIX B

ACTION PICTURE



Menn and Obler (1990), p.34

APPENDIX C

PICTURE SEQUENCE

Menn and Obler (1990), p.35

CYS:

Histo

nun tt

um –

susel

um ..

... p^{h}

Wo

jang

... u

um

Da

un

un

k^{h}

APPENDIX D1

CYS: PRIMARY TRANSCRIPTIONS AND INTERLINEAR MORPHEMIC TRANSLATIONS

CYS: Primary Transcription

History

e e
nun ttaemuney um...uh...um...an poye. um...um...um...um...y/o/ki--y/o/ki ... ttokkat --

um -- nun nun ttaemuney -- nun ttaemuney an poye. um ... ankyeng kkiesse. um ...

ey
susel haesse. um ... um...pyengwen/ney/se um ... seypen haesseyo--sepen haesseyo. um ...

l n
um ... seu/n/ . taehak ... um ... um ... um . sepe/ / haesseyo. um ... um ... um ... um

... p^hali apasse um ... ah . um ... um ... um ... um ... unh ... . whew ...um . ta ape.

4 minutes 1 second
30 words
15 'syntactic' phrases

Work

jangsa whew p^haesyon whew um ... um ... aniya (sighs) ani um . um ... an

j j s j ng s j s
... uh . /s/angsa--/s/ang/k/a--/s/a/n//j/a--/s/angsa--jang/j/a--jangsa ... p^halasse um ...

um ... p^halasse.

1 minute 44 seconds
13 words
8 'syntactic' phrases

Daily

p^h k
untong ...tollye. (laughs) ... tali . /t/al . untong . p^hal tollye. ku -- /j/iku. um ... um ...

um ... um ... uh untong . um ... pal ... um ... kiku --kiku whew isse. tto isse. k^hong --

k^hong --k^hong p^hal ape. um (shows rolling motion) um k^hong ... k^hong unh

k^{h}ong ur

unh . an

... um ...

um um

(looks fo

(showin

...yeng

um ... u
e
... y o k

kkenae
p
n ate

pap me

The H

nalye

~hens

puffin

t^{h}o-t^{h}o

(laugh

e e
k^{h}ong unh ... k^{h}ong . k^{h}ong (laughs) y/o/ki -- y/o/ki ... unh ... (shows rolling again)

unh . an toi ... uh . uh . unh . uh . ... um . epse. [E] aniya. isse. untong whew um

... um ... jeki. . um ... um ... tollye. ... (laughs)

um um ... um ... um ... ani. ttukewe. ... seypen -- seypen eng . eng ike . um

(looks for something) um... ju-jup^{h}asu . jup^{h}a-su whew um ... jup^{h}asu . um ...

(showing action) tali eng son . ta-ttu-sse eng -- ta halsuisse . tali . pwa . um ...

...yeng . um ... an poye ankyeng sse-sseye ...ankyeng . an poye um um ... ankyeng

um ... um ... ankyeng ... ani . ah eng . jipene. jjije. um ... um ... ani. um
e
... y/o/ki . ankyeng pes ... whew taptap . kkenae . um . um . um ... kkenae . um .
t
kkenae-ne--kkenaene. ssu-sulkkeya. ankyeng . kkenae-ne. Jinsuni . /p/a
p
/n/ate eng. ta pate ... whew (laughs) eng. yangci eng untong um ...

pap meke . um ... epse eng (laughs).

5 minutes 30 seconds
86 words
58 'syntactic' phrases

The Hare and the Tortoise

t^{h} n t^{h} t^{h}
nulye. /tt/okki . jam jasse. ... su--/t/ulye. /tt/okki . jam jasse. /tt/okki ... whew hek tek

--henseng silye ... hek--hek--hek--heksi ... hellek hellek whew (laughs) uh . (makes
t^{h}
puffing noises). hellek hellek (laughs) whew . kepuki . /tt/okki ... kepuki ah .
j j
t^{h}o-t^{h}okki--t^{h}okki . um ... /s/am jasse --/s/am jasse. mansey (raises her arms) . mansey

(laughs).

1 minute 32 seconds
29 words
16 'syntactic' phrases

Action P

jenhwa h

um ...ku

p'i-hae

...koyan

Picture

um ... p

jjallass

CYS

Histo

(1)

(2)

(3)

Action Picture

jenhwa haesseyo. ... uh ani . um ... tasi .um ... patasse--patasseyo--haesseyo--patasseyo.

um ...kuli ... um ... jul--jul--jullek ...talasseyo. kassta wasseyo. ... tampae
0 t m p t m pae t p
p^hi--haess/jj/e. /p/a/n//t/ae p^hiu--p^hi--p^hi ... /p/a/n//ta/ wasseyo--/p/am/t/ae p^hi

...koyang--koyangi . yaku ... $senp^h$ungki ... epseyo emma--emma wasseyo.

2 minutes 43 seconds
29 words
18 'syntactic' phrases

Picture Sequence

um ... pye . jjallasseyo. (laughs) ... um ... pye ... eng ... jjallassupnita. ... pye .

jjallassupnita ... an ... ah ... molla uh . uh . uh . p^halassupnita.

1 minute 27 seconds
9 words
6 'syntactic' phrases

CYS: Interlinear Morphemic Translation

History

-ess
(1) *nun* *ttaemuney* *an* *poy* *-e* *[yo]*
eyes because not be seen:PRED:(PRES)-VFE:(DEC):INT[:POL]
I can't see because of my eyes.
* correct tense is *PAST*
N Adv neg V

(2) *yeki* *ttokkat* *[i-eyo]*
here same [be/id:PRED:(PRES)-VFE:(DEC):POL]
[It is the] same here.
dem Adj [v]

-ess
(3) *nun* *ttaemuney* *an* *poy* *-e* *[yo]*
eyes because not be seen:PRED:(PRES)-VFE:(DEC):INT[:POL]
I can't see because of my eyes.
* correct form is *PAST*
N Adv neg V

(4) *ar*
gl
I
•

(5) *s*
o
I

(6) *p*
I

(7)

(8)

(9)

Wor

(10)

sse

(4) *ankyɜng [-ul]* **kki-ess-e [yo] /*
glasses [-PTL:ACC:OPTL] put in:PRED-PAST-VFE:(DEC):INT[:POL]
I put on glasses.
* semantic error; the appropriate verb is *'use wear.'*
N [ptl] V

(5) *susel [-ul]* *ha-ess-e [yo]*
operation [-PTL:ACC:OPTL] do:AUX-PAST-VFE:(DEC):INT[:POL]
I had an operation.
N [ptl] aux

(6) *pyengwen-eyse* *sey-pen* *ha-ess-eyo*
hospital-PTL:LOCd 3-PTL:CLS do:PRED-PAST-VFE:(DEC):POL
I did it three times at the hospital
N ptl N V

(7) *seul* *taehak* *[pyengwen-eyse]* *sey-pen*
Seoul university [hospital-PTL:LOCd] 3-PTL:CLS
I did it three times [at]
N N [N ptl] N

ha-ess-eyo
do:PRED-PAST-VFE:(DEC):POL
Seoul University [hospital].
V

(8) *p^{h}al-i* *ap-ass-e [yo] /*
arm-PTL:NOM hurt:PRED-PAST-VFE:(DEC):INT[:POL]
arm hurt.
N ptl V

-ass

(9) *ta* *ap *-___-e [yo] /*
all hurt:PRED:(PRES)-VFE:(DEC):INT[:POL]
all hurts.
* correct tense is *PAST*
Adv V

Work

(10) *jangsa [-lul]* *[ha-ess-ɜyo] /*
sales [-PTL:ACC:OPTL] [do:AUX-PAST-VFE:(DEC):POL]
[I worked in] sales.
N [ptl] [aux]

(11) *p*
fas
[

(12) */o*
[c
so
[N

Daily

(13) *w*
e
[

(14) */*
[
t

(15) *t*
l
[

(16) *
a
]

(17)

(18)

(11) *pʰaesyon* *[il-lɯl]* *[ha-ess-eyo]*
fashion [work-PTL:ACC:OPTL] [do:AUX-PAST-VFE:(DEC):POL]
[I worked in] fashion.
N [N ptl] [aux]

(12) *[os-ɯl]* *pʰal-ass-e [yo]*
[clothes-PTL:ACC:OPTL] sell:PRED-PAST-VFE:(DEC):INT[:POL]
sold [clothes].
[N ptl] V

Daily

(13) *untong [-ɯl]* *[ha-eyo]*
exercise [-PTL:ACC:OPTL] [do:AUX:(PRES)-VFE:(DEC):POL]
[I do] exercise.
N [ptl] [aux]

(14) *[mom-ul]* *tolly-e [yo]*
[body-PTL:ACC:OPTL] turn:PRED:(PRES)-VFE:(DEC):INT[:POL]
turn [my body].
[N ptl] V

(15) *tali* *untong [-ɯl]* *[ha-eyo]*
leg exercise [-PTL:ACC:OPTL] [do:AUX:(PRES)-VFE:(DEC):POL]
[I do] leg exercises.
N N [ptl] [aux]

(16) *pʰal [-ɯl]* *tolly-e [yo]*
arm [-PTL:ACC:OPTL] turn:PRED:(PRES)-VFE:(DEC):INT[:POL]
I turn my arms.
N [ptl] V

(17) *kiku [-ka]*
exercise machine [-PTL:NOM:OPTL]
have
N [ptl]

iss-e [yo]
be/exist:PRED:(PRES)-VFE:(DEC):INT[:POL]
exercise machine.
v

(18) *tto* *iss-e [yo]* *kʰong*
another be/exist:PRED:(PRES)-VFE:(DEC):INT[:POL] bean
I have another - beans.
Adv v N

(19) *p*
a
a

(20)

(21)

(22)

(23)

(24

(25

(2

(19) *pʰal [-i]* *ap-e [yo]* /
arm [-PTL:NOM:OPTL] hurt:PRED:(PRES)-VFE:(DEC):INT[:POL]
arm hurts.
N [ptl] V

(20) *yeki [-ka]* *an* *toi [yo]* /
here [PTL:NOM:OPTL] not become:PRED:(PRES)-(VFE:DEC):INT[:POL]
This does not work.
dem [ptl] neg V

(21) *eps-e [yo]* /
not be/exist:PRED:(PRES)-VFE:(DEC):INT[:POL]
nothing else.
v

-yo
(22) *ani* *-ya.*
not be:PRED:(PRES)-(VFE:DEC):PLA
No.
* correct level is *(VFE:DEC):POL*
v

iss-e [yo] /
be/exist:PRED:(PRES)-VFE:(DEC):INT[:POL]
There is.
v

(23) *untong [-ul]* *[ha-eyo]*
exercise [-PTL:ACC:OPTL] [do:AUX:(PRES)-VFE:(DEC):POL]
[I do] exercise.
N [ptl] [aux]

(24) *jeki [-lul]* *tolly-e [yo]* /
there [PTL:ACC:OPTL] turn:PRED:(PRES)-VFE:(DEC):INT[:POL]
turn that.
dem [ptl] V

(25) *ttukew-e [yo]* /
hot:PRED:(PRES)-VFE:(DEC):INT[:POL]
It is hot.
V

(26) *sey-pen* *[ha-eyo]* /
3-PTL:CLS [do:PRED:(PRES)-VFE:(DEC):POL]
[I do it] three times.
N [aux]

(27)

(28)

(29)

(30)

(31)

(32)

(32)

(27) *ikes[-i]* *jup^{h}asu*
this[PTL:NOM:OPTL] electric stimulator
This -
dem [ptl] N

[i-eyo]
[be/id:PRED:(PRES)-VFE:(DEC):POL]
[is an] electric stimulator.
[v]

(28) *tali [eyta]* *son [eyta]*
leg [PTL:LOC:OPTL] hand [PTL:LOC:OPTL]
I use it on
N [ptl] N [ptl]

ta *sse [yo]*
all use:PRED:(PRES)-(VFE:DEC):INT[:POL]
my legs, hands, everything.
Adv V

(29) *ta* *ha-lsu* *-iss-e [yo]*
all do:PRED-MOOD be:AUX:(PRES)-VFE:(DEC):INT[:POL]
I can do it all over.
Adv V-aux

(30) *tali [eyta]* *[sse-yo] /*
leg [PTL:LOC:OPTL] [use:PRED:(PRES)-VFE:(DEC):POL]
[I use it on my] leg
N [ptl] [V]

(31) *[TV-lul]* *po-a [yo]*
[TV-PTL:ACC:OPTL] watch:PRED:(PRES)-VFE:(DEC):INT[:POL]
I watch [TV].
[N ptl] V

(32a) *yeng[hwa-lul]* *[po-jiman]*
mov[ie-PTL:ACC:OPTL] [watch:PRED:(PRES)-CONJ]
[I watch] mov [ies but]
N [ptl] [V-adv]

(32b) *an* *poy-e [yo] /*
not be seen:PRED:(PRES)-VFE:(DEC):INT[:POL]
I cannot see.
neg V

(33)

(34)

(35)

(36)

(37)

(38)

(33) *ankyeng [-ul]* *sse-ya*
glasses [-PTL:ACC:OPTL] use:PRED-MOOD
I have [to]
N [ptl] V

[ha-eyo]
[-do:AUX:(PRES)-VFE:(DEC):FOR]
wear glasses.
[-aux]

(34) *ankyeng [epsi]* *an* *poy-e [yo] /*
glasses [without] not be seen:PRED:(PRES)-VFE:(DEC):INT[:POL]
I can't see [without] my glasses.
N [ptl] neg V

(35) *[ankyeng-ul]* **jipene [yo] /*
[glasses-PTL:ACC:OPTL] put in:PRED:(PRES)-(VFE:DEC):INT[:POL]
I put [the glasses] in.
* semantic error?
[N ptl] V

(36) *[ankyeng-ul]* **jjije [yo] /*
[glasses-PTL:ACC:OPTL] rip:PRED:(PRES)-(VFE:DEC):INT[:POL]
[The glasses] rip.
* semantic error?
[N ptl] V

(37) *ani[yo]* *yeki [-ey]*
not be/id:PRED:(PRES)-(VFE:DEC):INT[:POL] here [PTL:ABL:OPTL]
No. I to take
v dem [ptl]

ankyeng [-ul] **pes[-eyo] /*
glasses [-PTL:ACC:OPTL] take off:PRED:(PRES)-[(VFE:DEC):POL]
glasses off here.
* she does not produce verb that is a nonword; she stops in the middle of production
N [ptl] V

(38) *taptap* *[ha-eyo] /*
frustrated [do:AUX:(PRES)-VFE:(DEC):POL]
[I am] frustrated.
Adj [aux]

(39) *[ankyeng-ul]* *kkenae [yo]* /
[glasses-PTL:ACC:OPTL] take out:PRED:(PRES)-(VFE:DEC):INT[:POL]
I take [the glasses] out.
[N ptl] V

(40) *[ankyeng-ul]* *kkenae-*
[glasses-PTL:ACC:OPTL] take out:PRED:(PRES)-
I take [the glasses] out
[N ptl] V-

ne [yo] /
put:AUX:(PRES)-(VFE:DEC):INT[:POL]
and put them somewhere.
aux

eyo
(41) *[ankyeng-ul]* *su-lkke-***ya* /
[glasses-PTL:ACC:OPTL] use:PRED-MOOD-(VFE:DEC):PLA
I will use [the glasses].
* correct is VFE:*(DEC):POL*
[N ptl] V

(42) *ankyeng [-ul]*
glasses [-PTL:ACC:OPTL]
I take the glasses out
N [ptl]

kkenae- *ne [yo]* /
take out:PRED:(PRES)- put:AUX (PRES)-(VFE:DEC):INT[:POL]
and put them somewhere.
V-aux

(43) *Jinsuni [-hanʰey]* *[jenhwa-lul]*
Jinsuni [PTL:SRC] [telephone-PTL:ACC:OPTL]
I receive
N [ptl] [N ptl]

pat-e [yo] /
receive:PRED:(PRES)-VFE:(DEC):INT[:POL]
(phone calls from) Jinsuni.
* not a natural way to express this
V

(44) *ta* *pat-e [yo]* /
all receive:PRED:(PRES)-VFE:(DEC):INT[:POL]
I receive all..
Adv V

(45)

(46)

The H

(47)

(48)

(49)

(50)

(51)

(45) *yangci [lɯl]* *[ha-eyo] /*
toothbrushing [-PTL:ACC:OPTL] [do:AUX:(PRES)-VFE:(DEC):POL]
brushing teeth.
N [ptl] [aux]

(46) *pap* *mek-e [yo] /*
rice eat:PRED:(PRES)-VFE:(DEC):INT[:POL]
I eat
N V

The Hare and the Tortoise

(47) *[kepuki-ka]* *nɯly-e [yo] /*
[turtle-PTL:NOM] slow:PRED:(PRES)-VFE:(DEC):INT[:POL]
[The turtle] is slow.
[N ptl] V

(48) *tʰokki [-ka]*
rabbit[-PTL:NOM:OPTL]
The rabbit
N [ptl]

jam [-ɯl] *ja-ss-e [yo] /*
sleep [-PTL:ACC:OPTL] sleep:PRED-PAST-VFE:(DEC):INT[:POL]
slept.
N [ptl] V

han-sum sui-e
(49) **henseng silye* /
meaningless string
* maybe attempt to say *'(the rabbit) is out of breath.'*
*one-breath, breathe:PRED:(PRES)-*VFE*:(DEC):INT*

(50) helleypelttek-kely-e
**hellek hellek* *(makes puffing noises) /*
* maybe attempt to say *pant and puff:PRED:(PRES):*VFE*:(DEC):INT*

(51) *kepuki [-ka]* *mansey* *[-lɯl]*
turtle [-PTL:NOM:OPTL] cheers [-PTL:ACC:OPTL]
The turtle
N [ptl] N [ptl]

pul
**ha-ess-eyo /*
do:PRED-PAST-VFE:(DEC):POL
did a cheer.
* correct verb is *call out*
aux

(52)

(53)

(54)

(55

(56

(5'

(5

Action Picture

-ko iss

(52) *jenhwa [-lul]* *ha *-ess -eyo /*
telephone [-PTL:ACC:OPTL] do:AUX-PAST-VFE:(DEC):POL
She telephoned.
* the correct form is *do:PRED-GER be:AUX:(PRES)= is doing*
N [ptl] aux

(53) *ani [yo]* *tasi /*
not be/id:PRED:(PRES)-VFE:(DEC):PLA [POL] again
No. Again.
v Adv

-ko iss

(54) *pat *-ass -e [yo] /*
receive:PRED-PAST-VFE:(DEC):INT[:POL]
She received (a phone call).
* the correct tesne is *receive:PRED-GER be:AUX:(PRES)= is receiving*
V

-ko iss

(55) *pat *-ass -eyo*
receive:PRED-PAST-VFE:(DEC):POL
She received (a phone call).
* the correct tense is *receive:PRED-GER be:AUX:(PRES)= is receiving*
V

-ko iss

(56) *ha *-ess -eyo*
do:PRED-PAST-VFE:(DEC):POL
She did it.
* the correct tense is *do:PRED-GER be:AUX:(PRES)= is doing*
V

sil ttukaejil-ul ha -ko iss

(57) **jul *_____ *tal *-ass -eyo /*
string hang:PRED-PAST-VFE:(DEC):POL
(The mother) hung the string.
* semantic error; may be *sil=yarn, knit-PTL:*ACC,
do:PRED-GER be:AUX:(PRES)= is knitting yarn
N V

(58) *[atul-un] [eti-ey] kasstawa-ss-eyo /*
[son-PTL:NOM] where-PTL:LOC return:PRED-PAST-VFE:(DEC):POL
[The son] came back [from somewhere].
[N ptl] [N ptl] V

(59)

(60)

(61)

(62)

(63)

(64)

(65)

(59) *tampae [-lɯl]*
cigarette [-PTL:ACC:OPTL]
He
N [ptl]

pʰi[-ko iss-eyo] /
smoke:PRED-[GER be:AUX:(PRES)-VFE:(DEC):POL]
smo...
V [-aux]

(60) *ha-ess-eyo /*
do:PRED-PAST-VFE:(DEC):POL
He did (it).
V

pʰiu -ko iss
(61) *tampae [-lɯl]* *wa *-ss -eyo /*
cigarette [-PTL:ACC:OPTL] come:PRED-PAST-VFE:(DEC):POL
He smoked a cigarette.
* correct verb is *smoke:PRED-GER be:AUX:(PRES)*=is smoking
N [ptl] V

(62) *koyangi [-ka] [ja-ko iss-eyo] /*
cat [-PTL:NOM] [sleep:PRED-GER be:AUX:(PRES)-VFE:(DEC):POL]
The cat [is sleeping]
N [ptl] [V-aux]

(63) *yaku [-lɯl]*
baseball [PTL:ACC:OPTL]
[He is
N [ptl]

[po-ko iss-eyo] /
[watch:PRED-GER be:AUX:(PRES)-VFE:(DEC):POL]
watching] baseball.
[V-aux]

(64) *senpʰungki [-ka] [toraka-yo]*
fan [-PTL:NOM] [turn:PRED:(PRES)-(VFE:DEC):POL]
fan [turns].
N [ptl] [V]

(65) *eps-eyo /*
not be/exist:PRED:(PRES)-VFE:(DEC):POL
There is nothing (else).
v

(66)

Pictu

(67)

(68

(69

(70

?? 0

(66) *emma [-ka]* **wa-* **-ss* *-eyo* /
mom [-PTL:NOM:OPTL] come:PRED-PAST-VFE:(DEC):POL
Mom came.
* semantic error; mom is sitting in a chair knitting.
N [ptl] V

Picture Sequence

-ko iss

(67) *pye [-lul]* *jjalla* **-ss* *-eyo* /
rice stalk [-PTL:ACC:OPTL] cut:PRED-PAST-VFE:(DEC):POL
He cut down the rice.
* correct tense is *GER be:AUX:(PRES)=is cutting*
N [ptl] V

-ko iss

(68) *pye [-lul]* *jjalla* **-ss* *-upni-ta*
rice stalk [-PTL:ACC:OPTL] cut:PRED-PAST-VFE:FOR-DEC
He cut down the rice.
* correct tense is *GER be:AUX:(PRES)= is cutting*
N [ptl] V

(69) *molla [-yo]* /
not know:PRED:(PRES)-(VFE:DEC):INT[:POL]
I don't know.
V

(70) *[pye -lul]* *p'al-ass-upni-ta* /
[rice stalk-PTL:ACC:OPTL] sell:PRED-PAST-VFE:FOR-DEC
He sold [the stalk].
[N ptl] V

APPENDIX D2

KKM: PRIMARY TRANSCRIPTIONS AND
INTERLINEAR MORPHEMIC TRANSLATIONS

KKM: Primary Transcription

History

m ss ss
eh ... /p/okjangey . eh ka/s/esseyo. eh . juil ila. mokjangey ka/s/esseyo. eh ... jipey
o ss
salamhakoyo. suy/e/ngjang issketenyo. hanseng mokjangey ka/s/esseyo. eh ... pulul
i ke n
p^{h}yeko ... eh ... um ... eh ... kapjak/ey/ . kim hotu solika tullye . eh . ku/o/si pu/l/ myeng

ha--hayo. kuhulonun um ... kieki an nayo.

1 minute 21 seconds
28 words
11 'syntactic' phrases

Work

j
/k/ikjangey ku--kumantuko mokjangey ... se--so--jejsolul kiwesseyo. eh ... tangyoka

issketenyo. mokjang . eh . um . mokjang saep . eh . eh ... tungsan ... p^{h}ala

pelyesseyo. tungsan na--na hollo tungsanul cinku hanmyengto epse. tungsanhako
h
teymosan kuliko eh ... na--nam etiey kyeysintey? munan/n/ae eh ... calul t^{h}ako eh

...tto taniko cencelul tu--taniko unjen myeng hejie eh ... unjen si--sihem ... eh ... (laughs
p
and waves hand 'no') jangaeja sihem pol ...ha/k/kyek toisse. kuntey ...
ui
unye--ul--w/u/yemhaese mos kele.

2 minutes 44 seconds
50 words
23 'syntactic' phrases

Family

k^{h} k^{h} t tt k ey tt tt
key . sey salam . eh ... /k/ɯn--/k/ɯn atɯl. /j/u ... /t/al . ma/n/nae atɯl i/ya/yo. eh.. /t/al--/t/al
p^{h} ɯ 0
. eh ... taehakkyo taniko ji . eh . /p/ɯlangs/u/ ɯnhaeng/k/ey ipsahako . ah .
hy jae j 0ɯ o
/j/en/cae/--nɯn--si/k/ip/pu/l kakko isseyo. ... ah ... eh . s/e/nnye ttali isseyo. taɯm . maknae
a 0
yaeki h/ae/lkkeyyo. man . yey--yensey . taehakkyo . kɯmnyeney...jolephaesseyo.
0 i o
cuijik/k/ɯn. eh ... um . eh . whew ... taeu . samseng . whew . tae/h/u samseng kɯl/u/k/u/ .
i o ui
hyentae taeu samseng . kɯl/u/k/u/ (experimenter guesses Lucky Goldstar) c/i/jikɯl
ɯ
k/u/leh-key haessesseyo. ...na . ilekɯl p^{h}yengsaengɯl . tɯngsaneyman yeljung haeyo.
c l
/j/inkupuntɯl mannasseyo. su/p/ mekki.

3 minutes 3 seconds
55 words
18 'syntactic' phrases

Action Picture

ey mu ae ɯ ɯ
enɯ kajeng/hae/se eh . ah ... pang/pe/nɯl h/aye/ssɯpnita. eh ... k/o/jip/u/n ... eh

jajen . eh ... uh ... appaka ... eh ... eh ...t^{h}eyleypilɯl . poko issessɯpnita.
a e wa m
emmanɯn ttɯkeykilɯl h/ae/ko . s/o/np^{h}ungkilɯl t^{h}ɯlko k/a/ilɯl . pananalɯl /p/ekko jyusɯto
e ye tt wa
m/o/kko . eh ... aitɯlɯl sinmunjilɯl po--kaj/u/oko . /t/alɯn jenh/a/kilɯl kelko issessɯpnita.

2 minutes 1 seconds
27 words
10 'syntactic' phrases

Picture Sequence

0 sɯp
mo simkilɯl hako . uh ... /si/sim/ /nita. mo ... um ... cusulɯl hako . sɯ--sɯ--sɯl . eh ...
ɯ
nongpuka iessko tɯ--talkujilɯl k/u/lesɯpnita.

1 minute 3 seconds
11 words
5 'syntactic' phrases

(1)

(2)

(3)

(4)

(5)

(6)

(7a)

KKM: Interlinear Morphemic Translation

History

(1) *mokjang-ey* *ka-ss-ess-eyo* /
farm-PTL:LOC go:PRED-PAST-PAST-VFE:(DEC):POL
I had gone to the farm.
N ptl V

(2) *juil* *i-la [seyo]* /
weekend be/id:PRED:(PRES)-VFE:(DEC):PLA [POL]
It is the weekend.
N v

(3) *mokjang-ey* *ka-ss-ess-eyo* /
farm-PTL:LOC go:PRED-PAST-PAST-VFE:(DEC):POL
I had gone to the farm.
N ptl V

0
(4) *jip* **-ey* *salam-hako-yo* /
home-PTL:LOC person-CONJ-POL
With a person to the house.
* intended form is *jib-salam = home person = wife*
N ptl N ptl

(5) *suyong-jang [-i]*
swimming-pool [-PTL:NOM:OPTL]
There is a swimming
N [ptl]

iss-keten-yo /
be/exist:PRED:(PRES)-VFE:SUPP:(DEC)-POL
pool there, you know.
V

(6) *hanseng* *mokjang-ey* *ka-ss-ess-eyo* /
Hansung farm-PTL:LOC go:PRED-PAST-PAST-VFE:(DEC):POL
I had gone to Hansung swimming pool.
N N ptl V

(7a) *pul-ul* *pʰye-ko* [*iss-ess-nuntey*]
fire-PTL:ACC start:PRED:(PRES)-CONJ [be:AUX-PAST-CONJ]
[I was] started a fire and
* by adding the AUX,-*ko* becomes a gerund and the construction progressive
N ptl V-aux-conj

ha-nun

(7b) *kapjaki* *k'ung* **hotu* *soli-ka*
suddenly boom walnut sound-PTL:NOM
suddenly a boom walnut sound
* correct is *do:AUX-ADNZ + sound-PTL:NOM = a booming sound*
Adv N N N ptl

-ess
tully **-e* *[yo]* /
be heard:PRED:(PRES)-(DEC):INT [:POL]
is heard.
* correct tense is *PAST*
V

-ess

(8) *kukes-i* *punmyeng* *ha* **-yo* /
that-PTL:NOM certain do:AUX:(PRES)-(DEC):POL
That is certain.
* correct form of the verb is *ha-yo*. Missing the VFE that goes with *yo*;
also, correct tense is *PAST*.
dem ptl Adj aux

(9) *ku-hu-lo-nun* *kiek-i*
that-after-PTL:TEMP-PTL:CON memory-PTL:NOM
After that,
Adv ptl N ptl

an *na-yo*
not occur:PRED:(PRES)-(VFE:DEC):POL
I don't remember.
neg V

Work

-ul

(10a) *jikjang* **-ey* *kumantu-ko*
job-PTL:LOC quit:PRED:(PRES)-CONJ
I quit at my job and
* correct form is *PTL:*ACC = *'quit my job'*
N ptl V-conj

-eyse

(10b) *mokjang* **-ey* *jejso-lul* *kiwe-ss-eyo* /
farm-PTL:LOC milk cow-PTL:ACC raise:PRED-PAST-VFE:(DEC):POL
raised milk cows at the farm.
* correct PTL is LOC (dynamic)
N ptl N ptl V

(11) *tangyo-ka* *iss-keten-yo* /
diabetes-PTL:NOM be/exist:PRED:(PRES)-VFE:SUPP:(DEC)-POL
I have diabetes, you know.
N ptl v

(12) *mokjang* *saep [-ul]* *[ha-ess-eyo]* /
farm business [-PTL:ACC:OPTL] [do:AUX-PAST-VFE:(DEC):POL]
[I ran] a farm business.
N N [ptl] [aux]

(13) *tungsan [-ul]* *[ha-eyo]* /
hiking [-PTL:ACC] [do:AUX:(PRES)-VFE:(DEC):POL]
I [go] hiking.
N [ptl] [aux]

(14) *p'al-a-* *pely-ess-eyo* /
sell:PRED:(PRES)-AUX throw out:AUX-PAST-VFE:(DEC):POL
I sold everything off.
V-aux

(15) *tungsan [-ul]* *[ha-eyo]* /
hiking [-PTL:ACC] [do:AUX:(PRES)-VFE:(DEC):POL]
I [go] hiking.
N [ptl] [aux]

(16) *na* *hollo* *tungsan-ul* *[ha-eyo]* /
I alone hiking-PTL:ACC [do:AUX:(PRES)-VFE:(DEC):POL]
I [go] hiking alone.
N Adv N ptl [aux]

(17) *cinku [-ka]* *han-myeng-to*
friend [-PTL:NOM:OPTL] one-PTL:CLS-PTL:ADV
I don't have
N [ptl] N

eps-eyo /
not be/exist:PRED:(PRES)-VFE:(DEC):POL
even one friend.
v

(18) *tungsan-hako* *teymosan* *kuliko* /
hiking-CONJ Mt. Taemo CONJ
hiking and Mt. Taemo as well as ...
N ptl N conj

(1

(2

(2

(21

(21

(22)

(23)

(24)

(19) *eti-ey* *kyey-si-n-tey?* /
where-PTL:LOC live:PRED-HON-PRES-(INTER)-VFE:EXCL
Where (do they) live?
Adv ptl V

(20) *munan* *ha-e [yo]* /
smooth do:AUX:(PRES)-VFE:(DEC):INT [:POL]
(The trail is) smooth.
Adj aux

(21a) *ca-lul* *t'a-ko*
car-PTL:ACC ride:PRED:(PRES)-CONJ
We drive
N ptl V-conj

(21b) *tto* *[* *-lo]* *tani-ko*
also [-PTL:ACC] take-PRED:(PRES)-CONJ
also we take [something] and
Adv [N ptl] V-conj

-lo
(21c) *cencel* *-~~ul~~* *tani-ko [yo]* /
subway-PTL:ACC take-PRED:(PRES)-CONJ [POL]
we take the subway and
* correct particle with this verb is *via:PTL:INSTR*
N ptl V-conj

(22) *unjen* *myenghejung [-i]* *[iss-eyo]* /
driving license [-PTL:NOM:OPTL] [be/exist:PRED:(PRES)-VFE:(DEC):POL]
[I have] a driver's license.
N N ptl v

(23) *unjen* *sihem [-~~ul~~]* *[pwa-ss-eyo]* /
driving test [-PTL:ACC:OPTL] [see:PRED-PAST-VFE:(DEC):POL]
[I took] the driver's test
N N ptl V

-ess -eyo
(24) *jangaeja* *sihem [-~~ul~~]* *po* *-l* /
handicap test [-PTL:ACC:OPTL] see:PRED-ADNZ
To take the handicap test...
* intended tense is *PAST*-VFE:*(DEC)POL*
N N [ptl] V-adj

(25)

(26a)

(26b

Fan

(27

(28

(

(25) *hapkyek [-i]* *toi-ss-e[yo]* /
pass [-PTL:NOM:OPTL] become:PRED-PAST-VFE:(DEC):INT[:POL]
I was passed.
N [ptl] V

(26a) *kunteyn* *wiyem* *ha-ese*
however danger do:AUX:(PRES)-CONJ
However, it is dangerous so
Adv Adj aux-conj

ha
(26b) *mos* **kele[-yo]*
not walk:PRED:(PRES)-VFE:(DEC):INT[:POL]
I don't walk.
*correct verb is *do:AUX:(PRES)-VFE:(DEC):POL*
neg V

Family

(27) *sey* *salam [-i]* *[iss-eyo]* /
three person [PTL:NOM:OPTL] [be/exist:PRED:(PRES)-VFE:(DEC):POL]
There are 3 people.
Num N [ptl] [v]

tul-jjae-nun
(28) *k'u-n* *atul-hako* **tu* *ttal-hako*
big:PRED-ADNZ son-PTL:CONJ two daughter-PTL:CONJ
The oldest is a son and the second is a daughter and
* correct form is *two-ORD-PTL:CON = second*
V-adj N ptl Num N conj

maknae [-nun] *atul* *i-eyyo* /
youngest [-PTL:CON] son be/id:PRED:(PRES)-VFE:(DEC):POL
the youngest is a son.
N [ptl] N v

(29a) *ttal [-i]* *taehakkyo [-lul]*
daughter [-PTL:NOM:OPTL] university [PTL:ACC:OPTL]
My daughter attends
N [ptl] N [ptl]

-ess
*tani *__* *-ko*
attend:PRED:(PRES) -CONJ
university and
* correct tense is *PAST*
V-conj

(29b)

(29c)

(30)

(31)

(32)

(33

(29b) *p'ulangsu unhaeng-ey ipsa ha-ko*
France bank-PTL:LOC enter do:AUX:PRED:(PRES)-CONJ
enters a French bank and
N N ptl N aux-conj

(29c) *hyenjae-nun sijip-ul*
now-PTL:CON inlaw house-PTL:ACC
now she is
Adv ptl N ptl

ka -ess
**kaj* **-ko iss -eyo /*
hold:PRED-GER be:AUX:(PRES)-VFE:(DEC):POL
holding marriage.
*intended is *she has gone to the in-laws house= she got married.*
V-aux

(30) *sonnyettal-i iss-eyo /*
granddaughter-PTL:NOM be/exist:PRED:(PRES)-VFE:(DEC):POL
I have a granddaughter.
N ptl v

(31) *taum maknae yaeki ha-lkk-eyyo /*
next youngest child talk do:AUX-MOOD-VFE:(DEC):POL
Next I will talk about the youngest child.
Adv N N V

(32) *yensey taehakkyo [-lul] kumnyen-ey*
Yonsei University [PTL:ACC:OPTL] this year-PTL:TEMP
He graduated this year
N N [ptl] Adv

jolep ha-ess-eyo /
graduate do:AUX-PAST-VFE:(DEC):POL
[from] Yonsei University.
N aux

(33) *cuijik-un taeu samseng kuliko hyentae /*
job-PTL:CON Daewoo Samsung CONJ Hyundai
His job, Daewoo Samsung and Hyundai ...
(experimenter correctly guesses Lucky Goldstar)
N ptl N N conj N

-0

(34) *cuijik-~~ul~~* *k~~u~~le-key* *ha-ess* *-ess-eyo* /
job-PTL:ACC like that-ADVZ do:AUX-PAST-PAST-VFE:(DEC):POL
He has done that kind of job.
N ptl V-adv aux

ilsaeng

(35) *na [-~~nu~~n]* *iljek -~~u~~l* *p'yengsaeng-~~u~~l*
I [PTL:CON:OPTL] ?-PTL:ACC life-PTL:ACC
My life focuses
* correct form is *life;* the participant does self-correct with a synonym.
N [ptl] N ptl N ptl

t~~u~~ngsan-ey-man *yeljung* *ha-eyo* /
hiking-PTL:LOC-PTL:ADV focus do:AUX:(PRES)-VFE:(DEC):POL
only on hiking.
N ptl ptl N aux

-0

(36) *cinku* *-pun-t~~u~~l* *manna-ss-eyo* /
friend-HON-PL meet:PRED-PAST-VFE:(DEC):POL
I met my friends.
*cannot use honorific to refer to one's own friends.
N ptl ptl V

masi

(37) *sul* *mek -ki*
alcohol eat:PRED:(PRES)-COMP
drinking alcohol.
*although acceptable colloquially, more appropriate to say *drink:PRED:(PRES)*
N V-comp

Action Picture

-ey

(38) *en~~u~~* *kajeng* *-eyse*
some family-PTL:LOCd
We visited
*correct PTL is *PTL:LOC(static)* and not *(dynamic)*
det N ptl

-ko iss

pangmun-~~u~~l *ha-* *-ess* *-~~u~~pni-ta* /
visit-PTL:ACC do:AUX-PAST-VFE:FOR-DEC
at some family (in the picture).
*correct form is *GER be:AUX:(PRES)*
N ptl aux

(39) *ku-jip-un* *appa-ka* *teyleypi-lul*
that-house-PTL:TOP dad-PTL:NOM TV-PTL:ACC
As for that family, dad
N ptl N ptl N ptl

-0
po-ko *iss* *-ess -upni-ta* /
watch:PRED-GER be:AUX-PAST-VFE:FOR-DEC
was watching TV.
V-aux

-0
(40a) *emma-nun* *ttukeyjil-ul* *ha* *-e* *-ko* /
mom-PTL:CON knit-PTL:ACC do:AUX:(PRES)-(DEC)-CONJ
Mom knit and
* correct form should not have VFE with a conjunction
N ptl N ptl aux-conj

(40b) *senp'ungki-lul* *t'ul-ko*
fan-PTL:ACC turn on:PRED:(PRES)-CONJ
(Someone) turned on the fan and
N ptl V-conj

(40c) *kwail-ul* *panana-lul* *mek-ko*
fruit-PTL:ACC banana-PTL:ACC eat:PRED:(PRES)-CONJ
He eats fruit--bananas and
N ptl N ptl V-conj

masi
(40d) *jyusu-to* **mek-ko*
juice-PTL:ADV eat:PRED:(PRES)-CONJ
eats juice also and
* correct verb is *drink:PRED:(PRES)*
N ptl V-conj

-0 -ka
(40e) *ai* **-tul* **-ul* *sinmunji-lul* *kajyeo-ko*
child-PTL:PL-PTL:ACC newspaper-PTL:ACC bring:PRED:(PRES)-CONJ
(someone) brings in the children the newspaper and
* correct form is the *child PTL:NOM=The child brings in the newspaper.*
N ptl N ptl V-conj

jenhwa

(40f) *ttal-ŭn* **jenhwaki-lŭl*
daughter-PTL:CON telephone receiver-PTL:ACC
The daughter was calling
*Correct is *telephone*
N ptl N ptl

-0

kel-ko *iss *-ess -ŭpni-ta /*
call:PRED-GER be:AUX-PAST-VFE:FOR-DEC
the telephone receiver.
V-aux

Picture Sequence

(41a) *mo* *sim-ki-lŭl* *ha-ko*
stalk plant:PRED:COMP-PTL:ACC do:AUX:(PRES)-CONJ
It's planting stalks he does and
N V-comp aux-conj

(41b) *[mo-lŭl]* *sim-sŭpni-ta /*
[stalk-PTL:ACC] plant:PRED:(PRES)-VFE:FOR-DEC
he plants [stalks].
[N ptl] V

pye -0

(42a) **mo* *cusu *-lŭl* *ha-ko*
stalk cut-PTL:ACC do:AUX:(PRES)-CONJ
He cuts the stalks and
* *stalks* is appropriate only for planting; a grown plant is *pye*;
N N ptl aux-conj

-0

(42b) *nongpu-ka* *i *-ess -ko*
farmer-PTL:NOM be/id:PRED-PAST-CONJ
he was a farmer and
N ptl v-conj

-0

(42c) *talkuji-lŭl* *kŭl *-ess -ŭpni-ta /*
cart-PTL:ACC pull:PRED-PAST-VFE:FOR-DEC
he pulled the cart.
N ptl V

APPENDIX D3

CONTROL JYK: PRIMARY TRANSCRIPTIONS AND
INTERLINEAR MORPHEMIC TRANSLATIONS

JYK: Primary Transcription

Work

meyik^{h}ep hakueney tanyessesski ttaemuneyyo. salamtului elkulul meyik^{h}ep hae jununtey neycyulel meyikhepul haesseyo. maenceumey injey kicohwajangul iltan . ilehkey . um salamtului p^{h}ipulul peliji anhkey haki uihae kicohwajangul hae juntaumey kekiey saekcohwajangul te-te-tes ssuiununkejiyo.

16 seconds
30 words
3 'syntactic' phrases

Hungbu and Nolbu

enu hyengjeyka issessnuntey kulenikkanun hansalami yoksimi nemu nemu manhko hansalamun nemu nemu cakhan salam iessnuntey yoksim manhun hyengun nemu nemu jal salko tto kupanmyeney yoksimi epsnun kulenikkanun cakhan kutongsaengun nemu nemu kananhaese . ilekey saltaka . ku jeypilul mannase kulenikkanun uhyenhi ettehkey jeypiui talilul kocye jukey toissnuntey ku cakhan ku hungpunun talilul kocye juessnuntey kutalilul kocye jun ku-potapulo k^{h}etalan kulenikkanun jeymulul etkey toissko. kukesul sikihan hyengin nolbunun ah kutaliey jeypiui ta--jeypiui talika pulejiji anhassnunteyto ilpule pulettulyese ku-jeypilo put^{h}e keki kujeypilo put^{h}e pakssilul patassjiman kupakssieynun nolbulul ... uhm ... nolbulul ...saengkaki jal an nayo. malui p^{h}hyohyen etehkey haeya toilji molukeyssjiman nolpuui kulen motun ku-ku-po jeymulkwa kulen

jeymul kat^{h}un kesul ta hesalo tollyepelinun kulen pakssilul patassjiman najungey hungpuka tasi kunolpu hyengul towa jumulosse ilehkey selo hyengp--hyengjeysaika tasi uae isskey tointanun sut^{h}oli ipnita.

1 minute 21 seconds
119 words
5 'syntactic' phrases

Action Picture

sain kajok ikoyo. uh kekise tanlanhan sain kajokjungeyse apejinun injey ku t^{h}eylleypilul pomyense tampaelul p^{h}iuko kyeysiko tto emmanun tto uh ttukeyjilul hako issupnita. kuliko tto uh ueynka nuna inkes kat^{h}unteyyo. nunanun cinkutulwa jenhwalul hako issko tongsaengun macim sinmunul kajiko jikum ungjepsillo tuleoko issnun sajin ikunyo.

22 seconds
41 words
4 'syntactic' phrases

Picture Sequence

molul simko issnunteyyo. ah molul jikum simko issnunkesi anila molul jikum suhwak hako issnun sajin inkes kat^{h}aeyo. cespenjjae sajinun molul jikum peyko issko tto kekiey jaki ku janyepuntuli nawase--janyeka nawase kusuhwakhan pyelul kasstaka jikum cakok cakok caengkiko issko ku caengkin--seypenjjae kulimun ku cakok cakok caengkin pyelul ku tupupuka uh silko kanun kulim ipnita.

29 seconds
49 words
5 'syntactic' phrases

JYK: Interlinear Morphemic Translation

Work

(1) *meyik^{h}ep hakuen-ey tany-ess-ess-ki ttaemuney-yo /*
makeup institute-PTL:LOC attend:PRED-PAST-PAST-ADVZ-POL
Because I had attended a makeup institute (I work at a beauty shop).
N N ptl V-adv

(2a) *salam-tɯl-ɯi* *elkul-ɯl* *meyikʰep*
person-PTL:PL-PTL:POSS face-PTL:ACC makeup
I do people's
N ptl ptl N ptl N

ha-e *ju-nɯnte*y
do:AUX-PTL:AUX give:PRED-PRES-CONJ
face makeup for them and
aux-ptl aux-conj

(2b) *neycyulel* *meyikʰep-ɯl* *ha-ess-eyo* /
natural makeup-PTL:ACC do:AUX-PAST-VFE:(DEC):POL
I did natural makeup.
N N ptl aux

(3a) *maen-ceum-ey* *kicohwajang-ɯl*
very-first-PTL:TEMP basic makeup-PTL:ACC
At the very first,
Adv N ptl

iltan *salam-tɯl-ɯi* *pʰipu-lɯl*
first of all person-PTL:PL-PTL:POSS skin-PTL:ACC
you do first of all basic makeup so that
Adv N ptl ptl N ptl

peli-ji anh-key
throw out:PRED-NEG:PRED:(PRES)-ADVZ
you don't ruin
V-neg-adv

ha *-ki uihae [-se]*
do:AUX:(PRES) -ADVZ [-CONJ:OPTL]
your skin and
aux-adv

(3b) *kicohwajang-ɯl* *ha-e* *ju-ntaɯm-ey*
basic-makeup-PTL:ACC do:PRED-PTL:AUX give:PRED-ADVZ-PTL:TEMP
after basic makeup you
N ptl aux-ptl aux-adv

(3c) *keki-ey* *saekcohwajang-ɯl*
there-PTL:LOC color makeup-PTL:ACC
put on more
dem ptl N ptl

te *ssuiu-n-un* *ke-jiyo /*
more put on:PRED-COMP -(be:PRED):VFE:(DEC):SUPP:POL
there with color makeup, I suppose.
Adv V-comp v

Hungbu and Nolbu

(4a) *enu* *hyengjey-ka* *iss-ess-nunjey*
some brother-PTL:NOM be/exist:PRED-PAST-CONJ
There were some brothers and
det N ptl v-conj

(4b) *han-salam-un* *yoksim-i* *nemu* *nemu* *manh-ko*
one-person-PTL:CON greed-PTL:NOM too much too much many:PRED-CONJ
one person had far too much greed and
N ptl N ptl Adv Adv V-conj

(4c) *han-salam-un* *nemu* *nemu* *cak* *ha-n*
one-person-PTL:CON too much too much good heart do:AUX-ADNZ
one person was a very
N ptl Adv Adv Adj aux-adj

salam *i-ess-nunte*
person be/id:PRED-PAST-CONJ
very good-hearted person and
N v-conj

(4d) *yoksim [-i]* *manh-un* *hyeng-un*
greed [PTL:NOM:OPTL] many:PRED-ADNZ brother-PTL:TOP
the greedy brother
N [ptl] V-adj N ptl

nemu *nemu* *jal* *sal-ko*
too much too much well-ADV live:PRED:(PRES)-CONJ
lived very, very well and
Adv Adv Adv V-conj

(4e) *tto* *kupanmyen-ey* *yoksim-i*
also on the other hand-PTL:LOC greed-PTL:NOM not
also, on the other hand,
Adv Adv N ptl

eps-n-un
be/exist:PRED-PRES-ADNZ
the good-hearted brother
v-adj

cak *ha-n* *ku-tongsaeng-un*
goodheart doAUX-ADNZ that-brother-PTL:TOP
who was not greedy
Adj aux-adj N ptl

-key
nemu *nemu* *kanan* *ha* *-ese*
too much too much poor do:AUX:(PRES)-CONJ
was very, very poor and
*more appropriate is ADVZ = *poorly*
Adv Adv Adj aux-conj

(4f) *sal-taka*
live:PRED:(PRES)-ADVZ
while (he lived that way he)
V-adv

(4g) *jeypi-lul* *manna-se*
swallow-PTL:ACC meet:PRED:(PRES)-CONJ
met a swallow and
N ptl V-conj

(4h) *uhyenhi* *etteh-key* *jeypi-ui* *tali-lul*
by chance how:PRED-ADVZ swallow-PTL:POSS leg-PTL:ACC
it happened that he
Adv V-adv N ptl N ptl

kocy-e *ju-key* *toi-ss-nunley*
fix:PRED-AUX give:AUX-PASS become:AUX-PAST-CONJ
somehow by chance fixed the swallow's leg.
V-aux-pass aux-conj

(4i) *cak* *ha-n* *hungpu-nun* *tali-lul*
good-heart do:AUX-ADNZ Hungbu-PTL:TOP leg-PTL:ACC
That good-hearted Hungbu
Adj aux-adj N ptl N ptl

kocy-e *ju-ess-nunley*
fix:PRED-AUX give:AUX-PAST-CONJ
fixed the leg for (the bird) and
V-aux-conj

(4j) *tali-lul* *kocy-e* *ju-n*
leg-PTL:ACC fix:PRED-AUX give:AUX-ADNZ
it happended that the reward for
N ptl V-aux-adj

potap-ulo
reward-PTL:SRC
fixing the leg
N ptl

kʰetala-n *jeymul-ul*
large-ADNZ sacrifice-PTL:ACC
was a
V-adj N ptl

et-key *toi-ss-ko [yo] /*
get:PRED-PASS become:AUX-PAST-CONJ[POL]
large wealth.
V-pass-aux-conj

(5a) *ku-kes-ul* *siki* *ha-n* *hyengin*
that-thing-PTL:ACC jealous do:AUX-ADNZ brother
the jealous brother (saw) that...
N ptl Adj aux-adj N

nolbu-nun *tali-ey*
Nolbu-PTL:TOP leg-PTL:LOC
Nolbu on the leg ...
N ptl N ptl

jeypi-ui *tali-ka*
swallow-PTLPOSS leg:PTLNOM
even though the swallow's leg
N ptl N ptl

pule *-ji anh-ass-nuntey-to*
be broken:PRED -NEG-PAST-CONJ-PTL:ADV
was not broken,
V-neg-conj-ptl

(5b) *ilpule* *pulettulye-se*
on purpose break:PRED:(PRES)-CONJ
he broke it and
Adv V-conj

(5c) *jeypi-loputʰe* *pakssi-lul* *pat-ass-jiman*
swallow-PTL:SRC seed-PTL:ACC receive:PRED-PAST-CONJ
he received a seed from the swallow but
N ptl N ptl V-conj

(5d) *kɯ-pakssi-ey-nɯn* *nolbu-lɯl* /
that-seed-PTL:LOC-PTL:CON Nolbu-PTL:ACC
in that seed Nolbu
N ptl ptl N ptl

(6) *saengkak-i* *jal an na-yo* /
thought-PTL:NOM well not occur:PRED:(PRES)-VFE:(DEC):POL
I can't remember very well.
N ptl Adv neg V

(7a) *mal-ɯi* *eteh-key* *pʰhyohyen*
word-PTL:POSS how:PRED-ADVZ express
I don't know how
N ptl V-adv N

ha-eya *toi-l-ji*
do:AUX-MOOD become:AUX-ADNZ-COMP
I should
aux-comp

molɯ-keyss-jiman
not know:PRED-MOOD-CONJ
express it but
V-conj

(7b) *nolpu-ɯi* *kɯle-n* *motɯn jeymul*
Nolbu-PTL:POSS like that:PRED-ADNZ every reward
Nolbu received a seed
N ptl V-adj Adj N

kaʰ-ɯn *kes-ɯl* *ta*
like:PRED-ADNZ thing-PTL:ACC all
that turned all his wealth
V-adj N ptl Adv

hesalo tollyepeli-n-ɯn *pakssi-lɯl*
empty turn around:PRED-PRES-ADNZ seed-PTL:ACC
and things completely
Adj V-adj N ptl

pat-ass-jiman
receive:PRED-PAST-CONJ
around (i.e., reversed) but
V-conj

(7c) *najung-ey* *hungpu-ka* *tasi*
later-PTL:LOC Hungbu-PTL:NOM again
later Hungbu again
Adv N ptl Adv

(8a) *nolpu* *hyeng-ul* *towa* *ju-mulo-sse*
Nolbu brother-PTL:ACC help:PRED:AUX give:AUX-CAUSE-CONJ
helped his brother Nolbu and
N N ptl V-aux-conj

(8b) *selo* *hyengjey-sai-ka*
each other brother-between-PTL:NOM
again this is a story
Adv N ptl

tasi *uaey* *iss-key* *toi-n-ta-nun*
again good relation be/exist:(PRES)-PASS become:AUX-DEC-PTL:TOP
about making good
Adv N v-pass-aux-adj

sut'oli *i-pni-ta*
story be/id:PRED-VFE:FOR-DEC
relations between brothers.
N v

Action Picture

(9) *sa-in* *kajok* *i-ko-yo*
four-PTL:CLS family be/id:PRED:(PRES)-CONJ-(DEC):POL
This is a four-person family and
N N v-conj

(10a) *keki-se* *tanlan* *ha-n*
there-PTL:LOCd harmony do:AUX-ADNZ
among the happy
dem Adj aux-adj

sa-in *kajok-jung-eyse*
four-CLS family-among-PTL:LOCd
four-person family there,
N N ptl

apeji-nun *injey* *t'eylleypi-lul* *po-myense*
father-PTL:CON now TV-PTL:ACC see:PRED:(PRES)-ADVZ
while the father now watches TV,
N ptl Adv N ptl V-adv

(10b) *tampae-lɯl* *pʰiu-ko* *kyeysi-ko*
cigarette-PTL:ACC smoke:PRED-GER be:HON:AUX:(PRES)-CONJ
he is smoking a cigarette and
N ptl V-aux-aux-conj

(10c) *tto emma-nɯn tto ttɯkeyji-lɯl*
also mom-PTL:CON also knit-PTL:ACC
also the mom
Adv N ptl Adv N ptl

ha-ko *iss-ɯpni-ta* /
do:AUX-GER be:AUX:(PRES)-VFE:FOR-DEC
is knitting.
aux-aux

(11) *kɯliko u-ey-ka* *nuna*
CONJ top-PTL:LOC-PTL:NOM older sister
and in the top (picture)(she) is an older sister
Conj N ptl N

i-n kes *katʰ-ɯntey-yo* /
be/id:PRED-COMP seem:PRED:(PRES)-VFE:EMP-POL
it seems like.
v-comp V

(12a) *nuna-nɯn* *cinku-tɯl--wa* *jenhwa-lɯl*
older sister-PTL:TOP friend-PTL:PL-PTL:COM telephone-PTL:ACC
This is a picture where
N ptl N ptl ptl N ptl

ha-ko *iss-ko*
do:AUX-GER be:AUX:(PRES)-CONJ
The older sister is talking
aux-aux-conj

(12b) *tongsaeng-ɯn* *macim* *sinmun-ɯl*
younger brother-PTL:TOP at that time newspaper-PTL:ACC
with her friend
N ptl Adv N ptl

kaji-ko
carry:PRED-CONJ
on the phone and
V-conj

(15a) *ces-pen-jjae* *sajin-ŭn*
first-PTL:CLS-ORD picture-PTL:TOP
The first picture is (a man)
N N ptl

pye
**mo-lŭl* *jikŭm* *pey-ko* *iss-ko*
stalk-PTL:ACC now cut:PRED-GER be:AUX:(PRES)-CONJ
now cutting stalks and
N ptl Adv V-aux-conj

(15b) *tto* *keki-ey* *jaki* *janye-pun-tŭl-i*
also there-PTL:LOC himself child-HON-PTL:POSS-PTL:NOM
also (his) children there ...
adv dem ptl N N ptl

janye-ka *nawa-se*
children-PTL:NOM come out:PRED:(PRES)-CONJ
his children came out and
N ptl V-conj

(15c) *suhwak [-ŭl]* *ha-n* *pye-lŭl*
harvest [PTL:ACC:OPTL] do:AUX-ADNZ stalk-PTL:ACC
are gathering those harvested stalks
N [ptl] aux-adj N ptl

cakokcakok *caengki-ko* *iss-ko*
neat fashion gather:PRED-GER be:AUX:(PRES)-CONJ
in a neat fashion and
Adj V-aux-conj

(15d) *sey-pen-jjae* *kŭlim-ŭn*
three-PTL:CLS-ORD picture-PTL:NOM
the third picture is a picture of
N N ptl

cakokcakok *caengki-n* *pye-lŭl*
neat fashion gather:PRED-ADNZ stalk-PTL:ACC
a couple loading
Adj V-adj N ptl

tu-pupu-ka *sil-ko*
two-couple-PTL:NOM load:PRED:(PRES)-CONJ
the neatly gathered stalks
N ptl V-conj

(15a) *ces-pen-jjae* *sajin-ŭn*
first-PTL:CLS-ORD picture-PTL:TOP
The first picture is (a man)
N N ptl

pye
**mo-lŭl* *jikŭm* *pey-ko* *iss-ko*
stalk-PTL:ACC now cut:PRED-GER be:AUX:(PRES)-CONJ
now cutting stalks and
N ptl Adv V-aux-conj

(15b) *tto* *keki-ey* *jaki* *janye-pun-tŭl-i*
also there-PTL:LOC himself child-HON-PTL:POSS-PTL:NOM
also (his) children there ...
adv dem ptl N N ptl

janye-ka *nawa-se*
children-PTL:NOM come out:PRED:(PRES)-CONJ
his children came out and
N ptl V-conj

(15c) *suhwak [-ŭl]* *ha-n* *pye-lŭl*
harvest [PTL:ACC:OPTL] do:AUX-ADNZ stalk-PTL:ACC
are gathering those harvested stalks
N [ptl] aux-adj N ptl

cakokcakok *caengki-ko* *iss-ko*
neat fashion gather:PRED-GER be:AUX:(PRES)-CONJ
in a neat fashion and
Adj V-aux-conj

(15d) *sey-pen-jjae* *kŭlim-ŭn*
three-PTL:CLS-ORD picture-PTL:NOM
the third picture is a picture of
N N ptl

cakokcakok *caengki-n* *pye-lŭl*
neat fashion gather:PRED-ADNZ stalk-PTL:ACC
a couple loading
Adj V-adj N ptl

tu-pupu-ka *sil-ko*
two-couple-PTL:NOM load:PRED:(PRES)-CONJ
the neatly gathered stalks
N ptl V-conj

ka-n-ɯn	*kɯlim*	*i-pni-ta* /
go:PRED-PRES-ADNZ	picture	be/id:PRED:(PRES)-VFE:FOR-DEC

and leaving.

V-adj N v

APPENDIX D4

CONTROL CKY: PRIMARY TRANSCRIPTIONS AND
INTERLINEAR MORPHEMIC TRANSLATIONS

CKY: Primary Transcription

Work

jikum hako issnun kenun . takaku jut^{h}aekul kensel jisko issji. jut^{h}aek kensel epjaji. hankukeynun jikum jibi kunbonjekulo jom pujok haeyo. kulaese . ulika hako issnun kenun pot^{h}ong eh . p^{h}alsip p^{h}engeytaka han yesesnaeji ilkop kakuui jenyong myenjek han yelyeses p^{h}yengeyse sumulneys p^{h}yengjjali kulehan jut^{h}aekul han yeses kakussik jut^{h}aekul jisko isseyo. injey mullon seulto issjiman sutokuenjiyek indey ansanjipangeyta jikum manhi jisko issjiyo. kongkika cohko ... kuliko ikonguen josengyuli ama jenkukeyse tubenjjaelo manhayo. ansani kulaeyse sangtanghi kongkika kkaekkus haji. seuley pikyo hamyen. kuliko seulhako kyot^{h}ongkento sasipopuneyse hansikan keliki ttaemuney koingjanghi yut^{h}ongto cohko kuken jangjem isseyo. culkun haekajiko ansanse injey kencukul hako to injey seullo toikun hako

59 seconds
98 words
11 'syntactic' phrases

Hungbu and Nolbu

hungbu nolbu jen. kuke ulinala kojen iji. ama . eh nuka ssunken jal molukeyssnundey. hekyuni ssessna jal molukeysse kukenun. kulendey hungbuka . ku ani nolbuka sangtanghi ku . yoksimi manhji. kuliko hungbunun . yoksimi pyello epsko kulendey

isang hakey yoksimi manhi epsnun salamtuli atulul manhi nahji. kulaekajiko ikey hangsang mekko sanunkes ttaemuney kekjengi toini eti uithak halttaenun epsko ku ku muenya ku nolbumit^{h}ey kase jakku put^{h}akul hanuntey nolbunun kulenkestulul jenpu ihaelul mos hako kyeysok cukjekman hallyeko kulehji. kulehkey pomyenun uli nala ijositaeui yangpanhako uh semin sangnomhako ku kwankyeylul aju haehakjekulo jal myosalul haesstako ilehkey taecung ulinun ihaelul hako issji.

58 seconds
89 words
8 'syntactic' phrases

Action Picture

yokenun . ilpanjekin uli kajokkujolul iyaeki hanunkes hako ungjepseyst^{h}ueyse emenihako apejihako mue kantanhan taehwalul hanunkes kat^{h}ko kutaumey emeninun ttukeyjilul hako issney. apejinun tampaelul p^{h}iuko k^{h}ollalul mekna umlyosulul tusiko issko. kutaumey senp^{h}ungkika tolakanunkes kat^{h}unikka ikey yelumpamul ettehke iyaeki hanunkes kat^{h}ko. kutaumey apejinun sangtanghi sup^{h}culul coha hanunkuman. iyakuto jikum posiko kyeysiko macim ttalun jenhwalul patko issko atuli jikum eti hakkyolul kasstaonunji an kurehmyen apeji sinmunul kajiko onunji jikum tuleonun kulehan kesilui p^{h}kyengul aju nat^{h}anaeko isskuman. jenhyengjekin kesilui p^{h}ungkyeng.

55 seconds
76 words
6 'syntactic' phrases

Picture Sequence

ikulimun jwacukeyseput^{h}e pomyenun jwacukeynun pyelul simnun kekuman jikum. nongpuka pyelul simko issko. uh kaundeynun pyelul suhwakul hanunji an kulemyenun suhwakul hanunkes kat^{h}ae. suhwakul hanunkesiko kutaumey ucukun kukey yeysnaley

kanguento pomyenun susjangsatuli issessketun. susul ilen t^{h}ongeytaka eh . mantulekajiko injey tosilo p^{h}allekanun kulehan jangmyen kat^{h}untey.

33 seconds
41 words
5 'syntactic' phrases

CKY: Interlinear Morphemic Translation

Work

(1) *jikum ha-ko iss-nun ke-nun takaku*
now do:PRED-GER be:AUX-COMP-PTL:TOP family house
The thing I do now is
Adv V-comp N

jut^{h}aek-ul kensel
residence-PTL:ACC construction
building - construction
N ptl N

jis-ko iss-ji [-yo] /
build:PRED-GER be:AUX:(PRES)-VFE:(DEC):SUPP:INT [POL]
- residential homes, I suppose.
V-aux-aux

(2) *jut^{h}aek kensel epja-ji [-yo] /*
residence construction trade-(be/id:PRED)VFE:(DEC):SUPP:INT [POL]
(My) trade (is) residential construction, I suppose.
N N N v

(3) *hankuk-ey-nun jikum jib-i*
Korea-PTL:LOC-PTL:TOP now house-PTL:NOM
Now in Korea housing
N ptl ptl Adv N ptl

kunbonjek-ulo jom pujok ha-eyo /
basic-PTL:ADV a little not sufficient do:AUX:(PRES)-VFE:(DEC):POL
is basically a bit insufficient.
Adv Adv Adj aux

(4) *kulaese uli-ka ha-ko iss-nun ke-nun*
therefore we-PTL:NOM do:PRED-GER be:AUX-COMP-PTL:TOP
So, what we are doing is
Adv N ptl V-aux-comp

pot'ong *p'alsip* *p'yeng-eytaka*
usually 80 pyung-PTL:ABL
building residential homes in an area of usually 80 pyung
*one pyung is 3.59 square yards
Adv Num N ptl

han *yeses-naeji* *ilkop* *kaku-ui* *jenyong* *myenjek*
about 6-PTL:ABL 7 family-PTL:POSS private area
that hold about 6 to 7
adj Num ptl Num N ptl N N

han *yelyeses* *p'yeng-eyse* *sumulney* *p'yeng-jjali*
about 16 pyung-PTL:ABL 24 pyung-PTL:ADV
private residences and
Adj Num N ptl Num N ptl

kuleha-n *jut'aek-ul* *han* *yeses* *kaku-ssik*
like that:PRED-ADNZ residence-PTL:ACC about 6 family-PTL:ADV
(are) about 16 to 24 pyung each and
V-adj N ptl Adj Num N ptl

jut'aek-ul *jis-ko* *iss-eyo* /
residence-PTL:ACC build:PRED-GER be:AUX:(PRES)-VFE:(DEC):POL
each building holds about 6 family residences each.
N ptl V-aux

(5a) *injey* *mullon* *seul-to* *iss-jiman*
now of course Seoul-PTL:ADV be/exist:PRED:(PRES)-CONJ
Now, of course there are these homes in Seoul also but
Adv Adv N ptl v-conj

(5b) *sutokuen-jiyek* *i-ndey*
major-area be/id:PRED:(PRES)-CONJ
it is a major area but
N v-conj

(5c) *ansan-jipang-eyta* *jikum* *manhi*
Ansan-area-PTL:LOC now many
there is much building now
N N ptl Adv Adv

jis-ko *iss-jiyo* /
build:PRED-GER be:AUX:(PRES)-VFE:(DEC):SUPP:POL
in the Ansan area, I suppose.
V-aux

(6a) *kongki-ka* *coh-ko*
air-PTL:NOM good:PRED:(PRES)-CONJ
The air is good and
N ptl V-conj

(6b) *kuliko* *i-konguen josengyul-i* *ama* *jenkuk-eyse*
also this-space percentage-PTL:NOM probably this country-PTL:LOC
also in this country it is probably the second best
Adv N ptl Adv N ptl

tu-pen-jjae-lo *manh-ayo /*
2-PTL:CLS-ORD-PTL:LOC many:PRED:(PRES)-VFE:(DEC):POL
percentage of space division
Adv V

(7) *ansan-i* *kulaese* *sangtanghi* *kongki-ka*
Ansan:PTL:NOM therefore extremely air:PTL:NOM
Therefore, the air in Ansan
N ptl Adv Adv N ptl

kkaekkus *ha-ji [-yo] /*
clean do:AUX:(PRES)-VFE:(DEC):SUPP:INT [POL]
is extrmemly clean, I suppose.
Adj aux

(8) *seul-ey* *pikyo [lul]* *ha-myen /*
Seoul-PTL:LOC compare [PTL:ACC:OPTL] do:AUX-COMP
Compared to Seoul.
N ptl N [ptl] aux-comp

(9a) *kuliko* *seul-hako* *kyot'ongkento* *sasipo-pun-eyse* *han-sikan*
CONJ Seoul:PTL:GL transfer 45-minutes-PTL:SRC one-hour
And because the transfer to Seoul
conj N ptl N N ptl N

keli-ki ttaemuney
take:PRED:(PRES)-ADVZ
takes from 45 minutes to 1 hour
V-adv

(9b) *koingjanghi* *yut'ong-to* *coh-ko*
extremely circulation-PTL:ADV good:PRED:(PRES)-CONJ
the trip is extremely good and
Adv N ptl V-conj

(9c) *kule-n* *jangjem* *iss-eyo* /
like that:PRED-ADNZ good point be/exist:PRED:(PRES)-VFE:(DEC):POL
that thing is a good point.
V-adj N v

(10a) *culkun* *ha-ekajiko*
go to work do:AUX:(PRES)-CONJ
I go to work and
N aux-conj

(10b) *ansan-se* *inje* *kəncuk-ul* *ha-ko*
Ansan-PTL:LOCd now construction-PTL:ACC do:AUX:(PRES)-CONJ
do construction in Ansan and
N ptl adv N ptl aux-conj

(10c) *to* *injey* *seul-lo* *toikun* *ha-ko [-yo]* /
also now Seoul-PTL:GL return from work do:AUX:(PRES)-CONJ[POL]
also now come back to Seoul from work.
adv adv N ptl N aux

Hungbu and Nolbu

(11) *hungbu* *nolbu jen* /
Hungbu Nolbu tale
The Hungbu Nolbu tale.
N N N

(12) *ku-ke* *uli-nala [-ui]* *kojen*
that-thing we-country [-PTL:POSS:OPTL] folktale
That is our
dem N N [ptl] N

i-ji [-yo] /
be/id:PRED:(PRES)-VFE:(DEC):SUPP:INT [POL]
country's foltale, I suppose
v

(13a) *ama* *nu-ka* *ssu-n* *ken*
probably who-PTL:NOM write:PRED-ADNZ thing
I don't really know
Adv N ptl V-adj N

jal *molu-keyss-nundey*
well not know:PRED-MOOD-CONJ
who probably wrote that thing but...
Adv V-conj

(13b) *hekyun-i* *sse-ss-na* /
Huh Kyun-PTL:NOM write:PRED-PAST-VFE:INTER
I'm not really sure but
N ptl V

(14) *jal* *molu-keyss-e [-yo]* *ku-ke-nun* /
well:ADV not know:PRED-MOOD-VFE(DEC):INT [POL] that-thing-PTL:TOP
was it Huh Kyun who wrote that thing ?
Adv V dem ptl

(15a) *kulendey* *hungbu-ka* *ani*
anyway Hungbu-PTL:NOM not be/id:PRED:(PRES)-(VFE:DEC):INT
Anway, Hungbu no...
Adv N ptl V

(15b) *nolbu-ka* *sangtanghi* *yoksim-i*
Nolbu-PTL:NOM extremely greed-PTL:NOM
Nolbu is
N ptl Adv N ptl

manh-ji [-yo] /
a lot:PRED:(PRES)-VFE:(DEC):SUPP:INT [POL]
extremely greedy, I suppose.
V

(16a) *kuliko* *hungbu-nun* *yoksim-i*
CONJ Hungbu-PTL:CON greed-PTL:NOM
And Hungbu doesn't
conj N ptl N ptl

pyello *ebs-ko*
not much be/exist:PRED:(PRES)-CONJ
have much greed and
Adv v-conj

(16b) *kulendey* *isang* *ha-key [-to]*
however strange do:AUX-ADVZ-[PTL:ADV:OPTL]
however, strangely
Adv Adj aux-adv

(16c) *yoksim-i* *manhi* *ebs-nɯn* *salam-tɯl-i*
greed-PTL:NOM many not be/exist:PRED-ADNZ person-PTL:PL-PTL:NOM
people who are not greedy
N ptl Adv v-adj N ptl

atɯl-ɯl *manhi* *nah-ji [-yo]* /
son-PTL:ACC many give birth:PRED:(PRES)-VFE:(DEC):SUPP:INT [POL]
have many sons.
N ptl Adv V

(17a) *kɯlae-kajiko* *i-key* *hangsang*
like that:PRED-CONJ like this-PRED-ADVZ always
Anyway, because he
V-conj V-adv Adv

mek-ko *sa-nɯn kes* *ttaemuney*
eat:PRED-CONJ live:PRED-PRES-COMP because
always lives like this,
V-conj V-comp-adv

(17b) *kekjeng-i* *toi-ni*
worry-PTL:NOM become:PRED-ADVZ
he has many worries, and
N ptl V-adv

(17c) *eti* *ɯitʰak [-ɯl]* *ha-lttae-nɯn*
somewhere ask for help [PTL:ACC:OPTL] do:AUX-ADVZ-PTL:CON
he has nowhere
N N ptl aux-adv ptl

ebs-ko
not be/exist:PRED:(PRES)-CONJ
to ask for help and
v-conj

(17d) *mue-nya*
what-(be:PRED:PRES):INTER:INT (Filler)
what is that?
filler

(17e) *nolbu-mitʰey* *ka-se*
Nolbu-PTL:GL go:PRED:(PRES)-CONJ
he goes to Nolbu and
N ptl V-conj

(17f) *jakku* *puʰak-ul* *ha-nuntey*
often favor-PTL:ACC do:AUX:(PRES)-CONJ
often asks favors but
Adv N ptl aux-conj

(17g) *nolbu-nun* *kule-n* *kes-tul-ul*
Nolbu-PTL:TOP like that:PRED-ADNZ thing-PTL:PL-PTL:ACC
Nolbu can't understand
N ptl V-adj N ptl

jenpu *ihae-lul* *mos* *ha-ko*
all understand:PTLACC not do:AUX:(PRES)-CONJ
any of that kind of thing and
Adv N ptl neg aux-conj

(17h) *kyeysok* *ukjek-man* *ha-llye-ko*
contiunuously accumulate-PTL:ADV do:PRED-MOOD-CONJ
he continuously keeps on only accumulating (money) and
adv N ptl aux-conj

(17i) *kuleh-ji [-yo]* /
like that:PRED:(PRES)-VFE:(DEC):SUPP:INT [POL]
(things) like that.
V

(18a) *kule-key* *po-myen-un*
like that:PRED-ADVZ see:PRED:(PRES)-COMP-PTL:TOP
If you look at it that way,
V-adv V-comp ptl

(18b) *uli-nala* *ijo-sitae-ui* *yangpan-hako*
we-country Chosun-era-PTL:POSS upper class-CONJ
through the good, humorous expression (of this story),
N N N ptl N ptl

(18c) *semin [-hako]* *sangnom-hako [-ui]*
middle class [-PTL:CONJ:OPTL] lower class-CONJ [-PTL:POSS:OPTL]
people from our country mostly
N [ptl] N ptl [ptl]

ku-kwankyey-lul *aju* *haehakjek-ulo*
that-relationship-PTL:ACC very humor-PTL:ADV
understand this way
N ptl Adv Adv

jal *myosa-lɯl* *ha-ess-ta-ko*
well expression:PTL:ACC do:AUX-PAST-VFE:DEC-QUOT
the relations among the upper, middle and lower classes
Adv N ptl aux-quot

(18d) *ileh-key* *taecung* *uli-nɯn*
like this:PRED-ADVZ mostly we-PTL:CON
in the Chosun era,
V-adv Adv N ptl

ihae-lɯl *ha-ko*
understand:PTLACC do:AUX-GER
I suppose.
N ptl aux

iss-ji [-yo]
be:AUX:(PRES)-VFE:(DEC):SUPP:INT[POL]
-aux

Action Picture

(19a) *yo-ke-nɯn* *ilpanjek* *i-n*
this-thing-PTL:TOP general be/id:PRED-ADNZ
(It) is a general
dem ptl Adj v-adj

uli *kajok-kujo-lɯl*
we family-structure-PTL:ACC
family structure
N N N ptl

iyaeki [lɯl] *ha-nɯn kes* *ha-ko*
talk [-PTL:ACC:OPTL] do:AUX-COMP do:AUX:(PRES)-CONJ
that this seems to show and
N ptl aux-comp aux-conj

(19b) *ɯngjepseyst^{h}ɯ-eyse* *emeni-hako* *apeji-hako*
livingroom set-PTL:LOCd mother-CONJ father-COM
in the living room, it is a what ...simple conversation
N ptl N conj N conj

kantan *ha-n* *taehwa-lɯl*
simple do:AUX:(PRES)-ADNZ conversation-PTL:ACC
that the mother and father
adj aux-adj N ptl

ha-nun kes *kath-ko*
do:AUX-COMP seem:PRED:(PRES)-CONJ
seem to be having and
aux-comp V-conj

(19c) *ku-taum-ey* *emeni-nun* *ttukeyji-lul*
that-next-PTL:TEMP mother-CON knitting-PTL:ACC
next, the mother
Adv N ptl N ptl

ha-ko *iss-ney [-yo]* /
do:AUX-GER be:AUX:(PRES)-VFE:(DEC):EXCL:INT [POL]
is knitting!
aux-aux

(20a) *apeji-nun* *tampae-lul* *phiu-ko*
father-PTL:TOP cigarette-PTL:ACC smoke:PRED:(PRES)-CONJ
The father smokes a cigarette and
N ptl N ptl V-conj

masi-
(20b) *kholla-lul* **mek-na* /
cola-PTL:ACC eat:PRED:(PRES)-VFE:INTER:INT
eats a cola?
* *drink* is a more appropriate verb, which he corrects in the next clause
N ptl V

(21a) *umlyosu-lul* *tusi-ko* *iss-ko*
soft drink-PTL:ACC drink:HON:PRED-GER be:AUX:(PRES)-CONJ
He is drinking a soft drink and
N ptl V-aux-conj

(21b) *ku-taum-ey* *senphungki-ka* *tolaka-nun kes*
that-next-PTL:TEMP fan-PTL:NOM turn:PRED-COMP
Next, because it seems
Adv N ptl V-comp

kath-unikka
seem:PRED:(PRES)-ADVZ
that the fan is turning,
V-adv

(21c) *ikey* *yelum-pam-ul* *etteh-key*
this summer-night-PTL:ACC how:PRED-ADVZ
somehow it seems to be showing
dem N ptl V-adv

iyaeki [-lɯl] *ha-nɯn kes* *kaʰ-ko*
talk [-PTL:ACC:OPTL] do:AUX-COMP seem:PRED:(PRES)-CONJ
something like a summer night.
N ptl aux-comp V-conj

(21d) *kɯ-taum-ey* *apeji-nɯn* *sangtanghi* *supʰcɯ-lɯl*
that-next-PTL:TEMP father-PTL:TOP extremely sports-PTL:ACC
next, the father likes
adv N ptl Adv N ptl

coha *ha-nɯnkuman* /
like do:AUX-VFE:EXCL:INT
sports an awful lot!
V-aux

(22a) *yaku-to* *jikɯm*
baseball-PTL:ADV now
He is watching
N ptl Adv

po-si-ko *kyeysi-ko*
see:PRED-HON-GER be:AUX:HON:PRED:(PRES)-CONJ
baseball now too and
V-aux-conj

(22b) *macim* *ttal-ɯn* *jenhwa-lɯl*
at that time daughter-PTL:TOP telephone-PTL:ACC
at the same time the daughter
adv N ptl N ptl

pat-ko *iss-ko*
receive:PRED-GER be:AUX:(PRES)-CONJ
is taking a call and
V-aux-conj

(22c) *atɯl-i* *jikɯm* *ɜti* *hakkyo-lɯl*
son-PTL:NOM now somewhere school-PTL:ACC
the son now comes back
N ptl Adv N N ptl

kasstao-nɯnji
return:PRED:(PRES)-CONJ
from somwhere...school or
V-conj

(22d) *an* *kuleh-myen*
not like that:PRED:(PRES)-COMP
if not that then
neg V-comp

(22e) *apeji* *sinmun-ul* *kajikoo-nunji*
father newspaper-PTL:ACC bring in:PRED:(PRES)-CONJ
he brings in his father's newspaper and
N N ptl V-conj

(22f) *jikum* *tuleo-n-un* *kuleha-n* *kesil-ui*
now come in-PRES-ADNZ like that:PRED:ADNZ living room-PTL:ACC
him coming into this type of living room
Adv V-adj V-adj N ptl

p'ungkyeng-ul *aju* *nat'anae-ko*
view-PTL:ACC very come about:PRED-GER
is what .
N ptl Adv V

iss-kuman /
be:AUX:(PRES)-VFE:EXCL:INT
this view is showing
-aux

(23) *jenhyengjek* *i-n* *kesil-ui* *p'ungkyeng*
common be/id:PRED-ADNZ living room-PTL:POSS view
This is a view of
Adj v-adj N ptl N

[i-eyo] /
[be:PRED:(PRES)-VFE:(DEC)POL]
a typical living room.
v

Picture Sequence

(24a) *i-kulim-un* *jwa-cuk-eyse-put'e*
this-picture-PTL:TOP left-side-PTL:LOC-PTL:ABL
If you look starting
N ptl N ptl

po-myen-un
see:PRED:(PRES)-COMP-PTL:CON
from the left side of this picture,
V-comp ptl

(24b) *jwa-cuk-ey-nɯn* *pye-lɯl*
left-side-PTL:LOC-PTL:TOP stalk-PTL:ACC
On the left side it is
N ptl N ptl

sim-nɯn ke *kuman* *jikɯm* /
plant:PRED-COMP EXCL:INT now
planting stalks that he does now.
V-comp v aux

(25a) *nongpu-ka* *pye-lɯl* *sim-ko* *iss-ko*
farmer-PTL:NOM stalk-PTL:ACC plant:PRED-GER be:AUX:(PRES)-CONJ
The farmer is planting stalks and
N ptl N ptl V-aux-conj

(25b) *kaundey-nɯn* *pye-lɯl* *suhwak-ɯl*
middle:(PTL:LOC)-PTL:TOP stalk-PTL:ACC harvest-PTL:ACC
In the middle, he harvests
Adv ptl N ptl N ptl

ha-nɯnji
do:AUX-PRES-CONJ
stalks or
aux-conj

(25c) *an* *kɯle-myen-ɯn*
not like that:PRED:(PRES)-COMP-PTL:CON
if not, ...
neg V-comp ptl

(25d) *suhwak-ɯl* *ha-nɯn kes* *kat^{h}-e [-yo]* /
harvest-PTL:ACC do:AUX-COMP seem:PRED:(PRES)-VFE:(DEC):INT[POL]
it seems like harvesting stalks is what he is doing.
N ptl aux-comp V

(26a) *suhwak-ɯl* *ha-nɯn kes* *i-ko*
harvest-PTL:ACC do:AUX-COMP be/id:PRED:(PRES)-CONJ
It is harvesting that he is doing and
N ptl aux-comp v-conj

(26b) *kɯ-taum-ey* *u-cuk-ɯn*
that-next-PTL:LOC right-side-PTL:TOP
in the next, on the right side,
adv N ptl

ku-key *yeysnal-ey* *kanguento*
that-thing old days-PTL:TEMP Kangwon province
that...if you look at the old days
dem Adv N

po-myen-un
see:PRED:(PRES)-COMP
in Kangwon Province
V-comp ptl

(26c) *sus-jangsa-tul-i*
charcoal-trade-PTL:PL-PTL:NOM
there were charcoal
N ptl

iss-ess-ketun [-yo] /
be/exist:PRED-PAST-VFE:(DEC):SUPP:INT [POL]
businesses, you know
v

(27a) *sus-ul* *ile-n* *t'ong-eytaka*
charcoal-PTL:ACC like this:PRED-ADNZ container-PTL:LOC
It seems like a view that
N ptl V-adj N ptl

mantul-ekajiko
make:PRED:(PRES)-CONJ
he makes a charcoal-like
V-conj

(27b) *injey* *tosi-lo* *p'all-e* *ka-n-un*
now city-PTL:GL sell:PRED-AUX go:PRED-PRES-ADNZ
container and now
adv N ptl V-aux-V-adj

kuleha-n *jangmyen*
like that:PRED-ADNZ view
goes to
V-adj N

kat'-untey [-yo] /
seem:PRED:(PRES)-VFE:(DEC):EMP:INT [POL]
the city to sell it.
V

APPENDIX E1

CYS: PRODUCTION PARAMETERS

Rate of Production:

Narrative	Total Words	Total Phrases	Speaking Time (min:sec)	Rate Words/Min	Rate Phrases/Min
History	30	15	4:01	7.5	3.7
Work	13	8	1:44	7.5	4.6
Daily Life	86	58	5:30	15.6	10.5
Story	29	16	1:32	18.9	10.4
Livingroom	29	18	2:43	10.7	6.6
Rice Planting	9	6	1:27	6.2	4.1
TOTAL	196	121	16:57	11.6	7.1

Distribution of Phrase Length:

Narrative	Total Words	Total Phrases	Mean Words/Phrase	Median Words/Phrase
History	30	15	2	2
Work	13	8	1.6	1
Daily Life	86	58	1.5	1
Story	29	16	1.8	2
Livingroom	29	18	1.6	1.5
Rice Planting	9	6	1.5	1.5
TOTAL	196	121	1.6	1

APPENDIX E2

KKM: PRODUCTION PARAMETERS

Rate of Production:

Narrative	Total Words	Total Phrases	Speaking Time (min:sec)	Rate Words/Min	Rate Phrases/Min
History	28	11	1:21	20.7	8.1
Work	50	23	2:44	18.3	8.4
Family	55	18	3:03	18	5.9
Livingroom	27	10	2:01	13.4	5
Rice Planting	11	5	1:03	10.5	4.8
TOTAL	171	67	10:12	16.8	6.6

Distribution of Phrase Length:

Narrative	Total Words	Total Phrases	Mean Words/Phrase	Median Words/Phrase
History	28	11	2.5	2
Work	50	23	2.2	2
Family	55	18	3.1	3
Livingroom	27	10	2.7	2.5
Rice Planting	11	5	2.2	2
TOTAL	171	67	2.6	2

APPENDIX E3

CONTROL JYK: PRODUCTION PARAMETERS

Rate of Production:

Narrative	Total Words	Total Phrases	Speaking Time (min:sec)	Rate Words/Min	Rate Phrases/Min
Work	30	3	:16	112.5	11.3
Story	119	5	1:21	88.1	3.7
Livingroom	42	4	:22	114.5	10.9
Rice Planting	50	5	:29	103.4	10.3
TOTAL	241	17	2:28	97.7	6.9

Distribution of Phrase Length:

Narrative	Total Words	Total Phrases	Mean Words/Phrase	Median Words/Phrase
Work	30	3	10	8
Story	119	5	23.8	13
Livingroom	42	4	10.5	10.5
Rice Planting	50	5	10	11
TOTAL	241	17	14.2	11

APPENDIX E4

CONTROL CKY: PRODUCTION PARAMETERS

Rate of Production:

Narrative	Total Words	Total Phrases	Speaking Time (min:sec)	Rate Words/Min	Rate Phrases/Min
Work	98	11	:59	99.7	11.2
Story	89	8	:58	92.1	8.3
Livingroom	76	6	:55	82.9	6.5
Rice Planting	41	5	:33	74.5	9.1
TOTAL	304	30	3:25	89	8.8

Distribution of Phrase Length:

Narrative	Total Words	Total Phrases	Mean Words/Phrase	Median Words/Phrase
Work	98	11	8.9	7
Story	89	8	11.1	7
Livingroom	76	6	12.7	9
Rice Planting	41	5	8.2	9
TOTAL	304	30	10.1	8

APPENDIX F1

CYS: MORPHEME ERRORS AND DISTRIBUTIONS

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
Nouns	41	69	2	3	16	27	59
Adjectives	2	100	0	0	0	0	2
Adnominalizer	0	0	0	0	0	0	0
Adverbs	8	100	0	0	0	0	8
Adverbalizers	0	0	0	0	0	0	0
Demonstr.	5	100	0	0	0	0	5
Numerals	3	100	0	0	0	0	3
Lexical Verbs	42	79	5	9	6	11	53
Tense	35	74	12	26	0	0	47
Mood	2	50	0	0	2	50	4
Honorific	0	0	0	0	0	0	0
Neg	5	100	0	0	0	0	5
Passive	0	0	0	0	0	0	0
Gerund	0	0	0	0	0	0	0
VFE	47	96	0	0	2	4	49
Aux Verbs	3	20	1	7	11	73	15
Tense	2	50	2	50	0	0	4
Gerund	0	0	0	0	0	0	0
Passive	0	0	0	0	0	0	0
VFE	4	100	0	0	0	0	4
ID Verbs	3	60	0	0	2	40	5
Tense	3	100	0	0	0	0	3
VFE	3	100	0	0	0	0	3

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
EXIST Verbs	5	100	0	0	0	0	5
Tense	5	100	0	0	0	0	5
VFE	5	100	0	0	0	0	5
Level	15	27	2	4	38	69	55
COMP	0	0	0	0	0	0	0
Coordinate	0	0	0	0	0	0	0
Subordinate	0	0	0	0	1	100	1
NOM	1	8	0	0	11	92	12
TOP/ CON	0	0	0	0	1	100	1
ACC	0	0	0	0	33	100	33
POSS	0	0	0	0	0	0	0
LOC	0	0	0	0	3	100	3
LOCd	1	50	0	0	1	50	2
SRC	0	0	0	0	0	0	0
GL	0	0	0	0	1	100	1
ABL	0	0	0	0	2	100	2
TEMP	0	0	0	0	0	0	0
PL	0	0	0	0	0	0	0
CLS	3	100	0	0	0	0	3
CONJ	0	0	0	0	0	0	0
COM	0	0	0	0	0	0	0
ADV	0	0	0	0	0	0	0
TOTAL PTL	5	9	0	0	52	91	57

APPENDIX F2

KKM: MORPHEME ERRORS AND DISTRIBUTIONS

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
Nouns	84	94	3	3	2	2	89
Adjectives	3	100	0	0	0	0	3
Adnominalizer	1	100	0	0	0	0	1
Adverbs	6	100	0	0	0	0	6
Adverbalizers	1	100	0	0	0	0	1
Demonstr.	4	100		0	0	0	4
Numerals	2	100	0	0	0	0	2
Lexical Verbs	26	84	4	13	1	3	31
Tense	23	77	7	23	0	0	30
Mood	1	100	0	0	0	0	1
Honorific	1	100	0	0	0	0	1
Neg	2	100	0	0	0	0	2
Passive	0	0	0	0	0	0	0
Gerund	2	67	1	33	0	0	3
VFE	30	100	0	0	0	0	30
Aux Verbs	15	71	0	0	6	29	21
Tense	10	67	5	33	0	0	15
Gerund	0	0	0	0	0	0	0
Passive	0	0	0	0	0	0	0
VFE	14	93	1	7	0	0	15
ID Verbs	3	100	0	0	0	0	3
Tense	2	67	1	33	0	0	3
VFE	3	100	0	0	0	0	3

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
EXIST Verbs	4	67	0	0	2	33	6
Tense	4	100	0	0	0	0	4
VFE	4	100	0	0	0	0	4
Level	25	78	0	0	7	22	32
COMP	2	100	0	0	0	0	2
Coordinate	15	100	0	0	0	0	15
Subordinate	0	0	0	0	1	100	1
NOM	7	50	1	7	6	43	14
TOP/ CON	6	67	0	0	3	33	9
ACC	18	60	3	10	9	30	30
POSS	0	0	0	0	0	0	0
LOC	6	75	2	25	0	0	8
LOCd	0	0	1	100	0	0	1
SRC	0	0	0	0	0	0	0
GL	0	0	0	0	0	0	0
ABL	0	0	0	0	0	0	0
TEMP	1	100	0	0	0	0	1
PL	0	0	1	100	0	0	1
CLS	1	50	0	0	1	50	2
CONJ	6	100	0	0	0	0	6
COM	0	0	0	0	0	0	0
ADV	3	100	0	0	0	0	3
TOTAL PTL	48	63	9	12	19	25	76

APPENDIX F3

CONTROL JYK: MORPHEME ERRORS AND DISTRIBUTIONS

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
Nouns	82	98	2	2	0	0	84
Adjectives	8	100	0	0	0	0	8
Adnominalizer	7	100	0	0	0	0	7
Adverbs	34	100	0	0	0	0	34
Adverbalizers	2	100	0	0	0	0	2
Demonstr.	7	100	0	0	0	0	7
Numerals	4	100	0	0	0	0	4
Lexical Verbs	38	100	0	0	0	0	38
Tense	38	100	0	0	0	0	38
Mood	1	100	0	0	0	0	1
Honorific	0	0	0	0	0	0	0
Neg	3	100	0	0	0	0	3
Passive	1	100	0	0	0	0	1
Gerund	8	100	0	0	0	0	8
VFE	38	100	0	0	0	0	38
Aux Verbs	34	100	0	0	0	0	34
Tense	34	100	0	0	0	0	34
Gerund	0	0	0	0	0	0	0
Passive	1	100	0	0	0	0	1
VFE	34	100	0	0	0	0	34
ID Verbs	9	100	0	0	0	0	9
Tense	9	100	0	0	0	0	9
VFE	9	100	0	0	0	0	9

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
EXIST Verbs	3	100	0	0	0	0	3
Tense	3	100	0	0	0	0	3
VFE	3	100	0	0	0	0	3
Level	12	92	0	0	1	8	13
COMP	4	100	0	0	0	0	4
Coordinate	24	100	0	0	0	0	24
Subordinate	16	94	1	6	0	0	17
NOM	12	92	0	0	1	8	13
TOP/ CON	13	100	0	0	0	0	13
ACC	28	93	0	0	2	7	30
POSS	6	100	0	0	0	0	6
LOC	8	100	0	0	0	0	8
LOCd	2	100	0	0	0	0	2
SRC	2	100	0	0	0	0	2
GL	1	100	0	0	0	0	1
ABL	0	0	0	0	0	0	0
TEMP	2	100	0	0	0	0	2
PL	4	100	0	0	0	0	4
CLS	4	100	0	0	0	0	4
CONJ	0	0	0	0	0	0	0
COM	1	100	0	0	0	0	1
ADV	1	100	0	0	0	0	1
PTL	84	97	0	0	3	3	87

APPENDIX F4

CONTROL CKY: MORPHEME ERRORS AND DISTRIBUTIONS

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
Nouns	140	100	0	0	0	0	140
Adjectives	15	100	0	0	0	0	15
Adnominalizer	8	100	0	0	0	0	8
Adverbs	39	100	0	0	0	0	39
Adverbalizers	5	100	0	0	0	0	5
Demonstr.	12	100	0	0	0	0	12
Numerals	8	100	0	0	0	0	8
Lexical Verbs	57	98	1	2	0	0	58
Tense	58	100	0	0	0	0	58
Mood	2	100	0	0	0	0	2
Honorific	1	100	0	0	0	0	1
Neg	2	100	0	0	0	0	2
Passive	0	0	0	0	0	0	0
Gerund	10	100	0	0	0	0	10
VFE	58	100	0	0	0	0	58
Aux Verbs	36	100	0	0	0	0	36
Tense	36	100	0	0	0	0	36
Gerund	2	100	0	0	0	0	2
Passive	0	0	0	0	0	0	0
VFE	36	100	0	0	0	0	36
ID Verbs	8	89	0	0	1	11	9
Tense	8	100	0	0	0	0	8
VFE	8	100	0	0	0	0	8

	I		II		III		I+II+III
	Correctly Supplied	%	Incorrect (Substitutions)	%	Omissions	%	Total
EXIST Verbs	6	100	0	0	0	0	6
Tense	6	100	0	0	0	0	6
VFE	6	100	0	0	0	0	6
Level	10	40	0	0	15	60	25
COMP	15	100	0	0	0	0	15
Coordinate	30	100	0	0	0	0	30
Subordinate	8	100	0	0	0	0	8
NOM	18	100	0	0	0	0	18
TOP/ CON	23	100	0	0	0	0	23
ACC	31	89	0	0	4	11	35
POSS	4	67	0	0	2	33	6
LOC	8	100	0	0	0	0	8
LOCd	2	100	0	0	0	0	2
SRC	0	0	0	0	0	0	0
GL	4	100	0	0	0	0	4
ABL	4	100	0	0	0	0	4
TEMP	4	100	0	0	0	0	4
PL	3	100	0	0	0	0	3
CLS	1	100	0	0	0	0	1
CONJ	2	67	0	0	1	33	3
COM	2	100	0	0	0	0	2
ADV	7	88	0	0	1	13	8
TOTAL PTL	113	93	0	0	8	7	121

APPENDIX G1

CYS: DISTRIBUTION OF GRAMMATICAL CATEGORIES IN THE TEXTS

	Actual		Context	
	N	%	N	%
Free:				
Lexical Nouns	43	33	59	27
Lexical Adjectives	2	2	2	1
Lexical Adverbs	8	6	8	4
Lexical Verbs	47	36	53	24
Identification Verbs	3	2	5	2
Existential Verbs	5	4	5	2
Aux Verbs	4	3	15	7
Neg	5	4	5	2
Numerals	3	2	3	1
Bound:				
ADNZ	0	0	0	0
ADVZ	0	0	0	0
Suboordinate	0	0	0	0
Coordinate	0	0	0	0
COMP	0	0	0	0
Demonstratives	5	4	5	2
PTL:Case	1	0.7	46	21
PTL:Postpositions	4	3	11	5
TOTAL	130		217	
TOTAL Content	103	79	125	58
TOTAL Functional	27	21	92	42

APPENDIX G2

KKM: DISTRIBUTION OF GRAMMATICAL CATEGORIES IN THE TEXTS

	Actual		Context	
	N	%	N	%
Free:				
Lexical Nouns	87	37	89	34
Lexical Adjectives	3	1	3	1
Lexical Adverbs	8	3	8	3
Lexical Verbs	30	13	31	12
Identification Verbs	3	1	3	1
Existential Verbs	4	2	6	2
Aux Verbs	15	6	21	8
Neg	2	1	2	1
Numerals	2	1	2	1
Bound:				
ADNZ	1	0.4	1	0.4
ADVZ	1	0.4	1	0.4
Suboordinate	0	0	1	0.4
Coordinate	15	6	15	6
COMP	2	1	2	1
Demonstratives	4	2	4	2
PTL:Case	35	15	53	20
PTL:Postpositions	21	9	22	8
TOTAL	233		264	
TOTAL Content	130	56	133	50
TOTAL Functional	103	44	131	50

APPENDIX G3

CONTROL JYK: DISTRIBUTION OF GRAMMATICAL CATEGORIES IN THE TEXTS

	Actual		Context	
	N	%	N	%
Free:				
Lexical Nouns	84	21	84	21
Lexical Adjectives	8	2	8	2
Lexical Adverbs	34	9	34	8
Lexical Verbs	38	10	38	9
Identification Verbs	9	2	9	2
Existential Verbs	3	1	3	1
Aux Verbs	34	9	34	8
Neg	3	1	3	1
Numerals	4	1	4	1
Bound:				
ADNZ	7	2	7	2
ADVZ	2	1	2	0.5
Suboordinate	17	4	17	4
Coordinate	24	6	24	6
COMP	5	1	5	1
Demonstratives	7	2	7	2
PTL:Case	59	15	62	15
PTL:Postpositions	61	15	61	15
TOTAL	399		402	
TOTAL Content	168	42	168	42
TOTAL Functional	231	58	234	58

APPENDIX G4

CONTROL CKY: DISTRIBUTION OF GRAMMATICAL CATEGORIES IN THE TEXTS

	Actual		Context	
	N	%	N	%
Free:				
Lexical Nouns	140	28	140	27
Lexical Adjectives	15	3	15	3
Lexical Adverbs	41	8	41	8
Lexical Verbs	58	11	58	11
Identification Verbs	8	2	9	2
Existential Verbs	6	1	6	1
Aux Verbs	36	7	36	7
Neg	2	0.4	2	0.3
Numerals	8	2	8	2
Bound:				
ADNZ	8	2	8	2
ADVZ	5	1	5	1
Suboordinate	8	2	8	2
Coordinate	30	6	30	6
COMP	15	3	15	3
Demonstratives	12	2	12	2
PTL:Case	76	15	82	16
PTL:Postpositions	37	7	37	7
TOTAL	505		512	
TOTAL Content	262	52	262	51
TOTAL Functional	243	48	250	49

APPENDIX H

MAJOR CLASS LEXICAL ITEMS (TOKEN/TYPE)

CYS:

	Nouns		**Verbs**		**Adjectives**	
Narrative	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***
History	8/7	1.1	8/4	2	1/1	1
Work	2/2	1	1/1	1	0	0
Daily Life	19/12	1.6	29/17	1.7	1/1	1
Story	4/4	1	3/3	1	0	0
Livingroom	8/7	1.1	14/8	1.8	0	0
Rice Planting	2/1	2	4/3	1.3	0	0
TOTAL	43/31	1.4	59/26	2.3	2/2	1

Control JYK:

	Nouns		**Verbs**		**Adjectives**	
Narrative	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***
Work	13/9	1.4	9/5	1.8	0	0
Story	39/21	1.9	41/22	1.9	6/4	1.5
Livingroom	16/14	1.1	15/9	1.7	0	0
Rice Planting	16/9	1.8	19/11	1.7	2/1	2
TOTAL	84/50	1.7	84/36	2.3	8/5	1.6

KKM:

	Nouns		**Verbs**		**Adjectives**	
Narrative	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***
History	13/11	1.2	9/7	1.3	1/1	1
Work	22/16	1.4	15/13	1.2	3/3	1
Family	32/27	1.2	13/9	1.4	0	0
Livingroom	15/15	1	10/7	1.4	0	0
Rice Planting	5/4	1.3	6/4	1.5	0	0
TOTAL	87/66	1.3	53/27	2	4/4	1

Control CKY:

	Nouns		**Verbs**		**Adjectives**	
Narrative	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***	***Token/Type***	***Ratio***
Work	42/29	1.4	28/10	2.8	6/4	1.5
Story	39/25	1.6	30/16	1.9	4/3	1.3
Livingroom	37/28	1.3	32/19	1.7	2/2	1
Rice Planting	22/15	1.5	18/12	1.5	3/2	1.5
TOTAL	140/91	1.5	108/37	2.9	15/11	1.4

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