ACQUISITION HIERARCHY OF KOREAN AS A FOREIGN LANGUAGE

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ABSTRACT

This study has three general objectives:

1. To observe and describe learner oral performance data;
2. To attempt to discover any clusters or hierarchical relationships, of whatever type, that may be indicative of acquisition processes;
3. To attempt to determine which factors account for the observed clusters and hierarchy.

For this study, oral performance data collected from 111 learners of Korean as a Foreign Language (76 English native speakers and 35 Japanese native speakers) was analyzed for tokens of particles and verbal suffixes. Based on the findings obtained from statistical analysis of the tokens of the targeted variables, three stages of hierarchical development were proposed.

The morphemes acquired in Stage 1 were identical for the English-speaking and Japanese-speaking groups, except for the inclusion delimiter *-to* (INC) which the Japanese speakers have acquired and which the English speakers have not yet acquired at this stage. For the learners studied, Stage 1 can be characterized as the period during which grammatical morphemes are acquired. In Stage 2 both case markers and delimiters emerge, but there is strong evidence of random variation for both Japanese and English native speakers. At Stage 3 additional systematic

acquisition of delimiters continues. The three-stage acquisition hierarchy can thus be characterized as an alternation between a systematic stage and a diffused stage, followed by another stage of systematic acquisition. The early and systematic emergence of grammatical morphemes documented and observed in the case of Korean as a Foreign Language by this study contradicts the claims of models based on psychological processing constraints, which predict that pure grammatical morphemes will emerge late. However, the evidence in this corpus of adult instructed language learners clearly indicates that pure grammatical morphemes particles emerge in Stage 1 in Korean (five out of six early morphemes were grammatical morphemes). Theories based on the concept of psychological constraints, summarized in Pienemann's statement of 'easy to process, easy to acquire' somehow need to be able to account for these facts from KFL learner data.

Acquisition hierarchy of Korean as a foreign language

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LIST OF ABBREVIATIONS

AC accusative particle: 를/을 lul/ul
AD adverbial suffix: 이/히 i/hi
ADD addition delimiter: 조차 cocha
AH addressee honorific: 시 si
ALT alternative delimiter: 나/이나 na/ina
ass past tense marker: 았/었 ass/ess
CAP capacity particle: (으)로 (u)lo
CAS causative suffix
cCIM conjunctor:coordination: 지만 ciman
cESE conjunctor:surbordination:cause/effect: 어서/아서 ese/ase
cESEs conjunctor:surbordination:sequential: 어서/아서 ese/ase
cET conjunctor:surbordination:consessive: 어도/아도 eto/ato
cLE conjunctor:surbordination:intentive: (으)러 (u)le
cLY conjunctor:surbordination:intentive: (으)려(고) (u)lye(ko)
CMP complementizer suffix
cM conjunctor:surbordination:conditional: (으)면 (u)myen
cMY conjunctor:coordination: (으)면서 (u)myense
CNJ conjunctive suffix
cNUNTE conjunctor, subordination: 는데 -nunte
cKO conjunctor:coordination: 고 ko
cNIK conjunctor:surbordination:cause/effect: (으)니까 -(u)nikka
cNU conjunctor: cause, excuse: 느라고 nulako
COD comprehensiveness delimiter: 마다 mata
COM comitative particle: 와/과, 하고 wa/kwa, hako
COMP comparative particle: 보다 pota
DAT dative particle: 에, 에게 ey, eykey
DC declarative sentence-type suffix
DD quotative construction: declalative: 다고/라고 tako/ lako
DI quotative construction: interlogative (으)냐고 (u)nyako
DIM quotative construction: imperative: (으)라고 ulako
DIR directional particle: (으)로 (u)lo
DIS dissatisfaction delimiter: 나마/이나마 nama/inama

DPR	quotative construction: propositive: 자고 cako
eC	complementizer:infinitive: 어/아 e/a
EQ	equative particle: 처럼 chelem
EXH	exhaustion delimiter: 마저 mace
GEN	genitive particle: 의 uy
INC	inclusion delimiter: 도 to
INS	instrument particle: (으)로 (u)lo
ki	nominalizer: 기 -ki
koC	complementizer:adverbializer: 고 ko
l	relativizer:prospective: (으)ㄹ -(u)l
L IM	limitation delimiter: 만 man
LOC	locative particle:static: 에 ey
LOD	locative particle:dynamic 에서 eyse
lyC	complementizer -lyeko complementizer: (으)려고 (u)lyeko
NM	nominative case particle: 이/가 i/ka
NOM	nominalizer suffix
PRS	prospective modal suffix
PST	past tense and perfect aspect suffix
QT	quotative particle
RL	relativizer (or adnominal modifier) suffix
rN	relativizer:past: (으)ㄴ -(u)n
rUN	relativizer:non-past: (으)ㄴ/는 -(u)n/-nu-n
rUL	relativizer:prospective: (으)ㄹ –(u)l
SOU	source particle: 에서 eyse
TC	topic-contrast particle: 은/는 un/nun
te	mood:retrospective: 더 te
TOL	toleration delimiter: 야/이야 ya/iya
yaC	complementizer:: 아야/어야 eya/aya

CHAPTER 1
INTRODUCTION

'Chaos often breeds life, when order breeds habit.'
Henry Brooks Adams, *The Education of Henry Adams*

1.1 Terminological implications: 'foreign' and 'hierarchy'

From the outset, two points must be clarified. First, the use of the term 'foreign' language rather than 'second' language in the title is an intentional, somewhat loaded choice. The term 'second language' has been originally adopted in the field of second language acquisition to refer to the learning of a target language while living in the country or speech community where that language has common currency, These days, however, the term 'second language' has been widely and universally used to refer to any language other than speaker's mother tongue. The term is also sometimes used in reference to the widespread use of an official language or language of wider communication in multilingual societies where people of various language backgrounds need to communicate with each other, i.e., the use of English in the educational system and for business and government affairs in India, Singapore, the Philippines, or South Africa. The term 'foreign language' is customarily used to refer to the learning of a language while residing in one's own country, usually through a formal instructional method.

By the above definitions, this is a study of the acquisition of Korean as a second language, i.e., the study deals with the acquisition of Korean by adult learners who were residing in Korea during the period while they were enrolled in Korean language classes. However, I deliberately avoid using the term 'second language' learning to refer to their situation, as it implies massive exposure and communicative urgency. In the case of a less-commonly taught language like Korean, even though it is ranked the eleventh most-spoken language in the world, with approximately 72 million native speakers in Korea and the Korean diaspora combined (Sohn 1999:4), the contexts of usage and the status of the language are radically different from the situation which obtains for learners of a world language such as English. Simply put, if we term it Korean as a 'second language', even though the learners are studying the language in Korea, the term is misleading. Non-Koreans studying the Korean language, even in Korea, have ample opportunity to communicate with Koreans using a contact language such as English. This quite drastically reduces the urgency of using Korean, even while residing in the country. When we know that language contact and immersion in situations requiring the learner to communicate are essential to the promotion of acquisition, and if we know that Korean language usage with native speakers is minimal in the case of learners of Korean, we cannot assume an acquisition outcome that will resemble the case of true second language acquisition. Therefore, in this study, I will use the term Korean as a Foreign

Language (KFL).

In a study of bilingualism among American businessmen in Tokyo, Matsumoto (1994) situated their contexts of language usage by citing an interview with an American businessman published in the *New York Times*:

> [M]ost American trying to do business in Japan cannot speak the language at all. These Americans live in Tokyo in the equivalent of the Trump Tower and even though they are middle-level managers, they'll be chauffeured to and from their offices. These Americans will also spend all their time at the American Club or at the Foreign Press Club. They don't associate with the Japanese and they don't live in the Japanese consumer culture.

This same description could very well be applied to the situation of foreign business persons in Korea. It would be fair to say that foreigners residing in Korea who work in white collar professions, even when they have many more social contacts with Koreans than the isolated American businessmen in Tokyo described in the passage above, can easily find themselves 'cocooned' in a circle of friends and acquaintances who speak English with a reasonable, or even good, level of fluency. This is primarily a result of the fact that English has become a language of international communication, due to which very heavy emphasis is placed on the learning of English for people of all ages in Korea.

To serve as a constant reminder of the radically different language usage situation in which most adult learners of Korean find themselves, as compared to the

situation of a foreigner resident in an English-speaking country, I opted to use the phrase 'foreign language' in the title of this study. Furthermore, this limited Korean language context and lack of communicative urgency serve as background to all the ensuing discussion regarding the acquisition of Korean by adult learners residing in Korea.

One of the central issues which I want to investigate in this study is whether the models and theories of second language acquisition which originated primarily in the field of English as a Second Language can be applied to the acquisition processes of less commonly taught (and less commonly used) languages such as Korean.

The differences between learning a less-commonly-taught language and a world language or commonly-taught language has begun to catch the attention of some researchers. Kanagy (1994), for example, in a study of the learning of Japanese by students in the U.S., states that previous findings in the area of developmental sequences

> [The studies in Second language acquisition] have been based almost exclusively on acquisition patterns in learners of English and other Indo-European languages; until recently, almost no L2 acquisition research existed on typologically dissimilar (i.e., non-Indo-European) language. Thus, the question arises: Do learners of non-Indo-European languages...follow common routes in acquiring certain L2 features? (255).

Hopefully, this study will partially serve to fill the void regarding research on learners of non-Indo-Euorpean languages referred to by Kanagy above.

The second term which I have opted to use and which requires

explanation is 'hierarchy'. Here again, I have knowingly and intentionally used a term which is out of fashion because, as I hope to demonstrate, it is the term which best describes the patterning of the data in my corpus.

In the 1970s and the beginning of 1980s when the morpheme studies were popular, the goal was to find a linear morpheme-by-morpheme acquisition order. At the time, 'order' or 'sequence' were the terms applied. This approach was heavily criticized, however, and even its proponents (Dulay and Burt 1975; Krashen 1977) have revised their theory in favor of a hierarchy-based, rather than a linear, explanation of the acquisition of grammatical morphemes (Dulay, Burt and Krashen 1982). Ellis (1985) discusses both the theoretical and practical value in establishing an acquisition hierarchy, rather than a rank order:

> Even in those studies that reported significant statistical correlations in the rank orders of the morphemes studied, there were some differences. Also the ranking procedure used disguised the fact that some of the morpheme scores differed narrowly, while others were far apart. For these reasons Dulay and Burt (1975) proposed that rather than list the morphemes in order of accuracy, it was better to group them together. Each group would then reflect a clear developmental stage, with the morphemes within each group being 'acquired' at more or less the same time. These groupings were presented as a 'hierarchy'(56).

In my data, I find overwhelming evidence of variation among learners, which makes a linear acquisition hypothesis untenable. What I attempt to demonstrate here is that there is evidence for groupings of grammatical morphemes on the basis of interactional relationships between the morphemes (J.D. Brown 1983: 29, 37).

1.2 Background of the study

Anecdote 1

> Around 1992-1994, while I was an associate director of the Korean Language Education and Research Institute at Sogang University in Korea, we launched a KFL textbook development project. We wanted to create a rational instructional sequence for this textbook development project, but we found that no empirical research whatsoever had been conducted on the acquisition of Korean as a foreign language. As we were primarily language pedagogues rather than acquisition research experts, we decided to create an instructional sequence for the teaching of KFL based on a combination of our classroom experience with foreigners learning Korean and our common sense. This was the extent of the rationale for the instructional design of most of the Korean language textbooks at the time.

When the KFL textbook project was launched in 1992, our team was very enthusiastic and proud of being the first university-wide task force in Korea to develop a textbook which was to be based on a rationalized curriculum design. As a first step, we checked every journal and book concerning KFL pedagogy and acquisition. The meager resources we found consisted of, for the most part, general program descriptions, with

reports of numbers of enrolled students, and some reports of successful classroom teaching techniques. Further details regarding the KFL field will be provided in Chapter 3, section 3.1.

In sum, in the early 1990s, no primary research on KFL acquisition or curriculum design based on learners' performance data had been done and there were at that time no scholarly papers related to KFL acquisition to which we could refer or which could serve as a basis for the development of a Korean language program. This state of affairs is what suggested the idea to me that I undertake some primary research on the acquisition of Korean as a Foreign Language. To do this research, I needed real learner performance data, so I began collecting audio recordings of interviews with the KFL students enrolled in the Sogang University program. I did this on a regular basis for five years. My original idea was to collect large enough quantities of data to allow me to make some valid generalizations. I also hoped to undertake a longitudinal study of KFL learners, and I planned to complement these two studies with a qualitative examination of language learner profiles and practices.

This study, then, is but one part of my long-term research goals. In the course of doing this project, I have always tried to keep in mind that my research goal has its origins in a practical goal, which is to facilitate the acquisition of Korean as a foreign language. My hope is that by devising a rational instructional sequence based on the

factors actually affecting the acquisition of grammatical features of Korean, this goal will be at least partially realized. Having started this inquiry into language acquisition phenomena in order to obtain insights which would be useable in the language teaching classroom, throughout the years of incubation of this project, I have tried to maintain a focus on the importance of obtaining practical results.

In that endeavor, I join an ever-growing community of classroom-based researchers who share similar concerns. (See Schachter and Gass 1996; Nunan 1990, Bailey and Nunan 1996.) Pica (1994) described the contemporary relationship between research and practical classroom application, saying that researchers themselves are paying more attention to the most pressing questions being posed by classroom language teachers:

> ...[T]eachers are asking questions that researchers cannot, indeed would neither dare nor choose, to ignore...[This]...represents a reversal of an earlier sequence in applied linguistics in which researchers would generate their own questions, then carry out research in isolation and find ways to apply their findings to the classroom. Within ...[the] newer framework, researchers can view their responsibility as that of *responding* to teachers' classroom concerns rather than generating questions on their own (50).

Larsen-Freeman and Long (1991), for example, speaking to the relationship between researchers, research and classroom instructors, state that

> ... a major goal for many SLA researchers is to provide a sound psycholinguistic basis for SL [second language] teaching. While much of the research...has implications for teachers, syllabus designers and developers of language tests, there is a growing body of work within

> SLA which focuses directly on these issues. In particular, a considerable number of studies have been carried out whose explicit focus has been to determine the effects (if any) of formal instruction on interlanguage development (299).

Thus, while there have been periods of estrangement between the second language acquisition research community and the language teaching community, nowadays this gap is being bridged more often than not, and the idea that theoretical research can generate results which have practical applications in the language teaching classroom is no longer controversial.

1.3 Scope of the study: particles and verbal inflectional morphology

> ***Anecdote 2***
>
> In 1993, twelve adult English native speakers who had been learning Korean as a foreign language for more than 600 hours at a reputable intensive program in the U.S. came to Korea to complete their language training. After initial level placement exams were administered, eleven out of the twelve learners were placed at the beginning level (Level 1) of the Sogang University program. Only one learner tested high enough to be placed in the elementary level (Level 2).

This anecdote is just one among many which could be told to illustrate the degree of difficulty encountered by most people attempting to learn Korean as a foreign language. As language pedagogues, repeated experience with anecdotal evidence of this type leads us to ask ourselves several questions: What makes Korean such a difficult foreign language to learn? Is there something unique about learning Korean as a foreign

language, or is it experienced as being extremely difficult because it is perceived as a very 'foreign' language, in the sense discussed above? What are the most problematic areas confronting the learners of various language and cultural backgrounds? Can certain grammatical features of Korean be isolated as posing particular problems for learners? If it can be determined that specific features are particularly difficult for learners to acquire, then a close examination of these features and the processes involved in their acquisition (or lack thereof) is warranted.

Using actual learner performance data from my corpus, some examples of KFL interlanguage will provide guideposts as to the areas of concern:

(1) English native speaker (EN): Novice-mid learner1

malha-ki + + malha-ki ++ malha-ki-lul kongpwu hayyo
speak-NOM speak-NOM speak-NOM-AC study-POL
'Conversation, conversation, I study conversation.'

(++: pause)

In this example, in response to Interviewer's question, 'What were you studying in that class?', the learner was quickly able to retrieve the word for 'conversation' from his mental lexicon, as this was the title of the class. The verb 'study' is also a very basic and familiar one. But note that the learner had to retrace the noun 'conversation' three times in order to gain time to process the accusative marker '-lul' required of the argument of the verb 'to study'.

In Korean, post-positional particles, such as the accusative marker '-lul' are very important grammatical markers, although optional under certain discourse contexts. (Characteristics of the Korean language will be discussed in greater detail in 3.2.) This example is cited here simply to illustrate the fact that learners are demonstrably under cognitive pressure to include particles when in communicative situations.

In example (2), the learner's level is more advanced but his performance data nevertheless gives evidence of processing pressure derived from manipulation of the same particle delimiter we saw in example (1).

(2) EN: Intermediate-low learner

1	I2:	어떤 책으로 공부했어요?
		etten chayk-ulo kongpwu hay-ss-eyo?
		'What book did you use to study [Korean]?'
2	EN:	어떤 책?
		etten chayk?
		'[Did you ask me] 'which book'?'
3	I:	네
		ney.
		'Yes.'
→4	EN:	책을(rising pitch) + 없었어요.
		chayk-ul eps – ess - eyo
		book-ACC (rising pitch) none-PST-POL
		'I didn't have any book/There was no book.'

The student's intended meaning in his response in line (4) above is very

ambiguous. His answer could mean any of the following: (a) 'There was no book,' or '(b) I did not have a book,' (c) 'I intended to buy a book, but I couldn't get one,' or simply (d) 'The class didn't use a book.' Each of these interpretations requires a different grammatical structure. In order to appreciate the level of processing difficulties occasioned by '-ul' ('-ul' is a morphophonemic variation of '-lul' seen in example 1) in this utterance, it is crucial to know that in other circumstances this student gives evidence of an excellent mastery of the nominative and accusative case particles. We can therefore eliminate the hypothesis that the student had originally intended to formulate his sentence as either (a) or (b), as both of these ideas are expressed by means of the same structure in Korean, and this structure would have required a nominative case marker on '*chayk*' 'book', not the accusative case marker. It is plausible to assume that the student might have originally intended to say either (c) or (d), as both of these structures would require the use of the accusative marker '-ul'. The fact that the student uttered the word '-ul' with rising pitch, also an anomalous use of pitch when compared to this student's normal pitch range, indicates that he was encountering difficulties in the processing of the remaining complex morphosyntactic structures required to complete his thought. The slight pause (++) after the '-ul' is further evidence of the student's processing difficulties. Under the communicative urgency of the moment, he abandoned his initial conceptualization in mid-sentence, finishing the sentence with a simple verb (*eps-ta*) for which an accusative-

marked argument is incorrect.

(3) Target-like use of case particle

책(이)	없었어요.
chayk-(i)	eps – ess – eyo
book-NM	does-not-exist-PST-POL

Even under communicative pressure as just described, it is interesting to note that the student was able to include the past tense/aspect marker (*-ess*) on the verb, the use of which is a relatively reliable indication of an intermediate language learner's relatively good command of basic structures of the language. The problem this student experienced in processing the sentence containing the apparently simple *'-(l)ul'* accusative morpheme, usually taught to beginners within the first month of language learning, by contrast, leads one to wonder what processes are involved in its acquisition.

It is not only problems experienced by learners of Korean as a foreign language, however, which suggest that the area of particles is a crucial one. Korean linguists themselves are aware of the complexity involved in their usage, as explained by Seo (1999), 'Among topics in Korean linguistics, particles are the core grammatical morphemes and semantic morphemes which need to be examined from many perspectives such as syntax, morphology, phonology and even pragmatics and semantics (3)' [tr. by Hwang].

The appropriate use of case markers in Korean appears easy at first, as it looks very systematic at the novice level when simple practice sentences show only prototypical usage of the markers. However, when learners confront real-life usage outside of the classroom, they easily become overwhelmed with the complexities of particle usage. The forms have multi-functionality and there are multiple levels of conditions of usage along with multi-stacking of markers. The complexity of mapping form and multiple function inherent in the use of Korean particles, as well as the empirical interlanguage data which demonstrates various types of learner difficulties, all lead to the selection of particles as an area of investigation.

There are three types of particles: (a) case particles, whose function is to 'mark the syntactic relation of a nominal element with its cooccurring predicate or with another nominal...or the discourse relation of a nominal element...with the main sentence...' (Sohn 1999:213); (b) delimiters and (c) conjunctive particles. All three types of particles will be analyzed in this study.

There is also one additional grammatical area which this study investigates and that is verbal inflectional suffixes. Let us examine some learner data to illustrate the nature of the problem.

(4) Japanese native speaker (JN): Novice-high learner

cey-ka	information-ul	karu + karuchy-e + karuchi-eyo
I NOM	information-ACC	teach teach teach-POL
I	teach	information.

The interesting point in this example is the learner's attempt to formulate the endings for the verb *karuchita* – 'teach'. In this case, where the verb is a three-syllable stem, the learner's performance data shows her effort to distinguish between the stem of the verb from the base form in order to decide where to attach the sentence ender (-eyo). Similar to the accusative case marking particle –ul/lul, the sentence ender (-eyo) is taught to learners of Korean virtually always within the first month of instruction. This data shows how difficult finding a verb stem and adding a properly conjugated form is even for the most frequent and basic sentence ender ' –eyo'

(5) Intended form in TL (target language):

cey-ka	information-ul	karuchye-yo 가르쳐요
I-NM	information-ACC	teach-POL

When we go on to the formation of conjunctive and complement verbal inflectional suffixes, learners' struggles are intensified severalfold. Example (6), below, contains three false starts with retracings before the learner finally settles on the surface form to use in his fourth attempt.

(6) EN: Intermediate-high learner

kongpwu yelsim-hi an hay++s ++an ha+ an + ha-nun +
study hard-AD not do-ass(?) not do- not-do-

an hay-nuntey
not-do-CNJ
'I di- di- did--didn't study very hard, and …uh.'

The step-by-step analysis of this utterance, below, demonstrates how many steps this learner had to pass through before he was able to finally say the complete sentence. The sentence form he eventually uttered would still be classified as an interlanguage utterance, as he did not incorporate the past marker in the final word 'hay-nuntey',

an hay++s	learner struggles to incorporate past marker '*-ass/ess*'(surface verbalization of 's' gives evidence that he is trying to attach the past tense form) while combining it with the conjunctive suffix '*-nuntey*'
an ha-	goes back to base form of verb *ha-ta* for a restart
an	tries again with negative only because he knows there is something wrong with the conjugation of the *ha-ta* verb
ha-nun	tries to combine '*ha-ta*' with '*-nuntey*' with intended conjunctive marker, but stops when he realizes the past marker suffix is missing
hay-nun	shows the learner's effort to conjoin past marker with conjunctive suffix '*-nuntey*'. '*hay*' is the sign that the learner tried

hay-nuntey — final outcome as a result of time pressure or perhaps psychological pressure; lacking more time to analyze other alternatives, he just says the best sentence he has been able to figure out by this point.

Admittedly, the analyses above regarding what must have been going on in the learners' minds cannot be confirmed with absolute certainty. They are provided, however, in order to demonstrate the type of difficulties confronting learners when trying to sort out the intricacies of the Korean morphosyntactic system which is, in addition, subject to numerous and complex phonotactic constraints.

That the complex Korean morphosyntactic system should present difficulties to learners is not surprising. Kwon (1992) underscores the centrality of morphological processes in the structure of Korean: '...[G]rammatical categorization is realized mostly by the morphological process. Unlike English, which places more weight on syntax, Korean places more weight on morphology' (38). [tr. by Hwang].

The severity and frequency of learner problems in dealing with verbal inflectional morphology when attempting to formulate Korean sentences led to the selection of verbal inflectional suffixes as the second area to be investigated in this study. The other motivating factor was the fact that both Korean linguists and second language acquisition researchers are of the opinion that morphological processes are the key to an understanding of adult language learning.

1.4 Purpose of the study

> ***Anecdote 3***
>
> 'There are simply too many so-called "patterns", which are impossible for me to master. It's endless. Even worse is that most of the patterns look and sound similar. And even when I know the vocabulary, it's all useless because I don't know how to change it properly to fit the patterns. *The worst thing is that I only remember the patterns while we're studying it, and then I always forget the pattern when we go on to something else.*'
>
> English native speaker, intermediate high

The learner cited above had spent more than one year in an intensive language learning program in Korea. His comments are typical of those expressed by many learners. What factor or factors explain the problems highlighted in these comments? Why should it be so difficult for him to retain and use the patterns he had learned in the classroom? Is it possible that instructional sequences in the teaching of Korean are fundamentally flawed? Why do so many students, even quite assiduous ones who speak one or more other languages, assert that Korean is 'the most difficult language they have ever learned'? Could it be that the instructional sequence of Korean language teaching programs actually interferes with, or at least does not contribute to, language learners' cognitive ability to process the facts of the language as they are taught?

The frustration he is expressing, particularly the idea contained in the italicized statement, also serves to remind me that the research I am undertaking on Korean as a

foreign language is not just a way to find answers in some 'exotic data' to an interesting theoretical question about the human language faculty. This study sets itself an even more difficult goal, which is to find plausible explanations for the patterns observed in the learning of Korean by adult learners, in the hopes of bringing 'relief' to the current and future generations of frustrated learners of Korean such as the ones whose data and comments are presented above. This does not mean that this study offers a final answer. This study is rather a beginning toward that answer.

As mentioned above, a pragmatic goal was at the origin of this study. If patterns can be discerned in the learner data, the goal is to interpret these patterns in order to ultimately inform materials development and instructional practices. In section 1.2, I presented the justification for the selection of specific problematic morphosyntactic targets to be examined. In this section I explained that data will be examined for the information contained therein which can shed light on language acquisition processes in the learning of Korean as a Foreign Language. However, whatever systematic patterns I may find in the data are neither reliable nor valid until I can determine the factors which govern the phenomena. Then, and only then, can the interpretation of the patterns have theoretical validity and pragmatic value. In sum, there are three major goals for this study:

1. Observe and describe learner oral performance data;

2. Attempt to discover any clusters or hierarchical relationships, of whatever type, that may be indicative of acquisition processes;

3. Attempt to determine which factors account for the observed clusters and hierarchy.

Each question mentioned above is fraught with controversy, and these controversial aspects will be explained more fully in the analysis section in Chapter 4.

Chapter 2 will review previously published studies of Korean as a foreign language, as well as previous studies of developmental patterns in second/foreign language acquisition. Chapter 3 will provide preliminary background on the analytical tools which will be needed for the analysis of the data. In Chapter 4, after explaining the methods employed in this study in 4.2, I will present the results of this study in 4.3, followed by a discussion of these results in 4.4. I conclude Chapter 4 by providing a model of hierarchical acquisition of Korean as a Foreign Language. Chapter 5 is a summary of the findings of this study and suggests ideas for follow-up research.

[1] Throughout this study, learner levels will be referred to by the labels used in the 1989 American Council on the Teaching of Foreign Languages (ACTFL) oral proficiency guidelines (Buck, Byrnes and Thompson) . According to these ACTFL guidelines, there are four major levels, each of which is divided into various sublevels. The levels are as follows:

Novice
- Novice Low
- Novice-Mid
- Novice-High

Intermediate
- Intermediate-Low
- Intermediate-Mid
- Intermediate-High

Advanced
- Advanced
- Advanced-High

Superior

The criteria for placing students in each of these levels can be found in Buck, Byrnes and Thompson, eds. (1989).

[2] In examples, "I" indicates interviewer, who is a native speaker of Korean, and in this corpus, the native speakers, unless otherwise indicated, were all teachers of Korean language. "EN" will be used to refer to English native speakers learning Korean and "JN" will be used to refer to Japanese native speakers learning Korean.

Chapter 2
Previous studies

'The human understanding is of its nature prone to suppose
the existence of more order and regularity in the world than it finds.'
-Francis Bacon, *Novum Organum*-

2.1 Introduction

Among the earliest empirical studies in second language acquisition were those carried out under the Contrastive Analysis Hypothesis (CAH). Critiques of the assumptions underlying the strong version of the CAH led quite naturally to a burgeoning of work in the area of error analysis, and to the classification of error types, modeled to a great degree on research in child (first) language acquisition. As they considered the body of errors, researchers began to wonder if a typology of errors could be established. This line of questioning led to a research paradigm which came to be known as 'the morpheme studies', or 'the order studies'. Taking first language development as the model and incorporating insights from the emerging interlanguage framework, which looked at learner errors not as deviations from the target language but as evidence of a dynamic, developing natural language, the researchers working in this direction also wondered how the error types might change over time, as learners passed through developmental stages. If systematic variation in learner errors could be determined, it would have tremendous pragmatic value in the teaching of second languages. At the time, no other sub-field of SLA held as much promise for classroom teaching practices as these order studies. Inspired by this

potential practical value, the number of studies quickly burgeoned, as researchers undertook to discover systematic variation in learner interlanguage.

The order studies attracted a great deal of criticism of their theoretical assumptions and the standards of measurement used, but their potential promise was so great that the criticisms, rather than incite researchers to abandon their line of work, actually inspired new studies conducted with more refined methods and analytic tools.

For the sake of clarity, the review of previous SLA research relevant to this study is classified into two groups: (1) reviews of order studies, and (2) reviews of developmental stages. As these two terms appear to be similar and are, in fact, quite often confused, it would be useful to clarify at this point how the two terms are distinguished one from another. An acquisition *order* implies that one feature is acquired before another, e.g., in Korean that the nominative case marker *i/ka* is acquired before the accusative case marker *-ul/lul*. An acquisition *sequence* is an examination of the successive stages of acquisition which lead to ultimate target-like acquisition of both the form and use of the structure in question. As Ellis (1994) defines it, '[s]howing that learners pass through stages on route to the TL rule provides evidence for a sequence of acquisition' (73). 'Developmental pattern' is the term used by Ellis and others as a cover term for both acquisition order and acquisition sequence, and I, too, will use the term in this sense.

The previous studies reviewed here are from two different and distinct bodies of work. The first section (2.2) reviews the current situation in the field of Korean as a Foreign Language. A rather extensive general description is provided in order to

explain why my study is necessary. The second and third sections (2.3) review the older and now-classic acquisition order and sequence order studies. Finally, in section (2.4), I discuss more contemporary works in what I term a 'acquisition order studies re-visited'.

2.2 Korean as a Foreign Language

Korean is classified as one of the 'less commonly taught' (LCT) languages. Walton (1992) defines LCTs, from the perspective of foreign language education in the U.S., as 'all languages other than French, German, and Spanish' (1). Everson (1993), in his discussion of LCTs, includes Arabic, Chinese, Japanese, and Russian, which are 'languages that have demonstrated stabilized or growing enrollments in the past few years, and languages that researchers are investigating with increased fervor' (198). Such classifications are a reflection of research findings which group languages according to the length of time required by native speakers of English to reach the various levels on the ACTFL proficiency ratings (Liskin-Gasparro 1982). In a study of English-speakers' acquisition of 44 languages, Liskin-Gasparro (1982) found Arabic, Japanese, Chinese and Korean were the most difficult of the 44 languages considered. Liskin-Gasparro establishes four groups, classified according to length of study required by Foreign Service Institute (FSI) learners to achieve the ACTFL superior level. This classification implies a hierarchy ranking in difficulty of learning,

reminiscent of the contrastive analysis approach, which considered the degree of linguistic difference as a source of difficulties in the acquisition process.

Although Korean is still considered to be one of the 'Less Commonly Taught Languages' in Europe and the English-speaking countries, since the 1970s, there has in fact been a marked increase in the number of adults enrolled in classes to learn Korean as a Foreign Language (KFL). Some of this increased enrollment comes from the offspring of Koreans who have emigrated to other countries and who, upon reaching adulthood, develop a desire to learn the language of their heritage or perceive economic and professional advantages in speaking Korean. A substantial number of Korean language learners, however, are not such heritage learners, and it is these non-heritage learners, living in Korea which this study will focus on.

The motivation of non-heritage learners cannot be determined precisely, but the growth of enrollment in Korean language classes has paralleled the economic development of Korea. As the country has become more recognized as an economic power and as it has received increased recognition as a player on the international scene, increased enrollment in Korean language classes has been noted. The exact number of people living in Korea who are studying Korean as a foreign language cannot be precisely determined, as no statistical reporting has been carried out. In Seoul alone, there are almost 3,000 foreigners who are learning Korean in various university language institutes, and the number of universities offering courses in Korean language learning for foreigners increases each year. If people attending community-based language classes and those receiving private language tutoring are

included, the figures would be even higher. A breakdown by nationality and native language cannot be known, as there has been no systematic data-gathering on this point.

As the number of enrollees has increased, some positive phenomena with respect to the teaching of Korean as a foreign language have been noted. Prior to the 1980s, for example, it was thought that being a native speaker of the language would be sufficient preparation to teach foreigners. At a time when the field was little known and had virtually no visibility, no thought was given to effective methodology and the effect of curriculum design. As the number of enrolled students started to increase, however, more attention came to be paid to teaching techniques and effective methodology. Program administrators came to realize that amateur native speakers did not make good language teachers; they realized that trained language teachers were more effective in the classroom. As a result of this kind of increased demand for teachers of KFL, in the 1990s several universities established teacher training programs for KFL teachers. (For a critique of these teacher training programs, see Hwang 1995b.) There have also been collaborative efforts to establish a national evaluation system (For a critique, see Hwang 1996a) and to develop textbooks and materials.

Despite the growth phenomena and other positive signs reported above, I do not want to imply that the field of KFL has actually improved the level of instruction and is now a mature field.

Seeking to devise appropriate methods specific to the field of Korean language teaching, two tendencies developed which still characterize the field today. The first is an emphasis on linguistic descriptions of the features of the Korean language. Since the goal was to impart knowledge of the language, those involved in KFL quite naturally turned to linguists, the specialists of language. Whether insights from theoretical linguistics are relevant to the acquisition of a second or target language is a much-debated point. In any case, it can be said that the grammatical descriptions of the Korean language provided by linguists did and does still inform, in many cases, the content of many textbooks for the teaching of Korean as a foreign language. The result is that these textbooks often contain extensive descriptions of patterns and paradigms of the Korean language, including references to now obsolete historical changes. The other tendency which developed was a concern with methodology, techniques and specific classroom practices, often modeled on practices prevalent in the teaching of English and other languages as foreign languages, i.e., 'the communicative approach', variously interpreted in practice.

The papers presented at the annual conferences of the International Association for Korean Language Education, established as a forum for those involved in teaching Korean as a foreign language, reflected the two tendencies. Whereas it used to be that papers on theoretical linguistics and descriptions of discrete points of Korean syntax and phonology predominated, gradually some papers discussing practical issues in the teaching of Korean as a foreign language began to emerge. In the period since the 1980s, paralleling the increased enrollments, the

teaching of Korean has become a recognized field. The practitioners and researchers in this field have begun to look to published studies and papers based on ESL/EFL contexts to inform their teaching of Korean as a Foreign Language. There have been, however, very few original studies conducted by KFL teachers and researchers. The few studies that have been conducted focused on teaching techniques and pedagogical concerns. There have been very few studies designed to obtain baseline information on language acquisition processes relevant to learning Korean. (For an example of one such study, however, see E.J. Lee 1998.) To my knowledge, no studies at all have been conducted which were based on large enough samples to permit the generalization of conclusions.

Indicative of this paucity of published materials, Cook's online web-based bibliography containing 432 pages of published materials on SLA does not cite a single work written by a Korean author (Cook 2001). Furthermore, the fact that at the 2002 annual American Association of Teachers of Korean (AATK) conference there was only one presentation devoted to the topic of language acquisition provides further illustration of how little basic research is being undertaken in the field.

In the early 1990s, most publications related to the study of Korean as a foreign language consisted of reports of program history and program-related issues such as student enrollment trends, socio-political factors affecting the programs, under such titles as 'The current situation of Korean language teaching in China'. (See Kanno 1988; Y.T. Kang 1992; Han Woo Choi 1991; K.H. Choi 1997; J.P.Lim 1989; M.J. Kim 1997). As of this writing in 2002, such studies still predominate.

After 1990, there was a major trend in the KFL to adopt the ACTFL oral proficiency guidelines to the Korean teaching situation, and the oral proficiency performance guidelines served as a kind of *ad hoc* curriculum design. (See I.J. Kong 1993; M.O. Kim 1994; S.K.Seo and H.S. Kim 1997). In turn, the widespread popularity of the ACTFL oral proficiency guidelines led to an emphasis on oral testing (T.K. Noh 1983; K.S. Choi 1997; H.Y. Cho 2000; Y.J. Kim 1998, 1999).

Another major direction pursued in publications related to the teaching of Korean as a foreign language is a focus on materials development. (See M.J. Kwon 1992; J.S. Kim 1992; H.M. La 1999, I.H. Woo 1999; P.J. Paik 1991). Most of this research is devoted to methodology topics such as the teaching of reading, writing, instructional methods for the teaching of Chinese characters, or the use of mass media and the internet in instructional settings. Four relatively recent Ph.D. dissertations in the field of KFL have been completed in Korea. One of them (J.S. Kim 1992) focused on Korean language curriculum and textbook analysis. Y.A Kim (1996) and Y.J. Kim (1999) both discuss testing based on the ACTFL proficiency guidelines and how to adapt the Oral Proficiency Interview (OPI) for the purposes of testing Korean as a foreign language. J.Y. Lee (1996) proposes an instructional model for Korean particles. There have also been twenty-four M.A. theses produced in the field of KFL in recent years. All of the above-listed dissertations and theses follow the general trend described above, which could be summarily characterized as driven by top-down analysis rather than bottom-up empirical research.

There have been a few publications in the error analysis tradition. In a study of Japanese learners of Korean, for example, S.J. Koh (1992) analyzed the influence of Japanese as an L1 on learner error types. M.O. Kim (1994) also conducted an error analysis of KFL and learner errors. However, it should be noted that in none of these studies was the number of subjects sufficiently high to obtain statistical significance for the findings. Furthermore, the cited studies do not examine the principles underlying the reasons for the errors. The focus of these studies has been a classification of error types, upon which proposals for classroom teaching were made.

Sohn (1986) analyzed a sample of learners' writing errors, then provided a systematic and detailed linguistic analysis of the learners' interlanguage. Even though it is primarily a linguistic analysis and does not incorporate insights from the SLA field regarding cognitive factors affecting the language learning process, more fundamental research are needed in order to establish a more empirically-motivated approach to the teaching of Korean as a foreign language.

The lack of serious primary research related to acquisition processes specific to the learning of Korean is partly the result of the fact that many KFL teachers came from a background of Korean linguistics and have no background in language pedagogy. Most frequently they try to adapt a teaching technique, usually from the ESL/EFL literature, and apply it to the teaching of KFL. Discussions among KFL teachers mostly center on techniques at the level of individual lesson plan design without consideration of whether these techniques actually foster language learning. They have no theoretical background or practical research experience to

evaluate whether such a technique is appropriate for learners of Korean and whether it is appropriate to the given teaching context.

The focus in the field of KFL has primarily been on the revision of textbooks and materials, but lacking basic information on acquisition processes in the learning of Korean, these revisions have not been theoretically grounded. For example, changes have been made in the choice of lexical items to be presented to the learner, with the idea that certain words will be more useful for creating situationally-based conversations. Pictures, drawings and cartoons have also been added to enliven the layout of the text. What has not changed, however, is the basic assumption regarding methodology which almost all the textbooks share. Most of the KFL textbooks use pattern drills, based on the habit-formation theory. Prime examples of this are the textbooks used by the Korean language programs at Yonsei University and Seoul National University. They primarily concentrate on grammar explanations accompanied by pattern drills and an emphasis on rote memorization of conversational dialogues. In other words, these programs pay very little attention to meaningful interactional contexts. The natural result is that discrete point instruction has been the dominant and popular one. Even though lip service has been paid to the importance of developing learners' communicative competence, only cosmetic revisions of materials have been undertaken to support this stated goal. In addition, the learning context and learner variables have not been taken into consideration; they have not been factored into the curriculum design nor into the instructional design (Hwang 1994, 1995a, 1995b, 1996b, 1997b).

There are some new trends, however, which should be mentioned. The Korean language teaching programs at Sogang University and at Ewha Woman's University in Seoul, and at the University of Hawai`i in Honolulu are all attempting to adopt a communicative and task-based approach. Even in these cases, however, the basic practice format is still the pattern drill. Most recently, the first volumes of a new textbook series known as the KLEAR (Korean Language Education and Research Center) Textbooks in Korean Language (2000), produced by a consortium of American universities with Korean language programs, with support from the Korea Foundation have been published. This series combines explicit grammatical explanations with task-based activities designed to enhance learners' communicative competence. Advanced level textbooks for the series are still in preparation.

In the above review of the shortcomings of the field of Korean language research, it is not my purpose to place blame on the teachers of Korean or the textbook designers. The current situation is a sign of the relative immaturity of the field. The fundamental problem which hinders a more informed approach to improving Korean language instruction remains the lack of primary research (Hwang 1997a). There is a critical need for basic research into learner-centered acquisition, a need this study is designed to respond to.

The lack of basic research on Korean as a foreign language is not unique to the teaching and learning of Korean, in fact. Even the more commonly taught languages suffer from a lack of basic research and the overemphasis in the field of second language acquisition on data based on the learning of English as a second

language. Freed (1991) has discussed this imbalance in the American context: 'Given that there has been extensive focus on second language acquisition research in the past fifteen years...one might reasonably ask why foreign language research has been neglected' (3). Freed, citing other scholars, summarizes three primary factors as explanations for this situation. First, 'language teaching has long been a service function of...[foreign language and literatures] departments [and] those involved in teaching languages and conducting research on language learning or language teaching have usually remained at the lower end of the academic hierarchy' (3). Second, she notes the lack of foreign language specialists with training as researchers: '[M]ost American second language acquisition specialists are descendants of the TESOL profession, belonging to an English-oriented group, who, for the most part, do not have foreign language specializations. There are few foreign language specialists who have received the requisite training to conduct the caliber of research that is required' (4). Finally, and perhaps most importantly, Freed notes, referring to Kramsch (1987) that '...second language acquisition and foreign language learning...have been separated intellectually in the minds of scholars...This situation...has bred a false dichotomy...that has led to a fragmentation that distorts, retards, and ultimately replicates' (4). Regretting the separation of SLA from foreign language research, Freed notes the regrettable results of this separation:

> [W]e have the surprising legacy of two individual
> and historically quite separate traditions of research, both
> related to a very similar, if not identical area of inquiry:

> the acquisition or learning of nonprimary languages. This twofold situation has bred several distinct and unfortunate consequences. The first...is that there has been little theoretically based and psycholinguistically oriented research in classroom-based foreign language acquisition, and little research that tells us anything about the learner and the language learning process. Second...is the fact that certain general assumptions about second language acquisition have been formed and used as the basis for more research, which...has focused primarily on the acquisition of English as a second language. Finally...is the fact that those few foreign language learning specialists who are interested in theoretically motivated research have had no field to call their own...They have not been easily integrated into the ranks of English-dominated SLA research; yet there is no field of inquiry with which they can comfortably identify (5-6).

To summarize and reiterate, even though there have been efforts to revise textbooks and to train teachers in the field of KFL, concepts and practices are frequently borrowed from the field of ESL; KFL has thus not been informed by basic research conducted specifically in the context of Korean language learning and teaching. This is one important reason why the field of KFL has not made substantial improvement towards the rationalization of the effectiveness in the teaching of Korean. The reason for this lengthy explanation of the current state of KFL is to justify the need for my study.

2.3. Developmental pattern studies

> Understanding how we acquire a second language is much more challenging than understanding the learning of a first language. If observing first-language acquisition is like studying the forces of gravity at work by dropping feathers in a vacuum, perhaps taking a look at second-language acquisition is more like watching a feather drop from an airplane, buffeted by winds, weighted by moisture, and slowed by pressure. (Bialystok and Hakuta 1994:4)

No scholar denies that language acquisition is a complicated phenomenon. Complicated enough to take at least 40 years and the collective contributions of hundreds of thousands of scholars to answer the question 'How do we acquire language?'.

One common assumption about language learning is that a language learner's first language (L1) interferes with acquisition of a new language. That L1 does exert an influence on both the syntactic and phonological levels is without question, and it is natural for scholars to attempt to apply insights acquired from L1 studies to the field of L2, at least as a starting point.

2.3.1 Acquisition order studies

Learners make mistakes. However, these mistakes are a gold mine of information about the nature of language acquisition, if we can figure out the right questions to ask. Among the questions one might want to know are the following: Why do learners make mistakes? Are learners' mistakes random, or is there some kind of pattern? Do

all learners follow the same path in learning a language, or does each learner find his/her own path? If there is some kind of path which most learners follow, then what does it look like? If there is no common path, what determines the path taken by individual learners? Or, if learners sometimes travel a path with other learners and sometimes trace their own way, how can this behavior be explained? And, the most important question of all: how is language is acquired?

These *as yet unresolved* questions have been one of the main objects of second language acquisition research for a number of years not only for their theoretical but also for their practical implications. The following excerpt illustrates how theoretical and practical implications of these questions interact:

> Teachers traditionally decide both what classroom learners will learn and what order they will learn it in. A language textbook for instance, imposes an organization of content on the learner. It assumes that the order in which features of the language are presented will correspond to the order in which the learner is capable of acquiring them. Likewise, a teacher who draws up his or her own scheme of work does so in the belief that a careful selection and ordering of the teaching material will facilitate learning. However, unless we know for certain that the teacher's scheme really does match the learner's own way of going about things, we cannot be sure that the teaching content will contribute directly to language learning (Ellis 1985:1).

There was a general assumption that some kind of ordered sequence existed since the formulation of a hierarchical ordering of difficulty by the proponents of the contrastive analysis hypothesis, but it was in the 1970s that a serious research

program was undertaken to find out what that natural acquisition order might be and what kind of developmental sequences could be observed.

To review claims that there is a natural acquisition order and to find the limitations of these studies, we will start with an examination of the Contrastive Analysis Hypothesis (CAH), because historically, studies regarding natural language order emerged from criticisms of this hypothesis. Although the CAH itself has been quite solidly refuted, the process leading to its refutation opened up fertile areas of research, particularly with respect to the nature and role of learner errors. The approach to learner error fundamentally changed in the process. This changed approach enabled Selinker (1972) to obtain insights which led to the concept known as 'interlanguage'. This changed point of view about error which defined interlanguage as a unique system differing from both L1 and L2 occurred at a time when developmental sequences were being documented in L1 acquisition, which led scholars in second language acquisition to posit that the interlanguage framework would also yield evidence of acquisition order or developmental sequence in second language acquisition. This led scholars to undertake the landmark morpheme studies.

Contrastive analysis of the syntactic features of two languages grew out of the search for the most effective way to teach foreign languages. It was believed that teachers could facilitate learners' efforts to learn a language if learners were made explicitly aware of the differences and similarities between their L1 and the target language. One of the leading proponents of the use of contrastive analysis in language teaching was Charles Fries (1945), who explained the value of contrastive analysis in

these terms: 'The most efficient materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner' (9). Lado (1957) took this idea a step further when he proposed an order of difficulty based on the findings of similarities and differences between L1 and L2, and it was this idea of his that became known as the strong version of the Contrastive Analysis Hypothesis, which held that 'those elements that are similar to his native language will be simple [for learners to acquire]..., and those elements that are different will be difficult' (2). There are several elaborations on the CAH beyond a simplistic *similar-->easy/different-->difficult* dichotomy, notably regarding cases of coalescence in L1 or L2, but for our purposes, a sketch of the basic idea is sufficient. Evidence from learners' errors, however, did not support the strong claim made by the CAH, namely the ability to predict learner errors. As a result, a weak version of the CAH, which attempted to explain learner errors only after they were observed, was put forward. (Wardhaugh 1970). The basic assumption of the proponents of the CAH was that an instructional order could be established based on an order of difficulty, and that this instructional order, in turn, would automatically correspond to a learning order.

The CAH and its underlying assumption, language learning as behavior modification, were challenged on theoretical grounds and refuted by empirical research. First, let us examine the theoretical challenges. These took their inspiration mainly from Chomsky's challenge to behaviorist explanations for first language acquisition, based on the observation that children do not learn by imitation or by

reinforcement, nor as a result of error correction (Ellis 1985). In addition to criticisms of the CAH emanating from insights into first language acquisition, other criticisms of the CAH were raised. One was 'the validity of equating `difference' with `difficulty' on the one hand and `difficulty' with `error' on the other...`[D]ifference' is a linguistic concept, whereas `difficulty' is a psychological concept. Therefore, the level of learning difficulty cannot be inferred directly from the degree of linguistic difference between two language systems' (Ellis 1985:31).

Given the theoretical doubts cast on the validity of the CAH, scholars embarked on research programs to provide empirical evidence against the hypothesis. The first major refutation of the CAH came from Dulay and Burt's (1973) study of child second language learner errors which they classified into four types (interference, first language developmental errors, ambiguous errors and unique errors). With this classification system, they found that only 3% of the learner errors could be attributed to first language interference. In a subsequent study (1974), they found only 4.7% of the child learner errors to be due to L1 interference. Other studies found rather higher percentages of interlingual errors (ranging from 23%-50%). White (1977), for example, looked at errors among adult learners and found that 20.6% were of the interference variety (Dulay, Burt and Krashen 1982:186-187). Numerous other error studies corroborated the finding that L1 interference was at best only a partial explanation for learner errors (See *inter alia* LoCoco 1975; Hanania and Gradman 1977; d'Anglejean and Tucker 1975; Scott and Tucker 1974, Olsson 1974; Taylor 1975).

Even though they differed rather significantly in percentage of error attributed to interlingual errors, taken together, the error analysis studies provided strong evidence against the CAH claim that L1 interference was the primary explanation for learner error. The overwhelming evidence from research into the role of L1 transfer inevitably led to the conclusion that something other than source language interference must be affecting second language acquisition.

Despite the fact that error analysis shed light on the nature of error, the approach had its limitations. For one, error analysis cannot provide a complete picture of the language learning process. It can describe only the product of the learner's incomplete or inaccurate analysis. It cannot explain how it is that learners are successful in the aspects of language learning which they do master. Furthermore, error analysis led to an inaccurate picture of a learner's system by neglecting a consideration of the phenomenon of avoidance (Long and Sato 1984).

Despite its limitations, error analysis did serve as the catalyst to the development of an important theoretical construct, namely, the concept of interlanguage. After error analysis established that L1 transfer could not adequately explain learner language, a more dynamic explanation for learner error was sought.

Selinker's (1972) notion of 'interlanguage', inspired by Corder's (1967) seminal paper on the significance of learner errors, was based on the model of a continuum. In the interlanguage view, learner errors indicate the point between L1 and L2 at which a language learner finds himself at a given point in time and are an indication of the learner's (inaccurate or incomplete) analysis of the target language input. A crucial

insight brought out by the concept of interlanguage, and the one which has probably ensured its continued vitality, was that it claimed that learner language was internally systematic and rule-governed, rather than being the result of random acquisition. Larsen-Freeman and Long (1991) explain interlanguage in the following terms: 'At any point along the continuum, the learners' language is systematic, i.e. rule-governed, and common to all learners, any difference being explicable by differences in their learning experience' (60). Two characteristics of interlanguage not mentioned by Larsen-Freeman and Long is that learner language is considered to be permeable, i.e., 'rules that constitute the learner's knowledge at any one stage are not fixed, but are open to amendment' (Ellis 1985:50) and that it is considered to be dynamic, i.e., it is in a constant state of change. The changes are seen as gradual, however, evolving as the learner 'slowly revises the interim system to accommodate new hypotheses about the target language system' (Ellis 1985:50).

The concept of interlanguage is being continuously elaborated and developed, primarily to account for variation. Learner language has been observed to vary as a function of topic, immediate linguistic context, interlocutor, and variations in task difficulty, including familiarity, linguistic and cognitive requirements, processing demands, memory load, and attentional focus. (See Hulstijn 1989; Preston 1989; Tarone 1988).

Even in its early form, the concept of interlanguage stimulated important research questions. Among these were

> (a) whether learners passed through clearly identifiable stages in the acquisition of the grammar, phonology, and so forth of the target language; (b) whether learners with different mother tongues passed through the same developmental stages; and (c) whether L2 stages of development were the same as those observed among children acquiring English as a mother tongue (Brown 1973, cited in Richards 1985: 64).

2.3.2 **Acquisition sequence studies**

The theoretical concept of interlanguage with its focus on learner progress along a continuum gave rise to a number of studies which attempted to look at the developmental path of acquisition. These studies mostly took one of two approaches, the first being the cross-sectional morpheme studies (See, *inter alia,* Dulay and Burt 1973; Dulay and Burt 1974; Pica 1983; Bailey, Madden & Krashen 1974, Larsen-Freeman 1978 [1976]; Krashen, Butler, Birnbaum & Robertson 1978) and the other a series of longitudinal studies which looked at developmental stages. (See, *inter alia,* Hyltenstam 1989; Wong-Fillmore 1976; Wong-Fillmore 1979; Dittmar 1980; Schumann 1980; Cazden et al. 1975; Pienemann 1989). Whereas the morpheme studies looked at the question of whether learners of a variety of L1s provided evidence for similar orders in the acquisition of grammatical functors in the target language, the longitudinal developmental studies 'examined the acquisition of grammatical morphemes...[as well as] other aspects of development. They have tried to account for the gradual growth of competence in terms of the strategies used by a learner at different developmental points' (Ellis 1985: 58).

Dulay and Burt's 1973 landmark morpheme study compared the acquisition order of eight English grammatical morphemes of 151 native Spanish-speaking children, six to eight years old, living in three different locations, Each of the groups differed with respect to English proficiency and conditions of exposure to the target language. Speech samples were elicited by means of a structured conversation technique and were then scored 'to determine the degree to which the children controlled the structures they themselves had offered in conversation' (Dulay, Burt and Krashen 1982: 204), i.e., *suppliance in obligatory context* (SOC) was the method used to measure the children's acquisition of the target structures.

The results obtained indicated that, despite differences in proficiency, the order of acquisition across the three groups was 'strikingly similar' (Dulay, Burt and Krashen 1982: 204). 'These...results suggested that there might indeed be a universal or natural order in which L2 learners acquire certain syntactic and morphological structures' (Dulay, Burt and Krashen 1982: 204).

Encouraged by these findings, Dulay and Burt designed a second cross-linguistic study (1974) which compared 60 Chinese- and 55 Spanish-speaking children's acquisition of eleven English grammatical morphemes using the structured conversation method of elicitation and the same SOC method of coding the results. The results of the 1974 cross-linguistic study showed the same tendency as that noted in the earlier study of Spanish-speaking children of different English proficiency levels, namely, both the Spanish and the Chinese children gave evidence of having the same acquisition order for the target structures (Dulay, Burt and Krashen 1982: 206).

Two other studies of child language acquisition (Rathman 1975; Kessler and Idar 1979), with children from four language backgrounds (Korean, Spanish, Vietnamese and Japanese), and one study of 777 Japanese adolescents (Makino 1979) all found 'a learning order similar to that found by Dulay and Burt (1974)' (Dulay, Burt and Krashen 1982). The conclusion was thus drawn that '[i]t is...highly probable that *children of different langauge backgrounds learning English in a variety of host country environments acquire eleven grammatical morphemes in a similar order*' (Dulay, Burt and Krashen 1982: 208-9, emphasis in the original).

Around the same time period when the first of the above-mentioned child language acquisition studies was being conducted, Bailey, Madden and Krashen (1974) designed a study to see whether adult learners of English as a second language would give evidence of an acquisition order and if so, whether it would be similar to that found in children. Their study sampled 73 adults, half of whom spoke Spanish as an L1, but including a total of twelve different language backgrounds. The data collection and scoring methods used were the same as Dulay and Burt (1973). The results of the Bailey, Madden and Krashen study showed that '*the contours for the acquisition sequences of the children and adults studied [were] very similar.* [The]...initial sequence study of adult morpheme acquisition...suggest[s] that whatever internal factors are interacting with language input in children...seem to be operating in adults as well. Furthermore, the first language of the L2 learner, whether child or adult, does not appear to affect the result of this interaction: the sequences observed

for all groups are similar' (cited in Dulay, Burt and Krashen 1982, emphasis in the original).

Another important study of the order of acquisition among adult learners was that of Pica (1983). The variable introduced in this study was learning context, i.e., conversational data from three groups of Spanish-speaking learners of English was collected: (a) six instructed learners living in Mexico (instructed-only learning context); (b) six immigrants working in the U.S. who were acquiring the language naturalistically without instruction (uninstructed learning context); and (c) six learners living in the U.S. who were taking language classes (mixed learning context). What Pica found was that '...Spearman rank order correlation coefficients...attained significance at the .002 level or higher. These findings indicated that all groups of subjects, across all language contexts, exhibited a highly similar overall rank order of morpheme suppliance in obligatory contexts' (Pica 1983: 479). These findings were contrary to Pica's expectations, as she had posited that instructed learners would exhibit 'disturbed' natural acquisition order, (the assumed natural acquisition order being that of the earlier Dulay and Burt studies). Where Pica's study did find a difference between the groups was in the percentage and type of errors. The instructed learners tended to oversupply morphological marking, whereas the naturalistic learners tended to make more errors of omission. The mixed learners behaved more like the naturalistic learners at the early stage of acquisition but more like the classroom-only learners at later stages.

Larsen-Freeman (1978 [1976]) conducted another study of adults which, on the one hand, confirmed the Dulay and Burt acquisition order for oral speech production tasks, but, on the other hand, found different morpheme acquisition orders for written texts. A study of acquisition order of morphemes in written English by Krashen, Butler, Birnbaum, and Robertson (1978) provided counter-evidence for the conclusions reached in the Larsen-Freeman study. Krashen et al.'s study looked at two types of written data: one produced under 'fast writing' conditions, the other produced under 'careful writing' conditions. The results showed that the differences in conditions did not affect the morpheme acquisition order, and, furthermore, that the order correlated with Dulay and Burt's results of acquisition order for oral production.

Summing up these various cross-sectional studies, it can be said that, even though variation is noted according to task type (Larsen-Freeman [1978] 1976) and learning context (Pica 1983),

> the general picture that emerges is that the `acquisition order' for various grammatical functors is more or less the same, irrespective of the subjects' language backgrounds, of their age, and of whether the medium is speech or writing. The only time that a different order occurs is when the elicitation instrument require[s] the subjects to focus specifically on the form rather than the meaning of their utterances...(Ellis 1985:56).

The morpheme studies thus appear to provide strong support for the hypothesis of a natural sequence of development in second language acquisition. A natural sequence of development in turn contains the features necessary to support the primary claims

of the interlanguage hypothesis, namely, progress along a continuum and systematicity rather than randomness in the acquisition process.

I will turn now to a discussion of the longitudinal developmental studies. Like the morpheme studies, these studies also looked at whether there is a developmental sequence in the acquisition order of grammatical morphemes, but their primary focus was on the developmental stages involved in their acquisition. Their approach derived from a rather different approach to second language error data, explained by Wode, Bahns, Bedley and Frank (1978) as follows:

> [T]he morpheme order approach misses what makes language acquisition attractive for, and subject to, developmental investigations, namely, to discover how language is processed by the child for the purpose of acquisition. This processing is reflected in the way that children decompose complex structural patterns and then rebuild them step by step until they finally reach target-like mastery. Therefore, pre-targetlike regularities must be regarded as an essential part of the total process of acquiring a language (176, cited in Larsen-Freeman & Long 1991: 63).

The methodology of the longitudinal studies differs in several respects from the cross-sectional morpheme studies, which calls for a different type of interpretation and a different set of caveats to be formulated. Longitudinal studies are typically case studies of a limited number of learners (usually one or two) and consist of data collected over time. The major disadvantage of longitudinal studies is that generalizations based on data from such limited numbers of learners cannot be

conclusive. When corroborating evidence from a number of longitudinal studies is considered, however, more definitive conclusions can be drawn.

A number of longitudinal studies have been conducted over the years, but it is primarily those which have looked at negatives, interrogatives, and relative clauses which provide strong evidence for developmental sequences.

With respect to negation, Ellis (1994) reports that learners of both English and German as a target language follow a quite similar pattern of development, despite the fact that the rules of negation in German and English are different. Ellis bases his summary on a number of studies (Ravem 1968; Milon 1974; Cazden et al. 1975; Wode 1976 and 1980; Adams 1978; Butterworth and Hatch 1978; Schumann 1979). The findings for English are summarized in the following table:

Table 2.1
Summary of general stages in the sequence of acquisition
in L2 English negation

	Stage	Description	Example
1	External negation	(i.e. 'no' or 'not' is placed at the beginning of the utterance).	No you are playing here
2	Internal negation	(i.e. the negator-'no', 'not' or 'don't' is placed between the subject and the main verb).	Mariana not coming today
3	Negative attachment to modal verbs.		I can't play that one.
4	Negative attachment to auxiliary verb as in target language rule.		She didn't believe me. He didn't said it.

(Ellis 1994: 100)

The acquisition of negation is presented in four separate stages, but the studies cited show that the stages overlap greatly and are not as clearly defined as their presentation in table form requires. Furthermore, the transition from one stage to another is gradual, reflecting what is hypothesized to be learners' 'reordering of early rules in favour of later ones' (Ellis 1994:100). Across these studies, almost no evidence for L1 transfer has been found. In Hyltenstam's (1977) study, for example, Turkish learners of Swedish were found to begin with stage 1 (preverbal negation), despite the fact that the Turkish language has postverbal negation.

Another syntactic structure which has received much attention from researchers of developmental stages using the longitudinal case study method is the interrogative. In several cases, in fact, the findings on interrogative structures emanated from the same studies as those on negation. (See Ravem 1974; Cazden et al. 1975; Gillis and Weber 1976; Wode 1978; Shapira 1978; Adams 1978; Butterworth and Hatch 1978). It is primarily English yes/no questions and wh-questions which have been studied. In a succinct summary of these studies, Ellis (1985) reviews the principal findings:

> There appears to be an early `non-communicative' stage during which the learner is not able to produce any spontaneous interrogatives, but just repeats a question someone has asked him...The first productive questions are intonation questions, i.e. utterances with declarative word order but spoken with a rising intonation. At this stage there are also some Wh-questions, but these appear to have been learnt as ready-made chunks...The next development sees the appearance of productive Wh-questions. There is no subject-verb inversion to start off with, and the auxiliary verb is often omitted...Somewhat

> later, inversion occurs in yes/no questions and in Wh-questions. Inversion with `be' tends to occur before inversion with `do'... Embedded questions are the last to develop. When they first appear, they have a subject-verb inversion, as in ordinary Wh-questions..and only [much] later does the learner successfully differentiate the word order of ordinary and embedded What-questions...As with negatives, development of the rules of interrogation is gradual, involving overlapping stages and the slow replacement of transitional forms. There are also differences which can be attributed to the learner's language background. and individual preference (e.g. some learners make much more extensive early use of formulaic Wh-questions than others) (60-61).

A number of studies have investigated the acquisition of the English relative clause construction to find evidence for developmental stages (Cook 1973; Schachter 1974; Ioup 1977; Gass 1979; Chiang 1980; Gass and Ard 1980; Hyltenstam 1984; Pavesi 1986; Hansen-Strain and Strain 1989). Schumann's 1980 study was the first major longitudinal one and produced a clear picture. Examining relative clause emergence in five Spanish-speakers of different ages learning English, he found that 'relative clauses used to modify the object of a sentence were acquired first...while relative clauses modifying the subject of a sentence appeared later' (Ellis 1985:61-62). With respect to subject relative pronouns, Schumann found evidence suggesting that developmental stages occur: (1) omission of relative pronouns (e.g. 'I got a friend speaks Spanish'); (2) suppliance of a personal pronoun (e.g. 'I got a friend he speaks Spanish'); and (3) suppliance of the correct relative pronoun (e.g. 'I got a friend who speaks Spanish') (examples cited in Ellis 1985: 62).

Other studies have contradicted Shumann's findings, however. Hyltenstam (1984) and Pavesi (1986) found no conclusive evidence for a clear acquisition order of either indirect object/oblique or genitive/object of comparison (Ellis 1994).

Another research program which has provided evidence of developmental stages is that conducted on the acquisition of German word order. The relevant major studies on this point are Pienemann (1989) and Ellis (1989), who both studied developmental sequences and the effect of instruction with respect to word order. Both studies found evidence for a six-stage sequence in the acquisition of German word order; furthermore, the acquisition sequence was maintained despite differences in instructional sequence and frequency of input received from the teacher.

To sum up, the evidence appears quite convincing in favor of the existence of developmental sequences:

> The longitudinal research has provided strong evidence in favour of a natural developmental route in SLA. There is evidence to show considerable similarity in the way that negation and interrogatives develop in learners with different L1s, including those that belong to different language types...There is some evidence to show that advanced grammatical structures such as relative clauses may also follow a universal course (Ellis 1985:63).

2.3.3 Limitations of the developmental patterns studies

The published findings of the studies of both acquisition order and of developmental sequences appear to be quite stunning and convincing in support of the

existence of developmental sequences. However, they are predicated on several erroneous assumptions at both the theoretical and the methodological levels.

One of the fundamental and serious limitations of these studies is the undue weight they ascribe to knowledge of grammar as indicative of a language learner's state of acquisition. Since Chomsky advocated the study of competence over performance, there has been a tendency in SLA studies, carried over from studies of child language acquisition, to focus on the overt production of linguistic structures as the 'real' measurement of a language learner's proficiency. Learners' errors are explained as resulting from deficient grammar, i.e., from incomplete acquisition of target structures. Huebner (1979) points out, however, that the acquisition of a form should not be considered equal to the acquisition of all possible meanings associated with that form in the target language. Huebner also points out another serious weakness in the acquisition order studies, a critique which could be even more justifiably leveled at the developmental (i.e. supposedly process-oriented) studies: 'Functors judged ungrammatical by the order-of-acquisition approach apparently have well-defined functions within the interlanguage and follow systematic paths toward the standard use' (Huebner 1979: 21). Learners quite often create their own meanings for a form which do not correspond to target language native speakers. Acquisition of form may be concluded well before the process of differentiating all of the form-function combinations.

Another major problem posed by L2 learner acquisition data is how to account for the pervasive inter-learner and intra-learner variation, clearly in evidence in

synchronic, cross-sectional studies, if interlanguage is supposedly systematic. The longitudinal studies do not deal very neatly with this problem, but they do at least note and acknowledge the 'overlap' of stages as part of normal developmental sequences. It is the morpheme studies, in particular, which fail to address and account for variation and this is their main weakness. Dulay and Burt ((1975) cited in Dulay, Burt & Krashen 1982) ultimately reorganized their acquisition order data on discrete points into sets of features following an acquisition hierarchy. Similarly, Krashen (1977) posited a natural order for L2 acquisition, a step which was motivated by a desire to systematize the data and reflected that innately human desire for explainable patterns referred to in the introduction.

GROUP 1	
CASE	WORD ORDER
(Nominative/Accusative)	(In simple declarative sentences)

GROUP 2	
SINGULAR COPULA	SINGULAR AUXILIARY
('s/is)	*('s/is)*
PLURAL AUXILIARY	PROGRESSIVE
(are)	*(-ing)*

GROUP 3	
PAST IRREGULAR	CONDITIONAL AUXILIARY
	would
POSSESSIVE	LONG PLURAL
('s)	*(-es)*
3rd PERSON SINGULAR	
(-s)	

GROUP 4	
PERFECT AUXILIARY	PAST PARTICIPLE
have	*-en*

Figure 2.1 Acquisition Hierarchy Observed

However, the establishment of an acquisition hierarchy was neither empirically nor theoretically grounded. It resulted from a dilemma of how to deal with variation. Variation, for Dulay and Burt, as well as for the other researchers into acquisition orders, was considered a 'problem' to be dealt with; it was 'messy data', which needed to be contained in some way so that it would not 'contaminate' the presentation of clear-cut results. Variation was not seen as rich data which could lead to the formulation of new hypotheses.

The reason Hatch (1974) distinguished two broad categories of learners ('data gatherers vs. 'rule formers') was to provide an explanation for individual variation in learner language (not all learners acquire every structure in exactly the same order) which came from the application of different learning strategies to the language learning task. Learners give evidence of using a variety of learning strategies during the acquisition process, e.g., juxtaposition (topic-comment) in the pre-verbal stage (Huang 1970), relexification within the L1 syntactic pattern (Butterworth 1972), use of formulaic utterances (Hakuta 1974; Wong-Fillmore 1976), but this evidence is not considered by the acquisition order studies nor by the developmental sequence studies. This constitutes a serious failing in their research program.

In addition to the problems noted in the theoretical assumptions of the acquisition order studies, the methodological problems are even more serious, and

have led to a general discrediting of their findings. The first of these I will raise is the confusion between accuracy order and acquisition order. These concerns were first raised by Hakuta (1974) and Rosansky (1976), who both conducted longitudinal case studies. The contrast between their own findings and those of the so-called acquisition order studies led them to their insights. Basically, the confusion lies in considering tokens of target structures as 'acquired' when they can be shown to be 'supplied in obligatory contexts' (SOC). Counting SOC tokens neglects to consider the phenomenon of oversupply in inappropriate contexts, which should be counted as lack of acquisition. Accuracy order cannot be treated as acquisition order. As Long and Sato (1984) explain it, analysis of this type credits

> a learner with having mastered a form (to the level of accuracy observed) if that form appeared where a native speaker would use it in obligatory contexts, yet provision of the form in those contexts often concealed lack of mastery shown elsewhere in *non*-obligatory contexts...They would receive credit for suppliance... in obligatory contexts...and not be penalized for the other errors since these occurred in non-obligatory contexts, which fell outside the score of the analysis' (259)

It was due to this potential pitfall that Pica, in her 1984 study of learners in different acquisition settings, cautiously claimed only evidence for accuracy order. Pica's scoring method of considering 'target-like use analysis rather than obligatory occasion analysis...is important because it helps counter one of the main criticisms levelled at the morpheme studies, namely that they have failed to consider inappropriate morpheme use in non-obligatory contexts (Ellis 1994: 94-95). Another

methodological problem associated with the SOC method of analysis arises when there is no means in the elicitation procedures to 'force' the learners to attempt suppliance of difficult structures.

An even more serious criticism comes from the morpheme studies' use of statistical analyses, specifically their use of the Spearman rank-order coefficient (Long & Sato 1984). Brown explains the problem in these terms:

> Numerous morpheme-order studies have relied heavily on the significance of Spearman rank-order correlation coeffecients to indicate similarity between various orders. Yet this statistic by tself seems to be only a rather weak indication of a tendency to be similar...[but] [t]he dissimilarities...may be important..
>
> [An]...explanation for ...dissimilarities is that looking for *overall* morpheme orders may be inappropriate. Perhaps we should be examining smaller groups of morphemes for patterns which could ultimately explain both the similarities and differences found to date in the overall morpheme-acquisition orders. (J.D. Brown 1983:28-29; emphasis in the original).

Even if one were to avoid the theoretical and methodological objections outlined above by applying, for example, implicational scaling instead of the Spearman rank-order coefficient, or by applying target-like use analysis of token suppliance instead of SOC, there still remains one unavoidable and serious flaw. This is the fact that acquisition order studies, of whatever type, are, by definition, target-oriented:

> What performance analysis looks at are target language forms, and the way it assesses their suppliance is always in terms of their suppliance by native speakers of that target language.

> In this respect...it..inherently focuses the analyst on the second language, and away from the IL as a system in its own right (Long and Sato 1984:263).

Studies of developmental sequences have provided substantial evidence in support of acquisition orders, but one major methodological problem is reliability from study to study due to the lack of a common unit of measurement which could be used across the studies (similar to the mean length of utterance used in child language acquisition). Such a unit of measurement has so far eluded SLA researchers, mainly due to the lack of internal structure in early utterances (Larsen-Freeman 1978, cited in Ellis 1985:69). Another limitation of the longitudinal studies' evidence for developmental sequences is that a relatively small number of structures have been followed.

I started this section with a series of questions concerning language learning, among which were these: Why do learners make mistakes? Is there a pattern to learner error? What path do learners follow in learning a language? These questions are still being asked because no definitive answer has been found as yet.

In this section, some of the major acquisition order and sequence studies have been reviewed and critiqued. The findings of these so-called morpheme studies are not of much interest to contemporary scholars, due to both theoretical and methodological considerations. First on the theoretical level, the morpheme studies were strongly influenced by Chomsky's idea that linguistic competence was the most useful measure of a language user's knowledge. Now, perrformance data, which

shows the state of the learner's interlanguage, is taken by many to be a more accurate measure of a second language learner's knowledge. Another point is whether accuracy order, which was a major preoccupation of the developmental pattern studies, in fact provides any evidence of acquisition.

From the empirical research point of view, the methodology and analytical techniques used have been criticized by many scholars. The orientation of the acquisition order scholars, in which they considered the data from second language learners to be flawed or 'deviant' with respect to the target language, does not capture the insight provided by the interlanguage view, namely, that learner language obeys its own internal rule system. Basically, the acquisition order studies do not answer any of the fundamental questions we raised in the opening. Even the acquisitional sequence studies, despite the fact that they revealed some important phenomena of language acquisition, are also of limited interest because of their lack of generalizability.

These criticisms and the limitations we have discussed do not mean that the body of work known as the morpheme studies are totally useless and that they provided no insight whatsoever. They could, perhaps, be usefully revisited. Long and Sato (1984) and J.D. Brown (1983) have also suggested that if more appropriate methodological procedures (for data analysis) can be established, and if the data were to be analyzed from a perspective of index of proficiency rather than in terms of distance from idealized target-language, and if the cross-sectional studies were combined with longitudinal developmental studies, which would enable an analysis of

variation across developmental stages, then some useful insights from such studies might be obtained.

When all is said and done, what remains is that the morpheme studies and the studies of developmental sequences occupied the attention of researchers for a good number of years and they did play an important role in the history of the field of SLA. To be sure, there were serious limitations. Their attempts to provide a neat explanation of language acquisition were inconclusive. But if there hadn't been morpheme studies, the next generation of research would not have been possible. As the subtitle of Andersen's 1976 paper put it: 'The leftovers are more nourishing than the main course'. Ultimately, it is in providing an agenda for the next generation that the morpheme studies made their primary contribution to the field.

2.4 Developmental pattern studies revisited

The morpheme studies and the developmental sequence studies measured learner production and counted tokens, i.e., they focused on the *what* of second language acquisition. What these studies could not provide, however, was insight into *how* second languages are acquired. Trying to answer the question of *how* has now become a central preoccupation of scholars in SLA. Measuring what the learner produces is only the starting point. Contemporary scholars are now looking at different questions: how acquisition emerges, not what emerges.

> Research in the field of English as a second language (and, to a much lesser extent, German and French) has tried to explain the order of acquisition with regards to surface structures, such as e.g. morpheme

> order, as well as to markedness theory. Both approaches have been met with severe criticism as to their methodological approach as well as to their conclusions However, in recent years, there has been a growing focus on cognitive operations as the main factor of explaining how and in what order language learners acquire a foreign language (Nielsen 1997: 182).

Findings which emanate from this new line of inquiry have considerable credibility. As I mentioned in the preface, if one can present a rational basis for an analysis, its explanatory power is greatly enhanced. Findings without explanatory power, such as those which resulted from the developmental pattern studies, have a diminished pragmatic value. Cook (1993) expressed much the same idea in these terms:

> The answer to the acquisition question must concern the means by which the learner acquires a second language rather than simply stating the stages through which the learner develops. However useful a description of the learner's stages may be, it is only one of many types of evidence that could be used. This is not the view in much SLA research, where sequence is often taken as having a value in its own right. ... But the order of acquisition is not the reason behind errors; it is a generalization about errors which still lacks a reason (43-44).

Or, as Myers-Scotton and Jake (2000) said, 'Just like monolingual speech, bilingual speech is not best explainable only in terms of surface configurations' (1).

Efforts to discover the principles underlying the surface structure of learner language led scholars to delve into the question of whether second language acquisition processes are specific to the language faculty, or, rather, are governed by general human cognitive faculties. This line of inquiry led in

two directions. One line of inquiry wanted to determine how a particular structure is acquired, resulting in studies that hypothesized such processes as noticing, awareness, consciousness-raising, input and interaction and focus on form. (Schmidt 1990, Rutherford 1988, Long 1985, Doughty, etc). The second line of inquiry takes a more macro-level view. This line of inquiry is not concerned with the acquisition of one structure, but rather with the overall dynamics of the second language developmental process. This second line of inquiry could be described as a second generation of acquisition order studies, i.e., it is looking beyond surface structure to find the principles which drive the acquisition process, whether these principles turn out to be based on UG or psychological processing.

A summary of the cognitively oriented lines of research now follows, as these come the closest to providing explanations for the acquisition phenomena I find in my data. I claim that the characteristics of my corpus of learner performance data can best be explained by factors of psychological processing, which is a general human faculty rather than a language-specific. faculty The brief summary will include the Multidimensional Model (Meisel, J. H. Clahsen and M. Pienemann. 1981), the processability theory (Pienemann 1998) and the 4-M Model (Myers-Scotton and Jake 1995, 1999, 2000) which will inform this study.

The Multidimensional Model, developed by Clahsen, Meisel and Pienemann (1983; see also Meisel, Clahsen and Pienemann 1981), based originally on their analysis of Italian and Spanish workers in Germany, known as the ZISA project, differentiates itself from the previous acquisition sequence studies by incorporating a cognitive component. Because the Multidimensional Model laid important groundwork for the teachability hypothesis and the subsequent processability theory, I will review here its major claims, succinctly summarized by Ellis (1994) as follows:

> 1. Learners manifest developmental sequences in the acquisition of a number of grammatical structures, such as word order and some grammatical morphemes.
>
> 2. Learners also display individual variation, both with regard to the extent to which they apply developmental rules and to the extent to which they acquire and use grammatical structures that are not developmentally constrained.
>
> 3. Developmental sequences reflect the systematic way in which learners overcome processing constraints. These constraints are of a general cognitive nature and govern production.
>
> 4. Individual learner variation reflects the overall orientation to the learning task, which in turn is the product of socio-psychological factors.
>
> 5. Formal instruction direct at developmental features will only be successful if learners have mastered the prerequisite processing operations associated with the previous stage of acquisition. However, formal instruction directed at grammatical features subject to individual variation faces no such constraints (382).

Another important cognitive approach which has inspired second generation research on developmental patterns is the processability theory (Pienemann 1998) Adopting Levelt's (1989) model of language generation and applying the concept of lexical entry developed in Lexical Functional grammar, Pienemann established an implicational hierarchy of processing procedures as explained in Table 2.2 below. According to Pienemann, these processing procedures govern L2 development.

Table 2.2 Hierarchy of processing procedures-summary

- Subordinate clause procedure:
- S-procedure; inter-phrasal morphemes; exchange of information between internal constituents;
- Simplified S-procedure; exchange of information from internal to salient constituent;
- Phrasal procedures; phrasal morphemes;
- Category procedure; lexical morphemes; no exchange of information-canonical word order;
- Lemma access; words; no sequence of constituents

(Pienemann 1998:87)

Because this processing procedure is implicational, none of the procedures can be skipped in the L2 acquisition process. Pienemann analyzed a set of specific features of Japanese in order to test his theory with learners of Japanese as a second language. His goal was to show that the processabilty theory is valid even for non-configurational languages such as Japanese, Turkish, Finnish and Korean, in which morphology plays a preponderant role, as compared to configurational

languages such as English in which syntax plays the primary role in sentence generation. Pienemann takes Huter's (1996) longitudinal study of adult Australian learners of Japanese and Nielsen's (1997) study of a Danish learner of Arabic as a foreign language as strong evidence for the validity of his theory.

Building on their insights from their studies of code-switching, Myers-Scotton and Jake (2000) have proposed the 4-M model as a submodel of Myers-Scotton's Matrix Language Frame (Myers-Scotton 1993 [1997]). Claiming that the major error of the earlier morpheme order studies had been to treat all morphemes equally. Myers-Scotton and Jake (2000) describe their model in these terms: 'Although the 4-M model is a model of morpheme classification, its focus is on how morphemes are differentially elected in language production. A major premise of the model is that different morpheme types are related in different ways to the production process' (3). In their 4-M model, Myers-Scotton and Jake classify morphemes into four types:

> First, morphemes are classified as to their status with respect to conceptual activation. Second, they are classified according to how their forms participate in building larger constituents. Three features distinguish four types of morpheme: (1) [± thematic role assignment], (2) [± conceptually activated], and (3) [± referring to grammatical information outside of its X^{Max}] (Myers-Scotton and Jake 2000:3)

For detailed explanations of the 4-M model, see Myers-Scotton and Jake (1995), Myers-Scotton and Jake (1999) and Myers-Scotton and Jake (2000). For applications of the model, see Wei (2000a, 2000b) and the collection of articles in the special issue of *International Journal of Bilingualism* (2000). For purposes of this study, the main

idea that will be borrowed from the 4-M model is morpheme classification, as cited above in Myers-Scotton and Jake (2000) and as they say, 'a major premise of the model is that different morpheme types are related in different ways to the production process' (3).

The various psychological processing theories reviewed here, by proposing that underlying cognitive processes trigger IL surface forms, in some as-yet-to-be-determined fashion, have re-opened the door to the possibility that a second generation of morpheme studies might prove to be a valid way of researching second language acquisition processes.

> "The fact that studies of acquisition order in second language acquisition have moved from the level of language specific surface structures towards a more cognitive approach, makes it interesting to try to apply these to Arabic as a foreign language, since cognitive structures are supposedly the same, no matter what foreign language we are dealing with, whereas language specific structures are not. (Nielsen 1997: 184)

Although these cognitive approaches to second language acquisition order have been tested on various L1/L2 combinations, none have as yet been conducted with learners of KFL. It remains to be seen whether these theories can explain data such as that contained in my corpus. While the cognitive approaches are very promising, numerous issues remain to be clarified. Primary among them is the question of whether any one approach can satisfactorily explain second language acquisition phenomena, or whether the explanations should be sought in some kind of interactional configuration.

Chapter 3
Theoretical and analytical frameworks

3.1. Introduction

As preparatory groundwork for the actual quantitative analysis in Chapter 4, several concepts that will be referred to in that discussion require clarification so as not to detract from the main line of argumentation there by digressing to provide explanations that cannot be presumed to be familiar to all of the various readers.

The topics that I will cover in this section are the following:

1. linguistic features of the Korean morphemes investigated in this study;
2. statistical/ analytical tools
3. Rationale for using performance data

3.2 Agglutinative nature of Korean morphology

The information in this section will rely on Sohn's (1994, 1999) comprehensive presentation of the features of Korean. As it is not necessary for this study to have an elaborate analysis of Korean using the most recent linguistic theories, this presentation will be descriptive with no particular theoretical assumptions.

Korean is an SOV language and follows typological characteristics of verb-final languages in that it is left-branching and head-final. One of the unique characteristics of the Korean language, a characteristic which it shares with Japanese, Turkish and Finnish, among others, is that it abounds in particles, including case markers, delimiters and

affixes which carry a heavy morphosyntactic load. These affixes are one of the most remarkable features of the language and present various problems for learners of Korean as a foreign language. Additionally, as Sohn (1994) describes, these particles and affixes '[w]ith constant form and meaning...agglutinate with each other in a fixed order and are attached to nominal or verbal stems to perform various syntactic and semantic functions'(1994:7). Thus, it is primarily particles and affixes which fulfill syntactic and semantic functions in Korean. Mastery of this particle and affix system, for a learner of KFL, is very challenging but crucial to ultimate success. For this reason, in this study, particles and affixes are the features of learner interlanguage which have been selected for analysis.

3.2.1 Particles

Customarily, Korean particles are classified into three categories: case particles, delimiters and conjunctive particles which 'either indicate the syntactic relation of the co-occurring element with other constituents of the sentence, delimit the meaning of the element to which they are attached, or perform some other function such as plurality, conjunction, quotation, or politeness' (Sohn 1999:213-213). Particles are always postpositional, and are attached to a noun phrase, adverbial phrase or sentence.

(1)

영수가	식당에서	한국	음식을 먹었다.
yengswu-NM	restaurant-LOD	Korean	food-AC eat-PST-DC

'Yong-su ate Korean food in a restaurant.'

This prototypical example shows how case particles attach to noun phrases and function as morphosyntactic markers in a sentence. As each word in the sentence is now marked for grammatical relationship, the word order can vary freely, except for the verb, which must remain in sentence-final position. Looking at this example, one might think that the particle system looks quite straightforward because each particle has a clear semantic meaning or syntactic function. However, there are several complicating factors, even in this quite simple example. For instance, since some of the particles can be omitted and can agglutinate with each other, the phenomenon is, in fact, much more complicated than it first appears.

(2)

영 수 만 은	그 녀 가	빨 리 만	오 기 를	기 다 렸 다
yengswu-man- un	kunye-ka	ppalli-man	o-ki –lul	kitaly-ess-ta..
yengswu-LIM-TC	she-NM	quickly-LIM	come-NOM-AC	wait-PST-DC

'Nobody but Yong-su only waited for her to come quickly.'

(3)

나 한 테	만	은	너무	심하게는	하 지	말 라
na	hantay	man	un	nomu	simha-key-nun	haji	malla
I	DAT	LIM	CON	too much	hard-AD-CON	do-AD	don't-IM

'[You can treat other people like that], but don't try to treat me that badly.'

These two sentences, which are both quite colloquial and natural examples of conversational Korean, illustrate the way particles agglutinate with each other and

function in typical Korean discourse. It is almost impossible to translate the above sentences into idiomatic English without providing relevant contextual information.

These two examples show the very productive use of case particles and delimiters and illustrate how heavily loaded with semantic functions through agglutination. Sohn (1999:213-214) provides a list of 17 case particles and 19 delimiters. Conjunctive particles are not as numerous but occur quite frequently in natural discourse.

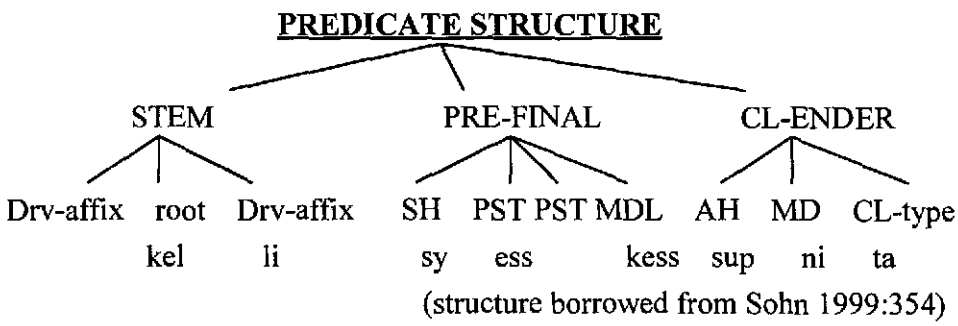
3.2.2 Verbal affixes

The verbal morphology of Korean is quite complex. As Sohn (1994) says, [t]he agglutinative nature of Korean is most distinctly reflected in the morphological structure of verbals (verbs and adjectives), especially in their inflectional behavior' (299). Further, 'it is necessary to distinguish between enders and non-terminal suffixes, in that enders such as sentence enders (e.g., plain interrogative ender *–ni*?, deferential declarative ender *–sup-ni-ta*), conjunctive enders (e.g., *-ko* 'and', *-myense* 'while)....occur at the end of a sentence or a clause and must be present in order for a verb or adjective to stand independently' (232). Verbal suffixes are attached to the verbal or adjective stem in a particular order. Each inflection fills a particular slot. The verbal inflectional slots are the following: (1) voice, (2) subject honorific, (3) tense and aspect, (4) modal, (5) addressee honorific, (6) mood, and (7) clause type (e.g. sentence ender or embedded clause ender), of which only (7) is obligatory (Sohn 1994:299).

(4)

할머니께서	감기에	걸리셨겠습니다.
halmeni-kkese	kamki-ey	kel-li sy-ess-keyss-sup-ni-ta
grandmother-NMH	cold-DAT	catch-**CAS-SH-PREM-AH-IN-DC**

'Grandmother must have caught a cold.'



(structure borrowed from Sohn 1999:354)

Figure 3.1 Structure of 걸리셨겠습니다.'kel-li sy-ess-keyss-sup-ni-ta'

This example shows both the productivity and complexity of verbal inflection, a phenomenon which is quite challenging for the learner of KFL. In this study, except for sentence enders, all the suffixes of the verbal inflectional structure will be treated. Sentence enders, which reflect both speech level and sentence type, will not be included, because the interview circumstances under which the data were collected allowed for very little context-induced variation. Embedded clause enders, however, will be included in the data analysis.

3.3 Statistical/analytical tools

Statistical tools employed in this study which are not widely used will be explained in this section. The explanation will not cover the mathematical models involved in the calculations, but, rather, the applications which I intend to make use of these tools in the analysis of my data.

3.3.1 Implicational scaling

The Guttman scaling procedure, often referred to as 'implicational scaling', is used to see 'if a distribution exists within a whole series of nominal data frequency counts and whether observations can be reliably rank-ordered in the distribution' (Hatch and Lazaraton 1991:203). Implicational scaling is very useful for the study of acquisition when the researcher is interested in developmental patterns, i.e., how the learner's language changes over time.

In using the Guttman scaling, we have to remember that visual observation alone does not prove whether a phenomenon happened by chance or whether it is statistically significant. One needs to obtain a coefficient of scalability in order to make any claims about the patterns observed in the data. To obtain the coefficient of scalability, one must follow certain steps, which I will now list. (1) Determine the coefficient of reproducibility, which 'tells us how easily we can predict a S's performance from that person's position or rank in the matrix...By convention, mathematicians have determined that the value of the coefficient of reproducibility should be over .90 before the scale can

be considered "valid"' (Hatch and Lazaraton 1991:210). (2) Determine the minimum marginal reproducibility figure, which 'tells us how well we could predict if we did not consider the errors (the place where people behave in ways not predicted by the model). The coefficient of reproducibility for the data should be over .90 in order for the scale to be considered 'valid' (Hatch and Lazaraton 1991:210-211). (3) Determine the percent improvement in reproducibility, which 'shows how much improvement there is between the coefficient of reproducibility and the minimum marginal reproducibility' (Hatch and Lazaraton 1991:211). Finally, in step (4), one obtains the coefficient of scalability, which is 'the figure that indicates whether a given set of features are truly scalable (and unidimensional)' (Hatch and Lazaraton 1991:212). Hatch and Lazaraton (1991) say that 'it is this figure that is usually reported in studies that use implicational scaling. It is equal to the percent improvement divided by 1 minus the minimum marginal reproducibility (212).

As the character of my data is dichotomous (tokens of a morpheme present/tokens of a morpheme not present) and because my main purpose is to see whether there is any statistical significance in the distribution of the tokens at a particular level, implying acquisition by learners, I adopted this analytical tool.

However, some adjustments in applying the strict procedures called for in statistical analysis will be somewhat relaxed. The reasons for deciding to relax the procedures by which one obtains statistical significance will be explained. The reasons

are twofold. The first reason has to do with the nature of the data. In second language acquisition, variation is one of the most pervasive phenomena. It is therefore to be expected that during the analysis of oral performance data I might be continually faced with variation. It is also highly predictable that if I apply the strict sense of implicational scaling, it might not fit to the statistical analysis even though visual patterning seems to be apparent. Second, the oral performance data used in this study were collected from oral proficiency interviews which were conducted as one of the components of an end-of-term examination. Therefore, even if the conditions of the oral interview are kept as natural as possible, it is inevitably somewhat artificial compared with natural conversation. Because the learners know that the results of the oral proficiency test will determine whether they can advance to the next level, it is entirely plausible that the learners stretch their language performance in order to get into a higher level. This is the opposite of natural conversation, where second language learners often avoid using structures that they are not sure they are able to produce accurately. In a natural context, learners do what they think they can successfully do. In the oral test, however, they may attempt certain structures even if they are not sure of themselves, because they know that displaying their knowledge of a wide variety of morphemes will be taken as an indication of higher proficiency. It is scarcely an exaggeration to say that they attempt to use morphemes learned yesterday for today's interview.

These efforts on the part of the learners to 'push the envelope' might skew the

acquisition patternings. Hatch and Lazaraton (1991) have discussed this problem of trying to subject data collected in naturalistic settings to analytical procedures better suited for controlled, experimental situations:

> When gathering observational data in natural settings, learners may simply not use the forms you wish to scale. Perhaps they use only a few of the forms....What if the person talked about past experiences and there were only three places where an *–s* for present tense would have been appropriate? ...With another topic, more *–s* forms might have been required and more supplied. The researcher must decide how many potential uses are needed. While convention requires five instances and an 80% cutoff point, there is no well-documented rationale for either of these conventions"" (215).

Because this kind of variation is anticipated in this study and for the reasons given above, only the coefficient of reproducibility (which tells how easily we can predict a S's performance from that person's position or rank in the matrix) will be calculated. The strictest calculations of significance--minimum marginal reproducibility (% improvement in reproducibility) and the coefficient of scalability-- will not be calculated. Only the implicational scaling determined to be statistically significant on the basis of the coefficient of reproducibility will be considered.

3.3.2 Hierarchical cluster analysis

The ability to distinguish patterns in both concrete and abstract dimensions is one of the characteristics of the human intellectual capacity. It is, in fact, one of the abilities,

which underlie the human language faculty. One of the major goals of the study is to find meaningful patterns in a data set of interlanguage tokens which are characterized by substantial variation. "In the widest sense, a classification scheme may represent simply a convenient method for organizing a large set of data so that the retrieval of information may be made more efficiently. Describing patterns of similarity and differences among the objects under investigation by means of their class labels may provide a very convenient summary of the data' (Everitt 1993:2).

The one statistical procedure which allows us to classify data into meaningful sets is known as 'cluster analysis'. Aldenderfer and Blashfield (1984) provide a useful summary of the purpose to which cluster analysis can be put:

> 'Most of the ....uses of cluster analysis can be subsumed under four principal goals:
>
> (1) development of a typology or classification,
>
> (2) investigation of useful conceptual schemes for grouping entities,
>
> (3) hypothesis generation through data exploration, and
>
> (4) hypothesis testing, or the attempt to determine if types defined through other procedures are in fact present in a data set (9).

Within the general framework of cluster analysis, there are three different methods which can be used for different purposes. In my study I will make use of only one method, the hierarchical cluster analysis. Hierarchical cluster analysis 'is an exploratory tool designed to reveal natural groupings (or clusters) within a data set that would otherwise not be apparent. It is most useful when you want to cluster a small number (less than a

few hundred) of objects' (SPSS Manual). In this study, hierarchical cluster analysis will be used as one of the analytical tools. Two terms related to the use of hierarchical cluster analysis should be mentioned in order to make the subsequent discussion clear. The first is that hierarchical cluster analysis uses two different methods, the agglomerative method and the divisive method. Here it is the agglomerative method which will be used. The agglomeration schedule is a numerical summary of the cluster solution. The agglomerative procedure 'produces a series of partitions of the data, Pn, P n-1, ..., P1. The first, Pn, consists of n single-member 'clusters,' the last P1, consists of a single group containing all n individuals...At each particular stage the methods fuse individuals or groups of individuals which are closest (or most similar)' (Everitt 1993:56-57).

	Cluster Combined			Stage Cluster First Appears		
Stage	Cluster 1	Cluster 2	Coefficients	Cluster 1	Cluster 2	Next Stage
1	8	11	1.260	0	0	7
2	6	7	1.579	0	0	4
3	2	9	1.625	0	0	7
4	1	6	2.318	0	2	6
5	3	5	2.619	0	0	8
6	1	10	3.670	4	0	10
7	2	8	4.420	3	1	8
8	2	3	4.505	7	5	9
9	2	4	4.774	8	0	10
10	1	2	5.718	6	9	0

Fig. 3.2. Example of agglomeration schedule resulting from a hierarchical cluster analysis

The second term requiring explanation is dendrogram, which is a two-dimensional diagram. A dendrogram is simply a visual presentation format of the information obtained by the agglomerative method. More specific details related to cluster analysis will be explained, as needed, when called for during the data description in Chapter 4.

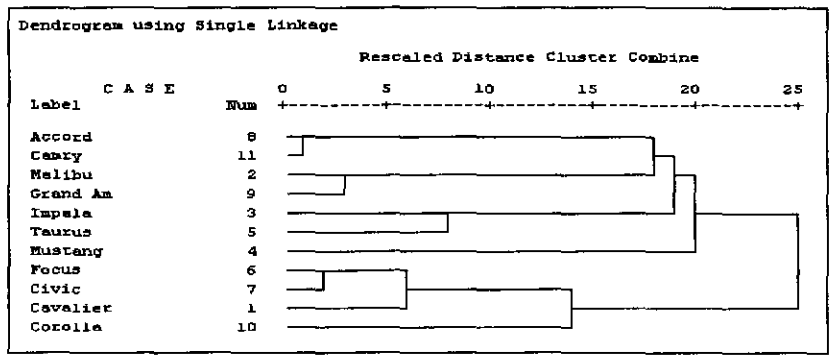


Fig. 3.3. Example of a dendrogram (*SPSS Program Tutorial)*

3.4. Rationale for using performance data

This study uses oral performance data to investigate one of the most important phenomenon in second language acquisition studies: acquisition hierarchy of target language morphemes. However, the use of performance data in acquisition studies is a very controversial issue and therefore the rationale for allowing performance tokens to be counted as evidence of acquisition in this study requires an extended explanation. This explanation might be more appropriately included in the discussion of analytical procedures in section 4.2.3, but because the issue is such a controversial one, I opted to include it here in Chapter 3, along with other preliminary background information, in order not to have to digress from the main line of presentation later in Chapters 4 and 5.

The controversy with respect to the use of oral performance data centers on the question of when to count a target structure as acquired. Is it considered acquired the first time it is used spontaneously by a learner? Or do a certain number of tokens of usage need to be counted before the structure can be considered acquired? If so, how many

tokens of usage need to be counted in order to qualify it as 'acquired'? Some researchers in SLA, following the criteria established in the related area of pidgin and creole studies, use initial emergence as an indication of acquisition (Pienemann 1984). Larsen-Freeman and Long (1991), discussing the earlier, first generation studies of acquisition order, said that the

> 'ZISA group (which studied the acquisition of German by immigrant Spanish and Italian workers) was one of the first to relinquish the prevailing target-language orientation of the 1970s...[I]n most North American and European SLA research of the 1960s and 1970s, the focus was either on errors defined in terms of the mature L2 system, or alternatively, on items held to be acquired when they were supplied 80 or 90 per cent accurately in obligatory contexts (or some variant thereof)...The ZISA group explicitly rejected this approach, redefining acquisition (of a form) as the first appearance of a form in an IL, this and the subsequent evolution of form-function relationships being treated from the same learner-oriented perspective that had long been taken for granted by creolists, for whom a target-oriented viewpoint is, of course, not an option' (Larsen-Freeman and Long 1991: 283).

Whether to count a single token as evidence of acquisition is not the only issue, however. Other dilemmas arise with respect to the criteria for considering structures to be acquired on the language acquisition continuum. Can a structure be counted as acquired if it is sometimes used in an obligatory context but not used at other times in the same obligatory context? In other words, what percentage of the time does the learner have to 'get it right' before the structure can be counted as acquired? There is also the well-

known phenomena of overgeneralization. Is the structure counted as acquired if the correct form is used but its meaning is overgeneralized and used in circumstances when it is not appropriate? (See Pica 1984)

It is, on the one hand, the inaccessibility of the cognitive processes involved in language learning, and the nature of interlanguage variation, on the other, which is at the root of these dilemmas. Suppliance of a token in one circumstance can merely give the analyst a view through an opaque window into the mental processes of the learner. Information about the acquisition status of a target structure cannot be observed directly; it can only be inferred. This is not a trivial concern, as Ohta (2001) explains:

> One of the biggest methodological problems in studying SLA processes has been that of knowing what actually is going on in the mind of a learner while learning a second language, for unfortunately many of the affective and cognitive components involved in second language learning are not observable in language behavior. Methods like elicited language use techniques using spoken and written tasks, role playing, self-reports using questionnaires and interviews have been employed in attempts to solve this problem, but all of these approaches have been criticized over questions about the validity and reliability of the data they have yield (154).

In L1 acquisition, which is a natural human process inevitably leading to 100% attainment of the target (pathological cases excepted), counting emerging structures upon 'first occurrence' is a relatively uncontroversial predictor of ultimate acquisition by the learner, since in the normal course of child development the structure will eventually be supplied at adult-like accuracy levels for the speech community in question. In the case of L2 acquisition, however, where ultimate attainment of native-like standards by

postadolescent learners is rarely if ever achieved, it is generally agreed that criteria of less than 100% attainment of target-like performance can reasonably be applied in the calculation of 'acquired' tokens.

As indicated above by Larsen-Freeman and Long (1991), part of the debate centers on what percentage of suppliance is an acceptable criterion. An 80% suppliance rate is often taken as an arbitrary criterion of learner acquisition, but there is actually no specific rationale for this level, other than the fact that a certain margin is allowed for native-like performance error.

As Cook (1993) has said,

> "It is clear that many other factors than linguistic competence are relevant to performance; the speakers' memory processes, their interpretation of the sociological situation, their physiological limitations, and so on, all influence their speech, and all these may be affected differently in an L2. The occurrence of a particular form in data collected from actual speech does not necessarily prove the existence of a particular grammatical rule in the learner's mind...L2 performance should at least be compared with L1 performance rather than with L1 competence" (49).

The main problem with any criteria based on percentages of target-like suppliance is precisely their focus on native-like as the standard of reference. In second language acquisition, as we are dealing with interlanguage variation, i.e., the ever-changing emergence of language on a continuum, with attainment of the upper ends of the continuum beyond the reach of most learners, to impose a target-like criterion is to ignore the nature of the phenomenon under investigation. In interlanguage research,

verifying attainment of the target-like end-point is not the most interesting research question. The interesting questions are those which probe the dynamic processes involved in acquisition.

In my study, in deciding on the criteria to be used for the inclusion or exclusion of emergent morpheme tokens, I followed principles which incorporated a recognition of the emergent and variable nature of interlanguage. The principle of interlanguage studies is to consider learner language in terms of its own dynamic, not in terms of the learner's attainment of native-like mastery.

Therefore, in coding my corpus, if there is even one observed token of a morpheme, I take this as an indication that the learner is at least aware of the pattern. I therefore coded a morpheme as 'present' on the basis of even a single correct suppliance.

One additional consideration informs my decision to include a morpheme after even one single suppliance. Suppose the learner supplies the morpheme on five occasions, one of which was correctly formed and four of which contained mistakes. In the case of Korean, the particle and verbal suffix morphemes must all attach to a lexical morpheme. The fact that the learner has supplied the suffix at least once indicates awareness of the morpheme and its usage. I claim that the four incidents of incorrect suppliance are likely to be errors related to the morphosyntactic interaction with various lexical entries rather than a 'morpheme supplicance error' in the strict sense. I therefore count all morphemes as 'present' on the learner's continuum of acquisition.

The criteria for inclusion/exclusion I have used in my study contain both a quantitative and a qualitative component. Quantitatively speaking, it is lower than the standard of 80% suppliance in obligatory contexts. Qualitatively, it differs from blanket-rule cover-all token-counting criterion.

The criteria for inclusion or exclusion of tokens of particle and verbal suffix morphemes are listed below:

INCLUSION criterion (quantitative criteria)

- 1 correct occurrence observed

(as long as that token was not eliminated on the basis of any of the exclusion criteria; a correct token was included even if one or more syntactically and pragmatically incorrect tokens also occurred)

EXCLUSION criteria (qualitative criteria)

- if the token occurred in frozen expressions such as greetings and apologies or common memorized expressions
- if the token was an echo answer of the interviewer's question or if there was imitation or direct borrowing from the interviewer's question
- precursors, no matter how many times used (Definition of precursor: recognizable token of target morpheme but has morphophonemic and/or syntactic ill-formedness at every suppliance, i.e., no correctly formed token)

The results obtained in Chapter 4 are all based on data which was coded 'present' or 'non-present' based on these criteria.

I will now explain my research methods and present the results, followed by a discussion of these results. Finally, I will present a model of acquisition hierarchy based on KFL learner performance data in chaper 4.

CHAPTER 4
QUANTITATIVE ANALYSIS OF ORAL PERFORMANCE DATA OF KOREAN AS A FOREIGN LANGUAGE

4.1 Introduction

In this chapter I will analyze the oral performance data collected from learners of Korean as a Foreign Language. As described at the end of Chapter 2, three general objectives drive this study:

1. To observe and describe learner oral performance data;
2. To attempt to discover any clusters or hierarchical relationships, of whatever type, that may be indicative of acquisition processes
3. To attempt to determine which factors account for the observed clusters and hierarchy.

From objectives two and three above, two research questions emerge:

1. Are there any statistically significant hierarchical patterns in the data?
    1.1 If there is a hierarchy, what does it look like?
    1.2. If there is a hierarchy, is it different in language learners from different L1 backgrounds?
    1.3. If there is a hierarchy, does it correlate with learner's proficiency level?
2. If there is a hierarchy, what are the factors contributing to this hierarchy?
    2.1 Do linguistic categories of the TL have a bearing on the acquisition hierarchy?

2.2 Does the classification of morphemes [morpheme valency, i.e. whether a system morpheme or content morpheme] correlate with acquisition hierarchy?

2.3 Do any cognitive constraints affect the learner's acquisition hierarchy?

2.4 Is communicative urgency a factor in the acquisition hierarchy?

2.5 Does the instructional order affect the acquisition hierarchy?

In Chapter 4, the research methodology will be described in 4.2. In 4.3 the data will be analyzed according to the statistical analysis tools mentioned in Chapter 3. Finally, in section 4.4 I will present and discuss the results of the classifications obtained.

4.2 Methods

4.2.1 Participants

The corpus of this study is based on audio-recorded oral interviews conducted with 111 instructed adult learners of Korean as a Foreign Language (KFL). The recordings were made from 1992 –1996. Seventy-six learners were native speakers of English. Thirty-five learners were native speakers of Japanese. All of the learners were enrolled in the intensive Korean language program at Sogang University in Seoul. The language teaching program consisted of classroom instruction for four hours per day, five days a week during instructional terms of ten weeks. There were four terms per year. The program was divided into eight proficiency levels, but levels seven and eight were never

opened. The learners whose data compose this corpus were in levels one – six at the time of the recordings. The oral interviews were conducted as a normal component of the end-of-term examination. The Sogang University Korean language program, contrary to other programs in Korea at the time, had instituted a communicative, task-based teaching method. The learners were thus accustomed to the task type which they were asked to complete for the recording.

Recordings from 80 English native speakers and 40 Japanese native speakers were initially selected. From these, a further triage was done during the transcription process to eliminate any speakers who gave evidence of being of Korean heritage, even from one parent. Ultimately, recordings from 76 English speakers and 35 Japanese speakers were retained for analysis. Most of the learners had had prior Korean language instruction in their countries of origin, or at other language programs in Korea.

4.2.2 Data elicitation technique

As mentioned above, the oral performance speech samples are recordings of oral interviews conducted as a normal part of the end-of-term examination. It should be noted that, as a matter of principle, and in conjunction with its emphasis on the communicative approach, the program did not include a written component in the end-of-term examination. However some individual teachers opted to give written tests to their classes for their own pedagogical purposes. Students were promoted to the next level

based on their oral performance during the end-of-term interview, combined with the classroom teacher's assessment, which was also primarily based on oral performance.

The interviews were conducted on a one-on-one basis and lasted for 15-20 minutes. Interviews were recorded on consumer quality tape recorders which were available in the language classrooms. All interviewers were native speakers of Korean and were teachers in the Sogang University KFL program. The interviewers had all been trained to conduct oral proficiency interviews, based on the ACTFL Oral Proficiency Interview (OPI) guidelines. In order to achieve inter-rater reliability for the test purposes for which the interviews were being conducted, all interviewers were expected to follow the ACTFL OPI format, with one exception: the 'role-play' segment of the OPI, prescribed by the ACTFL OPI guidelines, was not included as part of the Sogang University KFL program's end-of-term oral examination. This decision not to include the role-play as part of the examination procedure was a reflection of the overall program policy which was to involve the students in communicative tasks which were as natural as possible in an instructed language learning situation. To introduce the recommended role-play in the middle of the OPI was felt to be an artificiality which would interfere with the naturalness of the conversational atmosphere which the interviewers were striving to maintain throughout the interview. The interview content was not pre-determined. After an initial warm-up question or two, the interviewers were strongly encouraged to pursue topics mentioned by the interviewee.

4.2.3 Analytical procedures

4.2.3.1 Criteria for token counting

Recordings of 45 English speakers and 22 Japanese speakers were listened to a minimum of three times, without transcribing. After familiarizing myself with the contents and the context of the recordings, I made a Korean orthographic transcription of the tape contents of these 67 interviews, using a Panasonic Standard Cassette Transcriber, Model RR-830. Pronunciation errors were transcribed in Korean orthography.

After completion of the transcripts of the 67 interviews, all tokens of particles and verbal suffixes contained in these transcripts were noted. There was thus no pre-determined filtering of target morphemes. On the basis of these observed tokens, supplemented by additional descriptions of morphemes obtained from linguistic descriptions of Korean (Sohn 1994, 1999), a list of 19 particles and 49 verbal suffixes was made. The 67 transcripts were screened again for all tokens of the 19 particles and 49 verbal suffixes. An additional 44 tapes were listened to for tokens of the target morphemes, but full transcripts were not made. In the end, all of the 19 particles but only 26 of the verbal suffixes were retained for analysis. 23 of the original 49 verbal suffixes were eliminated from the final analysis in order to obtain a data set of a more manageable size. The 23 verbal suffixes chosen for elimination were all cases where no tokens were noted in the data.

Tokens were counted as 'present' or 'not present' on the basis of specific criteria, explained earlier in 3.4. Tokens of the target particle and verbal suffix morphemes were eliminated if they were supplied under any of the following conditions:

Elimination criteria:

-if they occurred in frozen Korean expressions such as greetings and apologies

-if they occurred in common memorized expressions

(e.g., 'I'm an American', 'Korean is interesting but difficult', 'I come from America' (past marker, locative dynamic, addressee honorific

-if the learner's response was an echo answer of the interviewer's question

(e.g., 'Do you come to school by bus?' 'Yes, I come by bus.'

-if the interviewee imitated or borrowed directly from the interviewer's question

(e.g. "What do you do when you have free time? When I have free time, I ...."

Inclusion criteria for questionable cases

-if tokens of certain particles and suffixes only occurred once, but were not eliminated on the basis of any of the elimination criteria, above, then they were counted as 'present'

(The rationale for this counting procedure was described above in section 3.4)

-if a learner used a particular token more than once, and on only one occasion out if the several uses it correctly, it is nevertheless counted as 'present'. The rationale for this counting procedure is that even one correct suppliance shows that the learner is aware of the pattern and it is at some stage of acquisition.

Suppliance several times with deviant morphophonemic forms does not disqualify the one token of correct suppliance.

-if a learner uses a particular token once or several times but it exhibits morphophonemic and/or syntactic ill-formedness at every suppliance, the morpheme is considered a precursor and is not counted.

4.2.3.2 Statistical analyses of tokens

The first statistical analysis which was done was the implicational scaling of the target morphemes using Microsoft Excel program. Based on the raw data of supplied tokens from the 111 learners, the learners were rank ordered from highest to lowest based on the number of target tokens they used. Next, a rank order of the tokens was established based on how many learners used that token. The acquisition hierarchy model is based on this implicational scaling. The implicational scaling was first done with all 111 learners with respect to particles, then separately for Japanese and English speakers. The two-step process was repeated for verbal suffixes. Finally, the implicational scaling for particles and verbal suffixes combined was calculated for Japanese and English speakers combined, then separately. Based on implicational scaling, a coefficient of scalability was calculated. (For details, see section 3.3.1.) Scalability can be claimed when the coefficient of scalability is above .60. The results of the implicational scaling will be presented in section 4.3, below.

The next step was to do a hierarchical cluster analysis using SPSS. The purpose of using cluster analysis is to determine how the target morphemes cluster together. The

hierarchical cluster analysis was first done with all 111 learners with respect to particles, then separately for Japanese and English speakers. The two-step process was then repeated for verbal suffixes. Finally, the hierarchical cluster analysis for particles and verbal suffixes combined was calculated for Japanese and English speakers combined, then separately. These analyses serve a dual purpose: one is to confirm the results obtained from the implicational scaling; the other is to obtain a more detailed picture of the distance between the target morphemes than the implicational scaling could provide.

Through the implicational scaling, I established an acquisition hierarchy (rank order) of the target morphemes. By doing a cluster analysis, I was able to determine (a) if certain morphemes cluster together, and if so which ones, and (b) how close the relationship is between morphemes within a cluster.

At this point, having ascertained the relationships existing between the morphemes through implicational scaling and cluster analysis, I turned my attention to identifying possible explanations for these relationships (i.e., research question 2, above). A number of factors have been claimed by researchers of the second generation of morpheme studies to have an effect on acquisition hierarchy. These were discussed in section 2.4. and are based on psychological constraints, such as those proposed by processability theory (Pienemann 1984, 1989, 1998) and the 4-M model (Myers-Scotton and Jake 1995, 1999, 2000), which is actually based on the psychological processing of sentence generation proposed by Levelt (1989). Morpheme classification proposed by the

4-M model were tested against the data from learners of KFL, as this classification contains the basic concept of psychological processing ability contained in other models. When these psychological processing factors were found not to have any statistically significant relationship to the acquisition hierarchy, a second set of factors was proposed and tested for correlation and factor loading.

- instructional sequence
- communicative urgency

The SPSS program was used to calculate the correlation coefficient between each of these possible factors and the acquisition hierarchy determined by the implicational scaling and the cluster analysis. A correlation coefficient for the interrelationship between all the factors was also calculated.

Finally, factor analysis was used to ascertain which factor or interaction of factors had the strongest effect on the acquisition hierarchy. I wanted to find out whether there is any correlation between the acquisition hierarchy and the listed factors, and if a correlation exists, how closely they correlate or do not correlate.

4.3 Results

4.3.1 General characteristics of the learners

Before proceeding with the analysis of any potential correlations between the morphemes used by individual learners and factors affecting the acquisition order of the morphemes, I must first determine if there is any correlation between the communicative competence of the learners and the number of morphemes used. It will be assumed here that communicative competence improves over time, whether gradually or more rapidly. If the number of morphemes used by the learner does not co-vary with this increase, then this study is pointless and without foundation. To determine the correlation between communicative competence and the number of morphemes used, I will assume that the instructional level correlates with the learner's communicative competency and I will do a cross-sectional analysis, using the distribution of the 111 learners. To find out whether the number of morphemes used at each level increases as the communicative competency improves, I will divide the group of 111 learners into 3 groups (novice, intermediate and advanced) and will find out whether the number of morphemes increases in each proficiency group.

Table 4.1 Descriptive: Native language, proficiency level, and mean score of morphemes used

		number	mean
English native speakers(EN)	novice	36	5.61
	intermediate	30	15.20
	advanced	10	22.60
Japanese native speakers(JN)	novice	43	6.00
	intermediate	47	17.24
	advanced	21	26.18
Whole group	novice	43	5.67
	intermediate	47	15.94
	advanced	21	24.48

Table 4.2 ANOVA: Native language, proficiency level and total number of morphemes used)

Source		SS	df	MS	F	significance
Native language	Between Groups	7.828	28	.280	1.421	.113
	Within groups	16.136	82	.197		
	Total	23.964	110			
Proficiency level	Between Groups	45.713	28	1.633	9.613	.000
	Within groups	13.926	82	.170		
	Total	59.640	110			

The Tables 4.1 and 4.2 give some basic facts about the data. There were a total of 111 learners, of which 76 were English speakers and 35 were Japanese speakers. There were 43 novice learners, 47 learners at the intermediate level, and 21 learners at the advanced level. Table 4.2 shows that the number of morphemes acquired varies in a statistically significant manner by level of proficiency (F=9.613, Sig.=.000), i.e., out of a

total of 45 morphemes considered, the number of observed morpheme tokens at the novice level was 5.57, at the intermediate level, there were 15.94 tokens, and at the advanced level the mean was 24.48 morpheme tokens (refer to table 4.1). With respect to native language, contrary to general expectations and anecdotal reports, which assume that due to the structural and lexical similarities between Japanese and Korean, Japanese learners learn Korean much more quickly than English speakers and use a much wider of morphemes, Table 4.2 shows that there is no statistically significant difference in number of morphemes acquired based on native language. (F=1.421, Sig. =.113).

As can be seen in Table 4.1, it is true that Japanese learners have a little bit wider variety of morphemes at all levels. Even though the gap between Japanese and English learners is not statistically significant, the difference can be clearly seen on the Figure 4.1 below from the novice through advanced level.

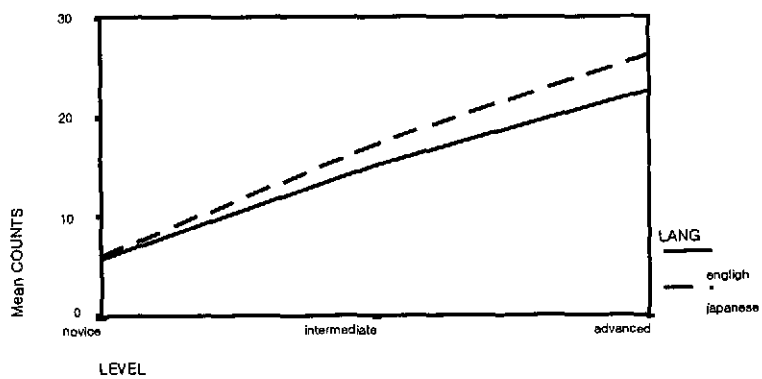


Fig. 4.1 Proficeiency level, native language and mean counts of morphemes acquired.

4.3.2 Analysis of particle acquisition

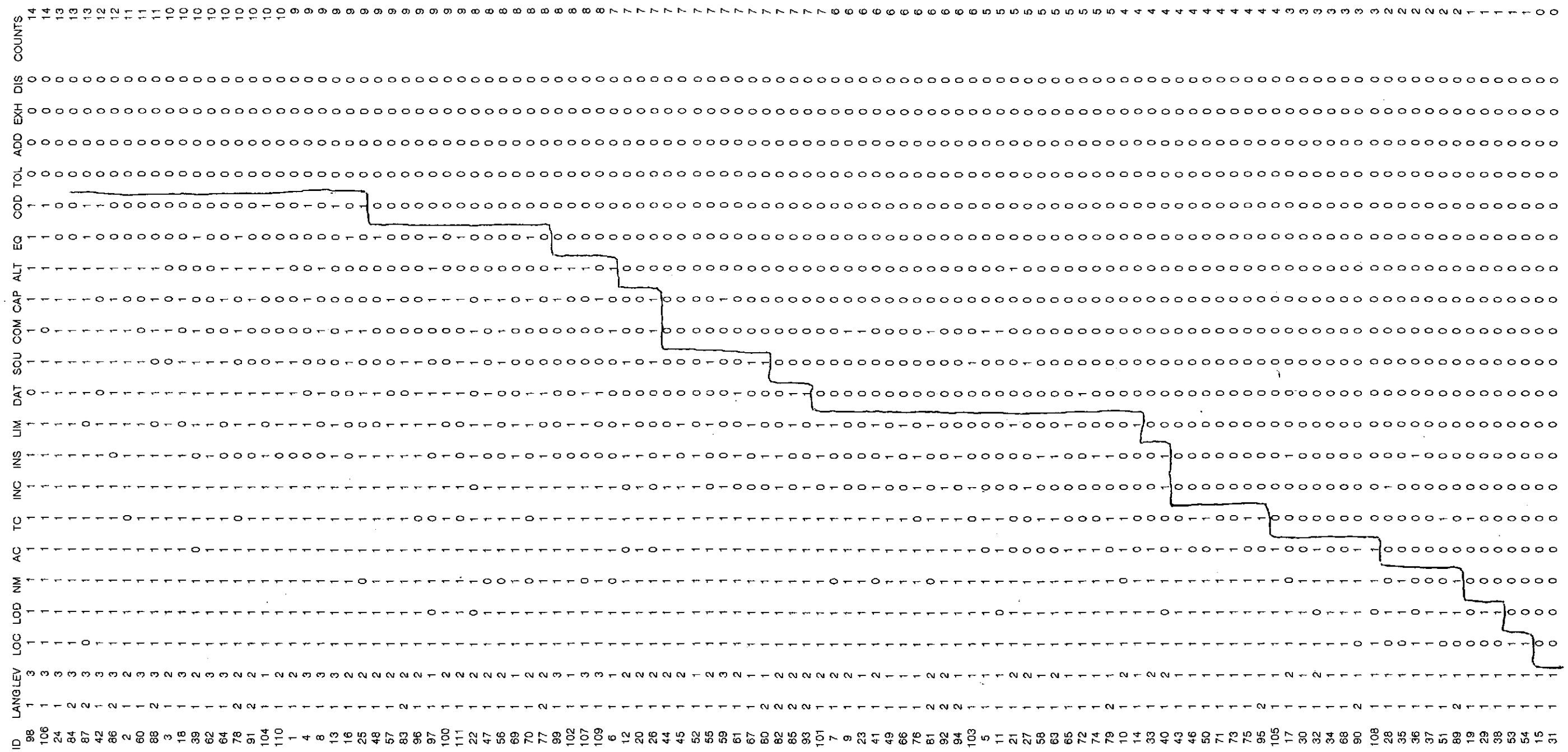
Table 4.3 (ANOVA-Native language, proficiency level and total number of particles acquired) shows that native language does not play a significant role in determining the number of particles acquired (F=1.181, Sig. .303), but that the number of particles acquired does vary in a statistically significant manner by level of proficiency (F=9.623, Sig.=.000)

Table 4.3 ANOVA: Native language, proficiency level and total number of particles acquired

Source		SS	df	MS	F	significance
Native language	Between Groups	3.520	14	.251	1.181	.303
	Within groups	20.444	96	.213		
	Total	23.964	110			
Proficiency level	Between Groups	33.867	14	2.419	9.623	.000
	Within groups	25.070	96	.261		
	Total	58.937	110			

If we now visually examine Fig 4.2 (Implicational scaling – Particles. Japanese and English speakers combined), we see patterns of implicational scaling. There were no tokens observed for four of the particles considered (toleration (TOL), addition (ADD), exhaustion (ESH), and dissatisfaction (DIS)). Interestingly, all four of these particles are delimiters. As we can see in the implicational scaling, there is a sudden drop between equative (EQ) and alternative (ALT) particles, e.g., only 10 out of 111 learners used equative particles, but 22 learners used alternative particles. A large gap such as this is

Fig. 4.2 Particles, Japanese and English speakers combined



possibly indicative of an different acquisition stage. Two other large drops occur between limitation (LIM) and instrumental (INS), e.g., 34 learners used the LIM particle and 40 learners used the INS particle, and between inclusion (INC) and topic/contrast (TC), e.g.. 57 learners used INC and 73 learners used TC. If analyzed visually, these drops could be taken as indicative of four acquisition stages. However, the coefficient of reproducibility was calculated and the result was .829, which does not meet the critical value. (Recall that the critical value for coefficient of reproducibility is .90.) For this reason, even though this chart can be used as an indirect reference for building a particle acquisition hierarchy, because it does not meet the critical value, it cannot be taken as scalable.

If each language group is considered separately, however, several interesting patterns emerge. The first concerns the pattern of particle usage by the Japanese speakers. As can be seen in Fig. 4.3 (Implicational scaling-Particles. Japanese speakers), the implicational scaling shows systematic development in that the number of particle morphemes used increases with level of proficiency. However, the coefficient of reproducibility for the data was .89, which is just under the critical value. It was puzzling that such a clear pattern of acquisition should not obtain a score over the critical value. Upon close inspection of the pattern for each particle, two unique types of patterning errors emerged: abundance of patterning errors and distribution of these patterning errors. The area above the line drawn on the matrix is designated as the 'present' area, meaning that the morpheme in question was counted as present in the data. A zero in that 'present'

ID	LANG	LEV	NM	LOD	LOC	TC	AC	INC	COM	INS	LIM	ALT	CAP	DAT	SOU	COD	EQ	TOL	ADD	EXH	DIS	COUNTS
98	2	3	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	14
106	2	3	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	14
84	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	13
87	2	3	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	13
86	2	3	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	12
88	2	3	1	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	0	11
78	2	2	1	1	1	1	0	1	1	0	1	1	0	0	1	1	0	0	0	0	0	10
91	2	2	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	10
104	2	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	10
110	2	2	1	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	10
83	2	2	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	9
96	2	2	1	1	1	1	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	9
97	2	1	1	0	1	1	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0	9
100	2	2	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	9
111	2	2	1	1	1	1	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	9
77	2	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	8
99	2	3	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	8
102	2	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	8
107	2	3	0	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	8
109	2	3	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	8
80	2	1	1	1	1	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	7
82	2	2	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	7
85	2	2	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	7
93	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7
101	2	2	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	7
81	2	2	0	1	1	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	6
92	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
94	2	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6
103	2	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	6
79	2	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5
95	2	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
105	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
90	2	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
108	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
89	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
			33	33	32	32	26	24	18	15	15	14	12	11	7	6	4	0	0	0	0	

Fig.4.3 Particles, Japanese speakers

area is considered a patterning error, i.e., it appears there contrary to expectation according to the concept of implicational scaling. Similarly, the area below the line is designated as the 'non-present' area. Therefore a '1' in that area is considered an error in the expected pattern and this is called a patterning error.

In the case of INS, there are an excess of patterning errors. While the other particles usually have five or six patterning errors, INS alone has 13 patterning errors, which account for 18% (13 out of a total of 72 patterning errors) of the total patterning errors on particles for the Japanese speakers. In addition, unlike other particles, the behavior of this particle in the matrix is quite distinct. Patterning areas happen not only in the present area but also in the non-present area, meaning that sometimes advanced learners do not supply the particle while novice and intermediate learners do sometimes supply the particle. This pattern could be an indication that INS does not behave in a systematic way; rather, it follows a random variation pattern. After noticing this behavior, the coefficient of reproducibility was recalculated without the INS particle. The result obtained was .906, which means that this data set is now scalable. The implication is that linguistic features which vary randomly compromise scalability. This random variation will be considered again in the discussion section.

As this matrix is scalable after the INS particle is excluded due to its pattern of random variation, we can say that the patterning in the matrix is reliable and does not occur by chance.

We can see that certain particle morphemes group together. Since the levels in this cross-sectional data correspond to a time lapse, we can say tentatively that there appear to be stages of acquisition, which we will call a hierarchy. The tentative hierarchy for the Japanese speakers' acquisition of particles is the following: Stage 1, which includes the morphemes NM, LOD, LOC, TC, AC, and INC; Stage 2, which includes the morphemes COM, LIM, ALT, CAP, and DAT (recall that INS was excluded from the scaling); Stage 3, which includes SOU, COD, EQ, TOL, ADD EXH, and DIS. Stage 3 could possibly be further divided into two separate stages, since there are four morphemes (TOL, ADD, EXH and DIS) which do not have any tokens. This tentative acquisition hierarchy can now be checked for reliability with another statistical tool, the hierarchical cluster analysis.

Fig. 4.4 (Implicational scaling-Particles. English speakers) shows the implicational scaling of the particle suppliance by the English speakers. The implicational scaling shows systematic development in that the number of particle morphemes used increases with level of proficiency, as is the case with the Japanese speakers. The coefficient of reproducibility for the data was .87, which is under the critical value of .90. In this case, the particles LIM, INS and INC were eliminated from the scaling because of

ID	LANG	LEV	LOC	LOCD	NM	AC	TC	INC	INS	LIM	DAT	SOU	COMP	CAP	ALT	EQ	COD	TOL	ADD	EXH	DIS	COUNT
24	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	13
42	1	3	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	12
2	1	2	1	1	1	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	11
60	1	3	1	1	1	1	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	11
3	1	2	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	10
18	1	3	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	10
39	1	2	1	1	1	1	0	1	0	1	1	1	1	0	0	0	1	0	0	0	0	10
62	1	3	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	10
64	1	3	1	1	1	1	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	10
1	1	2	1	1	1	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	9
4	1	3	1	1	1	1	1	1	0	1	0	0	0	1	0	1	0	0	0	0	0	9
8	1	3	1	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	9
13	1	3	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	9
16	1	2	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	0	0	0	0	9
25	1	2	1	1	0	1	1	1	1	0	0	1	1	0	0	1	0	0	0	0	0	9
48	1	2	1	1	1	1	1	1	1	0	0	0	1	0	0	0	1	0	0	0	0	9
57	1	2	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	9
22	1	2	1	0	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	8
47	1	2	1	1	0	1	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	8
56	1	2	1	1	0	1	1	1	0	0	1	1	0	1	0	0	0	0	0	0	0	8
69	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	8
70	1	2	1	1	0	0	1	1	0	1	0	0	1	1	0	0	1	0	0	0	0	8
6	1	1	1	1	0	1	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	7
12	1	2	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	7
20	1	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7
26	1	2	1	1	1	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	7
44	1	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7
45	1	2	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	7
52	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7
55	1	2	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	7
59	1	3	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	7
61	1	2	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	7
67	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	7
7	1	2	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	6
9	1	2	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6
23	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6
41	1	2	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	6
49	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6
66	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6
76	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6
5	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
11	1	1	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
21	1	2	1	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	5
27	1	2	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
58	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
63	1	2	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
65	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5
72	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5
74	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
10	1	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
14	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4
33	1	2	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
40	1	2	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4
43	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
46	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
50	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
71	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
73	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
75	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
30	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
32	1	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
34	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
68	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
28	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
35	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
36	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
37	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
51	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
19	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
29	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
38	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
53	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
54	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			68	66	56	47	47	33	26	25	17	16	16	10	8	4	4	0	0	0	0	

Fig.4.4 Particles, English speakers

their random variation. The highest number of patterning errors occurred with the INS particle, e.g, 31 patterning errors out of a total of 201 total patterning errors for the English speakers. The LIM particle also had a high number of patterning errors, e.g., 28 out of a total of 201; the INC particle had 22 patterning errors The patterning errors for these three morphemes together account for 40.2% of the total patterning errors. These three particles will thus be considered to behave in a random manner and will be eliminated from the calculation of the coefficient of reproducibility. The recalculated coefficient of reproducibility is .901, which means that this data set is now scalable.

Excluding LIM, INS and INC, we can see that for the English speakers, as was the case for the Japanese speakers, certain particle morphemes appear to group together. Look at the bold line drawn on the matrix of Fig. 4.4. The bold line is the line which was drawn after the three particles which behave randomly were eliminated. There now appears a huge gap between TC and DAT. This wide gap creates two distinct groups. The morphemes which fall into these two groups will tentatively be considered thrree stages of acquisition, or acquisition hierarchy. Stage 1 contains LOC, LOD, NM, AC, TC; Stage 2 contains DAT, SOU, COM, and CAP; Stage 3 includes ALT, EQ, COD, TOL, ADD, ESH, DIS. Here again, as with the Japanese speakers, Stage 3, which includes TOL, ADD, EXH and DIS, which have no tokens supplied, could possibly be divided into two separate stages. This tentative acquisition hierarchy can now be checked for reliability with the hierarchical cluster analysis.

Let us now turn to a closer examination of our tentative groupings for both the Japanese and English speakers. Recall that we had tentatively made a three-stage grouping for particle acquisition for each language group. The particle members of each group were almost identical at Stage 1 for both language groups, but the rank order of the particles for the two language groups was slightly different: Compare for example Stage 1 for Japanese speakers which consisted of NM, LOD, LOC, TC, AC, and INC, in that order; the particles acquired in Stage 1 by English speakers consisted of LOC, LOD, NM, AC and TC, in that order. Note that INC is acquired at Stage 1 by the Japanese speakers, but not by the English speakers.

The dendrogram in Fig. 4.5 (Dendrogram. Particles. Japanese speakers) shows the clustering of the particles, *by distance from each other* in terms of characteristics and behavior in the data set, as obtained from the hierarchical cluster analysis, based on a statistical procedure called 'agglomeration schedule'. To obtain the dendrogram, each variable (particle) is first put into a cluster by itself. Clustering then proceeds in stages. To obtain a cluster, 'the criterion by which objects are separated is relaxed in order to link the two most similar clusters until all of the objects are joined in a complete classification tree' (*SPSS Tutorial*). The dendrogram is thus the visual display of the agglomeration schedule.

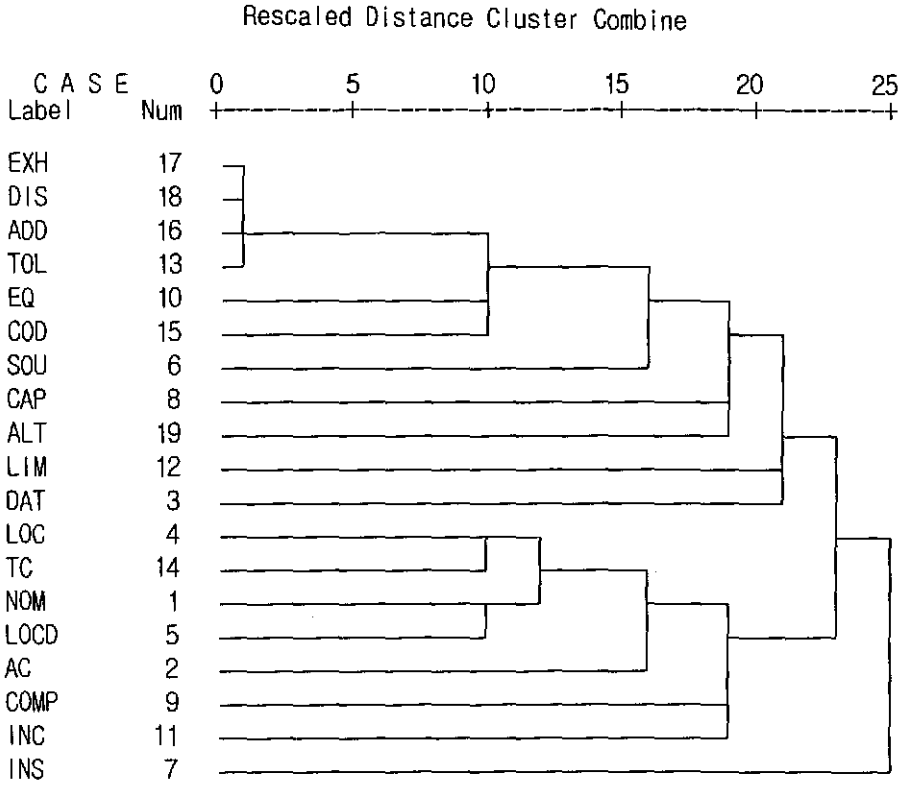


Fig.4.5 Dendrogram: particles, Japanese speakers

Fig. 4.5 displays the clustering of the acquisition of particles by the Japanese speakers. Significant to note in Fig. 4.5 is that the elimination of INS which was done on the basis of its unusual behavior in terms of patterning error in the implicational scaling matrix is supported by the cluster analysis. Note that INS does not cluster with any other particle in the data set in the dendrogram. LIM and DAT, which were retained in the implicational scaling for Japanese speakers, do not cluster until the late stage of the

agglomeration schedule. This clustering behavior alerts us to the fact that LIM and DAT may special properties which set them apart from the other particles. What will be relevant for our later discussion is the fact that these two particles both occur in Stage 2.

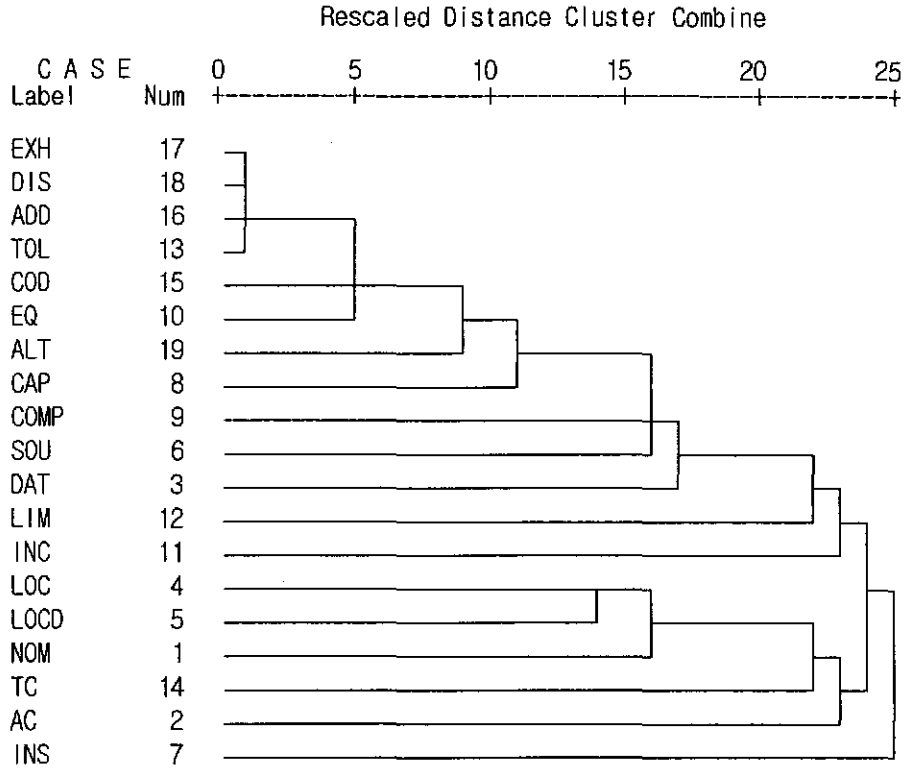


Fig.4.6 Dendrogram: particles, English native speakers

The dendrogram in Fig. 4.6 (Dendrogram. Particles. English speakers) shows the clustering of the acquisition of particles by the English speakers. Of significance in this dendrogram is, once again, the fact that the INS particle has a unique behavior and does not cluster with any other particle, as was the case with the Japanese learners. Recalling

that the INS, LIM and INC particles were all eliminated from the implicational scaling matrix for the English speakers, let us now look at the clustering behavior of the LIM and INC particles. Interestingly, because it confirms our treatment of these two particles in a particular way at the time of the implicational scaling procedure, LIM and INC do not cluster until the late stage of the agglomeration schedule, and when they cluster, they cluster with each other. To be noted is that LIM and INC, as was the case with the particles with peculiar behavior in the data for Japanese speakers (e.g., LIM and DAT) occur in Stage 2.

Let us now examine the behavior of the verbal suffixes. Note that the treatment of verbal suffixes explicitly excludes sentence enders which are determined by either sociopragmatic constraints derived from the honorific system or by sentence type (declarative, interrogative, quotative, etc.). In this corpus, there was a particular bias in favor of polite endings due to the teacher/student interview format. In addition, the non-terminal mood suffixes such as the presumptive *–keyss*, the addressee honorific *–sup* and the indicative mood *–n/ni* were used in very idiosyncratic patterns, e.g., English speakers who had previously studied Korean at the Defense Language Institute in Monterey tended to use almost exclusively the *–keyss-supnida* or *–(u)pnida* as a sentence ender until they became familiar with the Korean colloquial style.

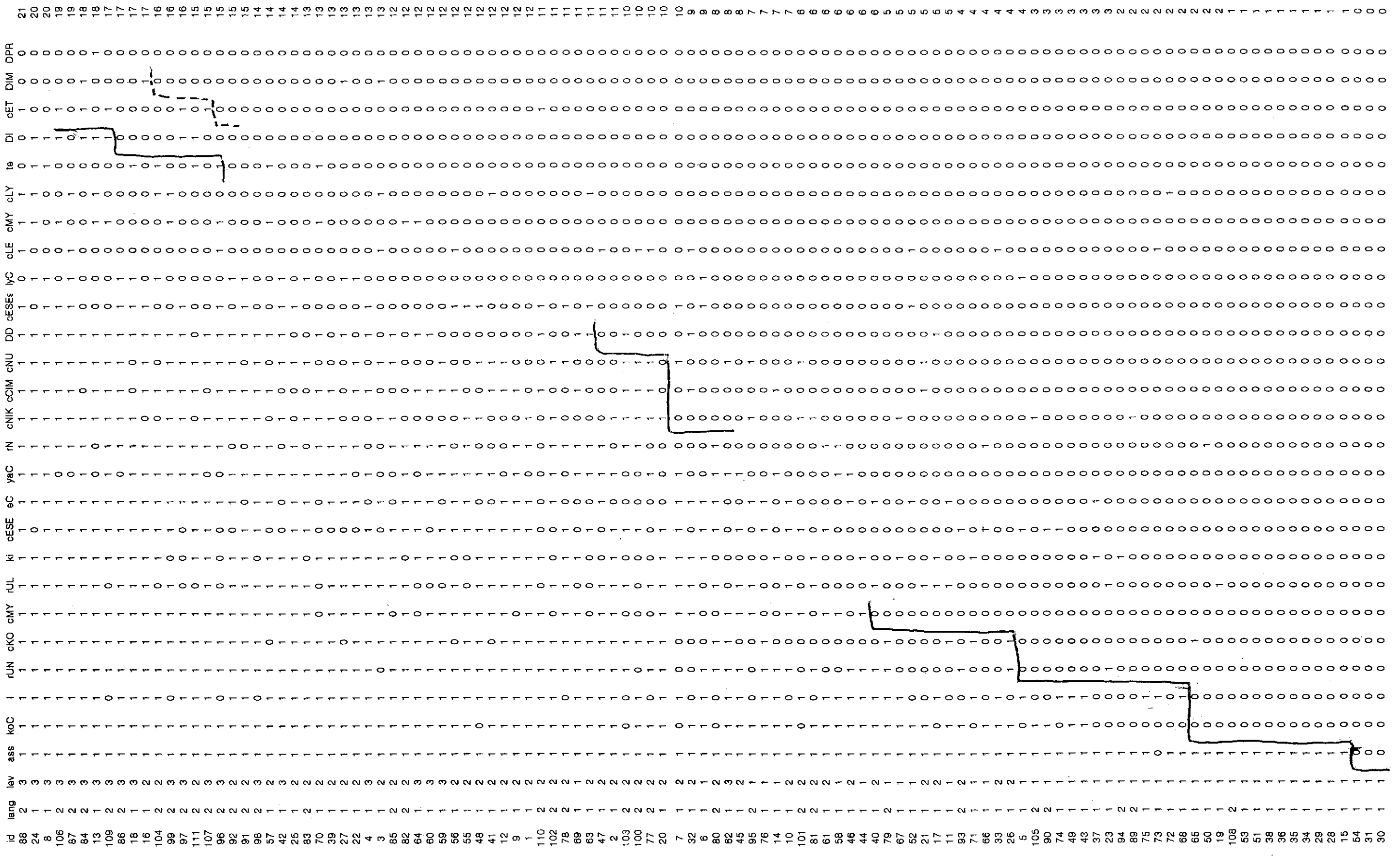
Table 4.4 ANOVA: Native language, proficiency level and total number of verbal suffixes acquired

Source		SS	df	MS	F	significance
Native language	Between Groups	31.560	20	1.578	11.680	.000
	Within groups	126.730	938	.135		
	Total	158.290	958			
Proficiency level	Between Groups	286.396	20	14.320	96.418	.000
	Within groups	139.310	938	.149		
	Total	425.706	958			

Table 4.4 (ANOVA-Native language, proficiency level and total number of verbal suffixes acquired) shows that both native language and proficiency level play a significant role in determining the number of verbal suffixes acquired. For the proficiency level the F ratio is 96.418 with the significance level of .000; for native language the F ratio is 11.680, with a significance level of .010.

Let us now examine Fig 4.7 (Implicational scaling – Verbal suffixes. Japanese and English speakers combined). The totals listed at the bottom of the matrix indicate that there are several gaps at the very beginning stage of acquisition (i.e., 78 learners used PST, 70 learners used koC (conjuctive suffix *'-ko'*) and 66 learners used prsm (prospective modal *'–(u)l'*). At a higher level of proficiency, there are big gaps between IDD (indirect discourse: declarative *'–tako/-lako'*, 33 learners used this form) and cESE (complement suffix *'-(e)se'* sequential, 22 learners used this form), and again between cESE and lyC (conjunctive suffix *'–(u)lyeko'*, 14 learners used this form).

Fig 4.7 Verbal suffixes, Japanese and English speakers combined



The coefficient of reproducibility was calculated for this data set based on the far-fetched line shown as dotted line in the matrix and the result was .732, which is far below the critical value of .90. This data is therefore not scalable. This can be seen visually by the fact that the line cannot be easily drawn throughout the entire matrix. Note that the line stops at cKO and has nowhere to go. This could be taken as an indication that learners exhibit considerable variation in their use of verbal suffixes from this point onward. Some very tentative and inconclusive lines can be drawn here and there in the middle and at the top end of the matrix. What is interesting is that if we draw a hypothetical diagonal line through the middle of the matrix to delineate the 'non-present' area, we find very few patterning errors in the 'non-present' area. However, in the 'present' area, the number of patterning errors is quite high, which means that for any given verbal suffix, a large number of learners use it, and a large number learners do not use it. This extreme variation is what causes the data set to be unscalable.

The general pattern of distribution found in the combined Japanese and English speakers data set is also found in the individual data sets, as can be seen in Fig. 4.8 (Implicational scaling: Verbal suffix, Japanese speakers) and and 4.9 (Implicational . scaling, verbal suffixes, English speakers). The coefficient of reproducibility for Fig. 4.8 is .83 and for Fig. 4.9 it is (.81), which means that neither of these data sets is scalable. The line has been drawn on the matrix to give a rough idea of the patterning, but onsiderable variation can be noted in the 'present' area. As in the case of the data set for

id	lang	lev	ass	koC	rUN	cKO	cNIK	cESE	cNU	cMY	rUL	rN	I	eC	cCIM	DD	ki	yaC	cESEs	cET	lyC	cMY	cLE	DI	cLY	te	DIM	DPR	
88	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	20
87	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	1	0	0	0	19
106	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	1	0	0	0	0	18
84	2	3	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	1	0	0	1	0	18
109	1	3	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	0	1	0	1	0	0	0	0	17
86	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	16
97	1	3	1	1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	0	1	0	0	0	1	0	0	0	0	15
99	1	3	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	1	0	0	1	0	0	0	16
104	1	2	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	0	0	1	0	0	0	1	1	0	0	16
91	2	2	1	1	1	1	1	1	0	1	1	0	1	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	15
92	2	2	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	16
96	1	3	1	1	1	1	1	0	1	1	0	1	0	1	1	1	0	0	1	0	0	1	1	0	0	1	0	0	15
111	1	2	1	1	1	1	0	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	0	1	0	1	0	0	15
107	1	3	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	15
98	1	3	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	15
83	2	2	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	13
82	2	2	1	1	1	1	0	1	0	1	1	1	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	12
85	2	2	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	12
78	2	2	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	10
102	1	2	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	12
110	1	2	1	1	1	1	0	0	0	1	0	0	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	11
77	2	2	1	1	1	1	1	0	1	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	10
100	1	2	1	1	0	1	1	1	1	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	10
103	1	2	1	0	1	1	1	1	1	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	10
80	2	2	1	0	1	1	0	1	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8
95	2	1	1	1	0	0	1	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
81	2	2	1	1	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6
101	1	2	1	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
79	2	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
93	2	2	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
90	2	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
105	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
89	2	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
94	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3
108	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
			35	29	27	26	24	22	22	21	20	20	19	19	17	17	16	15	9	7	6	6	5	5	4	3	1	0	

Fig 4.8 Verbal suffixes, Japanese speakers

id	lang	lev	ass	I	koC	rUN	ki	cMY	rUL	cKO	eC	yaC	cESE	rN	cCIM	DD	cNU	cNIK	cESEs	lyC	cLE	cLY	te	cMY	DI	DIM	DPR	cET	
8	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	0	0	20
24	1	3	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	20
13	1	3	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	1	0	1	1	0	1	0	18
16	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	17
18	1	3	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0	1	0	0	0	0	0	17
25	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	14
42	1	3	1	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	14
57	1	2	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	14
3	1	2	1	1	1	0	1	1	1	1	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	1	0	0	13
4	1	3	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	13
22	1	2	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	13
27	1	2	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	13
39	1	2	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	13
70	1	2	1	1	1	1	1	0	0	1	0	1	0	1	1	1	0	1	0	0	0	0	1	1	0	0	0	0	13
1	1	2	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	12
9	1	2	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	12
12	1	2	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	12
41	1	2	1	1	1	1	1	1	1	0	0	1	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	12
48	1	2	1	1	0	1	1	1	1	1	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	12
55	1	2	1	1	1	1	0	1	0	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	12
56	1	2	1	1	1	1	0	1	1	0	1	1	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	12
59	1	3	1	1	1	1	1	1	0	1	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	12
60	1	3	1	1	1	1	1	1	0	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	12
64	1	3	1	1	1	1	1	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	12
2	1	2	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	11
47	1	2	1	1	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	11
63	1	2	1	1	1	1	0	0	0	1	0	1	1	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	11
69	1	1	1	1	1	1	1	1	0	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	11
7	1	2	1	1	0	0	1	1	1	0	1	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	10
20	1	2	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	10
6	1	1	1	1	1	1	1	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	9
32	1	2	1	0	1	0	1	1	1	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	9
45	1	2	1	1	1	1	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
62	1	3	1	1	1	1	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	8
10	1	2	1	0	1	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
14	1	1	1	1	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
76	1	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
40	1	2	1	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
44	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
46	1	2	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
58	1	1	1	1	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
61	1	2	1	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
11	1	1	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
17	1	2	1	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
21	1	2	1	0	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5
52	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	5
67	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
5	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4
26	1	2	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
33	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
66	1	1	1	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
71	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
23	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
37	1	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
43	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
49	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
74	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
19	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
50	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
65	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
68	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
72	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
73	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
75	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
28	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
29	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
34	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
35	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
36	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
38	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
51	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
53	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			72	51	49	39	34	33	32	31	29	28	27	23	20	16	15	14	13	8	7	6	5	5	3	3	1	0	

Fig.4.9 Verbal suffixes, English speakers

the combined language groups, the beginning stages show a rather systematic variation. However, since the data set as a whole is not scalable, we cannot propose any hypotheses regarding stages of acquisition.

Out of the total of 26 verbal suffixes, one might wonder if there are any subsets. To test this possibility, I separated the non-terminal suffixes from the clause enders and analyzed the data set for the Japanese speakers separately. The coefficients of reproducibility were even lower, e.g., non-terminal suffixes were .80 and clause-enders were .806.

In order to obtain a finer-grained picture which might reveal any patterns that were not detectable from the implicational scalings, I proceeded to do a hierarchical cluster analysis. Fig. 4.10 shows the dendrogram for verbal suffixes in the corpus of Japanese speakers.

The clusters shown in the dendrogram cannot be interpreted. Conjunctive *-ko* (koC) and the past relativizer *–n/un* (r-N) pattern together, but these morphemes are learned at quite different levels in terms of Korean language acquisition. Their only commonality, and the reason they are clustered together by the hierarchical cluster analysis procedure is that they are not associated with other morphemes. It is there, as stated above, impossible to pursue any hierarchical development pattern within the verbal suffixes. In sum, the data for verbal suffixes for Japanese speakers is non-scalable. The

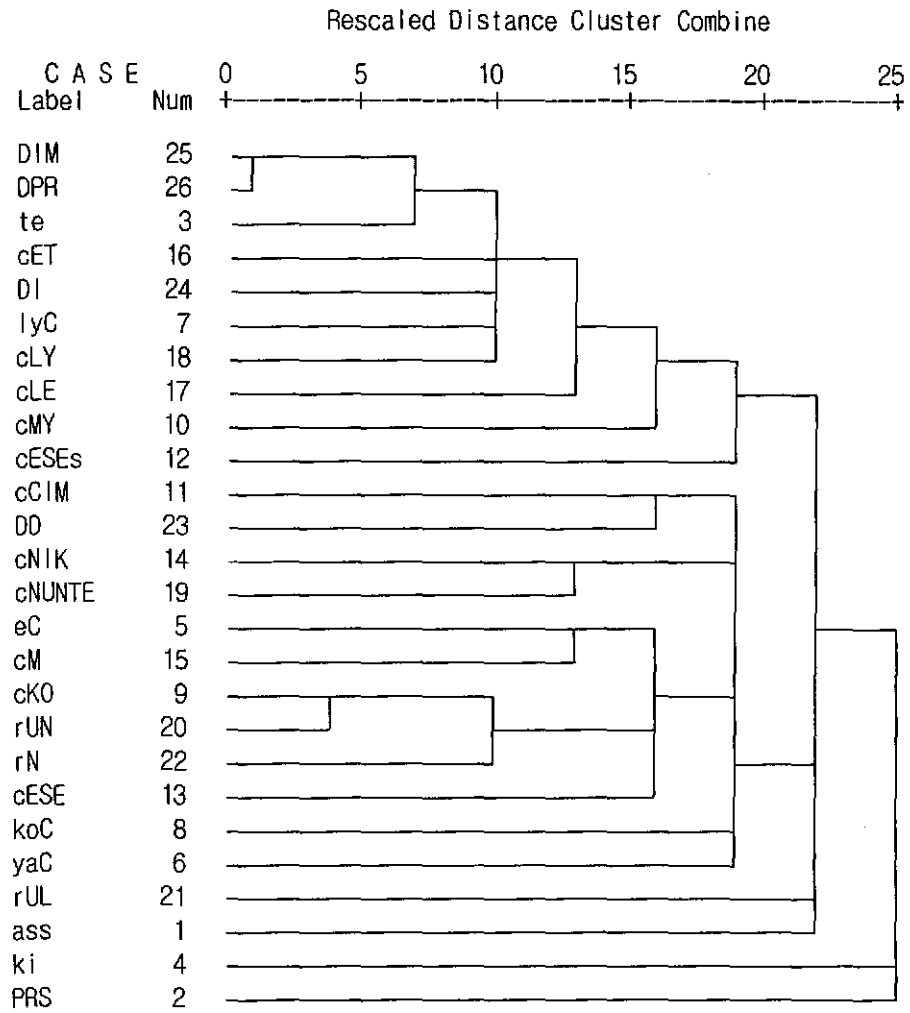


Fig.4.10 Dendrogram: Verbal suffixes, Japanese speakers

only thing that we can say about either the visual or statistical analysis is that, mpressionistically, based on the totals for number of learners using each verbal morpheme, the past *-ass* [PST], the conjunctive *–ko* [koC] and the non-past relativizer *–nun/-n* [rUN] are used by large numbers of learners regardless of proficiency level.

This lack of strong patterning in the use of the verbal suffixes forces us to raise a note of caution regarding the statistical significance shown in the ANOVA in Table 4.3. The ANOVA table shows that the number of morphemes acquired by a learner varies in a

statistically significant manner with the learner's level of proficiency. However, from this, it should not be concluded that there is a discernible developmental pattern in the use of the verbal suffixes.

Fig. 4.11 (Dendrogram. Verbal suffixes. English speakers) shows the dendrogram of the use of verbal suffixes by English speakers. The patterns discussed above regarding the Japanese speakers also hold true for the English speakers, i.e., after the initial stages, there are no systematic clustering patterns which correlate with any relevant

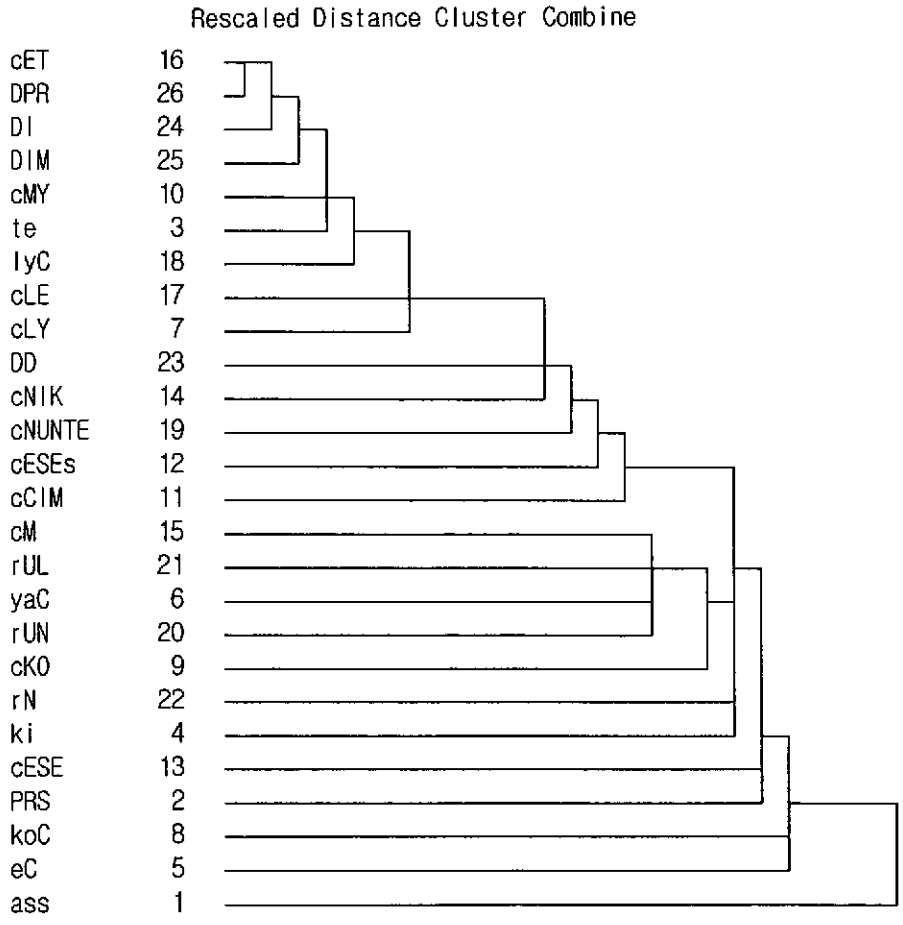


Fig. 4.11 Dendrogram: Verbal suffixes. English speakers

linguistic features. As was the case with the Japanese speakers, the data set is unscalable.

(The coefficient of reproducibility is .81 per cent.)

When we recall that for English speakers we eliminated these same particles because of their random variation, this clustering behavior of the LIM, INC and INS particles, all occurring in Stage 2, we can now say that Stage 2 open to random variation. Stages 1 and 3 do not contain any particles which exhibit this behavior.

4.4. Discussion

4.4.1 Acquisition hierarchy

4.4.1.1 Verbal suffixes

From the previous section, it will be recalled that the acquisition of verbal suffixes by Japanese and English speakers presented no statistically significant patterns. Whether analyzed together or analyzed separately by native language. Two types of analyses were conducted: implicational scaling procedures and hierarchical cluster analysis. From the visual representations resulting from these analyses, e.g., the matrix produced by the implicational scaling procedure and the dendrogram produced by the hierarchical cluster analysis, some patterns do appear to emerge. However, when subjected to statistical analyses, these emergent patterns turn out not to have any statistical significance and the clustering observed in the dendrogram did not correspond to any linguistic parameters.

One robust observation, however, is that the past tense marker *–ass* [PST] is the

first verbal suffix to be acquired by all learners (tokens were observed for 107 out of 111 learners). In the combined data set for both Japanese and English learners, the two next most frequently acquired verbal suffixes are the conjunctive *–ko* [koC] and the prospective modal *-ul* [prsm] (tokens were observed for 78 and 70 learners out of 111, respectively). Recall that based on the morpheme classification proposed by the 4-M model, discussed in section 2.4, both the past marker *–ass* and the conjunctive *–ko* are system morphemes, but *-ass* and *–ko* should be classified as 'late' system morphemes because their form 'is not available until the formulator assembles morphemes into larger constituents based on directions from those morphemes elected at the lemma level, content morphemes and early system morphemes' (Wei 2000: 111). This means that these morphemes should be, according to the 4-M model, acquired at a later stage. This robust finding of early acquisition of *-ass* and *ko* in Korean does not support this model, however. There are two possible explanations for this finding. First, there might be some principle [as yet to be discovered] which overrides the morpheme classification proposed by the 4-M model. It is also plausible that the communicative value of these two morphemes in Korean is so high that they become salient and therefore are acquired quite early in the acquisition process. As VanPatten (1996) said, in discussing the acquisition order of English verb morphemes,

> Recall that learners of English acquire verb morphemes in the following order.
>
> -ing, regular past, third person –s

> with –ing being acquired fairly early on and –s being acquired relatively late. As discussed earlier, -ing possesses high communicative value and –s possesses little communicative value, whereas tha past-tense marker falls somewhere between. Thus, the order of acquisition matches the input processing preferences of learners as the latter intersect with communicative value. It is true that the example from English verbal inflections is compounded by frequency in the input as well as structural differences. -ing is also syllabic, rendering it more perceptually salient compared with nonsyllabic –s. One could easily conclude that languages might simply bias saliency (based on structural features) and frequency toward items of higher communicative value, and that factors other than communicative value and processing capacity account for acquisition orders (29).

There is thus a strong indication from this evidence that another principle, such as communicative value, can nullify or circumvent the psychological processing principles or the linguistic complexity. This is one of the reasons why I chose 'communicative value' as one of the factors to be examined in the establishment of an acquisition hierarchy for KFL. Having thus extracted some tentative conclusions from the study of verbal suffixes, I will now turn my attention to particles, which presented much more robust findings in this study.

4.4.1.2 Particles

First of all, we proposed a tentative modeling from the separate data sets of Japanese and English speakers. We could not use the combined group chart because it did not meet the test of scalability. Futhermore, it was also of interest to know whether there are distinct patterns induced by an L1 effect. Table 4.4 (Correlation:

rank order of particles used by Japanese speakers and rank order of particles used by English speakers) shows a strong correlation between the native language and the rank order of particle morphemes ($r = .949$, $p<.01$). Despite some minor differences, already noted in the discussion above, we can now safely say that the rank order of the acquisition of particle morphemes does not differ in any statistically significant way based on native language of the learner (for native speakers of English and Japanese).

Table 4.4 Correlation: Rank order, Particles, Japanese/English speakers and total number of morphemes used)

		Japanese	English
Spearman's rho	Japanese	1.000	.949**
	English	.949	1.000

Correlation is significant at the .01 level (2-tailed).

Despite the fact that no statistically significant differences are noted in terms of the particle acquisition hierarchy between Japanese and English speaking learners, some differences of detail between the two groups are apparent and from a linguistic perspective, these differences beg an explanation.

Recall that three stages were posited for the acquisition of particles, with a random variation in the second stage. From the implicational matrices of the Japanese and English speakers, and from the hierarchical cluster analyses, I will present an

acquisition hierarchy model for KFL particles. This model is presented in Figure 4.12 (Acquisition hierarchy model for KFL particles), below. The major components of this model were already described in 4.3.

Note that the morphemes in Stage 1 are all identical except for INC, which the Japanese speakers have acquired and which the English speakers have not yet acquired. What features about INC could explain this differential? INC (*–to* 'also' in Korean) is a delimiter, with substantial semantic content. Four of the remaining five Stage 1 morphemes (AC (add Korean romanization and English meaning, LOC, LOD, and NM) are all grammatical morphemes.

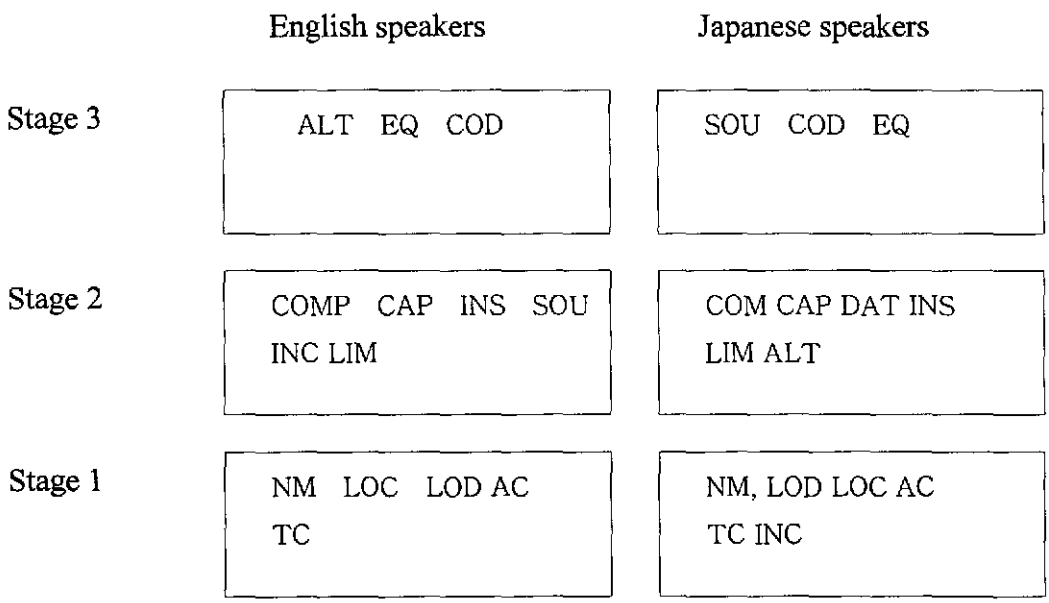


Fig. 4.12 Tentative model of Acquisition Hierachy (Particles)

The final morpheme, TC, requires some explanations. Speaking in a strict linguistic sense, the topic contrast particle TC (*un/nun*) is also a delimiter. At the novice level, it is taught as a means of delimiting nouns which are used as topics from

nouns which are used as subjects (although in native discourse it functions with many syntactic classes beyond subjects). In the minds of the learners (and also in common parlance among non-linguist native speakers of Korean) un/nun is assimilated to the class of grammatical markers of subjects. Sohn (1999) describes the multifunctionality of un/nun as follows: 'Among the delimiters, the topic-contrast delimiter (n)un 'as for, concerning' has been most extensively discussed in the literature since its use is the most widespread and its meaning is not easy to determine. In particular, when it appears in the subject position with a topic sense (roughly 'as for'), its meaning can hardly be distinguished from the neutral (i.e., not exclusive) meaning of the nominative case particle *i/ka* (347).

Thus, if we allow that TC is treated by the learners as a grammatical case marker, five out of the six morphemes acquired in Stage 1 can be characterized as grammatical morphemes, case particles. (The only exceptional case being the delimiter *-to*, which is acquired at this stage by Japanese learners only.)

Stage 2 is the stage where both case particles and delimiters emerge. As we saw in 4.3, it is at this stage where most of the patterning errors occur since random variation from learner to learner is rampant. After learners have mastered the basic syntactic relations in Stages 1 and 2, at Stage 3 they consolidate their knowledge of delimiters and use semantic/pragmatic expansion to color their discourse with nuance, as evidenced by the emergence of a few new delimiters at this stage, and a decline in

the random variation (patterning errors) noted at Stage 2. At Stage 3 and beyond, the acquisition hierarchy is open to virtually any delimiter.

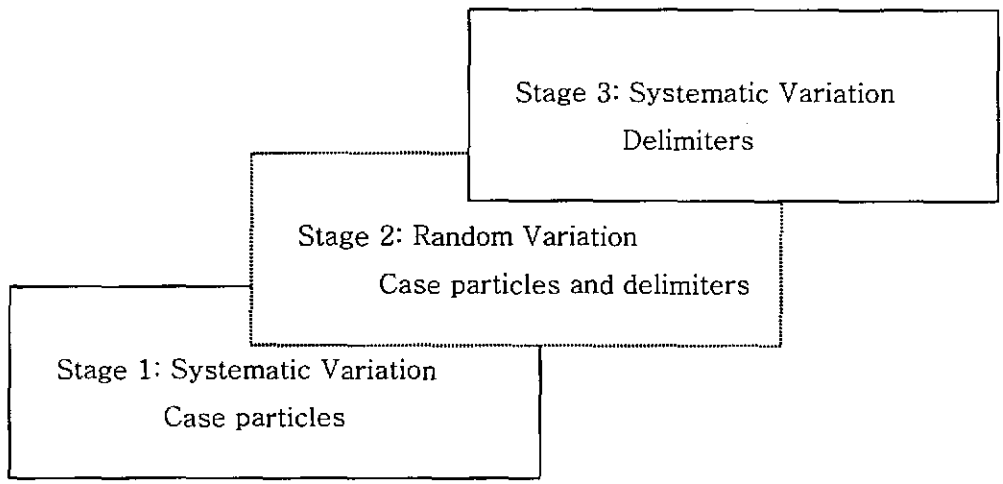


Fig. 4.1.3 Generalized model of acquisition hierachy (Particles)

The fact that grammatical morphemes emerge first in KFL is contrary to the claims in models based on psychological processing constraints. 'What is easy to process [at the conceptualizer or directly elected from the formulator level] is easy to acquire' (Pienemann 1998: 42). These models predict that pure grammatical morphemes will be difficult to acquire and therefore that they will emerge late. However, as seen, in Korean these particles emerge in Stage 1. Any theory or principle based on the concept of psychological constraints needs to be able to account for these facts.

4.4.2. Factors governing the acquisition hierarchy

In this section I will elaborate on some of the concepts alluded to briefly in earlier chapters, regarding the factors which are assumed to be responsible for the acquisition hierarchy. Initially, I tried to apply the 4-M model to my KFL data because its treatment of morphemes is quite attractive. While the other approaches to morpheme studies treat each morpheme equally, the 4-M model recognizes several levels of morphemes, and this opens the window to a revisiting of morpheme studies from a linguistically more sophisticated perspective.

My finding that delimiter particles, which have high semantic value, emerge in Stage 2 and Stage 3, i.e., relatively late, goes against the predictions of the 4-M model. The 4-M model predicts that because of their high semantic function, and because they should be directly elected from the formulator when the content morpheme sends its intended image to the formulator (Wei 2000), the delimiters should be acquired earlier than the case particles, which have only grammatical meaning (i.e., they are 'system morphemes' in 4-M model terms). Thus, the 4-M model does not satisfactorily explain the data in my study.

Therefore I will now go on to examine some factors which I hypothesize might be able to account for the facts of KFL and the model I have proposed. There are three factors which I will discuss here:

- Instructional sequence
- Communicative urgency
- Morpheme valency (based on the 4-M model)

Instructional sequence was hypothesized to play a role in the acquisition sequence for several reasons. As mentioned above in 4.2.1, most of the learners included in my study had previously studied Korean at other institutions. Even for the learners who began their study of KFL at Sogang, they were first interviewed after 200 hours of instruction. They were thus all exposed to an instructional sequence, regardless of the socio-communicative contexts they may have encountered outside the classroom. Another reason for choosing instructional sequence is that most SLA studies agree that language instruction has but little bearing on the acquisition sequence.

In order to establish the instructional sequence, I analyzed five of the most widely used textbooks in the teaching of KFL. Four of these textbooks are published in Korea (Korea university textbook, Yonsei university textbook, Ehwa woman's university textbook and Seoul national university textbook), one is published in the U.S. (Integrated Korean, published by Korean Language Education and Research Center) I first noted the grammatical objectives of each lesson in the five books and compared them. Because of variation in the structure of the textbooks and the lessons, the textbooks were not easily compared. To circumvent this difficulty, I regrouped the contents of the books

concerning grammatical structure into five stages. The results of this textbook analysis can be seen in Table 4.5.

The second factor which I hypothesized might have an effect on acquisition was communicative urgency. A list of factors commonly assumed to contribute to communicative urgency was obtained from Omaggio (1986: 180-181) and from the

Table 4.5 Instructional sequence in KFL textbooks

Group 1	NM TC LOC ACC CON LOD
	COM INCP BOU LOD LIM INC
Group 2	GEN INS ALT
Group 3	COMP CAP
Group 4	
Group 5	DCOM

ACTFL (cite) proficiency guidelines. The linguistic features necessary to realize the communicative functions and content appropriate for each proficiency level, as proposed by Omaggio and ACTFL, were translated into Korean and coded for the three stages proposed in my model. Table 4.6 shows the classification of the particles according to their communicative urgency.

Table 4.6 Particles classified by degree of communicative urgency

Group 1	NM AC LOC LOD
Group 2	TC INC COM LIM DAT SOU
Group 3	All other particles not included in group 1 and 2

The third factor hypothesized to have an effect on acquisition was the morpheme valency. I use the term 'morpheme valency' to distinguish early and late morphemes in the system morphemes. This morpheme valency factor represents the psychological constraints which have been proposed as having a significant effect on learners' acquisition hierarchy. Table 4.7 shows the classification of the particles according to 4-M model.

Table 4.7 Particles classified by 4-M model

Group 1	LOCD	LOC	TC	INC	LIM	ALT
	COE	EQ	TOL	ADD	EXH	DIS
Group 2	COM	INS	CAP	DAT	SOU	
Group 3	NM	AC				

First, Correlation between the stage of acquisition hierarchy and factors were sought: factor analysis with the three proposed factors was run. First, the correlation matrix shows a strong correlation between the stage of acquisition hierarchy and instructional sequence. ($r=.899$ $p<.05$) Communicative urgency was also found to correlate strongly with the acquisition hierarchy stages. ($r=.797$ $p<.05$) However, it should be noted that the methodology for obtaining the linguistic tokens for the communicative urgency factor, being based on pedagogical guidelines which might have affected instructional design, may have seriously biased the findings in favor of correlation with instructional sequence.

The third factor, morpheme valency, as seen in Table 4.8 , correlates negatively with particle acquisition hierarchy. (r = -.463) This means that the assumptions of the models based on psychological processing constraints need to be re-examined for validity.

Table 4.8 Correlations: Stages of acquisition hierachy and factors

		acquisition hierachy	morpheme valency	instructional sequence	communicative urgency
acquisition hierachy	Pearson Correlation	1	−.463*	.899**	.797**
	Sig. (2-tailed)	.	.046	.000	.000
	N	19	19	19	19
morpheme valency	Pearson Correlation	−.463*	1	−.446	−.432
	Sig. (2-tailed)	.046	.	.056	.064
	N	19	19	19	19
instructional sequence	Pearson Correlation	.899**	−.446	1	.774**
	Sig. (2-tailed)	.000	.056	.	.000
	N	19	19	19	19
communicative urgency	Pearson Correlation	.797**	−.432	.774**	1
	Sig. (2-tailed)	.000	.064	.000	.
	N	19	19	19	19

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The results of the factor analysis, with a negative correlation between morpheme valency and acquisition hierarchy of morphemes , is further instantiation of the fact that my data does not support the behavior of the morpheme classification proposed by the 4-M model.

As seen in Table 4.9, component matrix shows that morpheme valency does not function as a part of the component which explains common variance.

Table 4.9 Factor analysis: Component Matrix

	Component
Morpheme valency	-.706
Instructional sequence	.902
Communicative urgency	.898

Extraction Method: Principal Component Analysis.
1 components extracted.

In Chapter 5, I will summarize the findings of this study and suggest future lines of research.

CHAPTER 5
CONCLUSION

This study originated with the idea of producing something of pragmatic value. As a teacher of Korean as a Foreign Language constantly facing students who were experiencing frustration at learning Korean, I began to wonder as to the source of their frustration. I wondered what features of Korean, or what features of cross-linguistic typology, might account for my students' problems. The socio-pragmatic implications of 'foreigners' living in Korea and learning Korean also piqued my interest. I wondered if there was something unique about learning Korean as a foreign language, or whether it is experienced as being extremely difficult because it is perceived as a very 'foreign' language. Further, I wondered, could instructional design and instructional efficacy be improved if certain grammatical features which pose particular problems for learners of Korean could be isolated? My idea was that if it could be determined that specific features are particularly difficult for learners to acquire, then a close examination of those features and the processes involved in their acquisition (or lack thereof) might lead to insight as to how best to teach these structures.

At the time I began to envision this project, no substantial corpus of performance data from learners of KFL was available. I therefore undertook to make tape recordings of interviews conducted with students enrolled in an intensive Korean language program during their end-of-term examinations. A fairly large corpus of spoken learner language data was thus constituted over a period of five years. For this study, data collected from

111 learners of Korean as a Foreign Language (76 English native speakers and 35 Japanese native speakers) was analyzed for tokens of particles and verbal suffixes.

Three general objectives underlie this study:

1. To observe and describe learner oral performance data;
2. To attempt to discover any clusters or hierarchical relationships, of whatever type, that may be indicative of acquisition processes;
3. To attempt to determine which factors account for the observed clusters and hierarchy.

From the final two objectives, two research questions emerged:

1. Are there any statistically significant hierarchical patterns in the data?
2. If there is a hierarchy, what are the factors contributing to this hierarchy?

To obtain answers to these questions, several statistical analysis procedures were conducted on the available data. The first of these was an implicational scaling of the target morphemes. The implicational scaling was first done with all 111 learners with respect to particles, then separately for Japanese and English speakers. The two-step process was repeated for verbal suffixes. Finally, the implicational scaling for particles and verbal suffixes combined was calculated for Japanese and English speakers combined, then separately. A coefficient of reproducibility was calculated for the target morphemes. Particles were found to be scalable and an implicational hierarchy of acquisition was found. Verbal suffixes, on the other hand, were not found to be scalable

and no implicational hierarchy can be proposed in their acquisition, based on the data contained in this study.

Having thus ascertained the relationships existing between the morphemes through implicational scaling and cluster analysis (i.e., the first research question, as above), I turned my attention to identifying possible explanations for these relationships (i.e., the second research question, as above).

In recent years, a number of factors have been claimed by researchers to have an effect on acquisition hierarchy. These are based on psychological constraints, such as those proposed by the processability theory (Pienemann 1984, 1989, 1998) and the 4-M model (Myers-Scotton and Jake 1995, 1999, 2000), which, in turn, is actually based on the psychological processing of sentence generation proposed by Levelt (1989). The morpheme classification proposed by the 4-M model was tested on the data from learners of KFL, as this classification contains the basic concept of psychological processing ability contained in other models. When these psychological processing factors were found not to have any statistically significant relationship to the acquisition hierarchy, a second set of factors was proposed and tested for correlation and factor loading. This second set of factors consisted of:

- instructional sequence
- communicative urgency

As I wanted to determine whether any correlation could be found between the acquisition hierarchy and the listed factors, and furthermore, if a correlation was found to exist, how closely they correlate or do not correlate, a number of statistical procedures were conducted. The SPSS program was used to calculate the correlation coefficient between these possible factors and the acquisition hierarchy, which had earlier been determined through implicational scaling and cluster analysis. A correlation coefficient for the interrelationship between the factors was also calculated. Finally, factor analysis was used to ascertain which factor or interaction of factors had the strongest effect on the acquisition hierarchy.

Based on the findings obtained through the statistical procedures, three stages of hierarchical development were proposed.

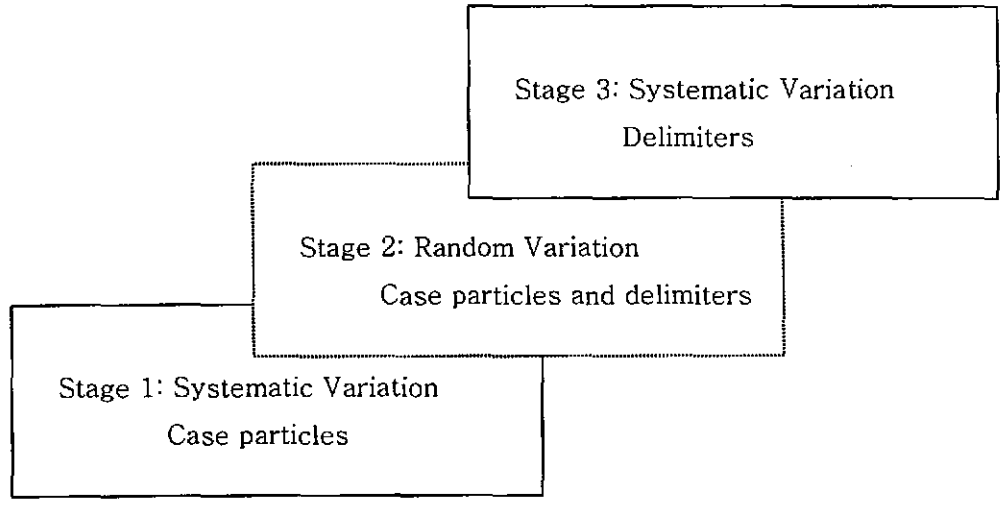


Fig. 4.13 Generalized model of acquisition hierachy (Particles)

The morphemes acquired in Stage 1 were identical for the English-speaking and Japanese-speaking groups, except for the delimiter INC (*-to)* which the Japanese speakers have acquired and which the English speakers have not yet acquired. Four of the remaining five Stage 1 morphemes are all grammatical morphemes. The final morpheme, TC, a delimiter, can be assimilated to the grammatical morphemes based on its function. If TC is treated as a grammatical morpheme, we can say that five out of the six morphemes acquired in Stage 1 can be characterized as grammatical morphemes. (The only exceptional case being the delimiter *-to*, which is acquired at this stage by Japanese learners only.)

In Stage 2 both case markers and delimiters emerge, but there is strong evidence of random variation. At Stage 3 additional systematic acquisition of delimiters continues. The acquisition hierarchy can thus be characterized as an alternation between a systematic stage and a diffused stage, followed by another stage of systematic acquisition. I believe that the randomness of the variation at Stage 2 is indicative of each individual learner's need to acquire what is communicatively urgent in their respective social situations. This explains their variation *en route* to target-like performance.

The early and systematic emergence of grammatical morphemes documented and observed in the case of KFL through this study is contrary to the claims of models based on psychological processing constraints, which predict that pure grammatical morphemes will emerge late. However, as seen in this corpus, pure grammatical morphemes emerge

in Stage 1 in Korean (five out of six early morphemes were grammatical morphemes). Theories based on the concept of psychological constraints, i.e., Pienemann's statement that 'easy to process, easy to acquire' somehow need to be able to account for these facts from KFL learner data.

The hypothesis I can offer in explanation of these surprising findings is that it is possible that in the case of languages where inflectional morphology is abundant, and where it is the main source of learning difficulty, the learners tend to behave linguistically in terms of the target language structure and quickly adopt themselves to the specific nature of target language. It appears that adult learners are capable of changing their learning strategies. Even adult learners can adapt to new learning circumstances. Based on the evidence in my data, it appears that the language faculty is not simply a psycholinguistic faculty, but a general psychological learning ability. Psychological constraints are part of the learning process, but these constraints must not be applied rigidly. My data do not support the conclusion that there are rigidly sequential steps and that each step has its own linguistic constraint. Also, psychological constraints, along with language-specific abilities as proposed by Universal Grammar, are only partial explanations of the adult language acquisition phenomenon. Language acquisition is a very diversified enterprise. To understand it, one must look not to one single explanation, but to a variety of factors and to the interaction between these factors.

In this study, I have not attempted to test a theory, nor did I attempt to apply a

theory to explain my data. From the outset, there was no pre-specified theoretical framework. I saw my task as essentially a descriptive one, given the paucity of basic research in the study of Korean as a Foreign Language.

Today's society is very theory oriented, but, as was the case here, sometimes the primary data contradict the prevailing theories. Without further extensive research, I cannot make strong claims in this direction, but one pertinent question that could be asked in the field of second language acquisition is the following: Is the effort, mostly found in second generation acquisition research, to find an underlying principle from psychological constraints or from UG constraints actually the right question to be asking? Or is it possible that as researchers we are simply ignoring the external factors which so obviously contribute to acquisition (instructional order and communicative urgency)? I suggest that these 'obvious' questions may not have been considered because they do not constitute material for a highly elaborated research project. However, by ignoring the 'obvious explanations', we have done a disservice to the field of research in second language acquisition by overlooking what is most crucial to the language learners themselves.

In conclusion, although it has been somewhat disappointing that the analysis of verbal suffixes in this study did not yield more robust findings, either quantitatively or qualitatively, the study of particles in Korean did reveal statistically significant patterns of acquisition, patterns which appear to be unique to Korean in that they contradict the

theories of several major acquisition models.

I suggest that future studies might uncover very interesting patterns in the development of verbal suffixes. More written and spoken corpora on KFL need to be collected, archived and made available to the research community. From such corpora, primary research will emerge. From this primary research, we can determine the appropriate curriculum and instructional design for KSL learners. The first step toward improvement of research in Korean as a Foreign Language is to recognize that the KFL field lacks the essential primary research, a lack which this study has hopefully in part reduced.

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