Acquisition Order of English Morphemes by Japanese Secondary School Students

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The present study was attempted to determine if the same acquisition order occurs for Japanese secondary school students learning English as a second language as the orders observed by Dulay and Burt (1973, 1974a and b). In all, 777 subjects from 33 classrooms were sampled and stratified by three variables: 1) grade (8th and 9th graders), 2) English textbook used (*Total English* and *Prince English*) and 3) location of school (urban and rural). The data collected for this study were written responses. The test consisted of three pictures accompanied by several questions each pertaining to the pictures. The test contained twenty test questions altogether and included three to four expected contexts each for nine morphemes investigated here. The subjects were allowed 45 minutes to answer.

The data for obligatory occasions were analyzed by three different scoring methods from strict to lenient. Only analyzable responses were scored and unanalyzable responses were eliminated from the study. The three scoring methods were nearly perfectly correlated. Moreover, there were no remarkable differences between grades, textbooks or locations of schools, although there were some differences between subgroups and individuals covered in this study. The order of morphemes for all subjects was significantly correlated with orders obtained by Dulay and Burt, and also most of

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other L2 studies including Bailey, Madden and Krashen (1974), the speaking and imitating tasks of Larsen-Freeman (1975a and b) and Rosansky (1976), but not the one given by Hakuta (1974a and b). The order also correlated with some sequences observed in L1 studies: Method I of de Villiers and de Villiers (1973) and Porter (1977). The present result supports the hypothesis that strong similarities exist in the L2 acquisition process for all kinds of learners: children, adolescents and adults, even if the amount of exposure, learning situation and data collection procedures are different..

CHAPTER I : INTRODUCTION

One of the most important practical considerations in the teaching of English in Japan is the preparation of teaching materials. At present, the Japanese government uses a standard syllabus for all schools. This influential syllabus provides, among other things, a list of grammatical structures to be taught, and the order in which they are to be taught. Yet there is no scientific research basis for this order of teaching.

Recently, there has been considerable research on the "natural" order of acquisition of grammar. There have been studies of children learning their native language as well as studies of children and adults learning foreign languages. Usually, a limited set of grammatical morphemes is studied so that comparisons among different studies can be easier. Findings show that most often the "natural" learning sequence for these grammatical morphemes is quite different from the sequence prescribed in the textbooks.

Some research controversies still exist. It is not clear whether the acquisition of these grammatical morphemes is exactly the same order for children and for adults, for first- and second-language learning, or for those who have had strong influence on their "natural" learning. Hakuta's research (1974a and b) is only one significant study which has been done on a Japanese child, and there have been no studies specifically on teenagers learning English as a second language in secondary schools. This research attempts to add to theoretical knowledge in these areas.

At the same time, experts in language teaching have looked forward in anticipation to new scientific knowledge about the actual sequences of learning. It is possible that this knowledge could be applied to present teaching materials to change and improve them. A study of the real sequence of learning of English grammatical morphemes by Japanese students could influence the design of the government *Course of Study*.

Research in acquisition orders is in turn based on a research design called "error analysis". Much recent pedagogical and linguistic research has dealt with the analysis of learners' errors in second-language acquisition. Usually the error analysis has taken the form of classification of errors produced by the learners and has been undertaken for the purpose of gaining insights into the language acquisition process (Richards, 1974). Dulay and Burt (1973 and 1974b) advocate a creative construction theory in language acquisition, which emphasizes the learners' innate ability and creativity. According to this theory, the child has his own mechanisms which guide his

discovery of the rules of the language; he constructs and creates rules of his own that are similar to and simpler than adult rules, without the help of explicit instruction in correct structures. A second-language learner can actually 'reconstruct' linguistic rules of the new language, largely independent of the knowledge of the structure of his first language (Dulay and Burt, 1973: 247). In other words, the second-language learner, like the child, appears to use his simplified language to express himself in the early stages and to approximate the target grammar through successive developmental steps involving the teaching of "hypotheses" as to the nature of the linguistic system that he is learning. Errors, then, may be natural and even necessary to second-language acquisition, but the types of errors the second-language learner produces might be different from those of first-language speakers.

Over the past several years, research in second-language acquisition has focused on certain grammatical features of the second language in terms of acquisition order. The majority of the second-language acquisition studies have attempted to analyze errors produced by children and adults, but not by adolescents. Grammatical morpheme studies seem to be most common: Brown (1973), de Villiers and de Villiers (1973), Dulay and Burt (1973, 1974a and b), Bailey, Madden and Krashen (1974), Hakuta (1974a and b), Larsen-Freeman (1975a and b), Fathman (1975a and b), Krashen, Sferlazza, Feldman and Fathman (1976), Rosansky (1976), Porter (1977), Krashen (1977b), Krashen, Houck, Giunchi, Bode, Birnbaum and Strei (1978), Houck, Robertson and Krashen (1978) and Fuller (1978) have all attempted to establish an order of acquisition for certain morphemes. Most of these L2 morpheme acquisition studies result in "approximately the same" acquisition order of English morphemes among children and adults learning English as a second language, regardless of their linguistic and cultural backgrounds. From this evidence, Dulay and Burt (1973, 1974a and b) hypothesize that the creative construction process results in a similar acquisition order of morphemes for all learners of English as a second language. A prominent exception to this hypothesis is Hakuta's study of a Japanese child (1974a and b).

The study proposed here, conducted in Hokkaido, Japan, was designed to examine the Dulay-Burt hypothesis in terms of Japanese adolescents between the ages of 13 and 15 who have received only formal instruction in English as a second language in Japan. The research also attempted to determine the order of acquisition of nine English grammatical morphemes by the Japanese subjects according to the variables of grade (8th and 9th grade), English language textbook used (*Total English* and *Prince English*) and location of school (rural and urban).

It is now commonly believed that error analysis might be of great help in preparing instructional materials. As to the design of pedagogical grammars, Corder states that "the effectiveness of the preparation and practicing of linguistic materials must ultimately depend upon what is discovered about the actual processes and strategies of language learning, that is, on performance analysis" (1975: 213). Also concerning the relevance of performance analysis to the design of syllabuses, he says it "is based on the notion that there is some 'natural' sequence of elaboration of the approximative system of the second-language learner and that when/if this can be well established it would provide a psychological logic to the ordering of material in a syllabus." However, "up till now little experimental work has been done in actually trying out teaching sequences in the light of error analysis" (1975: 213). This study proposes to examine these

sequences.

Chapter II of this study gives a review of literature on English morpheme acquisition studies emphasizing major works such as those of Dulay and Burt (1973, 1974a, b and c), and Bailey, Madden and Krashen (1974). Chapter III gives the plan of the study and major hypotheses, and Chapter IV presents the actual research design and method of the study. Chapter V provides the results of the analysis and a discussion of these results. Chapter VI gives the conclusion of the study, and includes implications for error analysis research and pedagogical implications for second-language acquisition in general and English language teaching in Japan.

CHAPTER II : REVIEW OF THE LITERATURE

In the course of learning a second language, errors have been considered an indication of the difficulties the learners have had with certain aspects of the language (Lado, 1957: 59). These errors have been also considered to appear whenever their first language and second language are different[1] at all linguistic levels. In one theory, the contrast between the first and second language is the key to the difficulty of learning an item. Therefore, errors will vary according to the distance of the learner's first language from the second language. More recently, quite a different point of view has emerged on these errors. Corder (1967), the first to introduce the Error Analysis Hypothesis, states that errors in second language are systematic and they play the same role in our study of second-language learning as differences between child and adult speech play in the study of first-language acquisition. Corder (1967) believes:

> It is in such an investigation that the study of learmer's errors (in second language acquisition) would assume the role it already plays in the study of child language acquisition, since. . . the key concept. . . is that the learner is using a definite system of language at every point in his development, although it is not the adult system in the one case, nor that of the second language in the other. The learner's errors are evidence of this system and are themselves systematic (p. 166).

If second-language learners' errors are systematic, how are they organized, and what do they imply about the nature of second-language acquisition?

Recent studies in the analysis of second-language learners' errors take a cognitive development approach to 'error analysis' (Corder, 1967; Nemser, 1971; Selinker, 1972). A central point for the investigations might be the analysis of the errors made by learners since they represent the most significant data on which a reconstruction of his knowledge of the target language could be made. It is argued that a language user possesses a set of cognitive structures acquired by certain processes, and "the child's errors are not indicative of faulty learning nor of a need for instructional intervention. Rather, making errors is a necessary condition in the learning process" (Dulay and Burt, 1974c: 135). It seems certain that one's first language is actually acquired by making errors through first simplifying and over-generalizing the rules and then generalizing

and reconstructing the rules of the target language with a much less degree of imitation (John-Steiner, personal communication, 1966). Corder concludes that it will be useful to use the term *error* to refer to the systematic errors of the learner from which we are able to reconstruct his knowledge of the language to date, i.e., his *transitional competence* (1967: 167). From the discussion above, we can assume that a learner's errors provide evidence of the system of the language that he is manipulating at a particular stage in the course of language acquisition.

The terms "interlanguage"(Selinker,1972), "approximative system"(Nemser, 1971), and "idiosyncratic dialects" (Corder, 1971) are used to describe the progressive or transitional stages by which the learner moves from native language competence to the target language competence. Nemser's term "approximative system" emphasizes the transitional and dynamic nature of the language system, while Selinker's term "interlanguage" stresses the structurally intermediate status in learning a second language, since it naturally differs from the actual rules of the second language. Selinker (1972) also devotes considerable space to the phenomenon of "fossilization" to refer to permanent characteristics of the second-language speech irrespective of the age at which the second language is acquired or the amount of instruction in it. Oller and Vigil (1976) extend the notion of fossilization to any case where grammatical rules become relatively permanently incorporated into a psychologically real grammar, and found "the tendency toward fossilization of either correct or incorrect forms is governed by feedback principally on the cognitive dimension" (p. 281). Corder (1971) refers to these systems as "idiosyncratic dialects" of the target language.

In a series of studies, Dulay and Burt (1972, 1973, 1974a, b and c) have tried to find an appropriate theory of second-language acquisition as an alternative to the traditional 'habit-formation' theory. As the basis of their "creative construction" process, Dulay and Burt (1972: 242) have made explicit the assumptions on which the theory must rest:

1. The language learner possesses a specific type of innate mental organization which causes him to use a limited class of processing strategies to produce utterances in a language.
2. Language learning proceeds by the learner's exercise of those processing strategies in the form of linguistic rules which he gradually adjusts as he organizes more of the particular language he hears.
3. This process is guided in L1 acquisition by the particular form of the L1 system, and in L2 acquisition by the particular form of the L2 system.

Dulay and Burt (1972 and 1973) argue that the errors made by children learning a second language are similar to those that children make in learning their native language. These errors typically involve simplification, rule over-generalization, and the reduction of morphological redundancies in adult second-language acquisition. After Dulay and Burt (1973) discussed the differences between the "habit formation" and the "creative construction" hypotheses, they (1973) reached the conclusion that "the child is 'reconstructing' the new language independently of his knowledge of the structures of his first language. Thus, errors due to transfer of L1 structures onto L2 structures should not occur" (p. 247). Errors made by second-language learners which do

not derive from transfer from another language are called "intralingual" or "developmental" errors (Richards, 1971b). Richards extends the Dulay-Burt interpretation of errors made by second-language learners by pointing out that "the error types (in second language acquisition) should be the result of the processing strategies the child uses to organize and produce the new language. These are called 'developmental' errors similar to those of children learning that language natively" (Dulay and Burt, 1973: 247). It seems that "developmental" errors reflect a speaker's competence at a particular stage, and "may represent either a transitional stage in the development of grammatical rule or the final stage of the speaker's knowledge" (Richards, 1971b: 21). Bailey, Madden and Krashen (1974), Larsen-Freeman (1975a and b) and Fathman (1975a and b) found that the adults operate under a similar strategy of grammar simplification.

Dulay and Burt (1972, 1973, 1974a, b and c) analyzed the speech of children learning English as a second language. In their investigations of child second-language acquisition, they have resorted to techniques similar to those proposed by Brown (1973) for the study of first-language acquisition. They have utilized a technique called the *Bilingual Syntax Measure* (Burt, Dulay and Hernandez, 1973) which is an instrument designed to elicit natural speech from children, and which consists of a set of cartoons and an accompanying set of questions which the children are asked. They classified the errors[2] of child learners of English as a second language into the four following categories (1972: 244—45 and 1973: 248):

1. Interference-like goofs— those that reflect the learner's L1 structure, and are not found in L1 acquisition data of his target language.
2. L1 Developmental goofs— those that do not reflect the learner's L1 structure, but are found in L1 acquisition data of his target language.
3. Ambiguous goofs— those that can be categorized as either interference-like goofs or L1 developmental goofs.
4. Unique goofs— those that do not reflect L1 structure, and are also not found in L1 structure, and are also not found in L1 acquisition data of the target language.

The first three of these errors are somewhat related to *interlingual* errors (Selinker, 1972), *intralingual* errors (Richards, 1971b), and *hypothesizing false concepts* (Richards, 1971a), respectively.

Selinker's "interlingual" errors are caused by interference from the mother tongue. Dulay and Burt (1974c) report that only 4.7% of all errors could be ascribed to this cause in the case of child learners (p. 132), while George (1972) notices that as many as one-third of the errors could be attributed to this kind of cause. Here, we must point out that various factors such as age, the amount of exposure to the target language, the methods of teaching motivation and attitude may result in different proportions of these transfer errors. Richards' "intralingual" errors (1971b) do not reflect features of the mother tongue at all, but result from the learning process *per se*. Any learner seems to make inductive generalizations about the target language system on the basis of the data to which he is exposed. He will tend to over-generalize the system by analogy first and reconstruct it afterwards. These types of errors may be regarded as developmental errors cate-

gorized by both Richards (1971a) and Dulay and Burt (1973), since similar processes are regularly observed in child-language acquisition studies. These errors seem to be independent of the mother tongue of the learner, and Dulay and Burt (1973) suggest that some errors are common to all learners of any given second language, regardless of their linguistic backgrounds. The third type of error is caused by faulty teaching techniques or strategies, which Richards refers to in this process as "hypothesizing false concepts" (1971a: 210). This type cannot be classified as either interlingual or intralingual errors. The same source of errors is regarded as "redundant error" (Corder, 1973) from a language acquisition point of view.

Dulay and Burt (1972) believe that this kind of classification shows that the distribution and the nature of these errors are substantially the same as those of children acquiring their first language. The only difference in L2 learning is a very small proportion of first-language interference errors. This observation leads them to postulate the L1 = L2 hypothesis. According to Dulay and Burt (1972), this L1 = L2 hypothesis, in opposition to the contrastive analysis hypothesis, "holds that children actively organize the L2 speech they hear and make generalizations about its structure as children learning a first language do.... Therefore, the goofs expected in any particular L2 production would be similar to those made by children learning that same language as their first language" (p. 236). This contradicts the contrastive analysis hypothesis that "while the child is learning a second language, he will tend to use his native language structures in his second language speech, and where structures in his first language (L1) and his second language (L2) differ, he will goof" (p. 236). This hypothesis also brings out that the acquisition of a second language goes fundamentally through the same process, as far as children are concerned, as the acquisition of a first language, and that sequential development of the approximative system is substantially the same in both cases regardless of the first language of the learner. Ervin-Tripp, moreover, suggests that when older children learn a second language, they may regress to processing strategies similar to those in first-language acquisition when faced with data in a second language (1974: 126).

In the area of second-language acquisition, many researchers such as Ravem (1968), Ervin-Tripp (1974), Milon (1974), Dulay and Burt (1974a and b), Fathman (1975a and b), Krashen, Sferlazza, Feldman and Fathman (1976), Rosansky (1976), Krashen (1977b), Krashen, Houck, Giunchi, Bode, Birnbaum and Strei (1977), Houck, Robertson and Krashen (1978) and Fuller (1978) largely agree that a great many of the errors made by second-language learners cannot be derived from their first language, and there is a considerable agreement among them in acquisition order of grammatical morphemes. However, Hakuta's report (1974a) of a Japanese-speaking child learning English and some tasks of Larsen-Freeman's result show a different acquisition order. From these studies, I conclude that certain questions regarding L2 acquisition orders are yet unsolved at the present time. I believe that many more studies on L2 acquisition order are needed in order to determine whether there exists a single universal order. My study will provide more information as to second-language acquisition.

Using three methods of speech analysis (the Group Score, the Group Means and the Syntax Acquisition Index), Dulay and Burt (1974a) found that the acquisition orders of eleven grammatical morphemes (eight in the 1973 study) of English obtained from Spanish- and Chinese-

Table 1 Comparison of L1 and L2 Acquisition Orders of English Grammatical Morphemes[3]

	L1 Rank Orders				L2 Rank Orders			
	Brown	de Villiers		Porter	Dulay-Burt			Hakuta
		I	II		GS	GM	SAI	
Prog	1	1.5	2	1	3	2.5	2.5	2
Art	5	4	5	6	1	1	2.5	7
Plu	2	1.5	1	2	4	4	5	6
Cop	8	6	6	3	2	2.5	1	2
Poss	4	5	7	7	8	7.5	6.5	4
Aux	9	9	9	4	5	5	4	2
R-past	6	7.5	4		6	6	8.5	9
3rd	7	7.5	8	8	9	9	8.5	8
I-past	3	3	3	5	7	7.5	6.5	5

	L2 Rank Orders				
	BMK	Rosansky		Larsen-Freeman	
		GS	GM	Speaking-I	Speaking-II
Prog	1	1	1.5	1	2
Art	4	4	3	3	4
Plu	3	3	1.5	5	5
Cop	2	5	4	2	1
Poss	8	6	6	9	6
Aux	5	2	5	4	3
R-past		8	8	6	9
3rd	7	9	9	7	8
I-past	6	7	7	8	7

speaking children of ESL are *approximately the same* (1974a: 37), and the sameness provides strong evidence that children exposed to natural language acquire certain structures in a universal order. Again, Dulay and Burt (1974b) have compared nine out of Brown's fourteen grammatical morphemes in a study on second-language acquisition order with the ones studied by Brown (1973) in first-language acquisition. Table 1 is a comparison of the first-language acquisition and the second-language acquisition orders obtained by major researchers: we may well ask if these varied rank orders demonstrate great similarity or substantial differences.

Dulay and Burt, by and large, have studied the natural speech of children learning English as a second language whose learning environment has been informal. The problems which still have to be resolved are the influence of the language learning settings, the nature of the language data, and communicative functions of the target language[4] studied. It seems that these variables may influence the 'natural' sequence and the nature of the approximative systems. Similarly, the exposure of adults to natural speech might also result in an order different from the one they obtained. At present, unfortunately, very little is known about the effects of such different types of language learning environments on the shape of the child's speech product.

Bailey, Madden and Krashen (1974) corroborated the adult acquisition order of of grammatical morphemes found for the children by Dulay and Burt (1974a). Their study seems to suggest that

adults of different language backgrounds encounter a similar acquisition order for function words, and that the adult orders of morphemes are very similar to those found for children learning English as a second language in the Dulay and Burt study (1974a). Bailey, Madden and Krashen found a "highly consistent order of relative difficulty in the use of the functors" (1974: 235) by seventy-three adult learners of English as a second language. The adult acquisition order, however, was significantly different from both of the L1 orders discovered by de Villiers and de Villiers (1973) and by Brown (1973) (see Table 1).

Larsen-Freeman (1975a) administered a battery of five tasks (speaking, reading, writing, listening and imitating) to twenty-four adult ESL learners, six from each native-language background (Arabic, Japanese, Persian and Spanish), in order to assess whether the reported acquisition sequence of grammatical morphemes for second-language learners would be found to exist in tasks other than those requiring speech production. Through the speaking test, the *BSM*, which was used as a means of data-elicitation, the acquisition order she obtained was nearly identical to that found in Bailey, Madden and Krashen (1974) and it was not significantly different from that of the child order in the Dulay and Burt study (1974a). Larsen-Freeman also found a high level of concordance across language groups with regard to morpheme sequencing within each task, although individual and language group variability was apparent (1975a).

It is also interesting to note that a "natural order" (Dulay and Burt, 1973, 1974a, 1975a; Bailey, Madden and Krashen, 1974) does not emerge in Larsen-Freeman's written test, because, we may suppose, of the instrusion of conscious linguistic knowledge. The result of her written task, of course, affects the present writer's use of a writing test in the present study. Larsen-Freeman's writing task asks her subjects to fill in with a correct word or rewrite the word in the parentheses in the space provided, while my test is designed to obtain written responses from my subjects in asking them to complete sentences, which is the so-called open-ended written test.

In comparing morpheme sequencing across Larsen-Freeman's five tasks for all subjects (1975a), there was not the same high degree of relationship. That is, Larsen-Freeman found relatively similar, but not identical, acquisition order[5] in ten functors for the subjects with four different linguistic backgrounds to the one found in the Dulay and Burt study (1974a), as well as the one found in the Bailay, Madden and Krashen study (1974).

Fathman (1975a), who used the *SLOPE* test, an oral production battery, had as subjects sixty Korean- and another sixty Spanish-speaking children between the ages of six and fourteen in order to list the order of acquisition of certain morphemes and syntactic patterns. All of the children had been in the United States for one year and were learning English as a second language in public schools throughout the Washington, D. C. area in different types of learning situations, with the primary source of the general English speaking school environment. Her findings showed that few differences existed in the acquisition order of the Korean and Spanish children, and in the order of which structures were learned for children from various schools, suggesting neither language background, age, nor learning situation in her study seemed to have a great effect on the order of acquisition in second language. However, in her study (1975a), she concludes that there are no major differences observed in the ordering in which children of different ages learned to produce the structures included in the test. That is, age, language

background and learning environment did not seem to change the order of morpheme acquisition, although there appeared to be a difference in the rate of learning of English phonology, morphology and syntax based upon differences in age. Her order is in agreement with the results reported by Dulay and Burt (1974b), Bailey, Madden and Krashen (1974) and Krashen, Madden and Bailey (1975).

The studies of Hakuta (1974a and b) are unique in research on second-language acquisition. He elicited data from the natural speech of a five-year-old Japanese girl learning ESL, but did not find the same orders as reported in other studies (such as Dulay and Burt, 1974a) of child second-language acquisition, nor with adults (see Bailey, Madden and Krashen, 1974, and parts of Larsen-Freeman, 1975a and b). Nevertheless, Hakuta examines the eight morphemes which are common to most second-language acquisition research projects reviewed in the present study. Surprisingly, Hakuta's analysis of acquisition order reached a statistically significant correlation with one of Larsen-Freeman's analyses for Japanese adults (Larsen-Freeman, 1975a: 418). Hakuta, of course, took issue with the L1=L2 hypothesis which he argues is much too simplistic an explanation of a very complex process. Hakuta accordingly regards L2 acquisition "not as the unfolding of anything grammatical but as the formation and effective execution of strategies" (1974a: 19). He draws a conclusion from his research as to the formation of these strategies that children use both their first language and generalizations from whatever data they have in their second language.

Two other studies on Japanese subjects, Milon (1974) and Gillis (1975), must be mentioned. Milon studied only one Japanese child learning English in Hawaii, while Gillis studied two Japanese children learning ESL in Canada; both studies done in a naturalistic setting. Milon restricted his analysis to the system of negation as it developed in the speech of three native speakers as described by Klima and Bellugi (1973). He has shown that the utterances of the subject were described by Klima and Bellugi's rules for Periods 1 and 2 and were moving toward the complexity that they show for Period 3. From his research, he hypothesizes that "any child who is learning a second language functioning within the culture of that language... makes use of the same learning strategies used by native speakers of that language" (p. 143). On the other hand, Gillis analyzed those morphemes which were related to verbs (past regular and irregular, third person regular and irregular, copula, auxiliary and possessive). As a result, she (reported with Weber, 1976) found "a striking basic similarity between first and second language learning" (p. 77) from the analysis and comparison of their subjects' language to first-language acquisition data shown in the study of Klima and Bellugi (1973).

Comparing the acquisition orders of three Japanese children (two boys for Gillis and one girl for Hakuta), Hakuta (1976) also notices that "even within the same L1 background, the order seems variable, at least, for the verb-related morphemes" (p. 343). It is needless to say that the two languages, Japanese and English, differ markedly at all linguistic levels. This is part of the motivation for the present research.

More recently, Krashen, Sferlazza, Feldman and Fathman (1976) showed more evidence for a natural sequence in adult second-language acquisition, utilizing Fathman's *SLOPE* test which consists of a series of pictures obligating occasions for target items. They found that difficulty

order is virtually the same regardless of L1 backgrounds and it is not significantly different from that found in children learning English as a second language in previous studies (Fathman, 1975a). These results, of course, confirm and extend the Bailey, Madden and Krashen findings (1974). This fact may suggest that all learners follow a "natural syllabus" that is independent of the way or order which the linguistic data is given to them. However, the importance of the Krashen, Sferlazza, Feldman and Fathman study (1976) includes the following predictions:

> the change in difficulty order may have been brought about by the subjects' having altered their output, under the influence of a consciously learned and more idiosyncratic pedagogical grammar..... It is also predicted that formal learners will show a different difficulty order on the SLOPE when more response time is allowed (p. 150).

The statement above indicates that we should expect a different result from a consciously monitored task like writing than from a spontaneous task like an oral interview. This is another problem for the present writer's research design. At any rate, their conclusion is that both child and adult ESL learners have very similar acquisition orders in spoken English tests, regardless of their linguistic backgrounds and their learning environments. Here, again, there are some differences in rank order of morpheme acquisition among L2 studies, especially between data elicited from spoken and written responses. That is, L2 acquisition order has not been resolved.

Rosansky (1976) examined a one hour taped natural speech protocol for each of several untutored Spanish speakers learning English as a second language. The sample consisted of two children, two adolescents and two adults. Rosansky's morpheme order correlated with the other orders observed in several other studies. It did not correlate well with Hakuta's order, though it did with de Villiers and de Villiers' L1 order.

Krashen (1977b) argues that when adult ESL performers produce English under "monitor-free" conditions, their difficulty order for grammatical morphemes is similar to that seen in child second-language performance (Dulay and Burt, 1975a). The appearance of the child's difficulty order under these conditions is hypothesized to be the manifestation of the creative construction process in adults (Krashen, 1977a), and when pencil and paper "grammar" type tests are used, adult performers can focus on form and have time to think about specific rules, and the "natural order" of grammatical morphemes is disturbed (1977b : 146). He also proposes "natural order" for second-language acquisition and agrammatics (1977b: 149) as shown in Figure 1.

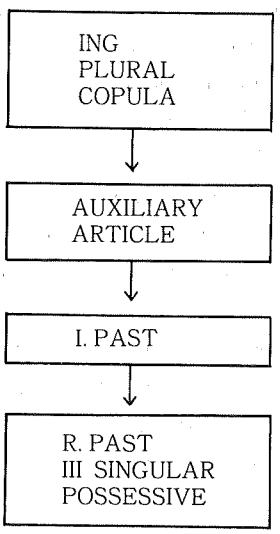


Figure 1. Proposed "Natural Order" for Second Language Acquisition and Agrammatics (Adopted from Krashen, 1977b:149)

Fuller (1978) recently gave the *SLOPE* test both oral and written to ESL students in the U. S. and also found significant correlations with other L2 studies, which we called the "natural order" following Krashen (1977b). A hypothesis that explains her results, as well as most of other recent studies (Houck et al., 1978; Krashen et al., 1978), is that we get a natural order only when we give subjects a real grammar test (discrete-point test). This has been considered to be true for subjects acquiring a second language in a natural (second language, not foreign language) environment, where a great deal of acquisition was possible.

By and large, the L2 acquisition order of English grammatical morphemes across a variety of L1 backgrounds holds not only in adults (Bailey, Madden and Krashen, 1974; Larsen-Freeman, 1975a; Fuller, 1978), but also in children (Dulay and Burt, 1973, 1974a and b; Fathman, 1975a and b), although this order is different from L1 orders. Of course, comparing these studies reported and reviewed in the present study so far is not simple at all, because methods of data collection and scoring procedures are different to some extent among these studies. Studies utilizing the *BSM* and the *SLOPE* test show a strikingly high correlation in their acquisition, order (Dulay and Burt, 1973, 1974a; Bailey, Madden and Krashen, 1974; some tasks of Larsen-Freeman, 1975a; Fathman, 1975a and b; and Krashen, Sferlazza, Feldman and Fathman, 1976), but the data elicited by Hakuta (1974a and b) resulted in different orders. It is not clear why the *BSM* and the *SLOPE* studies show invariant results or why Hakuta's findings are inconsistent with the others. As to the *BSM*, Porter (1977) argued that "the previous order of morpheme acquisition obtained through research on L2 learners was probably in artifact of the Bilingual Syntax Measure testing situation" (p. 47). To Porter's conclusion, Krashen (1978) brought forth a counter-argument by showing clear agreement between *BSM* and spontaneous speech (and writing) morpheme orders that "the L1 order by Porter is not 'highly dissimilar' to child L1 order obtained using spontaneous speech, and the degree of similarity between Porter's L1 order and *BSM* L1 order is not inconsistent with previous findings" (p. 187). Then, how can we explain Hakuta's results? Concerning the question of individual variation in morpheme orders, Krashen (1977b) also hypothesized an average order for child and adult second-language acquisition, and argued that all studies that included at least ten obligatory occasions for each morpheme would show significant correlations with his 'natural order.'

As we have seen above, we cannot determine at present whether the L2 acquisition order is a universal or differential process. Most L2 studies seem to show a universal order, except some of Larsen-Freeman's tasks and Hakuta's study, and L2 performers under the Monitor Model conditions did not show this universal order. This is one reason for all of these matters to provide motivation for the present study. The procedures will be discussed in more detail in the next chapter. No work is available at present on the acquisition order of English morphemes using written data elicited from Japanese adolescents. Although there are several small and specific case studies on error analysis in general, there is no study of acquisition order of English morphemes.

CHAPTER III : PLAN OF STUDY AND MAJOR HYPOTHESES

As reviewed in the previous chapter, there has been fairly extensive research on both the first language acquired by children and the second language learned by children and adults. There are two competing hypotheses on second-language acquisition: Dulay and Burt believe the order of English morpheme acquisition is universal regardless of first language (1974b). Yet contrastive analysis theory predicts that the order depends heavily on the contrast of L1 and L2. Limited research supports both positions. Most of these studies above (except the one by Hakuta) resulted in "approximately the same" acquisition order of English morphemes among children and adults learning English as a second language, regardless of their first language and cultural backgrounds. This acquisition order is, however, slightly different from those of children learning English as a mother tongue. Dulay and Burt hypothesize that the creative construction process results in similar acquisition order of morphemes for all learners.

Although Dulay and Burt denied the effect of native language interference on the ordering of morphemes (1972: 241—44), Hakuta (1974a and b) found a different order for his Japanese subject than that of Dulay and Burt for their Spanish and Chinese subjects. Larsen-Freeman's results were also different from the one obtained by Hakuta. However, interestingly enough, the orderings by Hakuta's Japanese subject and the Japanese subjects of Larsen-Freeman on a speaking task were significantly correlated at the .05 level. The Spearman rank correlation coefficient was .79 (Larsen-Freeman, 1975b: 75). Larsen-Freeman, at this point, states "Language background, then, does seem to have some effect in accounting for the different morpheme ordering among language groups" (1975b: 75). That is, the research by Hakuta showing L1 contrasts seems to be unique and important as well. However, Larsen-Freeman summarizes her study by describing that an invariant order of morpheme acquisition does not exist when elicited by different tasks, although there is high concordance among language groups for their ordering of morphemes on four of the five tasks.

In this respect, it would be interesting to see if the ordering of English morphemes in this study differs from those obtained by Dulay and Burt, and others, even if the amount of exposure to the target language, the number of years of instruction, the types of textbooks the subjects used and the locations of schools (rural and urban) are different. In short, the main purpose of this study is to examine the Dulay and Burt hypothesis (1973, 1974a and b) in terms of Japanese adolescents (ages 13 to 15) who have received only formal instruction in English as a second language in Japan. The study proposed here will investigate the types and frequencies of errors made by the subjects and attempt to determine the order of morpheme acquisition in English.

There is no systematic and comprehensive research available for orders of morpheme acquisition of Japanese adolescents learning English as a second language, although there is a little research on ESL Japanese children (Hakuta, 1974a and b; Gillis, 1975; and Milon, 1974) and adults (Larsen-Freeman, 1975a and b). No research has been available on written data in this area elicited from Japanese adolescents. Neither has any research been done on the learning of English as a second language through different textbooks and different locations of schools.

The hypotheses tested in this study, therefore, are as follows:

1. There is no difference in acquisition order of the morphemes between Japanese 8th graders and 9th graders.
2. There is no difference in acquisition order of the morphemes between Japanese adolescents using different textbooks.
3. There is no difference in acquisition order of the morphemes between Japanese adolescents of rural and urban schools.
4. There is no difference in acquisition order of the morphemes between written data elicited from Japanese adolescents and spoken data elicited from Dulay and Burt's subjects.

The present study will differ in details from other studies in the following aspects:

a) Adolescents versus children and adults: There is only one study on adolescents as subjects learning English as a second language— that is the Rosansky study (1976). She used two adolescents as subjects. Her grouped rank ordering of means statistically correlates with the *BSM*-generated order of morphemes observed by other researchers (1976: 418). In addition, Fathman (1975a and b) indicates that her children's order is not significantly affected by differences in ages from other studies of adults.

b) Written versus oral testing: There are several research studies on written testing, although most L2 morpheme acquisition studies are based on oral testing. Among these are Larsen-Freeman (1975a and b), Krashen, Sferlazza, Feldman and Fathman (1976) and Fuller (1978). Larsen-Freeman's writing task correlated with her reading task in both Phases I and II, and with speaking in Phase I at the .05 level of significance, but did not correlate with listening and imitating tasks in either Phase. Further, her writing task did not correlate with the Dulay and Burt *BSM* study (1974a). Krashen, Sferlazza, Feldman and Fathman (1976) found that when the *SLOPE* was administered to a subgroup of the subjects so that their responses were in writing, some traces of a different order were obtained. Fuller's study (1978), on the other hand, shows that the oral and written orders were found to be similar within each group. She also hypothesizes that "although... an order resulting from conditions that permitted monitoring (e.g., writing) would differ from an order produced under conditions when monitoring was not as likely (speaking naturally), the similarity in the oral and written orders indicates that a stable order was obtained in both modes" (1978: 14). This study will possibly clarify whether there is an invariant order between written and oral testing.

c) Effect of differing textbooks: We should notice that there is a complete absence of research on the difference of textbooks. If the contrastive analysis theory holds, it seems possible that different textbook orders for teaching the morphemes could have variable results.

d) Effect of differing quality of schools: There is no research available on differing quality or locations of schools. In Japan, most English teachers have to teach subjects other than English, and moreover, non-licensed teachers teach English at schools in rural areas. In other words, most schools in rural areas are small and involve combined grade levels in a single classroom. We might expect that the teaching of English in these conditions may result in a contrast with instruction in more ideal situations.

e) Verification of longitudinal effects by inclusion of two levels: The present study will be the first in testing a possible longitudinal effect across two different grade levels, because this kind of study has not been done before as far as I know. One cause of variation in acquisition order might be the amount of exposure to or instruction of English.

In short, many variables in this study are unique. Perhaps, the most important point to stress is that adolescents had not been used as subjects largely in previous studies of English morpheme acquisition order. Dulay and Burt (1974a), Hakuta (1974a and b), Fathman (1975a and b), Gillis (1975), Larsen-Freeman (1975a and b), Krashen, Sferlazza, Feldman and Fathman (1976), Krashen (1977a and b) and Fuller (1978) used subjects living in the United States and learning English as a second language. The subjects in this research studied English as a second language living in a non-English speaking milieu and having English instruction as one of the school subjects from mostly non-native speakers of English for only three or four hours a week for two or three years.

CHAPTER IV : RESEARCH DESIGN AND METHOD

Subjects

The total number of subjects sampled was over 1,100 in 33 classrooms which were randomly selected and whose teachers, fortunately, all volunteered to participate in the study. The schools are located in the Prefecture of Hokkaido, the northern part of Japan, which is my native state. The classrooms were selected through stratified random sampling. There were eight subgroups of subjects for this study: all combinations of the following variables: 1) grade: 8th and 9th, 2) English language textbook used: *Total English* and *Prince English,* and 3) location of school: rural and urban. All subjects are native speakers of Japanese who received either two-years (for the 8th graders) and three-years (for the 9th graders) of instruction in English as second language. Other subject-matter instruction is conducted exclusively in Japanese in formal junior high school settings. However, only 777 out of more than 1.100 subjects were scored, because some of them gave answers in Japanese, no answers at all, random answers, or gave just a few words for the whole test.

Textbooks

All the textbooks used at school have to be authorized by the Ministry of Education. However, there are now four kinds of English textbooks available to junior high school students in Japan, which are more or less based on structural linguistic approaches and/or learning theories from general psychology. The two which are most widely used in Hokkaido are included in this study: *Total English Junior Crown Series* (*Total English*) and *New Prince English Course* (*Prince English*). By and large, the contents of these textbooks such as the number of vocabulary words, structural patterns and morphemes as well, are quite similar and homogeneous, because these items are prescribed in the *Course of Study* by the Ministry of Education. The only difference between the two textbooks is the order in which grammatical morphemes are introduced or

Table 2 Arrangements of Grammatical Morphemes Introduced in Two English Textbooks

	Total English	*Prince English*
7th Grade	1 article (indef.)	1 copula
	2 plural	2 article (indef.)
	3 article (def.)	3 plural
	4 3rd person singular	4 3rd person singular
	5 copula	5 possessive
	6 possessive	6 article (def.)
	7 auxiliary	7 auxiliary
	8 progressive	8 progressive
8th Grade	9 past-regular	9 past-regular
	10 past-irregular	10 past-irregular

arranged, although no remarkable difference is found in their arrangements, as shown in Table 2: The Spearman rank order correlation coefficient for these sets is .813 which is statistically significant at the .01 level.

Schools

The subjects were also differentiated by location of school. Most of the classrooms (especially in urban areas) have 45 students, which is the maximum number of students per classroom at the junior high level, while some of the classrooms (especially in rural areas) have only a few students or, frequently, a few seventh graders and a few eighth graders in the same room. Although there is legally no clear distinction between urban and rural schools, I draw a line between the two: by coincidence, urban schools have 20 or more students in a class and rural schools have less than 20 students in the same grade. There are some further difference to be considered. According to a questionnaire that I circulated to junior high English teachers in 1977, while 96% of the teachers in the urban area deal only with English and only 5.5% of teachers of other subjects also teach English, a much higher percentage of English teachers in the rural area have to teach both English and something other than English (46%) and 39% of teachers of other subjects also teach English without a license for teaching English. Nowadays, eleven subjects are taught in junior high schools, but in a small school there are only five or six teachers in all and they have to cover all eleven subjects, dividing the work among themselves. These may be significant variables in English instruction, and might affect the level of English achievement of students and, in turn, the order of morpheme acquisition. A very low level of

Table 3 Number of Subjects Scored

	Prince English			*Total English*			
	Urban	Rural	Sub-total	Urban	Rural	Sub-total	Total
8th Graders	143	54	197	121	70	191	388
9th Graders	109	86	195	143	51	194	389
Sub-total	252	140	392	264	121	385	777

achievement might produce random morpheme acquisition orders. Table 3 shows the number of subjects scored.

Data Collection and Instrument

The data collected were written responses. I made a written test which is designed to measure adolescents' acquisition of written English grammatical structures. Oral tests such as the *BSM* (*Bilingual Syntax Measure*: Burt, Dulay and Hernandez, 1973) are designed to elicit spoken responses. It would have been natural to use an oral test rather than a written test in order to compare results, but the *BSM* and other oral tests require that the subjects actually talk a great deal in the language tested. Japanese students are not accustomed to expressing themselves in their classes, either in English or even in Japanese. It is almost impossible for us to elicit spoken responses from those who have little practice in expressing themselves.

All of the data were collected using my test which is designed to elicit written responses. The test consists of three pictures accompanied by several test questions each pertaining to the pictures. The test questions are designed to elicit the use of the nine selected English grammatical morphemes common to second-language acquisition researchers and to be covered in class by the end of 8th grade. The test is composed of 20 test questions altogether and includes three to four expected contexts each for the nine functors investigated in this study.

The test was given between February 25 and March 4, 1978. Each subject was allowed only about 45 minutes to answer the test questions. Some were not able to finish. The limit was necessary, however, because a class period is usually 50 minutes in a Japanese junior high school. In order to complete the unfinished or incomplete sentences, a subject has to write in at least one word and sometimes several words in a blank space given. In each case there is more than one possible correct answer. Different answers to the same questions can be supplied since the subjects may perceive the picture differently. The subject sometimes has to infer the answer, because the picture may not tell exactly how to answer. This kind of question was included on purpose. When a subject is learning a language, he is considered to creatively construct obligatory occasions for grammatical morphemes and he can have more freedom in this kind of test than in straight discrete-point-type tests. The freedom to complete items was judged to approximate the freedom offered in such oral tests as the *BSM*. Test questions were field tested three times to determine the maximum test length for 45 minutes and to judge the power of questions to elicit predicted answers. Native speakers of English were used to predict answers, too. At any rate, all of the sentences suggest occasions where certain grammatical items are required.

Grammatical Morphemes

Article: Under the general category "article," all of *a, the* and 0 (zero) were combined. One allomorph of the indefinite article, "an," is not elicited in this study. In Japanese, there is no grammatical structure to express the notion of definite and indefinite. Contrastive analysis predicts great difficulty for Japanese students to learn English articles.

Auxiliary: "Auxiliary" under this category is *BE*, a part of progressive aspect, not modals

such as *can*, *will*, etc. The singular and plural were lumped together, but only the "present tense" of auxiliary was dealt with in this study. In Japanese, there is no such structure as this *BE* in English. Again, contrastive analysis would predict slow learning.

Copula: The copula must agree in number and person with the subject noun and carry tense in English. Singular and plural copulas were combined, but only the present tense was elicited under this category. Although there is a structure *wa* intervening between the subject and complement in Japanese, this is different from the English copula.

Ano hito *wa* sensei *da* (or *desu*) "She is a teacher."

sensei — "teacher"

Wa is considered to be a topicalizer and *da/desu* is part of the inflection of the adjective or noun (Larsen-Freeman, 1975: 27). Consequently, there is no such grammatical structure as English copula *BE*. Though the Japanese structure has a different function from the English copula, its location may signal to the Japanese student a slot to fill something in in English, since the Japanese syntax is the same as the English one as shown above.

Past Regular: Allomorph forms of the past regular (/t/, /d/ and /əd/) (spelled *-ed*) were included under this category. It modifies the weak verb stem and implies "pastness" as used in this study. This morpheme does not carry either number or person to the verb.

Past Irregular: Past irregular conveys the same grammatical meaning as the regular past tense morpheme, and does not mark the verb for number or person. Irregular past morphemes have such a variety of phonological and orthographical composition, so that it is almost impossible to list all the allomorph forms. Auxiliaries such as *was* and *were* which require passive voice were not included in this study.

The irregular past tense morpheme is not incorporated into the verb system, but does conform to certain rules in its formation. This is considered to be one of the hardest obstacles in acquisition for both native and non-native speakers of English.

Japanese past tense connotes a completed action. The past tense morpheme is formed in different ways, depending upon the class of verb and the final consonant. Since Japanese does not have words ending in stops (Hakuta, 1974a: 31), it does not seem that Japanese students have difficulties in forming past tense forms, except for phonological composition (Larsen-Freeman, 1975b: 25) and spelling problems :

Informal:	taberu	→ tabeta		iku →	itta
	"eat"	"ate"		"go"	"went"
	yomu	→ yonda			
	"read"	"read"			
Formal:	taberu	→ tabemashita	iku →	ikimashita	
		"ate"		"went"	

Plural: Only the "short plural" (/s/ and /z/) was elicited under this category, such as inflections on nouns (for example, "pens", "books", etc.). The irregular plural ("teeth") which is a morphologically conditioned allomorph was not included in this study.

In Japanese, there are almost no plurals. *Tachi, ra* or *domo*, sometimes, are attached to the noun to convey plural notion. Otherwise, there is no singular/plural distinction except that the

nouns can be modified by quantifiers, if needed. This is according to contrastive analysis another obstacle for Japanese students learning English.

Possessive: This has the orthographically-idiosyncratic feature of being written with an apostrophe, which makes it noticeable in written from. Under this category, only the possessive marker *'s* of nouns was considered as a possessive morpheme.

In Japanese, there is a possessive form similar to the one in English. *No* is intervened between the possessor and possessed. It conveys the same meaning as "'*s*" in English and at the same time functions as the agent in possessive pronoun formation.

Progressive: "-ing" on main process verb was elicited. It has the notion of progressive action. The *-ing* ending was not elicited when it appeared as gerund, verb complement, etc. As mentioned, the auxiliary carries the number, person and tense.

Japanese has a distinction between general present and present progressive like English. The Japanese present progressive is presented by a combination of a verb form and one of the verbs corresponding to the English *BE*. However, Japanese must use the present progressive to indicate an action taking place more often than English (Larsen-Freeman, 1975b: 25).

Third-Person Singular Present: Third-person singular present is inflected with a phonologically conditioned allomorph. This was elicited whenever a singular noun or pronoun occurred in the subject position and was immediately followed by a main verb. In Japanese, there is no third-person singular present tense morpheme. This is again considered to be one of the obstacles for Japanese students.

Contrastive analysis theory has never offered a definitive hierarchy of difference which could predict a grammatical order from easiest to most difficult, but a feeling that some contrastive effect must operate has long been held by many language teachers.

Data Analysis Procedures

Obligatory grammatical responses were scored by three different methods. Only analyzable responses in the given contexts were scored and unanalyzable responses were eliminated from the study. Consequently, the number of expected contexts was reduced depending upon the number of unanalyzable or unanswered items. Some subjects skipped some test items for some reason; some might not have had enough time to finish the test; and others wrote nonsense, gave answers in Japanese, etc. The nonsense or random answers cannot be scored as grammatical "errors" (Brodkey, personal communication, 1977) and these were excluded from the study, for these do not make sense in English. If some subjects supplied as unexpected morpheme which was appropriate to the context grammatically, then credit was given to the new morpheme and the number of expected contexts for that morpheme was naturally increased. The three different scoring methods are illustrated below:

METHOD I: This method is the strictest but simplest scoring. It counts all the analyzable answers "right" or "wrong," and does not give them any partial credit at all. For instance, a mature or educated native speaker of English would never put *-ed* on *go as* in *She went to school yesterday.* However, some native speaking children of English and many non-native speakers of English add some inappropriate forms as in *She goed to school yesterday,* where a past indicative

is misformed. In the "right-wrong" system, each grammatical item in the expected context is scored as follows for Irregular Past, for instance:

(a) She *buy* it. = 0 (no form supplied)
(b) She *buyed* it. = 0 (misformed)
(c) She *did buy* it. = 0 (misformed)
(d) She *buys* it. = 0 (misformed)
(e) She *was buy* it. = 0 (misformed)
(f) She *was bought* it. = 0 (misformed)
(g) She *bought* it. = 1 (correct form supplied)

There are no questions about sentences (a), (d), (e), (f) and (g). One might question sentences (b) and (c), because these carry the notion of past tense in a sense. However, in this strict scoring system these misformed items are considered still ungrammatical.

METHOD II: This scoring method gives partial credit (0.5) to those which are misformed and carry the notion of past tense (i. e., one which makes sense as past tense in the given context). Among the example sentences above, (b) and (c) are given 0.5 instead of 0 point, because they can be considered to carry the notion of past tense, but cannot be considered to be 100% grammatical. In the case of (b), one can see the subject understands the notion of past tense and its formation as a regular verb. This is called an error caused by "over-generalization." In this case, he or she applies a regular rule in the language to an exception. Sentence (c) is an emphatic sentence from an educated speaker's point of view, but subjects do not intend to emphasize the verb at this stage and intend to convey the idea of past tense. By and large, sentences (e) and (f) can be seen as misformed, but could be seen as connoting the past tense. They pose a difficult problem of classification. Since they do not appear in studies of developmental errors of L1 learners, they could be scored "wrong" altogether (Brodkey, personal communication, 1978). Developmental errors which have appeared frequently in studies of first-language learning are easy to credit as "partially right." Other errors are given partial credit solely on the author's judgment.

METHOD III: This is the least stringent method of marking. In this method, only sentences (a) and (d) are given 0 points, and the rest are given 1 point.

In order to rank the order of the grammatical morphemes, I decided to use Dulay and Burt's Group Score Method (1974a) in determining percentages of morphemes supplied in each obligatory context. The morphemes were ranked in descending percentage order for each group and for all subjects. This method works as follows: each experimental group of subjects received one single score for each grammatical morpheme. The group score for a particular morpheme is obtained by computing a ratio whose denominator is the sum of each expected context (where each context is worth one point) for that morpheme for all subjects in the group as specified above, and the numerator is the sum of the scores for each produced context of that morpheme for all subjects. The resulting quotient is multiplied by 100. The grammatical morphemes are ranked according to decreasing group scores to yield the order of morpheme acquisition. The orders of morpheme acquisition are obtained for each group separately, and can be compared and ranked by a Spearman rank order correlation.

CHAPTER V : RESULTS AND DISCUSSION

The subjects were sampled and stratified by three major variables: (1) grade, 8th graders (8) and 9th graders (9) : (2) textbook, *Total English* (T) and *Prince Euglish* (P) and (3) location of school, urban (U) and rural (R) .

I threw out "nonsense" replies. The number of "scorable" replies obtained in this study are shown in Table 4 (the upper row indicates the number of scorable replies and the lower sensible replies). The morphemes tested include Present Progressive, Article, Plural, Copula, Possessive, Auxiliary, Regular-Past, Irregular-Past and Third Person Singular.

Table 4 Numbers of Scorable and Sensible Replies

	Scoring Method		
	I	II	III
Prog	1,173	1,205	1,226
		1,326	
Art	1,296	1,332	1,343
		1,588	
Plu	1,670	1,697	1,897
		2,139	
Cop	1,389	1,557	1,637
		2,168	
Poss	733	831	975
		1,205	
Aux	805	964	1,070
		1,435	
R-past	818	978	1,078
		1,496	
3rd	917	1,001	1,081
		1,760	
I-past	835	943	1,116
		1,610	

Tables 5, 6 and 7 show the rank orderings of nine English morphemes for all subgroups according to each scoring method:

Table 5 Rank Orderings of Nine Morphemes for All Subgroups Using Scoring Method I

	8TU	8TR	9TU	9TR	8PU	8PR	9PU	9PR
Prog	1	1	1	1	1	1	1	1
Art	2	2	2	2	2	2	2	2
Plu	3	3	3	3	3	4	3	3
Cop	5	7	5	4	8	6	4	9
Poss	4	5	4	7	4	5	6	6
Aux	6	4	7	8	9	9	5	5
R-past	7	9	6	6	7	3	9	4
3rd	9	8	8	5	6	8	7	8
I-past	8	6	9	9	5	7	8	7

Table 6 Rank Orderings of Nine Morphemes for All Subgroups Using Scoring Method II

	8TU	8TR	9TU	9TR	8PU	8PR	9PU	9PR
Prog	1	1	1	1	1	1	1	1
Art	3	3	4	2	2	2	2	3
Plu	4	5	3	4	4	5	3	4
Cop	2	6	2	3	3	3	5	6
Poss	9	4	5	8	9	9	7	2
Aux	5	2	6	6	5	8	4	7
R-past	6	8	7	5	7	4	6	5
3rd	8	9	8	9	6	7	8	8
I-past	7	7	9	7	8	6	9	9

Table 7 Rank Orderings of Nine Morphemes for All Subgroups Using Scoring Method III

	8TU	8TR	9TU	9TR	8PU	8PR	9PU	9PR
Prog	2	1	1	1	1	1	1	1
Art	4	3	3	3	2	5	2	3
Plu	1	2	2	4	4	2	3	2
Cop	3	5	7	7	6	6	6	9
Poss	5	4	4	2	3	4	4	4
Aux	8	6	5	8	5	3	5	5
R-past	6	9	6	6	7	8	8	8
3rd	9	7	9	9	8	7	9	6
I-past	7	8	8	5	9	9	7	7

Tables 8, 9 and 10 show the Spearman rank correlation coefficients for all subgroups according to each method:

Table 8 Spearman Rank Correlation Coefficients for All Subgroups Using Scoring Method I

	8TR	9TU	9TR	8PU	8PR	9PU	9PR
8TU	.850**	.967**	.733*	.700*	.750*	.883**	.733*
8TR		.733*	.533	.700*	.467	.867**	.733*
9TU			.833**	.717*	.833**	.833**	.733*
9TR				.633*	.733*	.800**	.567
8PU					.750*	.583	.683*
8PR						.500	.767*
9PU							.567

** $p < .01$
* $p < .05$

Table 9 Spearman Rank Correlation Coefficients for All Subgroups Using Scoring Method II

	8TR	9TU	9TR	8PU	8PR	9PU	9PR
8TU	.533	.800**	.950**	.933**	.850**	.833**	.383
8TR		.633*	.567	.533	.233	.767*	.633*
9TU			.800*	.767*	.600*	.817**	.733*
9TR				.867**	.900**	.867**	.567
8PU					.800**	.867**	.400
8PR						.650*	.400
9PU							.683*

** $p < .01$
* $p < .05$

Table 10 Spearman Rank Correlation Coefficients for All Subgroups Using Scoring Method III

	8TR	9TU	9TR	8PU	8PR	9PU	9PR
8TU	.783**	.750*	.667*	.650*	.583	.733*	.483
8TR		.850**	.683*	.883**	.867**	.917**	.833**
9TU			.783**	.917**	.850**	.933**	.850**
9TR				.750*	.483	.800**	.683*
8PU					.833**	.933**	.800**
8PR						.817**	.817**
9PU							.833**

** $p < .01$
* $p < .05$

For N = 9, the correlation coefficient must be .783 to be significant at the .01 level, and .600 at the .05 level.

As can be seen in Tables 6, 7 and 8, twenty-two, twenty and twenty-five pairings correlated significantly either at the .01 or the .05 level using scoring methods I, II and III, respectively, though some individual pairings (six, eight and three with respective scoring methods) did not attain correlations of statistical significance. This shows that there is a general homogeneity of morpheme orderings among all groups. Most groups exhibited similar orders in ranking the morphemes, in spite of the fact that they had different grade levels, textbooks, and urban/rural locations.

Now, we would like to discuss the results of the analysis in detail. First, our discussion will start with the relationship between the grades investigated. Table 11 shows the English proficiency of the two grades (8th and 9th).

Table 11 Rate of Correct Responses of the Two Grades (Scoring Method I)

	Order	8th graders (%)	9th graders (%)	Order
Prog	1	84.4	88.4	1
Art	2	82.3	85.4	2
Plu	3	75.8	81.0	3
Poss	4	67.3	68.7	6
Cop	5	66.6	72.8	4
R-past	6	64.0	65.3	8
I-past	7	62.3	63.9	9
Aux	8	61.5	69.7	5
3rd	9	59.7	66.5	7

We can see from Table 11 that on all the items the rate of correct responses increases from the 8th grade to the 9th grade, though the orders change slightly. (However, see Table 13 below.) This evidence shows that students generally increase in proficiency as they advance in grades.

Table 12 is a list of the rank orderings of nine morphemes by grades for all subjects with the three scoring methods.

Table 12 Rank Orders of Nine Morphemes by Grades for All Subjects Using Three Scoring Methods

	Method I		Method II		Method III	
	8th	9th	8th	9th	8th	9th
Prog	1	1	1	1	1	1
Art	2	2	2	2	3	2
Plu	3	3	4	3	2	3
Cop	5	4	3	4	5	6
Poss	4	6	8	6	4	4
Aux	8	5	5	5	6	5
R-past	6	8	7	7	7	7
3rd	9	7	9	9	8	9
I-past	7	9	6	8	9	8

The first null hypothesis to be tested for the present study is: There is no difference of acquisition order of the morphemes between Japanese 8th graders and 9th graders. Table 13 gives the Spearman rank correlation coefficients by grades:

Table 13 Spearman Rank Correlation Coefficients by Grades

	Method I-8th	Method II-8th	Method III-8th
Method I-9th	.783**		
Method II-9th		.917**	
Method III-9th			.950**

** $p < .01$

It is evident from Table 13 that all possible pairings of methods are significant at the .01 level. However, the rank orders changed little across scoring methods from the 8th grade to the 9th grade as can be seen in Table 11. We can conclude, consequently, that the amount of language instruction and/or exposure to English did not have much effect on the morpheme orderings.

Secondly, we will look at the differences between the two textbooks. Table 14 shows the rank orderings of nine morphemes by textbooks, regardless of grades and locations of schools:

Table 14 Rank Orders of Nine Morphemes by Textbooks for All Subjects Using Three Scoring Methods

	Method I		Method II		Method III	
	T	P	T	P	T	P
Prog	1	1	1	1	1	1
Art	2	2	2	2	3	2
Plu	3	3	4	3	2	3
Cop	4	4	3	4	5	6
Poss	5	5	6	7	4	4
Aux	6	6	5	5	7	5
R-past	7	7	7	6	6	7
3rd	8	8	9	9	9	8
I-past	9	9	8	8	8	9

Table 15 reveals the Spearman rank correlation coefficients by textbooks for subjects using the three scoring methods.

Table 15 Spearman Rank Correlation Coefficients by Textbooks

	Method I-T	Method II-T	Method III-T
Method I-P	1.000**		
Method II-P		.967**	
Method III-P			.917**

* $p < .01$

As can be seen in Table 15, textbooks also yield high correlations significant at the .01 level. We conclude that there is no difference of acquisition order of the morpbemes between Japanese adolescents using different textbooks. Thus, the second null hypothesis can be accepted for textbooks for all scoring methods. This was expected, since the textbooks orders themselves correlated so highly (see Table 2).

Thirdly, we will also note the relationship between the locations of schools. Table 16 gives the list of the rank orderings by locations of schools for all subjects:

Table 16 Rank Orders of Nine Morphemes by Locations of Schools for All Subjects Using Three Scoring Methods

	Method I		Method II		Method III	
	U	R	U	R	U	R
Prog	1	1	1	1	1	1
Art	2	2	2	2	3	3
Plu	3	3	4	3	2	2
Cop	4	4	3	4	5	6
Poss	5	5	7	7	4	4
Aux	6	8	5	5	6	5
R-past	7	6	6	6	7	9
3rd	8	7	9	9	9	7
I-past	9	9	8	8	8	8

Table 17 shows the Spearman rank correlation coefficients by the locations of schools for all subjects:

Table 17 Spearman Rank Correlation Coefficients by Locations of Schools for all Subjects

	Method I	Method II	Method III
	U	U	U
Mothod I-R	.950**		
Method II-R		.983**	
Method III-R			.917**

** $p < .01$

For the locations of schools, all pairings were correlated significantly at the .01 level. We conclude that there is no difference of acquisition order of the morphemes between Japanese adolescents in rural and urban schools.

Finally, from the evidence above, we can state that there is a homogeneity of ordering morphemes across all subgroups. Subgroups showed very similar orders in ranking morphemes, in spite of differences in textbooks, grades and locations of schools.

We should also compare the arrangements of grammatical morphemes in the two textbooks and the actual acquisition orders we obtained. Only eight morphemes were common to both textbooks. Table 18 gives the Spearman rank correlation coefficients by arrangements of items in the textbooks and the actual acquisition orders we found.

All these pairings had very low correlations and none of them reached any statistical significance even at the .05 level. That is, the arrangements of grammatical items in the textbooks seem to bear little relation to obtained acquisition orders.

One point which is very important at this stage is that, as can be seen in Table 12, there are very high correlation coefficients between the 8th and 9th graders. This evidence shows strong consistency though not invariability. Therefore, we may argue that the evidence for similar

Table 18 Spearman Rank Correlation Coefficients by Arrangements According to Three Methods in Textbooks and Actual Acquisition Orders

Arrangements in Textbooks	Orders of Acquisition					
	Total English			*Prince English*		
	I	II	III	I	II	III
Total English	.381	.179	.179			
Prince English				.452	.238	.286

acquisition orders for the two grades supports the notion that there exists a consistent natural sequence in English morpheme acquisition, at least for Japanese junior high school students, as far as certain grammatical structures are concerned.

Tables 19, 20 and 21 show the Spearman rank correlation coefficients on the three scoring methods by each classification variable.

Table 19 Spearman Rank Correlation Coefficients by the Three Scoring Methods for the Two Grades

	Method II		Method III	
	8th	9th	8th	9th
Method I-8th	.733*	.733*	.900**	.900**
9th	.833**	.850**	.917**	.883**
Method II-8th			.700*	.759*
9th			.917**	.933**

** $p < .01$
* $p < .05$

Table 20 Spearman Rank Correlation Coefficients by the Three Scoring Methods for the Two Textbooks

	Method II		Method III	
	T	P	T	P
Method I-T	.950**	.933**	.933**	.950**
P	.950**	.933**	.933**	.950**
Method II-T			.850**	.867**
P			.867**	.867**

** $p < .01$

Table 21 Spearman Rank Correlation Coefficients by the Three Scoring Methods for the Two Locations

	Method II		Method III	
	U	R	U	R
Method I-U	.917**	.933**	.950**	.883**
R	.833**	.850**	.858**	.783**
Method II-U			.833**	.700*
R			.833**	.767*

** $p < .01$
* $p < .05$

As can be seen in the three tables above, four pairings for the grades and one for the locations of schools had significant coefficients at the .05 level, and all others were significant at the .01 level. Thus, we can conclude that there is a high degree of correlation among the three scoring methods used in this study.

Table 22 gives the resulting rank orders by these three scoring methods combining all the variables of grade, textbook and location of school.

Table 22 Rank Orderings of Nine Morphemes by the Three Scoring Methods

	Method I	Method II	Method III
Prog	1	1	1
Art	2	2	3
Plu	3	3	2
Cop	4	4	5
Poss	5	5	4
Aux	6	6	6
R-past	7	7	7
3rd	8	9	9
I-past	9	8	8

Table 23 Spearman Rank Correlation Coefficients by the Three Scoring Method for All Subjects

	Method II	Method III
Method I	.983**	.950**
Method II		.967**

** $p < .01$

Again, the correlations reveal substantial (nearly complete) similarity.

In Chapter IV, we described the morphemes investigated, and made several contrastive analysis predictions concerning the acquisition of these particular grammatical items. One of

them was that the Japanese speaking adolescents would have trouble with the third person singular present tense marking, because the Japanese language does not have this kind of morpheme. It did, indeed, seem to cause difficulty for them. Of the nine morphemes, the third person seemed to be acquired last or next to the last, although this was introduced fairly early in the textbooks and in the classroom.

Another contrastive analysis prediction was that the plural morphemes would cause difficulty for Japanese. The actual results were not as low as we had expected, and this morpheme does not cause great difficulty. The article was also expected to cause difficulty for the Japanese students, but, surprisingly enough, this is listed as the second or third highest in rank.

The past tense morphemes (both regular and irregular) were always ranked at one of the lowest levels. Similarly they came out last among the nine morphemes in the textbooks. There are very few instances of *buyed* or *goed*, which are typical of L1 learners. There were quite a few instances of *did buy* or *did play* as well as the correct *bought* or *played*. However, there were only a few instances of *was/were buy, was/were bought, was/were play* or *was/were played* indicating pastness. Thus, there does not seem to be much over-generalization in the past tense by Japanese speakers. However, it may be argued that these forms were caused by the interference of Japanese. Those who do not know how to inflect certain verbs in the past just try to put some past marker (*was, were* and/or *did*) because Japanese past tense is formed by adding *da, shita* or *yatta* at the end of a stem depending upon the final sound, which roughly means *did.* The reason these Japanese did not over-generalize in the past tense may have been because they learned past tenses of irregular verbs as independent units or words in their pattern drills. It does not seem at this point that they had learned the rule for forming the past tense in irregular verbs yet. From this evidence, it is still difficult to determine the degree to which native language background and/or learning style or kind of instruction influences the ordering of grammatical morphemes.

We now turn to the question of comparing these results with those from similar studies by other second-language acquisition researchers. The last and most important hypothesis of this study as stated in Chapter III was as follow :

> There is no difference in acquisition order of the morphemes between written data elicited from Japanese adolescents and spoken data elicited from Dulay and Burt's subjects.

As to second-language acquisition studies, there are indications that the processes of child and adult second-language learning are not entirely different. Dulay and Burt (1974a) found "virtually the same" order of acquisition of eleven English morphemes by young Chinese and Spanish speaking ESL children as measured by the children's production of these morphemes in obligatory contexts in speech data elicited using the *BSM* developed by Burt, Dulay and Hernandez (1973). Soon after, Bailey, Madden and Krashen (1974) obtained an acquisition order (they call it a difficulty order) for grammatical morphemes for adult learners of English as a second language which was not significantly different from that found in children learning English as a second language by Dulay and Burt. Bailey, Madden and Krashen (1974) also reported no dif-

ference in acquisition order of eight morphemes between adult learners who speak Spanish as a first language and those who speak other first languages. This result implies that first-language background does not greatly influence acquisition order of morphemes.

I have attempted to support the hypothesis of Dulay and Burt (using different techniques and subjects in different situations) and to compare my sequence to orderings found by other researchers as well as by Dulay and Burt. Further comparisons with similar studies such as Bailey, Madden and Krashen (1974), Fathman (1976) and Rosansky (1976) give additional support to this hypothesis. The subjects sampled for this study were not young children, nor adult learners, but adolescents. If my orders are not significantly different from other orders of second-language acquisition, it could be supposed that there is a "universal" order for second-language learners. Hakuta's report (1974a) of a Japanese speaking girl learning English, however, is the only one which showed a quite different order from others, as shown in Table 1 in Chapter II.

Table 24 is a display of the Spearman rank correlation coefficients between previous studies and those found here using the different methods of scoring:

Table 24 Spearman Rank Correlation Coefficients of L1 and L2 Orders and Orders Obtained in This Study

	Method I	Method II	Method III
Brown (L1)	.383	.450	.567
The de Villiers I (L1)	.533	.608*	.667*
The de Villiers II (L1)	.367	.450	.500
Porter (L1)	.572	.643*	.643*
Dulay-Burt GS (L2)	.783**	.813**	.667*
Dulay-Burt GM (L2)	.850**	.875**	.742*
Dulay-Burt SAI (L2)	.746*	.779*	.646*
Hakuta (L2)	.367	.417	.400
BMK (L2)	.738*	.762*	.643*
Rosansky GS (L2)	.767*	.800**	.800**
Rosansky GM (L2)	.904**	.938**	.929**
Larsen-Freeman (L2)			
Speaking-I	.733*	.717*	.567
Speaking-II	.700*	.717*	.617*

** $p < .01$
* $p < .05$

As mentioned earlier, all the L2 orders except the one Hakuta obtained were very similar, though the three orders of this study were relatively different from the L1 orders. However, some pairings with L1 orders attained correlations of statistical significance. Both de Villiers and de Villiers' Method I order and Porter's order correlated with the present study Methods II and III at the .05 level. As to L2 orders, twenty-three out of twenty-seven possible pairings correlated either at the .01 or .05 level of significance. Hakuta's order did not correlate with any order of the present study at all. Only the speaking task of Larsen-Freeman's, in both Phases, correlated with the present writer's orderings (except one pairing). Other pairings with Larsen-

Freeman's tasks did not correlate significantly, except one pairing with the listening task for Japanese at Phase II which produced a ratio of .629.

To test Hypothesis 4, my orderings of morphemes were compared to Dulay and Burt's (1974a) data for 5- to 8-year-old children learning English as a second language. As we have seen already in Tables 1 and 22, Dulay and Burt's orderings and my orderings of morpheme acquisition were very similar. Let us compare the two again in Table 25 :

Table 25 Comparison of Morpheme Acquisition Orders of Two Studies: Dulay-Burt's Study and Present Study

	Dulay and Burt			Present Study		
	GS	GM	SAI	I	II	III
Prog	3	2.5	2.5	1	1	1
Art	1	1	2.5	2	2	3
Plu	4	4	5	3	3	2
Cop	2	2.5	1	4	4	5
Poss	8	7.5	6.5	5	5	4
Aux	5	5	4	6	6	6
R-past	6	6	8.5	7	7	7
3rd	9	9	8.5	8	9	9
I-past	7	7.5	6.5	9	8	8

The similarity between Dulay and Burt's orderings and the present study Method I ordering is more clearly illustrated in Figure 4:

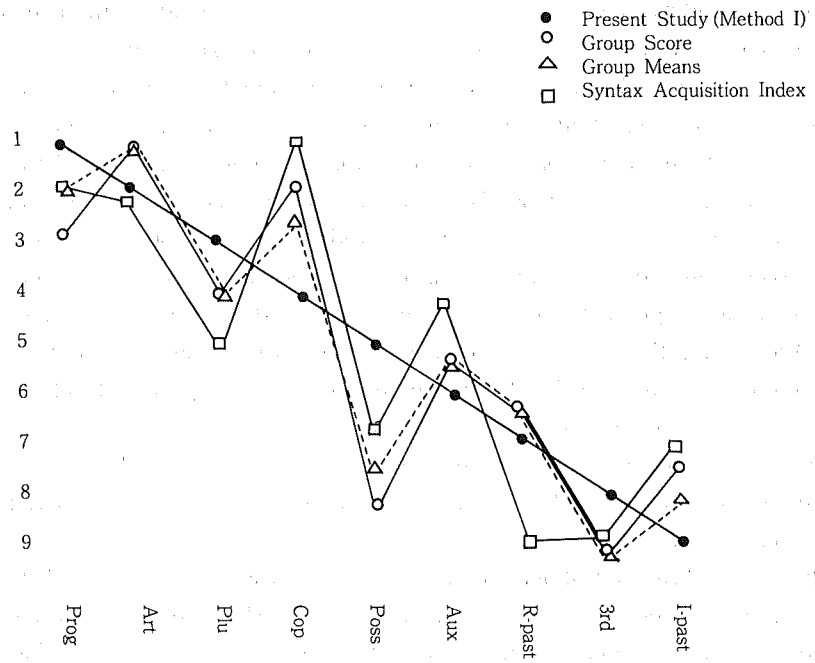


Figure 2. Comparison of Dulay and Burt's and Present Studies

Table 25 shows that the Copula and Possessive had the greatest amount of difference in orderings. Other differences were not as great. Other morphemes differed only from 1 to 3 ranks between the Dulay-Burt orders and my own. As noted, the Spearman rank correlation coefficients were statistically significant; four of these pairings are at the .01 level of significance (see Table 24).

As far as these studies are concerned, there is a high degree of agreement with each other with respect to the degree of accuracy of grammatical morphemes, despite the fact that these studies have used different modes of responses (speech and written) from different types of subjects with different ages (five to eight, and 13 to 15 years old) in different learning situations (informal and formal), and presumably with different motivations. From this evidence, we can see that Hypothesis 4 is strongly supported by the present study.

I would now like to compare the sequence I found to the orders obtained by other L2 researchers using different elicitation instruments and subjects with different ages and L1 backgrounds. The comparison will make it possible to determine what kinds of acquisition orders we may obtain when the subjects' ages and/or L1 backgrounds are different. Hakuta (1974a) found an L2 order of morphemes for a five-year-old Japanese girl acquiring English as a second language. As we have seen in Table 24, Hakuta's order and the orders found here did not significantly correlate at all, even though both studies investigated Japanese subjects learning English as a second language. It is not easy to explain why these studies have produced such different results. Moreover, Hakuta's order did not correlate with any other L2 acquisition orders of English. Perhaps it was because he based his entire result on a single subject and he observed her longitudinally.

Bailey, Madden and Krashen (1974) conducted a cross-sectional study of morphemes using the *BSM* on 73 adult ESL students from eleven different linguistic backgrounds. They found that their rank ordering of morphemes correlated with Dulay and Burt's (1974a). Based on their findings and high correlations, Bailey, Madden and Krashen concluded that "children and adults use common strategies and process linguistic data in fundamentally similar ways" (p. 235). Their order of morphemes, as well as Dulay and Burt's, correlated with the order in my study (see Table 24) at the .05 level of significance. From these studies, we can conclude at this point that children, adolescents and adults learning English as a second language show general agreement with one another, and suppose from this evidence that all these subjects use similar learning strategies. Additionally the Bailey, Madden and Krashen study reported that the order did not seem to be significantly affected by differences in amount of English instruction nor varying degrees of exposure. Nevertheless, their order of morphemes, as well as Dulay and Burt's, did not correlate significantly with the cross-sectional orders for functors reported by de Villiers and de Villiers (1973) for children learning English as a first language (the highest correlation coefficient these two studies obtained: rho = .572, n. s.).

Larsen-Freeman (1975a and b) obtained similar results when she used the *BSM* with adults learning English as a second language. Besides the *BSM*, she also administered four other tasks— reading, writing, listening and imitating. Tasks were significantly correlated with that of the children in the Dulay and Burt study and the one found in the Bailey, Madden and Krashen

study. In this respect, Krashen (1977a) explains these results by suggesting that the additional time and opportunity to examine the output, i.e., focus on form, resulted in the use of the monitor by the subjects, causing changes in the ordering of the structures.

Interestingly enough, five out of six pairings between Larsen-Freeman's speaking task (both Phases I and II) and my orders correlated significantly with each other. She also reported in regard to the Hakuta study that "his subject's ordering and the Japanese subjects' on the speaking task were significantly correlated at the .05 level producing a Spearman rank correlation coefficient of .79" (1975a: 75). My study and Larsen-Freeman's Japanese subjects did not significantly correlate at all on the speaking task (.524, .524 and .333 at Phase I and .524, .500 and .453 at Phase II), though my study and her speaking task across the language groups *did* correlate significantly (except for one pairing), as shown in Table 24. Only the one pairing of the listening task for Japanese at Phase II and my Method II obtained a correlation coefficient of .629 which was significant at the .05 level, and other pairings of any task for Japanese did not significantly correlate at all.

Krashen, Sferlazza, Feldman and Fathman (1976) tested L2 adult students using the *SLOPE* test, following Fathman's (1975a) study. The ordering of morphemes was found to be similar to that produced by L2 children obtained by Fathman (1975a) and, moreover, the results were the same regardless of the L1 of the subjects. There was one important finding when the *SLOPE* was administered to a subgroup of the subjects, there were traces of a different order found in writing. They explained the differences of orderings to be probably due to the subjects' monitoring of their output, as with Larsen-Freeman's (1975a and b) subjects. Here a question arises, because my study based on written responses was not significantly different from the speech data elicited by Dulay and Burt (1974a and b), Bailey, Madden and Krashen (1974) and Larsen-Freeman (1975a and b).

Rosanksy (1976) examined a one hour taped natural speech protocol for each of six untutored Spanish speakers learning English as a second language. The sample consisted of two children, two adolescents and two adults. The transcripts were scored for morphemes following Dulay and Burt's methodology: both Group Score and Group Means. Her morpheme order correlated with mine as well as Dulay and Burt's, with Bailey, Madden and Krashen's, and with Larsen-Freeman's *BSM* orders and even with de Villiers and de Villiers' L1 order. In fact, her Group Means order was more highly correlated with my three orders than with the other studies, as can be seen in Table 24. This high correlation was a big surprise because again these two studies used completely different subjects, elicitation instruments, etc.

The orders my study obtained correlated with speaking tasks of other similar studies as well, regardless of the speech elicitation methods used so far. As to the data presented, we can draw a conclusion that there is an almost "invariant" order of morpheme acquisition for L2 performers. The Spearman rank correlation coefficients between grades, textbooks and locations of schools revealed statistical significance. The written data I elicited suggests that there is a similar acquisition order of certain grammatical structures of English for L2 students, including children, adolescents and adults. The difference between Hakuta's order and other orders in L2 will be discussed later in this chapter.

Another point that deserves some discussion is the magnitude of correlation coefficients between the orders found in this study and the orders obtained in L1 studies. The order obtained in this study did not correlate with Brown's longitudinal acquisition order (1973) of grammatical morphemes. However, as can be seen in Table 24, two out of three pairings between this study and de Villiers and de Villiers' Method I and two out of three pairings between this one and Porter's L1 orders correlated significantly.

One more important issue we have to discuss is individual variation. As can be seen in Table 24, there are some individual differences in the orders of morphemes, although the subjects are matched for ability (all of these subjects got almost the same total score in the test).

Table 26 Spearman Rank Correlation Coefficients of Morpheme Orderings Between Subject Pairings (Scoring Method I)

Subject	1 : 2	.242	Subject	3 : 4	.705*
	5 : 6	.246		7 : 8	.811**
	9 : 10	−.163		11 : 12	.143
	13 : 14	.612*		15 : 16	.287
	17 : 18	.030		19 : 20	.775*
	21 : 22	.432		23 : 24	.846**
	25 : 26	.573		27 : 28	.396
	29 : 30	.265			

** $p < .01$
* $p < .05$

In Table 26, only five out of 15 pairs of subjects barely reached significant correlations. Therefore, they show different acquisition orderings, despite the fact that they have the same language background and the same language ability. As we have seen, we found some individual variability from the data examined. Hakuta's order did not significantly correlate at all with any other L2 morpheme acquisition orders. Rosansky (1976) also suggested that there is considerable individual variation in morpheme orderings. We should note that the findings of Cancino, Rosansky and Schumann (1974 and 1975) also indicated that there is individual variation in the way in which learners acquire structures of the second language. In the case of my study, the number of obligatory occasions per morpheme for each subject is fairly small. Some subjects had only two obligatory occasions for a given morpheme and some others had five occasions at most. Concerning individual variation, as Krashen (1977b) strongly argues, it can be considered to be due to too few obligatory occasions. According to Krashen (personal communication, 1978), even ten obligatory occasions are actually a very small number for this, and there is surprisingly little individual variation when we use a sufficient amount of data. However, I believe that Hakuta's study can be explained as a case of too small a number of subjects rather than too few obligatory occasions. The issue of individuals variation will be explained more explicitly when many more studies have been conducted in the future. Perhaps we will see little individual variation when individual subjects get enough obligatory occasions per morpheme to be studied.

Nevertheless, the fact of individual variation does not mean that there are no universal

strategies employed by second-language learners. We can conclude that the morpheme studies suggest children, adolescents and adults follow similar strategies in a broad sense, although more research is, of course, needed to determine whether different types of strategies are used among individuals in different situations. This fact encourages me to do further research in the future using as subjects Japanese learners of English as a second language in different situations.

CHAPTER VI : CONCLUSION

In the language classroom, good teachers try to know their students well, encourage them, show concern for them, find and discover their interests and learning preferences, monitor their progress, and unravel their difficulties; in other words those teachers cherish their students (Strevens, 1977). Nevertheless, all language teachers will testify that language learners do not always learn all that is presented in their classrooms. This may be not only because the learners' learning processes are not in the proper receptive state, but also because the students are unwilling learners (Strevens, 1977) and, moreover, the order in which the instructional materials presented is not always based on linguistic description, at least not on the language learning process. Corder states on this matter as follows:

> ... the learner has to know certain things before he can learn something new. If we then attempt to teach him something before he is ready for it, the result will be confusion, false hypotheses and what we could call redundant 'errors' (1973b : 38).

Once teaching aims have been established, the basic stage in the preparation of efficient instructional materials is the ordering of the features that need to be acquired by the learner as he or she proceeds toward linguistic and communicative competence. It is quite difficult to understand the process of second-language learning without a large body of learner responses and access to native speaker's intuitions about the intermediate grammar of L1 the learner has evolved; that is, the interlanguage.

I believe, in this respect, that analysis of errors produced by a second-language learner promises to guide the ordering of instructional materials to be presented in the classroom. Recently, increasing attention is being given to the errors made by second-language learners because of the information errors provided about strategies learners employ (Burt and Kiparsky, 1972; Corder, 1967 and 1975; Dulay and Burt, 1972 and 1974c). Especially Dulay and Burt (1972 and 1974c) were concerned themselves with errors children make in acquiring a second language. Errors can come about for several reasons. Dulay and Burt classify them as follows (1972: 244-45 and also 1973: 248): errors made by second-language learners reflecting interference between languages, developmental errors that occur in the speech of monolingual children acquiring the target language, ambiguous errors that cannot be classified as due exclusively to either interference of developmental factors, and unique errors that do not reflect first-language structures or developmental factors. To attempt systematically to classify errors into such categories is generally

called "error analysis."

Dulay and Burt (1972) analyzed data from Spanish-speaking children who were learning English as a second language in terms of the classification mentioned above. Usually their errors are classified as interference errors because such errors supposedly reflect the influence of Spanish construction on English. Dulay and Burt argued that these errors correspond to strategies used by all children acquiring the target language as a first language. In a subsequent study (Dulay and Burt, 1974c), they added to the evidence that there are common strategies used in second-language acquisition by children with various language backgrounds. Their study indicated that the types of errors made by the children among different L1 backgrounds were strikingly similar. They argued that the similarity of errors reflect what they referred to as "creative construction"— a process whereby children gradually reconstruct rules for the language they are exposed to, guided by strategies that derive from certain innate mechanisms that cause them to formulate certain types of hypotheses about the language system being acquired, until the mismatch between what they are exposed to and what they produce is resolved. The result of this "creative construction" process is extended to a developing language often referred to as interlanguage (Richards, 1972; Selinker, 1972). By this is meant to be a separate linguistic system that results from the learner's attempted production of the target language framework.

It seems that interference between languages from language transfer is probably greatest in those situations where languages are learned in a classroom setting and where there is no regular contact with native speakers of the target language. Interference errors probably occur in all second-language acquisition situations. However, the important issue is to determine when and to what extent they occur in different situations. As Dulay and Burt (1973) suggested, what the nature of language learning strategies is and whether they relate to innate mechanisms are unresolved issues at the present time. In order to attempt to resolve these issues, we really need more detailed information about the types of errors produced by second-language learners and about the extent to which these errors reflect the learning situation and the structural similarity between languages.

Stimulated by Brown (1973) and de Villiers and de Villiers (1973), a great number of L2 morpheme acquisition studies based on error analysis research on second-language learners have been carried out in the last five years. Some have been cross-sectional (Dulay and Burt, 1973, 1974a and b; Bailey, Madden and Krashen, 1974; Larsen-Freeman, 1975a and b) and others longitudinal (Hakuta, 1974a; Gillis, 1975; Rosansky, 1976). By and large, longitudinal second-language studies have attempted to determine the order of acquisition of certain grammatical morphemes of an individual(s), while cross-sectional procedures were aimed to rank-order the morphemes according to the performance of the entire group. The latter procedure assumes that all subjects in the sample exhibit the same acquisition order.

Dulay and Burt (1974a) compared the order of acquisition of eleven morphemes for a group of Chinese and Spanish children learning English as a second language. Their findings showed that the order of acquisition to be nearly identical between the two groups, although it was quite different from that observed for children of English as a first language (Brown, 1973 ; de Villiers and de Villiers, 1973). This was a striking result in light of the differences between Chinese and

Spanish. Bailey, Madden and Krashen (1974) and Larsen-Freeman (1975a) obtained a more astonishing result from adults receiving formal instruction in English as a second language. Their order was also approximately the same as the one found by Dulay and Burt, despite the fact that these subjects had various first-language backgrounds. The result of my own study confirms and extends the Dulay and Burt (1973, 1974a and b) and Bailey, Madden and Krashen (1974) studies and supports the hypothesis that there are some similarities in the L2 acquisition processes utilized by all kinds of learners: children, adolescents and adults.

My study was attempted to test the Dulay and Burt hypothesis of "approximately the same" order among second-language learners, using different subjects and data elicitation procedure in a different situations. In order to obtain the errors to be analyzed, I used as subjects Japanese junior high school students who studied English as a second language for two or three years in their classrooms. The total number of subjects was 777 from 33 classrooms of teachers who all volunteered to participate in the study. The subjects were randomly sampled and stratified by three variables: 1) grade (8th and 9th graders), 2) English textbook (*Total English* and *Prince English*) and 3) location of school (urban and rural).

The data collected for this study were written responses to a paper-and-pencil test. This test consisted of three pictures and 20 test questions altogether with blanks to be filled. Each subject received a copy of the test. He or she was instructed to fill in the open-ended type blanks with an appropriate word(s) with relation to the picture given. Subjects were allowed 45 minutes to answer the test questions. The content of the test and grammatical items had been previously covered in their English instruction in class.

The written responses to obligatory occasions (or expected contexts) were scored by three different scoring methods, from strict to lenient. Only the analyzable responses in the given contexts were scored, and the unanalyzable ones were eliminated from the study.

In my study, most pairings of all eight subgroups correlated significantly either at the .01 or the .05 level, though a few individual pairings did not attain correlations of statistical significance in each method. In short, most groups exhibited similar orders in ranking the morphemes, in spite of the fact that they had different variables such as textbook, grade, and urban or rural location. It seems that those few which did not correlate significantly might have their own peculiar or characteristic factors which my study did not take into account.

For all the items, the rate of correct responses increased from 8th graders to 9th graders, although the orderings were slightly changed.

All possible pairings of grade in each method were significant at the .01 level, although the rank orders changed a little across scoring methods from the 8th grade to the 9th grade. In conclusion, the amount of language instruction and exposure to English did not have much effect on the morpheme ordering. As to textbooks, they also showed high correlations significant at the .01 level. All pairings of locations of schools were correlated high enough to be statistically significant at the .01 level, too.

In sum, we can state that there was a homogeneity of ordering of morphemes across all subgroups. In addition, the three scoring methods combining all the variables reached extremely high correlations at the .01 level among themselves. This means that these scoring methods do

not exert on the result of analysis as far as these three methods and the data collected are concerned. That is, there is no difference whether we score the data strictly or not, although there are some slight differences among rank orderings of morphemes.

Compared with the orders of similar studies by other second-language researchers, those found in this study are similar, though they were relatively different from the L1 orders. They reached high correlation with most L2 studies, except for one by Hakuta. Surprisingly, de Villiers and de Villiers' Method II with L1 learners correlated with my study's scoring methods II and III at the .05 level. As to L2 order, only the speaking task of Larsen-Freeman's at both Phases correlated with findings of this study with one exception (between her speaking at Phase I and my study III), besides Hakuta's order. Twenty-three out of twenty-four other possible pairings correlated either at the .01 or .05 level of significance (only the pairing between Porter's and my study I did not reach significance).

As far as the Dulay and Burt (1973, 1974a and b) studies and my study are concerned, there is a high degree of agreement between them with respect to the degree of accuracy of grammatical morphemes, despite the fact that these studies have used different modes of responses (speech and written) from different types of subjects with different ages (five to eight-year-olds, and 13 to 15-year-olds) and different motivation in different learning situations (informal and formal). The fact that two studies varying so greatly yielded similar acquisition orders is the most significant finding of this study, particularly since I set out to examine the Dulay-Burt hypothesis of invariant acquisition order of English morphemes. From this evidence, we can see that Hypothesis 4 is strongly supported by the study, as well as three other hypotheses stated in Chapter III.

One point we have to discuss is individual variation. In my study, there are some individual differences in the orders of morphemes, although the subjects were matched for ability (all of these subjects got almost the same total score in the test). As we have seen before, Hakuta's order did not significantly correlated at all with any other L2 morpheme acquisition orders. One thing all studies indicate is that there seems to be much variation among individual subjects. We should note that the findings of Cancino, Rosansky and Schumann (1974 and 1975) and Hakuta (1975) indicated that there is individual variation in the way in which learners acquired structures of the second language. Concerning individual variation in individual subjects, as Krashen (1977b) strongly argues, it can be considered to be due to too few obligatory occasions. According to Krashen (personal communication, 1978), even ten obligatory occasions are actually a very small number for this, and there may be little individual variation when we use a sufficient amount of data. Another problem is that even in a single morpheme, there are varying degrees of difficulty emerging from the environment of the morpheme. In this respect, it would be premature to determine the order of morphemes and to draw any conclusion from the small number of obligatory occasions (Spolsky, personal communication, 1979). In the case of my study, the number of obligatory occasions per morpheme for each subject is not large. Some subjects had only two occasions for a given morpheme and some others had five occasions at most. The issue of individual variation will be explained more explicitly when more such studies have been conducted in the future.

Nevertheless, the fact of individual variation does not mean that there are no universal strategies employed by second-language learners. Although the morpheme studies suggest that children, adolescents and adults follow similar strategies, more research is needed to determine whether different types of strategies are used in different situations. This observation also encourages me to do research in this field using as subjects Japanese learners of English as a second language in different situations.

As to the goals of error analysis, Hakuta and Cancino (1977) state that they "are twofold: to describe, through the evidence contained in errors, the nature of the interlanguage in its developmental stages and to infer from these descriptions the process of second-language acquisition" (p. 297). Morpheme acquisition studies seem to attain the second goal and accelerate materials development in language learning and teaching. I believe that these morpheme order studies will promote the design of syllabuses and the writing of pedagogical grammar. Of course, it seems too early to draw any conclusions as to the study of second-language acquisition processes through present morpheme acquisition order studies, though we may get some hints of what it would be like.

To my knowledge, there is no extensive proposal available to put forward for the use of results from error analysis in the preparation of materials of second-language instruction, except one example of such a use provided in the field of the teaching of English as a second language by Burt and Kiparsky's *The Gooficon: A Repair Manual for English* (1972). Therefore, it is an urgent task for second-language researchers to do further research using various subjects and instruments in the various situations in the future, in order, if possible, to establish the so-called "natural sequence" of morphemes.

FOOTNOTES

[1]While according to a structuralist view (mainly represented by Fries, 1945 and Lado, 1957), learning a language means acquiring a new set of habits, and interference was described as the negative effect of old habits in the acquisition of a new language, according to current views on language acquisition, learning a language means the formation and testing of hypotheses: thus, interference in a foreign language can be described as the formation and testing of hypotheses on the basis of the native language (Corder, 1967: 168).

[2]Dulay and Burt use the term "goof" for "a productive error made during the language learning process" (1972 : 235), but "error" is used for the same thing throughout my study.

[3]Bailey, Madden and Krashen (1974) and Porter (1977) investigated only eight of the nine morphemes which were common to all the other studies.

[4]One thing I would like to point out here as to the Dulay and Burt studies is that throughout their investigations, they did not consider any sociolinguistic factors. There is a reference to this important issue: "we are aware of the importance of the influence of social factors and personal motivation on second language learning, but adequate treatment of those factors is also beyond the scope of this paper" (1974d: 121). The account to their own research provides little evidence

that potentially relevant sociolinguistic factors have been seriously considered while their discussion of the research findings reveals inattention to the crucial role of sociolinguistic factors in the second-language acquisition process.

In this respect, Kennedy and Holmes (1976) ask "why such important research with children as that initiated by Lambert and his colleagues (1972) in Montreal is excluded from productive research in second-language learning during the last decades" (pp. 81-2). The potential relevance of such factors to speech produced in a second language is suggested by Ervin-Tripp's hypothesis that different speech situations may be related to different degrees of errors. As to age and rate of learning, for instance, she suggested that "the older the learner is, the more burdened he or she may be with overlearned habits" (1974: 122). Similarly, the large scale studies of second-language learning and teaching (Brown, 1973; Schumann, 1975 and 1976) have thrown light on the critical variables affecting success or failure in this field. It is also possible to expect that acquisition orders in second language may vary depending upon the type of the exposure to the target language (especially, the countries, such as Japan, for instance), the means of data-elicitation and other psychological (or affective) variables as well as the "critical period."

[5]She reports actually a somewhat different acquisition order in different tests (reading, writing and listening) for adults learning English as a second language. This makes possible the argument that different means of data elicitation may produce the variance in order. Dulay and Burt (1973), and Bailey, Madden and Krashen (1974) tested only oral production of subjects. Krashen, Madden and Bailey (1975) also described that "tasks that allow monitoring time will show a different pattern of errors as they allow the learner to bring a more conscious knowledge of grammar to bear on his output" (p. 50). Krashen also suggests that a written test may not obtain exactly the same results as researchers have with oral tests (personal communication, 1976), and feels that the crucial factor is whether or not a learner's attention is focused on the form or on the meaning (Larsen-Freeman, personal communication, 1977). These ideas might lead Krashen (1976; Krashen and Pon, 1975; Krashen, 1977a) to develop the monitor model theory further.

APPENDIX

THE TEST

The following is the entire text of the test which was given to the subjects sampled. The instructions were written in Japanese.

DIRECTIONS

Look at the picture and answer the questions pertaining to the picture (do the same on pages 2 and 3). In answering, complete the sentences or write something in each blank even if you are not sure of the exact English words.

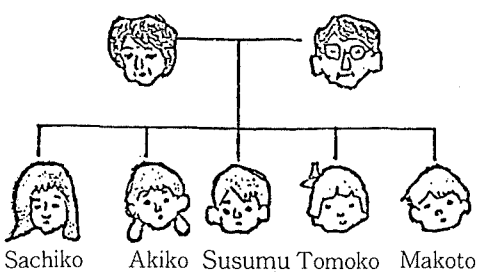
Michiko

Page 1.

1. What is Michiko doing now?
   She_____a letter.
2. Where does Michiko go everyday?
   She_____school everyday.
3. What does she have in her hand?
   She_____in her hand.
4. What is on her desk?
   There_____on her desk.
5. What did Michiko do yesterday?
   She_____yesterday.
6. Whose coat is on the hanger?
   _____is on her hanger.

Page 2.

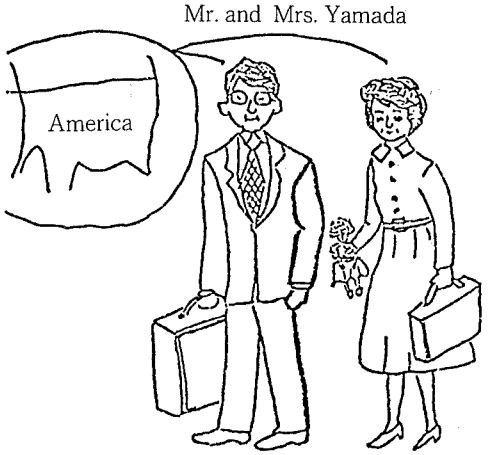
Mrs. Yamada Mr. Yamada



Sachiko 11 Akiko 9 Susumu 7 Tomoko 5 Makoto 3

years old

Mr. and Mrs. Yamada



7. Do Mr. and Mrs. Yamada have one child?
   No, they don't. They have five children: three of them _____
   and the others are boys.
8. Is Makoto older than Tomoko?
   No, he isn't. He_____youngest child.
9. Susumu is older than Tomoko, and Sachiko and Akiko
   _____than Susumu.
10. Did Mr. and Mrs. Yamada visit Europe?
    No, they didn't. They_____
11. Did they go there by boat?
    No, they didn't. They_____by plane.
12. Whose suitcase is larger?
    Mr._____is larger.
13. What did they buy for Akiko?
    They_____for her.

Page 3.

1. George　　2. George　　Mr. Takahashi

14. George is an American boy. He's now in Japan. When did George arrive in Japan?
    He_____five weeks ago.
15. What language did he speak in America?
    He_____there.
16. George is sitting on a chair, and he _____
    Japanese now.
17. What does George have on his desk? (Look at Picture 1. above)
    He_____on his desk.
18. What did George do last night?
    He_____last night.

19. Whose teacher is Mr. Takahashi?
    He_____.
20. What are George and Mr. Takahashi doing now? (Look at Picture 2. above)
    They_____now.

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