THE ACQUISITION OF SYNTAX AND MORPHOLOGY BY LEARNERS OF JAPANESE AS A SECOND LANGUAGE
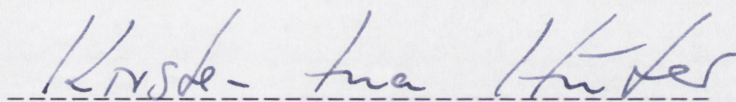
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I hereby declare that this thesis is my own original work.

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ABSTRACT

This thesis presents the results of a three-year longitudinal study on the acquisition of Japanese as a second language (JSL) by five Australian university students.

The theoretical approach followed in this study is the concept of interlanguage as a systematic internal grammar of the language learner, and its development as a dynamic and cumulative process. This is based on research on Second Language Acquisition Research (SLA) that has developed in the last thirty years (e.g. Corder 1967, Hyltenstam 1977, Huebner 1983, Clahsen et al. 1983, Pienemann 1989, in press).

In this research project, oral production data from five university students of JSL were collected throughout their three-year undergraduate course in sessions at the end of each university semester, and on the basis of this a universal order of acquisition for JSL syntax and morphology is described. The data analysis shows that the acquisition process is cumulative and systematic; the sequence of acquisition in JSL syntax and morphology is similar for all learners and independent of the teaching curriculum. The implications of this for JSL teaching are discussed.

I believe that this study provides a clear description of JSL interlanguage development. It has the potential to contribute to practice as well as to provide a basis for further research. Suggestions for further research concern the next stages of JSL acquisition, the explanation of findings - for which cognitive theories seem to suggest themselves - and the interaction of developmental aspects of language acquisition with other components of language, particularly discourse-pragmatic motivation.

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0. INTRODUCTION

i. Aims of the study

This thesis presents the findings of a three-year longitudinal study on the acquisition of Japanese as a second language (JSL) by five Australian university students. The study was undertaken in order to gain insights into the *dynamics of interlanguage development*, i.e. into a second language learner's internal grammar and the characteristics of its changes during the acquisition process. The question of whether and in what form systematic and/or universal phenomena occur in language development will be investigated. The theoretical basis and the aims of the study are presented here, followed by a description of the organisation of the thesis.

The fundamental assumption underlying the concept of interlanguage in this study is that of interlanguage as an internal grammatical system which is largely independent of the first language and the target language system. During the acquisition process, the interlanguage develops dynamically through transitional grammars in a cumulative fashion. It is also assumed that transitional grammars show characteristics which are identical across individual learners and that their structures are acquired in a fixed order which is again identical across different learners. This concept of interlanguage is based on results from the last thirty years of SLA research by, for example, Corder (1967), Dulay and Burt (1973), Hyltenstam (1977), Meisel, Clahsen and Pienemann (1981) and Huebner (1983), to name only a few.

The methodology of data collection, description and analysis follows from these tenets. In order to gain insight into the rule system of the internal grammar, data from spontaneous oral production were collected, because it is assumed that oral production draws on a speaker's internal rule-system. I decided not to conceptualise the study in such a way that specific hypotheses about the structures occurring in JSL acquisition are formed and then tested. Instead, data are subjected to extensive distributional analyses, i.e. they are analysed like "unknown grammars" of yet undescribed languages, because such an approach allows for an observation of all occurrences of phenomena and their interrelation, and prevents the researcher from restricting the analysis to anticipated structures or form-function relationships, e.g. from the target grammar. Detailed discussion of the methodology of analysis will be presented in Chapter 3. The interpretation of the data description uses implicational scaling (Guttman 1944, DeCamp 1971) in order to depict the different learner grammars and their development in the language acquisition process.

The main objective of this study is to provide a clear description of universal structures and acquisition phenomena in interlanguage development of JSL. This requires a longitudinal study of several learners' interlanguage, enabling observations of development over a long period of acquisition. The comparison of several learners' interlanguage allows conclusions to be drawn about individual variation on the one

hand, and cross-individual similarities on the other. The results from the data analysis are the presentation of the course of development in the learner grammar of five JSL learners and of a fixed sequence of acquisition for basic syntactic and morphological structures of Japanese.

The practical relevance of the study lies in its consequences for JSL teaching, as it has the potential to provide teachers with insights into learning mechanisms and patterns. The description of the developmental path in JSL syntax and morphology pinpoints the structures learners can be expected to produce at specific points in time. It also shows that what might appear to a language teacher to be a logical subsequent step from one structure to the next, is not necessarily the next stepping stone in the learner's interlanguage grammar. The study, therefore, has the potential to feed into concepts of curriculum design, error correction and assessment. Possibilities and limits of the application of findings to practice will be addressed.

The present study is of relevance for SLA theory insofar as it provides data from a typologically different language in a field that is dominated by studies on the acquisition of Germanic and Romance languages. The comparison of findings from the acquisition process of different languages provides the basis for a testing or an extension of language acquisition models, especially those that focus on universal features of language development and operate within the dynamic paradigm, such as, for example, Pienemann's (in press) Processability Theory. However, the application of a specific language acquisition theory to the findings of the study is beyond the scope of this thesis.

ii. Structure of the thesis

The first chapter will lay the theoretical foundations for the conceptualisation of the study, and the methodology of the data collection and analysis. The development of the concept of "interlanguage" and its inherent characteristics will be traced over the last thirty years, and the contributions that studies on interlanguage have made to research methodology are discussed. This will outline the position from which this study was undertaken.

Two explanatory approaches to SLA will also be discussed in Chapter 1: Government and Binding Theory as applied to SLA, and Processability Theory. The contributions of both to SLA theory will be discussed, and it will be shown that Processability Theory has systematically incorporated the dynamic paradigm, thereby continuing the approach, the development of which is traced in Chapter 1.

Chapter 2 will focus on Japanese and the research regarding its acquisition. First, a short overview of the grammar of Japanese will be given for those readers who are not familiar with this language. Only those structures which are necessary for

understanding the data are presented, and where possible, the presentation of structures is simplified. The grammatical overview is structured in small sections, so that cross-referencing is facilitated.

Next, previous research on the developmental aspects of JSL and Japanese first language acquisition (JFL) will be summarised. Following the data analysis, findings from prior research will be compared with those from the present study.

Chapter 3 will present information directly relevant to the set-up of the study. Data on the informants' background, i.e. biographical data and their language knowledge background, will be presented. Then the data analysis methodology will be explained, and its position within the theoretical assumptions of this study discussed. The acquisition criteria applied in the data analysis are also defined. Finally, research on data elicitation methodology is discussed and the elicitation tasks used in the data collection sessions are presented.

The data analysis itself will follow in Chapter 4. For each informant, the data from every session will be described, resulting in a learner grammar written for each sample, and on the basis of these grammars, a description of the interlanguage development for each learner will be compiled. The summary then provides a synopsis of all learners' acquisition processes and thereby a basis for comparison and conclusions regarding similarities and differences in the acquisition process.

The interpretation of the data analysis in Chapter 5 will compare the data from all informants, apply implicational scaling and conclude the sequence of acquisition in JSL syntax and morphology. This forms the basis for a demonstration of the systematicity and universality in interlanguage development. It will also be shown that the order of acquisition deviates considerably from the order of instruction, i.e. that it is to a high degree independent of external factors such as instruction. This will be discussed in context with research on the influence of instruction on the acquisition process.

The acquisition patterns found in the data of the present study will then be compared to results from the previous studies that were presented in Chapter 2. It will be shown that there are parallels in all described acquisition processes.

The conclusion in Chapter 6 will summarise the findings: the developmental path of JSL syntax and morphology acquisition will be presented, and its similarity across different types of acquisition and its independence of external factors such as instruction will be demonstrated. Research regarding the potential effect of instruction on acquisition will be applied to these findings. The thesis concludes with suggestions for further research on the next structures in the sequence of interlanguage development; on the application of explanatory theories such as Processability Theory to the results; and on the interaction of the course of grammar acquisition with discourse-pragmatic motivation in verbal communication.

1. THE CONCEPT OF INTERLANGUAGE

1.1   Introduction

This study of learner language development in JSL is based on a concept of interlanguage (IL) that contains three tenets:

1.   the assumption that a second language learner creates and develops his/her own internal grammar, i.e. the assumption of a creative construction process in second language acquisition;
2.   the assumption of systematicity in this process;
3.   the assumption of basic similarities in the interlanguage of a specific target language across all learners.

This is based on the results of the last thirty years of SLA research.

The history of the concept of interlanguage has been characterised by an increased focus on the creative force in language learning. Corder (1967) was a major proponent of this new position, which contrasted with behaviourist accounts like that of Lado (1957), which focus on the notion of imitative learning mechanisms. Subsequently the emphasis shifted from the degree of deviance from the target norm to the dynamic character of learner language, its regularities, mechanisms and causes. Questions arose as to what constitutes a learner grammar; what kind of form-function relationships underlie it; and the nature of the driving force behind the acquisition process.

A range of studies arose from this theoretical shift. They aimed to analyse learner language as autonomous systems in their own terms, and each study contributed to the development of increasingly consistent concepts and methodologies. Throughout this process, the dynamic paradigm (DeCamp 1971, Bailey 1973) played an important role, an approach that accounts for language change and language variability in such a way that the systematic relationship of features is reflected. However, the dynamic paradigm was not consistently taken up by SLA researchers, and only few data were collected specifically with that concept in mind. Such studies include those by Hyltenstam (1977), Klein and Dittmar (1979), Huebner (1983) and Clahsen, Meisel and Pienemann (1983), which will all be discussed below. The present study attempts to take up the progress towards a consistent notion of language development and a methodology for its investigation by conducting an in-depth analysis of interlanguage development which is based on a broad data basis.

Recently there have been few longitudinal studies, and even fewer with an exhaustive data analysis. This is partially in response to the increased interest in possible explanations for language learning mechanisms, which caused a shift in research methodology towards a top-down approach. Studies based on Government and Binding Theory (e.g. Hyams 1983, Flynn 1987, Bley-Vroman et al. 1988, Clahsen 1988,

White 1988, 1991a) are representative of this approach. These studies are usually cross-sectional and serve to test a specific theory rather than describe the development of a grammar as a system of interrelated structures, which would need to be based on a broader data basis. This approach will be discussed and the conclusions drawn from it for the present study will be formulated.

SLA research has also examined a wide range of factors potentially influencing language acquisition such as input (e.g. Hatch and Wagner-Gough 1976, Gass and Varonis 1985), aptitude (e.g. Oller et al. 1977), motivational factors (e.g. Schumann 1978a), instruction (e.g. Long 1983c), first language transfer (cf. Kellerman and Sharwood Smith 1986), etc. Many studies were set up to test the influence of specified factors on learner language, choosing a small number of grammatical structures on which to observe changes. As the focus in such studies lies per definition on the potential influence of the factor in question rather than on the grammatical structures and their development, their contribution is not of major influence for the present study and their approaches will not be discussed here.

Following is an overview of the development of the interlanguage concept in SLA and the contributions of the main studies investigating dynamic aspects of language acquisition. The conclusions drawn from this make clear suggestions towards the set-up of data collection, methodology of data analysis and description, and potential explanatory theories for interlanguage development, all of which are taken up in the JSL study presented later.

1.2 Early research on the concept of interlanguage

1.2.1 Corder: Systematic, transitional grammars in language acquisition

Corder (1967) took the first important step towards a non-behaviourist view of second language learning. In his article "The significance of learner errors" he laid the foundations on which the later understanding of second language learning as a creative process would be based. The main hypothesis in this article is that second language acquisition consists of a development through successive stages of transitional grammars just like first language acquisition:

> "... the key concept ... is that the learner is using a definite system of language at every point in his development, although it is not ... that of the second language."
> (Corder 1967, 166)

Corder sees language acquisition as a creative process of hypothesis testing. The first source of hypotheses about a second language is assumed to be the learner's first language; transfer is understood as a learning strategy, not as a consequence of habit formation. Systematic errors reveal the constructive rules of the linguistic system that the learner is using. Therefore the analysis of a learner's errors is a tool for describing his/her internal grammar and his/her learning strategies:

> "A learner's errors, then, provide evidence of the system of the language that he is using ... at a particular point in the course ... They (the errors, K.H.) provide to the researcher evidence of how language is learned or acquired, what strategies or procedures the learner is employing in his discovery of the language."
> (Corder 1967, 167)

It is important to note here that the analysis of errors is merely a tool for gaining information about the second language learner's internal grammar, and that first language transfer is seen as only one of several language learning strategies. The most important aspect of the learner's language is its systematicity and its development through transitional grammars; the analysis of errors is best seen as a shortcut to the end of the describing these transitional grammars. The logical progression from Corder's hypothesis about the nature of learner language would be to conduct longitudinal studies to describe the transition of grammars, and/or the creation of a framework in which systematic errors serve as a basis for predictions about learner language development.

1.2.2 Selinker: Interlanguage

Selinker (1972) coined the term "interlanguage" to refer to the concept of a learner's separate linguistic system:

> "*This set of utterances for most learners of a second language is not identical to the hypothesized corresponding set of utterances which would have been produced by a native speaker of the TL had he attempted to express the same meaning as the learner. Since we can observe that these two sets of utterances are not identical, ... one would be ... compelled to hypothesize the existence of a separate linguistic system ...*"
> (Selinker 1972, 214, emphasis in the original).

Corder (1981) describes interlanguage as it is conceptualised by Selinker as "a sort of hybrid between his (the learner's, K.H.) L1 and the target language" (Corder 1981, 2). Selinker claims that in the course of second language acquisition, interlanguage is reorganised to identify with the target language (TL) in question (Selinker 1972, 229).

With the aim of constructing a "psycholinguistic theory of second language learning" (Selinker 1972, 209), Selinker lists five "central processes" of second language learning: language transfer, transfer-of-training, strategies of second-language learning, strategies of second-language communication, and overgeneralisation of TL linguistic material (Selinker 1972, 215). Only "strategies of second language learning" and "overgeneralisation' are not directly dependent on external factors. Selinker suggests that fossilisation data are most revealing about strategies of second language learning. Fossilisation is a concept in which, according to his definition, the TL is the main reference point, not the separate linguistic system of the learner (Selinker 1972, 215).

There are several severe methodological and theoretical problems with Selinker's model. A fundamental problem is Selinker's choice of fossilisation data, for which he does not give reasons. It demonstrates that he does not consistently separate the idea of the development of an internal linguistic system from the view of learner language being an incomplete and erroneous version of the target language.

Another remaining question is the definition of strategies. It does not become clear why Selinker assumes the quoted processes as the central ones. An example of inconsistency are "strategies of second language learning", which Selinker equates with "various internal strategies" (Selinker 1972, 219). One of these internal strategies is simplification. It is difficult to establish the qualitative difference between overgeneralisation and simplification which makes Selinker consider the one as constituting one of the central processes, and the other as only one of several - perhaps internal - strategies.

The definition of the central strategies or processes of language learning and the reasoning for ascribing errors to one process or another is a methodological problem. The failure to differentiate between the internal system and individual external influences are part of the theory construction. Selinker's concept of interlanguage is neither predictive nor falsifiable. What remains is the term "interlanguage", which developed to be a cover term for the concept of an internal, transitional learner grammar as well as for the specific grammatical system of one learner at a certain point in the language acquisition process.

1.2.3 Dulay and Burt: Universal development

Dulay and Burt (1973) conducted cross-sectional studies with 151 children of Spanish first language background, and later with children of Chinese first language background (Dulay and Burt 1974). These morpheme order studies are concerned with the acquisition of eight functors, or grammatical morphemes, in ESL. Data are produced in oral production and are scored in the following way: The value "0" is given when no functor is supplied in an obligatory context ("she's dance_"), "0.5" is given for a misformed functor ("she's dances"), and "1" is given for a correct functor ("she's dancing") (Dulay and Burt 1973, 255). Dulay and Burt (1973) infer from the data that

> "1) *there does seem to be a common order of acquisition for certain structures in L2 acquisition, at least for our three groups of children, and 2) the order is different from that found in L1 acquisition. Thus this pilot study supplies independent and additional evidence of the creative construction process in L2 acquisition.*"
> (Dulay and Burt 1973, 256)

Dulay and Burt (1973) interpret the findings as suggesting that order of acquisition does not vary with external factors such as first language or instruction, and conclude that acquisition is not mainly driven by those factors (Dulay and Burt 1973, 256). The path of acquisition of linguistic knowledge is attributed to "children's innate ability to organize structure" (Dulay and Burt 1973, 245).

There are various methodological problems with these studies, which have been pointed out in abundance (cf. Larsen-Freeman 1975, 1976, Meisel, Clahsen and Pienemann 1981, Larsen-Freeman and Long 1991, Ellis 1994). One of the major flaws relevant to the present discussion concerns the scoring method for the supplied morphological items: not only does it appear that the distinction between "no functor" and "misformed functor" is arbitrary, but, more important, this scoring method equates accuracy and acquisition, as it does not distinguish between non-suppliance and suppliance in non-targetlike environments. This approach must also assume that each change is a step towards the TL, and that every variation forms a developmental stage. Meisel et al. (1981) criticise that

"... cross-sectional studies which are intended to determine developmental stages in second language acquisition are necessarily based on the assumption that the process of acquisition is strictly linear and uniform."
(Meisel, Clahsen and Pienemann 1981, 113)

The morpheme order studies thereby make - involuntarily - a clear point for the importance of a *distributional analysis* of learner data; an analysis which does not calculate the degree of the learner language's correctness in marking specific functions by specific functors, but investigates which functions are marked in a specific interlanguage in the first place, and how this is done. As Meisel et al. (1981) claim, with such a method:

"... results are obtained by quantifying all features under consideration ... it allows for a description of linguistic development as well as of variation in the development, for standard-like structures as well as for features which deviate from the standard norm."
(Meisel et al. 1981, 112)

It is only an analysis of this kind which can account for the internal systematicity of interlanguage, as it does not measure one system (the IL) with the rules of another (the TL). The present study aims to avoid the fallacy of describing interlanguage by preconceived ideas. A detailed account of the data analysis methodology is given in Chapter 3.3.3.

The major impetus of the morpheme order studies is the claim that there is a universal sequence in second language acquisition, due to universal cognitive factors. This assumption gave rise to further studies examining interlanguage development and its causes.

1.2.4 Schumann's Pidginization Hypothesis

Schumann conducted one of the first studies describing learner language development over a long (here: one-year) period of time. He studied the English second language acquisition by Alberto, a native speaker of Spanish, and related the characteristics of interlanguage development to socio-psychological factors (Schumann 1978a). Schumann found that Alberto's interlanguage contained the following simplifications and reductions:

- uniform "no" for most negative utterances;
- no inversion in questions;
- no auxiliaries;
- few inflections for the possessive;
- use of unmarked form of the verb;
- deletion of subject pronouns. (Schumann 1978b)

Schumann (1978a) shows that there is a strong structural similarity between these features of Alberto's interlanguage (and early ESL interlanguage in general) and the simplification in pidgin languages, i.e. in structurally restricted languages which are developed by speakers of different first languages for limited referential functions.

Schumann claims that the structural similarities, the "pidginization" of Alberto's interlanguage, can be accounted for by the fact that Alberto's socio-psychological conditions are similar to those of pidgin-speakers. His Pidginization Hypothesis (Schumann 1978a) says that the restricted communicative need as resulting from the subordinate socio-economic position of the speaker and his low desire to integrate in the society of the target language causes the ESL interlanguage of an immigrant such as Alberto to show parallel forms of simplification to pidgin languages. In other words, Schumann claims a causal relationship between socio-psychological factors, resulting communicative needs and linguistic structures.

This study is significant for a number of reasons, including the fact that it is an in-depth study that defines characteristics of the interlanguage in question on the basis of the whole grammatical system rather than on the basis of preselected structures. Being based on longitudinal data, it also provides an opportunity to take developmental aspects into account.

However, the problem of data analysis remains. Schumann concludes from the data that there is very little linguistic development during the course of the study and that Alberto's interlanguage contains many grammatical simplifications and reductions. These statements are based on a methodology of analysis that measures acquisition and development only in terms of accuracy; progression towards and deviation from the TL (therefore terms like "reduction"; there can only be a reduction if a more complex form is supposed to exist somewhere). Meisel et al. (1981) provide the example that Schumann claims that auxiliaries and past tense marking are not acquired, although Alberto obviously produces several auxiliaries and tense marking morphemes (Meisel et al. 1981, 112). However, as these forms do not mark standard-like functions and therefore do not stand in obligatory environments, Schumann analyses them as not acquired. This is justified in terms of Schumann's research questions, which basically ask why Alberto's ESL interlanguage is not "better", and why it lacks a certain elaboration and is not closer to the TL; however, such an approach does not allow to account for all the structures and form-function relationships which can be found.

Schumann's methodology, and the hypothesis he concludes from his analysis, are open to further criticisms. These mainly relate to the fact that there are many socio-economic and psychological differences between pidgin languages and second language acquisition, such as a learner's knowledge of other languages, the contact with other learners of the same language, and the reasons and conditions of social distance. There are also strong structural differences claimed between SL interlanguage and pidgin languages. A major difference between both language types

is that pidgin languages often develop a stable norm, which is not true for SL interlanguages. It is also problematic that the Pidginization Hypothesis is not easily falsifiable as long as social and psychological distance cannot be clearly defined and measured. However, as those points are not central to the line of argument developed in this chapter, they are not discussed in detail here.

A theoretical and methodological approach to the description of interlanguage is therefore needed that provides a means of depicting interlanguage development not by measuring it against the target language, i.e. measuring its accuracy, but by systematically describing the rule-system that is inherent in the interlanguage in question, and its development. The "dynamic paradigm" is a approach in the field of linguistics that focuses on language variation, change and development. It provides insights and methodologies for a systematic description of these phenomena. Implicational scaling, a methodology for the description of variational data, is used in the data evaluation of this study and will be presented in Chapter 1.3.1 below. Several SLA studies which utilised this paradigm as an approach to language development; the most influential of these will be reviewed below in Chapter 1.3.2.

1.3 Dynamics of interlanguage development

1.3.1 Dynamic paradigm and implicational scaling

After the heyday of structuralist approaches to language description and language teaching (e.g. Lado 1957), which took language as (synchronically) invariant and static, linguists like Labov (1969), Bailey (1973) and Bickerton (1975) became increasingly interested in variational features of language. They were advocates of a "dynamic paradigm", an approach to language that systematically takes account of variability within a language, of language change and its spread through the language and the language community. A methodology for the description of this is the implicational scaling of rules, or features, of the language in question, which orders features according to their implicational relationship.

Guttman (1944) was the first to "present a[n] ... approach ... for quantifying qualitative data" (Guttman 1944, 139), by ranking them in scales so that an attribute which is ranked higher in the hierarchy only exists if those below it in the hierarchy exist as well. He suggested this as a methodology for systematising data in sociological research. DeCamp (1971) then suggests implicational scaling as a method for describing language variation data. He defines an implicational scale as:

> " ... a binary relation between linguistic features and language varieties, so selected and so arrayed in order, as to result in a triangular matrix."
> (DeCamp 1971, 33)

Table 1-1 provides an example of this matrix:

Table 1-1: Example of DeCamp's implicational table

V1	V2	V3	V4	V5	
0	0	0	0	0	F6
0	0	0	0	X	F5
0	0	0	X	X	F4
0	0	X	X	X	F3
0	X	X	X	X	F2
X	X	X	X	X	F1

In table 1-1, language variety V3 is characterised by the features F1, F2 and F3; the feature F4 is not part of that variety, therefore neither are the features F5 and F6.

In such an implicational scale, features of a given variety are ordered hierarchically, and the existence of a feature higher in the hierarchy implies the existence of all lower ones. The lower features are therefore implied in the higher ones. This model works on the basis of if-then-conditions: IF a feature higher in the hierarchy exists, THEN features lower in the hierarchy must be there as well. IF a certain feature does not exist, THEN the ones above it cannot exist either. In terms of table 1-1 above, that means: IF the variety V3 is about to be produced, THEN feature F4 and all features above are "switched off".

Bailey's Wave Model (1973) shows similar regularities in synchronic language variation and in language change. It describes how linguistic variation, e.g. in sociolects, is first introduced by one group of speakers, then taken up by a second group, while the first group is already introducing another rule, and so on. It depends on factors like social class or gender, as to which group is the most innovative and introduces new rules. Language change can also take place in such a way that a new rule is applied in a restricted linguistic environment first and then spreads through the language by being applied to an increasing number of environments.

Bickerton's (1975) study concerns a creole language, i.e. a language that developed from a pidgin when learned as a first language by a new generation of speakers. He shows that Guyanese Creole consists of several varieties, which are arrangeable along a continuum that spreads from the largest to the smallest distance from the standard language, and that these varieties stand in an implicational relationship. He demonstrates that the different varieties do not have different features, but that variety X has the same features as variety Y plus some more - i.e. that features are cumulative. In other words, the features of the language in question can be arranged in a specific order, and the varieties of that language are characterised by their cut-off point in that line of features. Ellis (1994) provides a simplified version of Bickerton's graph that illustrates this relationship of varieties:

Table 1-2: Varieties of Guyanese creole in the speech of six speakers
(simplified table from Bickerton 1975, 79 from Ellis 1994, 126)

Speaker	Linguistic features			
	Ving	Ning	doz	a
1	0	0	0	X
2	0	0	0	X
3	0	0	X	X
4	0	X	X	X
5	X	X	X	X
6	X	X	X	X

This model of description makes it possible to describe different language varieties such as creole lects and dialects and also intra-speaker variation such as different styles or registers.

Implicational scaling has been applied to SLA (Hyltenstam 1977, Meisel, Clahsen and Pienemann 1981). It has made important contribution to SLA research, because it allows the researcher to take into account aspects of interlanguage development that have been found to be crucial. First, the methodology of implicational scaling establishes that one can describe different varieties of a language not as deviations from a norm, but as several autonomous systems.

Second, implicational scaling is a method that allows the systematic description of these autonomous grammars, and opens the way for understanding and describing interlanguage as a net of relationships of forms and functions. This is important because SLA research often finds (see Schumann 1978a, above, Huebner 1983, below) that the functions that are marked in an interlanguage are not always identical to those in the target language. The English verb ending '-ing', which is often used by beginning ESL learners as a category marker (Johnston 1987a), is a good example of this. Therefore, certain form-function relationships cannot be taken for granted, but a methodology must be used that allows the researcher to find and describe the relationships as they exist in the interlanguage in question (see ch. 3.3.3 for the implementation of functions in a description of a grammar).

Most importantly, implicational scaling makes it possible to systematically describe interlanguages at different points in time (transitional grammars) and thereby to show the development of a learner's interlanguage system. The cumulative nature of interlanguage development can be presented by an implicational scaling of the data. Meisel, Clahsen and Pienemann (1981) incorporate this in their Multidimensional Model (see ch. 1.3.5, below), for the developmental dimension of which they assume that *developmental stages* can be assumed for those features which stand in an implicational relationship:

"An additional criterion for identifying those features which indicate new developmental stages is the assumption that it should be possible to plot such features on an implicational scale. This is a natural consequence of the idea on which most language acquisition studies are based, namely that certain rules are acquired in a strict order ... What speaks in favor of implicational ordering is not only that it is in accordance with common practice of language acquisition research, but, as Bailey (1976, 1977) convincingly argues, it constitutes a psychologically plausible hypothesis about what is learnable. In other words, if we find that all learners of L2 who have acquired rule R3 also possess rules R2 and R1, but those who do not yet have R2 do not use R3 either, then we may assume that the three rules are ordered as
R3 > R2 > R1
and we can furthermore hypothesize that each of these rules marks a new developmental stage."
(Meisel et al. 1981, 123)

The use of implicational scaling as a criterion for the identification of structures that form a developmental stage, i.e. a necessary step in the sequence of acquisition, is methodologically as valid today as it was fifteen years ago, and will be used in the interpretation of the data from the study in this thesis. However, the expression of *developmental stages* is today often associated with cognitive models of language acquisition. The term used in this thesis will not be "stage", but the theory-neutral "step" in a "sequence", because, as previously stated, the application of a specific theory to the findings would go beyond the scope of this thesis.

In the next step, implicational scaling can be used for the interpretation of cross-sectional data; all data can be pooled and ordered in one implicational scale. If informants have acquired structures in the same order, then the path of language development can be read from this scale. In the interpretation of the data from the JSL study described in this thesis, this is exactly what will be done; data from all informants will be pooled, and the high scalability of structures will support the claim of a universal order in JSL acquisition.

In summary, the dynamic paradigm is an approach that understands the notion of language variability as central to language. Implicational scaling, a methodology used within this paradigm, is useful in interlanguage research because it makes the description of transitional grammars (as "varieties") possible. It offers a model for the presentation of the developmental path of the interlanguage in question, and also of its cumulative character. These features are extremely important for an approach that holds that interlanguage and its development is systematic.

1.3.2 Hyltenstam's study on the acquisition of negation

Hyltenstam (1977) conducted a cross-sectional study on the acquisition of negation in Swedish as a second language (SSL), an area in which a high variation of learner production had been found (Hyltenstam 1977, 384). The objective of the study was to collect enough data to find maximal variation and also possible regularities in the variation and to be able to quantify the linguistic environment of structures. To this end, Hyltenstam constructed a test for the elicitation of intuitional data, the basis of which was a combination of oral and written data (Hyltenstam 1977, 385). 160 subjects did this test, which consisted of 75 sentences into which they had to fill in negation forms.

Hyltenstam works within the dynamic paradigm, making use of Labov's variable rules, the notion of linguistic continua (DeCamp 1971, Bickerton 1975) and DeCamp's implicational scaling (see above) in order to derive the order in the acquisition process from cross-sectional data (Hyltenstam 1977, 384). In the analysis, he pools all data and finds that the different forms of negation are arrangeable in an implicational scale, a fact that demonstrates the regular and dynamic nature of the acquisition process. Hyltenstam concludes from the data analysis

> " ... that there is a successive and dynamic development from a simplified grammar with overgeneralisation to a more complex and differentiated one in the acquisition of the syntax of negation. This development seems unaffected by factors such as native languages, etc. since although the learners in this investigation differ in many of these respects, they still keep to the same pattern of acquisition."
> (Hyltenstam 1977, 404)

Hyltenstam also finds systematicity in the way backsliding takes place. From the implicational scaling of the data it is obvious that the structures which are lost first have been acquired last, which Hyltenstam finds "in agreement with the Jakobsonian view of a natural sequence in language acquisition and language loss" (Hyltenstam 1977, 383).

Hyltenstam shows that there is, in spite of differing factors like first language, and in spite of all communicative needs, a systematicity to the structural development itself. Hyltenstam's application of the dynamic paradigm is convincing, because it shows identical developmental patterns for many learners and that structural change does not depend on individual, arbitrary factors, but is regular and inherently systematic.

1.3.3 Huebner's study on the development of form-function relationships in interlanguage development

Huebner (1983) conducted a one-year longitudinal study on the ESL interlanguage development of a native speaker of Hmong, a language spoken in Laos. It is one of the first studies with the objective of describing the IL-functions of occurring forms independent of their TL-functions, the change of form-function relationships in the acquisition process, and also the nature of the changes from earlier to later stages (Huebner 1983, 48f). Huebner's study is complementary to Hyltenstam's insofar as it does not focus on the purely syntactic side and does not apply implicational scaling, but rather focuses on form-function relationships and their development in the acquisition process.

Huebner concentrates his analysis on the areas of the topic marker and copula "is(a)", the article "da" and the development of the anaphoric system. He describes the functions and the syntactic environment that these forms have in the interlanguage system at different points in time within the dynamic paradigm and concludes so from the data that the development of interlanguage features is systematic and rule-governed. He also shows that the regularities of the acquisition process are similar for different features of the interlanguage:

> "*As was the case with is(a), it has been shown in this chapter that the variation in the use of the form da before its SE function is acquired is not random, and that it can be described in terms of the changing rules governing features of the noun phrase. In both the case of is(a) and the case of da, the initial system was in effect neutralized before a new one was gradually adopted.*"
> (Huebner 1983, 147, underlining in the original)

Huebner's approach of including functions into the analysis makes it also possible to include discourse features. He finds that

> " *... that the rules governing various aspects of the interlanguage grammar were influenced by the structure of discourse. It was found that in the early stages of the interlanguage, topic-comment structures prevailed.*"
> (Huebner 1983, 203)

It is not entirely clear why the data description is divided into chapters describing them as target-like or not ("Using the form where he shouldn't" is the title of Chapter 4.2.1). However, Huebner succeeds in bringing out the system inherent to the development. His methodology, which defines the functions within the interlanguage system, provides the means to describe the interlanguage in its own right. This is different from earlier studies such as the morpheme order studies (see ch. 1.2.3 above), which examined only those interlanguage forms which were supplied in obligatory contexts (Huebner 1983, 203).

Huebner does not make claims about universality of the described learning strategy and suggests that learning strategies may result from the first language, input (there is no instruction) or the subject's "adventurous disposition" (Huebner 1983, 201). Stronger claims about these points could have been substantiated if Huebner had related his work more closely to other studies on ESL dealing with such questions (Pienemann 1987b).

Huebner proposes the question regarding the interdependence of acquisition of several forms as the topic of future research. One problem with the study is the fact that Huebner examines a restricted number of specified structures; therefore, the structural environments that he presents for e.g. the form is(a) are non-analysed and described in TL-terms. Only an exhaustive analysis can remedy this drawback. This is attempted in the present study.

In summary, Hyltenstam's and Huebner's studies make a strong point for an inherent systematicity in interlanguage development and implicational scaling as a methodology for data analysis. The systematic investigation of interlanguage as a system in its own right will be taken up in the analysis of the data for the present study.

1.3.4 Klein and Dittmar's study on developing grammars

The Heidelberger Forschungsprojekt Pidgin-Deutsch (HPD, Heidelberg project on Pidgin-German) was conducted in the wake of the variability studies of the late 60s and early 70s and gained fame as one of the few in-depth analyses of its time. 48 informants of Spanish and Italian first language background were interviewed in a pre-, main and post-interview each. Data analysis is quantitative; on the continuum of description-explanation, Klein and Dittmar's study stands at the extreme end of description. The interests of Klein and Dittmar (1979) are mainly the factors influencing language acquisition:

> "*Now, we are not so much interested in LA (language acquisition, K.H.) of some individual as such, but in the general regularities of LA as a function of numerous determining factors, many of which differ from one learner to the other.*"
> (Klein and Dittmar 1979, 90)

These factors are: motivation, duration, mother tongue and instruction method. Not being interested in the individual developmental process, Klein and Dittmar (1979) do not use implicational scaling, but set up a "variety space", which is a grammar that contains all structures produced by the learners. Interlanguage is seen as a variety of the target language, and a specific learner grammar at one point in time ("variety grammar") can be located within the variety space (Klein and Dittmar 1979, 89). The syntactic distance between a specific interlanguage and the target language is measured on the grounds of probability values for the production of syntactic

structures. Learners are ranked in four groups according to their interlanguage's syntactic complexity. Klein and Dittmar (1979) infer a "tentative sequence in the acquisition of basic syntactic features from this ranking" (Dittmar 1981, 137).

The results of this analysis are then evaluated according to the factors assumed to influence language acquisition that were listed above, and a correlation of success of acquisition, defined as the degree of complexity in syntactic structures, and socio-psychological factors is shown:

> "*The most important factors are the two contact variables and age at the time of immigration ... Duration of stay seems to be important only for the first two years.*"
> (Klein and Dittmar 1979, 209)

Klein and Dittmar (1979) draw conclusions about the success of acquisition from a purely quantitative data analysis and by grouping interlanguages according to their distance from the target norm. In so doing, they apply an accuracy criterion. This does not necessarily allow conclusions to be drawn about the quality of the acquisition process, because changes of the grammatical system that do not increase the grammar's accuracy might be revealing of the acquisition process as well. For this reason, an approach such as Klein and Dittmar's is rejected for the analysis of JSL data that will be presented below in Chapter 4. The accuracy criterion for the definition of acquisition will be discussed in detail in Chapter 3.3.2.

The separation of the probability continuum that creates the four groups of learners, or interlanguages, does not seem to be motivated by theory-driven reasons. Therefore the groups can be used as a tool for description, but cannot be assigned theoretical or explanatory value.

Meisel et al. (1981) comment on a severe methodological problem in that regard. They question whether an increase in the frequency of certain structures or even in syntactic complexity necessarily reflects the order of acquisition of certain rules; the regularity of suppliance might be dependent on socio-psychological factors, but that does not necessarily stand in direct relationship to the order of acquisition. They give an example concerning verb deletion:

> "*As for verb deletion, HPD (1976: 157f) claim that the appearance of the verb is a major indication of syntactic development ... we suggest that the findings of HPD (1976) need not be interpreted as evidence for a sudden increase in the use of verbal elements from Stage I to Stage II ... Rather, the more frequent use of the corresponding rules by speakers of Group IV may be an indication of differences in social distance, etc. ... Thus, the work by HPD (1976) is good evidence that such factors influence quite strongly the success of natural L2 acquisition. But it gives no support to the claim that the interlanguage of Group I is an early stage through which those in IV must have gone.*"
> (Meisel, Clahsen and Pienemann 1981, 123)

Meisel et al. (1981) criticise the approach to second language acquisition that sets the degree of complexity in direct relationship to the order of acquisition as a "unidimensional view of language acquisition". In reaction, they set up a methodology that endeavours to replace this view of language acquisition as a linear process with a multidimensional model. It enables the researcher to distinguish between acquisition stages through which a learner must pass in a fixed order - i.e. which stand in an implicational relationship - and those features of the interlanguage which are subject to individual variation. In this model, the order of acquisition is not assumed to go along an increase of complexity, but is defined on the basis of an implicational scaling of the data. The Multidimensional Model is now presented.

1.3.5 Meisel, Clahsen and Pienemann's Multidimensional Model and related studies

Meisel, Clahsen and Pienemann (1981) question earlier studies such as those of Schumann and Klein and Dittmar (see above) for their unidimensional approach to the description of language acquisition which presents language acquisition as a linear process moving in a straight line from zero to the target variety. They take issue with the fact that in these studies, each variation is indiscriminately interpreted as a further step in the development, and make the point that the degree of difficulty or accuracy, however defined, does not necessarily determine or reflect the order of acquisition. They call this approach the Uniformity Hypothesis (Meisel et al. 1981, 117) and suggest abandoning it in favour of a model which describes second language acquisition as a multidimensional process (Meisel et al. 1981, 119). They suggest a multidimensional model that will

> " ... go beyond the general statements about the possible influence of socio-psychological facts on linguistic development, and ... take an important step in this direction by combining the concepts of 'variation' and 'developmental sequences' ."
> (Meisel et al. 1981, 118)

Meisel, Clahsen and Pienemann conducted the ZISA-study (Zweitspracherwerb italienischer und spanischer Arbeiter, Second language acquisition of Italian and Spanish workers, Clahsen, Meisel and Pienemann 1983), a German project which started in 1977 and collected and analysed cross-sectional and longitudinal data from German second language (GSL) production by 45 immigrants from Spain, Italy and Portugal. It focuses on the factors that have an effect on language acquisition and the range and nature of their influence:

> " ... the language acquisition process must be studied in its dependence on socio-psychological variables, including the politico-economic conditions. We placed particular emphasis on the question of which linguistic particularities are determined by extra-linguistic factors with a high probability, and which particularities, on the other hand, stay constant for all learners, despite considerable differences between the extra-linguistic factors ... Indeed, our study leads us to hypotheses about stages of acquisition which are valid for all people studied, and to hypotheses about socio-psychologically determined variation."
> (Clahsen et al. 1983, 4f, translation by K.H.)

In the Multidimensional Model, the *dimension of development* describes the fixed order in the acquisition of structures. Meisel et al. (1981) hypothesise on the grounds of the then contemporary research that

> " ... *there exist developmental sequences which can be defined by the appearance in a strict order of certain linguistic features. This again implies that a learner acquires part of the rules in an ordered sequence ... if, however, it (a rule, K.H.) is learned, this hypothesis predicts when it will appear as compared to other rules ordered in this sequence. It is furthermore assumed by many authors that this order is normally the same for each individual learning a second language, more or less independent of the learner's first language.*"
> (Meisel et al. 1981, 110)

Implicational scaling (see ch. 1.3.1, above) is used as a tool for the definition of structures that form the stages of the developmental sequences.

The second dimension of the model, the *dimension of variation*, describes a variety space for individual differences within each developmental stage. The factors which are assumed to influence variation are parameters developed in sociolinguistic research (Meisel et al. 1981, who quote Haugen 1956 and Gardner and Lambert 1972), especially social distance from the target group, intensity of contact, attitudes and motivation (Meisel et al. 1981, 117f).

An example of a structure that is not part of the implicational hierarchy of structures and therefore not part of the developmental dimension, but which is subject to variation, is the copula. Many learners of GSL do not supply the copula in equational sentences, or only in restricted environments. This is not targetlike. However, because the equational sentence is not part of the implicational hierarchy, it can still be produced without the copula by learners who are at an advanced developmental stage.

The Multidimensional Model can be represented in a coordinate system. The following table shows an idealised distribution of learners along both axes. It illustrates the fact that according to the Multidimensional Model, accuracy can increase along the developmental (vertical) or the variational (horizontal) dimension. As an increase in accuracy can move on the variational axis only, increased accuracy does not necessarily entail a progression in the developmental sequence:

Table 1-3: Multidimensional Model (Pienemann, Johnston and Brindley 1988, 13)

```
DEV  |0.50       0.75       1.00
EL   |
O    |
P    |0.25       0.50       0.75
ME   |
N    |
T    |00         0.25       0.50
     |V  A R I  A T I  O N
       simplified        norm-oriented
```

The Multidimensional Model provides a way to clearly spell out interlanguage development. In the ZISA-study, specific structures for each developmental stage of GSL acquisition are presented, and the potential influence of socio-psychological factors on the variational dimension of linguistic production is defined and delimited.

The finding that syntactic development takes place in a fixed order is explained with cognitive skills that are built up incrementally. Clahsen et al. (1983) suggest that, together with other factors, psycholinguistic constraints shape interlanguage development. They argue that the learner's mental system must be able to process the linguistic material in question in order to produce it, but that memory and processing capacity, as elements of the mental system, are limited. As processing skills develop, the learner is able to produce increasingly complex linguistic structures (Clahsen et al. 1983, 157 ff).

The Multidimensional Model goes beyond the unidimensional approach by providing a framework that separates the dynamics of the acquisition process from the notion of accuracy. The approach which defines the complexity of a structure according to its processability was taken up later in Clahsen's model of processing strategies (Clahsen 1984) and the Pienemann-Johnston-model (Pienemann, Johnston and Brindley 1987), as well as in Pienemann's Processability Theory (in press).

Clahsen (1984) continues the cognitive approach of the Multidimensional Model by suggesting that "... the observed sequences can be explained by certain constraints inherent in the mental system" (Clahsen 1984, 219). His model understands language development as "constraint-shedding": The more complex the structures that the speaker can process, the less constraints s/he needs in order to be able to process the overly complex grammatical system of the target language.

The strategies are based on a concept of psychological complexity which is proportional to the "degree of reordering and rearrangement of linguistic material involved in the process of mapping underlying semantics on to surface forms" (Pienemann and Johnston 1996, 326). The speech processing strategies are the following:

Table 1-4: Clahsen's processing strategies (Clahsen 1984, 221f)

Canonical order strategy COS: No reordering takes place.
Initialization-Finalization strategy IFS: No element can be moved into the canonical word order, but elements can be attached to the initial or final position.
Subordinate clause strategy SCS: No permutations take place in subordinate clauses.

The stepwise shedding of these constraints, according to Clahsen, leads to a specific order of acquisition: "... central aspects of the way L2 learners acquire German syntax can be predicted by the language processing strategies" (Clahsen 1984, 221). The stages of GSL acquisition as found in the ZISA-project are explainable with the (non-) application of these strategies in the following way:

Table 1-5: GSL stages and Clahsen's processing constraints (Pienemann in press, 60)

GSL rule	Strategies
canonical order	+COS +SCS
adverb preposing	+IFS +COS +SCS
verb separation	+IFS -COS +SCS
INVERSION	-IFS -COS +SCS
verb final	-IFS -COS -SCS

Clahsen's strategies make reliable predictions for the acquisition of word order. However, there are many points of criticism (cf. Pienemann, Johnston and Brindley 1987, White 1989, Eubank 1991). A major objection is that the concept of strategies was based on transformational grammar, which has since been abandoned by large groups of the linguistic community. It is also problematic that there is no explanation for how the constrained grammar develops in the first place, and that, as White (1989) points out, the definition of strategies partially relies on findings on comprehension, whereas Clahsen's model makes claims about speech production. Lastly, because the strategies are set up to prevent the movement of subconstituents across the boundaries of major constituents, the strategies approach is restricted to the phenomena of word order. However, the predictions of Clahsen's strategies are "rock solid" (Pienemann in press, 67), and the concept of constituent structures was found to be psychologically plausible. On these grounds, Pienemann later developed a model of processing constraints which are not based on constituent movements, but on transfer of abstract grammatical information across constituent boundaries (see ch. 1.4.2 below).

The Pienemann-Johnston-Model (Pienemann, Johnston and Brindley 1987), while being based on Clahsen's psycholinguistic approach, attempts to overcome some of the drawbacks of Clahsen's strategies. It abandons the transformational approach and instead demonstrates "that initially the learner organizes his/her interlanguage around non-linguistic processing devices and gradually builds up language-specific and target language-specific processing devices" (Pienemann and Johnston 1996, 321).

The production of linguistic structures is assumed to be based on different kinds of information exchange which take place beyond word, phrase and clause boundaries. It is important to note that it is not words or constituents, but linguistic information (e.g. on number, gender etc.) which is being exchanged. Processing complexity is defined by the type of information exchange that takes place when syntactic or morphological structures are produced. The relationship of the processing skills that are necessary for the different kinds of information exchange is implicational, which again leads to the acquisition process being cumulative. This model broadens the applicability of the cognitive approach to morphology, and so Pienemann et al. (1987) can present stages of acquisition for syntax and morphology of English as a second language (ESL) and explain them within their model. The underlying information exchange processes as described in Pienemann et al. (1987, 16f) are as follows:

Stage 1: The first structure a learner produces is the canonical word order (CWO), in which the order of elements depends on semantic notions rather than category annotation. As lexical material has not yet been annotated for grammatical categories, phrase structure rules are not accessible to the learner, and linguistic information cannot be recognised, stored and then applied in other sentence positions where necessary.

Stage 2: The ability to recognise first and last elements in a string of information, i.e. elements in salient positions, is a general information processing ability which is not specific to linguistic knowledge, but at every speaker's disposal. The learner acquires the ability to exchange information between the two salient positions of a sentence, and thereby to topicalise elements.

Stage 3: When lexical items are indexed for their category, phrase structures become accessible. The learner acquires the ability to recognise information on a sentence-internal element, store this information and on that basis transfer it to a salient position. Also, morphemes whose marking depends on information exchange within the phrase, e.g. determiner-adjective agreement, can be produced.

Stage 4: In the next step, two non-salient positions are involved in the exchange of information. Inter-phrasal information exchange, as, for instance, that which is necessary for subject-verb agreement, becomes possible.

This approach, which conceptualises grammatical structures as specific types of organisation of information and explains their fixed order of acquisition within a cognitive framework, has subsequently been developed further by Pienemann in his Processability Theory (Pienemann, in press). Below, two explanatory approaches in SLA research, Government and Binding Theory and Processability Theory, will be presented and discussed.

1.4   Explanatory approaches to second language acquisition

1.4.1 Government and Binding Theory

Some researchers base their explanatory approach to SLA acquisition on a specific linguistic theory: Chomsky's Government and Binding Theory (e.g. Hyams 1986, Flynn 1987, Clahsen 1988, White 1989). This approach has the advantage of having a theoretical point of reference that lies outside the area to be explained, and gives the area of SLA theoretical strength:

> "*Until the 1980s most work in L2 acquisition theory tended to keep one eye on the classroom; it is really not until "Government and Binding Theory" (Chomsky, 1981) began to be applied to L2 acquisition that we see a truly theory-centered approach to the question of L2 acquisition ...*"
> (Gregg 1996, 49)

This approach will now be presented and discussed. It is an approach that attempts to provide an answer to the "logical problem of language acquisition":

> "*The problem is to explain how one comes to have the complex linguistic knowledge, or competence, one does, given the limited input one receives in the course of acquisition. This is a problem because the input vastly underdetermines the finally achieved competence.*"
> (Gregg 1996, 50)

Government and Binding Theory (GB) is a "property theory" (Gregg 1996, after Cummins 1983). It tries to solve the logical problem by describing the characteristics of human knowledge which permit language acquisition to take place.

GB proposes that there is innate linguistic knowledge, which is realised as the *principles and parameters* of a universal grammar (Chomsky 1982). Principles are non-variant rules that account for universal linguistic structures, and parameters describe values which are set differently for individual languages, e.g. leftbranching vs rightbranching. Parameter setting is triggered by linguistic input. GB thereby explains how linguistic knowledge occurs, and takes into account the fact that language learners do not entertain all logically possible hypotheses about a language's structure by understanding language acquisition as the unfolding of the universal grammar (UG) in the individual.

GB itself does not make specific claims about second language acquisition, but several SLA researchers have examined the influence of universal grammar as described in GB on the second language learning process. The basic research questions are whether principles and/or parameters are available to the second language learner, i.e. whether "UG is accessible", whether parameter settings are transferred, and whether there is a specific order to the setting of different parameters.

Clahsen (1988, 1990) argues for the "fundamental difference hypothesis" (Bley-Vroman 1988). According to this hypothesis, second language learners have access to universal grammar (as defined in GB) only through their first language. It is therefore not possible for them to reset parameters for the second language. As second language learners have no access to the principles of UG as a learning device, general learning strategies become influential in the learning process. This leads to learner languages which do not conform to the rules of GB, i.e. to "impossible grammars".

White (1985, 1988, 1990, 1991a, b, White et al. 1994), on the other hand, argues for partial access to UG in second language acquisition. She assumes that second language learners construct systematic interlanguages which are constrained by universal principles, as are all natural languages. The learner's initial hypothesis about second language parameter settings is that they are identical to first language settings; in reaction to negative input, however, the learner will change this hypothesis and reset parameters. White bases her claims on cross-sectional data, testing e.g. particle and adverb placement and WH-question formation. In these studies, data are often elicited by written grammaticality judgement tests. Like White, Flynn (1987, 1988, 1991) also assumes that parameter settings are transferred; where settings are identical in first and second language, acquisition is easy, or better, needs not take place at all.

Like White and Flynn, Schwartz and Sprouse (1994) assume access to UG principles and transfer of parameter settings, but they also argue for full access of UG and full transferability. Because they are interested in the course of development in the interlanguage system, they examine longitudinal data (transcripts from a study undertaken by the European Science Foundation). Their conclusion from the analysis of those data is that there are three stages of acquisition for German word order, which can all be described in terms of GB, i.e. they are "possible grammars". They assume that " ... each successive state in interlanguage emerges on the basis of the interaction of the L1 grammar, (positive) input, principles of UG and aspects of a (language) learning procedure ..." (Schwartz and Sprouse 1994, 361). So their position stands in opposition to Clahsen's view.

This summary of three approaches to the question of UG (as specified in GB) in SLA is far from being complete; however, it does provide an adequate background to the logic on which this field of research is based.

Several problems remain with the GB-approach in SLA. As Meisel (1991, 236) points out, the logical problem of language acquisition (the epistemological question of how linguistic knowledge comes into existence - which is exactly what GB attempts to explain -) does not exist in SLA if transfer is accepted as a source of knowledge (Meisel 1991, 236).

The GB-approach is also problematic in that, despite using the same linguistic theory, researchers arrive at contradictory results. Also, GB itself is still in development, and now known as the minimalist program; an accommodation to major changes in the theory (Chomsky 1995, Pienemann in press, 21ff). This makes the application to SLA problematic, because the definition of rules that are to be applied is still in flux.

In summary, the incorporation of GB into SLA has meant a paradigm shift in the field. As research became explanation-oriented and theory-driven, SLA theories came to rely on concepts from other fields and on data other than those that they were to explain, which avoids a circularity of argument. In the current context of this thesis, however, GB is not appropriate, because it is a theory that focuses on the given knowledge of a learner rather than on the characteristics of the development of linguistic knowledge. The preceding sections explained that a major characteristic of SL interlanguage is its systematic development, which is what this study intends to investigate. Gregg (1996) calls theories that answer to the "developmental problem", i.e. the question of how regularities of development can be explained, "transition theories" (Gregg 1996, 51). Processability Theory (Pienemann in press) is a transitional theory that explains which kinds of structures can occur in SL interlanguages, and why they are acquired in their specific order. It is now described below.

1.4.2 Processability Theory

Processability Theory (Pienemann in press) offers an explanatory approach that takes account of the concept of systematic development as a major characteristic of the second language acquisition process, and is compatible with the dynamic paradigm. Processability Theory is a cognitive theory that incorporates the concept of interlanguage as developing systems by focussing on the *processing prerequisites* that are necessary for the production of linguistic structures. The language acquisition process is understood as the gradual acquisition of mechanisms for the processing of linguistic information.

Processability Theory is also in accordance with models of development that have been elaborated within a wider context of research on the growth of natural systems. It describes linguistic development in such a way that it is compatible with developments in biological systems which are mediated by their specific environment, i.e. developments that start from a genetically coded "initial state", but whose further course is driven by the interaction of given and environmental factors (Pienemann in press, 25ff). Processability Theory has a clear stance on the developmental problem of language acquisition, explaining similar developmental paths that have been found in the acquisition of different languages.

The starting point of Processability Theory is the psychological scenario of speech processing. A fundamental premise is the fact that a speaker can only hypothesise about and produce structures that s/he can process. Therefore, the acquisition of a language "depends to a large extent on the sequence in which processing prerequisites develop which are needed to handle the TL's components" (Pienemann in press, 53). In order, therefore, to explain the language acquisition process the development of the underlying processing prerequisites must be described. These processing prerequisites are described in Processability Theory on the basis of Levelt's (1989) and Kempen and Hoenkamp's (1987) theories. Key points of Levelt's procedural model of speech production will be summarised below.

Real-time language production challenges the speaker with the problems of time constraints and linearisation: what is required is rapid word retrieval and a fast temporal alignment of conceptualisation of a proposition, its translation into linguistic structure and its articulation (Pienemann in press, 69f). Levelt (1989) presents a incremental, piecemeal model of language production in which sentences are built from the smallest unit/from smaller to larger units in order to account for the problems of speed and linearisation. He assumes processing sub-components which can work on each other's still-incomplete output and which

> "... are specialized and ... do their work in rather autonomous fashion. Most of the components underlying the production of speech ... function in a highly automatic, reflex-like way. This automaticity makes it possible for them to work in parallel, which is a main condition for the generation of uninterrupted fluent speech. The special way in which this cooperation between components is organized (is) so as to result in "incremental production"."
> (Levelt 1989, 2)

A central factor in this model of language production is memory storage. As a necessary condition for the linearisation described above, there need to be storage facilities in which propositional as well as linguistic information can be deposited. It is assumed that these storage facilities are highly specialised and have fast access times in order to meet the above mentioned time-constraints in oral production. It is important to note for the data analysis methodology of this study in Chapter 4 that main units of memory in this system are constituents, such as noun phrases, an assumption which is based on research in cognitive psychology (Pienemann in press, 38ff). This fact permits the application of an analysis methodology such as distributional analysis to the data. This method of analysis will indeed be used in Chapter 4.2 on the JSL data in this study.

The concept of a incremental language production becomes more graphic when following the (here highly simplified) path of sentence construction: first, *concepts* (from the conceptualiser) call *words* and their *lemmata*, i.e. the grammatical and phonological information attached to them, from the lexicon. Then, in the formulator, these lexical items either build heads of phrases, or are attached to one. *Phrases* are produced. At the next level, several phrases are attached to a higher (e.g. sentence) node; at this point, *sentences* are produced. Processing components are highly

specialised and exchange information in a parallel, i.e. non-serial, manner; one module can work with the still-incomplete output (in the form of linguistic information) of another module (Levelt 1989, 24). This allows for the speed of sentence production.

This speech production model is characterised by the fact that the operations, processing mechanisms and the linguistic structures based on them form a *hierarchy*, because, as said above, information processed and generated in one procedure is required in the other:

> "*The hierarchical nature of (these processing resources) arises from the fact that the resource of each lower level is a prerequisite for the functioning of the higher level: A word needs to be added to the L2 lexicon before its grammatical category can be assigned. The grammatical category of a lemma is needed before a category procedure can be called. Only if the grammatical category of the head of phrase is assigned can the phrasal procedure be called. Only if a phrasal procedure has been completed and its value is returned can Appointment Rules determine the function of the phrase. And only if the function of the phrase has been determined can it be attached to the S-node and sentential information be stored in the S-holder.*"
> (Pienemann and Håkansson 1996, 13)

The implicational relationship of operations forms what Pienemann (in press) calls the *processability hierarchy*. Processability Theory is based on the inference that language acquisition must proceed along this hierarchy, starting from the lowest level, because it is impossible for a speaker to produce a higher level structure if a lower level structure, or its processing prerequisites, does not exist. The following overview presents the different types of morphology, distinguished by the type of information exchange that are required for their production. The order of acquisition will then be shown on that basis.

1. The child eats many apples.

Lexical morphology: An example for lexical morphology is tense marking (see above: "eats", or 'eat' vs 'ate' or 'have/has eaten'). Tense is marked on the verb; this information comes directly from the lexical entry and need not be mapped on any information from other lexical items. There is no information exchange between words, constituents or phrases, and therefore no information must be held in memory. Only a category annotation for the verb and the information in its lemma that it can take tense morphology are necessary. Therefore, tense marking is *lexical*.

Phrasal morphology: In Standard English, determiners and nouns are annotated for number (see above: "many (pl) apples (pl)"). They must agree in number. To achieve this, information on the diacritic feature 'number' of both items comes from and is delivered in the same phrase; information must be stored in the phrasal procedure. This kind of morphology is *phrasal*.

Inter-phrasal morphology: The annotation of number and person for subject and verb must match in Standard English (see above: "child (3rd Ps) eats (3rd Ps)"). To realise this, the information about number and person must be exchanged beyond phrase boundaries, and for this, it must be held in memory in the S-procedure. This morphology is *inter-phrasal*.

It is assumed that this model of sentence generation applies to all languages; however, the specific information for lemmata, phrase and sentence procedures differs between languages, as do category annotations, diacritic features, syntactic procedures and word order rules. Language acquisition, therefore, includes the acquisition of this language-specific information, which feeds into the computational mechanisms needed to process it.

Language learners do not have language-specific knowledge at their disposal from the beginning, but accumulate it stepwise. Processability Theory claims that linguistic processing prerequisites form an implicational hierarchy and can only be acquired in the order of this hierarchy. At each stage of the processing hierarchy, only specific linguistic structures can be produced. This leads to the acquisition of linguistic structures developing in the sequence of category annotation first, then phrase procedures and then sentence procedures, and this in turn leads to the order of acquisition of linguistic structures as they were found for ESL GSL, Spanish SL, Swedish SL and, in this study, JSL.

It is possible to predict L2 syntactic and morphological outcome from these processing prerequisites and their incremental development:

stage 1:
In the beginning phase, a learner has stored lemmata which are only annotated for meaning. *No structures* can be produced yet.

stage 2:
At this stage a lemma can be annotated for additional diacritic features such as tense or number, because no information storage and exchange is necessary for *lexical morphology*. *Canonical word order schemata* (CWO) can be produced at this stage as well, because its ordering can rely on semantic-pragmatic notions. All additional information, e.g. negation markers or spatial or temporal information, is placed behind the canonical word order structure.

stage 3:
Agreement within a phrase, e.g. diacritic features of determiner and noun, can be marked (*phrasal morphology*) once the learner has acquired the processing prerequisites for the storage of diacritic features. *Adverb-fronting* (AdvP+CWO) and topicalisation require the same prerequisites and can be acquired at this stage.

stage 4:
Inter-phrasal morphology, such as subject-verb-agreement, where information on person and number must be retrieved in the subject phrase and delivered in the verb phrase, requires information to be stored in the S-procedure and exchanged beyond phrase boundaries. Inter-phrasal information exchange also makes it possible to produce sentences which do *not follow the canonical word order*. First, a *perceptually salient* (i.e. sentence-initial or sentence-final) position is involved in inter-phrasal information exchange.

<u>stage 5:</u>
Syntactic operations at stage 5 include the linguistic processing prerequisites of stage 4, and inter-phrasal information exchange is possible. At stage 5, the learner also acquires the skill for information exchange between phrases *within the sentence*. An example of a structure that occurs at stage 5 is *subject-verb inversion* in German: the learner acquires the ability to perform the target-like operation of inverting subject and verb when an adverbial phrase in the sentence-initial position precedes them.

<u>stage 6:</u>
The processing prerequisites of stage 6 allow information to be exchanged beyond clause boundaries, an operation on the basis of which a speaker can produce *subordinate clauses*.

The following table summarises the stages of acquisition for processing prerequisites and their L2 structural outcome:

Table 1-6: Predictions for language acquisition (Pienemann in press, 184)

stage	Processing prerequisites	L2 process
1.	Word/lemma	'words'
2.	Category procedure	lexical morphemes, CWO
3.	Phrasal procedure	phrasal information exchange
4.	S-procedure/word order rules A	inter-phrasal info exchange, + salient
5.	S-procedure/word order rules B	inter-phrasal info exchange, - salient
6.	clause boundary	main and subordinate clauses

At each stage of this processability hierarchy, only the structures that are based on the existing processing prerequisites can be produced. This constrains the structural variation that is possible at the different stages in interlanguage development. The range of structures that are possible at a certain point in time, or at a certain stage, are "Hypothesis Space" called in Processability Theory:

> "... *processing prerequisites which are available at any one stage constrain the range of structural hypotheses, regardless of what would be logically possible hypotheses. This range of structural hypotheses will be referred to as Hypothesis Space.*"
> (Pienemann in press, 239)

The concept of the hypothesis space is related to the variational dimension of the Multidimensional Model (see ch. 1.3.5), but is defined not on the grounds of socio-psychological parameters, but formally within the definition of processability. Because the hypothesis space constrains the range of logically possible structures to the range of processable structures, it has the potential to define interlanguage variation in an *a priori* manner: for each acquisition stage, psycholinguistically possible structures can be defined, and others ruled out.

The interlanguage variety that an individual learner chooses depends on a range of different factors. Type of acquisition and type of instruction are examples for which Pienemann (in press, ch. 6) demonstrates that they influence the occurrence of specific interlanguage varieties, all of which lie within the constraints of the hypothesis space. Another factor that has an influence on the way possible structures are chosen and produced is the whole context of discourse with its specific requirements.

In conclusion, Processability Theory differs from Government and Binding Theory fundamentally in that it is not a property, but a transition theory. It is based on findings on interlanguage development and extends SLA research with an explanatory approach that takes account of interlanguage development with reference to findings from research in other disciplines, namely findings from the field of psychology and, more generally, from accounts of growth in biological systems. Processability Theory also has the potential to be universally applicable to the acquisition of all languages, because human processing capacities are not language-specific, but universally identical.

The data analysis of this thesis provides a basis for a subsequent application of Processability Theory, because both the study and Processability Theory are built on the same premises and assumptions. Such an application should be able to test and to extend the theory.

2. THE ACQUISITION OF JAPANESE

2.1. Overview of Japanese grammar

The purpose of this section is to present a sketch of the Japanese grammar to those readers unfamiliar with Japanese. The presentation concentrates on those aspects of the language which are important for understanding of the following data analysis. All paragraphs are annotated with chapter numbers in order to facilitate later cross-referencing. However, relevant aspects of the Japanese grammar will be explained later in detail where necessary. Unless otherwise indicated, the following is based on Kuno (1972), Lewin (1975) and Shibatani (1990).

2.1.1 Basic sentence structures

Japanese is an agglutinative, consistently leftbranching verb-final language. The unmarked word order is SOV:

1. *Tomoko   wa   ringo   o   taberu.*
   (name)   (top-p)   apple   (obj-p)   eat
   Tomoko eats apples.

As Japanese is a non-configurational language, the order of subjects, objects and adverbial phrases can be changed according to pragmatic needs (Kuno 1972, 3):

2. *Ringo   o   Tomoko   ga   taberu.*
   Apple   (obj-p)   (name)   (subj-p)   eat
   Tomoko eats apples.

3. *Kinoo   Tomoko ga   ringo   o   tabeta.*
   yesterday   (name)   (subj-p)   apple   (obj-p)   eat (past)
   Yesterday Tomoko ate an apple.

4. *Tomoko ga   kinoo   ringo   o   tabeta.*
   (name)   (subj-p)   yesterday   apple   (obj-p)   eat (past)
   Yesterday Tomoko ate an apple.

The Japanese equational sentence has the structure 'N wa N cop':

5. *Kore wa   ringo   da.*
   this   (top-p)   apple   (cop)
   This is an apple.

6. *Tomoko wa   shinsetsu   da.*
   (name)   (top-p)   friendly   (cop)
   Tomoko is kind.

When a location is described, the existential verbs 'aru' (for non-animate subjects) and 'iru' (for animate subjects) are used:

7.   *Tomoko*   *wa*   *daigaku*   *ni*   *iru.*
       (name)   (top-p)   university   (loc-p)   be
       Tomoko is at university.

2.1.2 Question formation

Questions are only marked by the question-markers '-ka' or 'no' in sentence-final position, and not by a change of word order. WH-words often stand in sentence-final position, but this is not obligatory:

8.   *Tomoko*   *ga*   *ringo*   *o*   *taberu*   *no?*
       (name)   (subj-p) appl   (obj-p)   eat   (qu-p)
       Does Tomoko eat apples?

9.   *Tomoko*   *ga*   *nani*   *o*   *taberu*   *no?*
       (name)   (sub-p)   what   (obj-p)   eat   (qu-p)
       What does Tomoko eat?

2.1.3 (Case-) particles and postpositions

Grammatical and semantic relations are marked by case-particles and other postpositions. Most particles mark more than one feature. 'ga' and 'wa', for example, usually called subject- resp. topic marker, stand in a complementary relationship to mark (in)definiteness, among other features. 'ni' describes the direction 'to(wards)' as well as the grammatical indirect object and the agent in a passive construction. All particles follow the noun directly. Postpositions can therefore be interpreted as having the function of noun markers.

topic marker '*wa*':	Tomoko wa	concerning Tomoko
subject marker '*ga*':	Tomoko ga miru	Tomoko sees
direct object marker '*o*':	Tomoko o miru	to see Tomoko
ind. object marker '*ni*':	Tomoko ni	to(ward) Tomoko/by Tomoko
postpositions:	Tomoko mo	Tomoko as well
	Nihon ni	in Japan (static)
	Nihon de	in Japan (dynamic)

2.1.4 Noun phrases

Noun phrases consist of at least one noun and one case particle or postposition. As Japanese is leftbranching, the modifying element precedes the modified; adjectives, quantifiers and relative clauses precede the noun (for relative clauses, see ch. 2.1.8):

10. *Ookii   zoo   wa   takusan   no   ringo   o   taberu.*
    big   elephant (top-p) many   (con-p) apple (obj-p) eat
    Big elephants / a big elephant eat(s) many apples.

Nouns can also function as modifiers, when connected to the head noun by the connecting particle 'no':

11. *Zoo   no   kodomo*
    elephant   (con-p) child
    The child of the elephant; the elephant's child

Locations are described not by postpositions, as they are in English by prepositions such as 'behind', 'on' etc., but by nominal constructions similar to the English 'on top of X':

12. *Ringo   ga   teeburu   no   ue   ni   aru.*
    Apple   (subj-p) table   (con-p) top   (loc-p) be
    The apple is on the table.

This complex noun phrase, having the structure 'noun particle noun particle', is therefore a duplication of a simple noun phrase. It looks like a genitive construction, but its meaning is not necessarily possessive. It can be simply modifying:

13. *Nihonjin   no   tomodachi   wa*
    Japanese person (con-p) friend   (top-p)
    My Japanese friend OR the friend of the Japanese

2.1.5 Topic

Japanese marks subjects as well as topics or, according to Li and Thompson (1975, 60), is a "subject-prominent and topic-prominent language". It allows double-subject marking, but no double-topic marking. The topic can be identical with a sentence element (subject, object, adverbial phrase). In that case, the topic-marker 'wa' replaces subject and object markers and follows postpositions:

14. *Tomoko   wa   ringo   o   taberu.*
    (name)   (top-p) apple   (obj-p) eat
    Tomoko eats an apple.

15. *Tomoko   ga   ringo   wa   taberu.*
    (name)   (subj-p) apple   (top-p) eat
    It is an apple that Tomoko eats.

16. *Yasumi   ni   wa   ryokoo   ni   iku   tsumori   da.*
    Holidays   at   (top-p)   journey   to   go   plan   (cop)
    In the holidays, (I) plan to go on a trip.

The topic can also

> " ... *limit the applicability of the main predication to a certain restricted domain....The topic sets a spatial, temporal, or individual framework within which the main predication holds.*"
> (Chafe in Li and Thompson 1975, 64).

In that case, the topic must be closely related to the subject, e.g. stand in a relationship of whole-part or possessor-possessed or in an inclusion relationship (Shibatani 1990, 273ff):

17. *Zoo   wa   hana   ga   nagai.*
    Elephant   (top-p)   nose   (sub-p)   long
    An elephant is such that the trunk is long/Elephants have long trunks.

Shibatani interprets this as suggesting that a Japanese sentence consists of a topic and a comment, with the topic having the structure of a noun phrase, and the comment having the structure of a complete sentence. When a sentence constituent is the topic and stands in topic-position, its position in the comment-sentence is empty (Shibatani 1990, 274). The deep structure of Japanese is not of major interest here; but it is important to note that Japanese offers the learner a structure to mark topic-comment relationships. It seems to be a universal tendency of learners in early stages to mark topic and comment rather than grammatical relations such as subject and object (see e.g. Huebner 1983, Schumann 1978 and Klein and Dittmar 1979), and Japanese provides learners with a chance to express this in target-like structures.

2.1.6 Adjectives

Japanese has two types of adjectives, i.e. categories that are semantically defined as characterising nouns or, "things", and syntactically defined as being dependent on a head noun[1]. **One type of adjective** directly precedes its head noun:

18. *Tsuna   wa   oishii sakana   da.*
    tuna   (top-p)   tasty   fish   (cop)
    Tuna is a tasty fish.

These adjectives can take on features that are typologically typical of verbs, as they carry a finite tense-ending and can be marked for negation and for adverbiality:

---

[1] There is also a third type, which Backhouse (1993, 69) calls "no-adjectives". They are linked to the following noun by the particle 'no', which also connects two nouns. As they are a small subclass which is not relevant for the data analysis of the present study, they are not taken into regard here.

19. *Zoo   wa   hayai. Zoo   wa   hayaku   hashiru.*
    eleph. (top-p) fast   eleph. (top-p)   fast(-adv) run
    Elephants are fast Elephants run fast.

20. *Kinoo tabeta tsuna wa oishikatta.*
    yesterday ate tuna (top-p) tasty-(past)
    The tuna that (we) ate yeasterday tasted good.

21. *Tsuna   wa   oishikunai.*
    tuna   (top-p)   tasty(-neg-non-past)
    Tuna does not taste good.

The other type of adjective, usually called "nominal adjective" or "na-adjective", is connected to its head noun by the particle 'na'. In predicate position, it behaves like a noun, i.e. a copula may follow it, on which negation is marked when necessary.

22. *Kore wa   kirei   na   hana da.*
    this   (top-p) beautiful(con-p)   flower   (cop)
    This is a beautiful flower.

23. *Kono hana wa   kirei   da.*
    this   flower(top-p) beautiful (cop)
    This flower is beautiful.

24. *Kono   hana   wa   kirei.*
    this   flower   (top-p) beautiful
    This flower is beautiful.

When in adverbial position, adjectival nouns receive the postposition 'ni':

25. *Sono   hito   wa   kirei   ni   utaru.*
    this   person (top-p) beautiful(-ly)   sing
    This person sings beautifully.

2.1.7 Quantifiers

Quantifiers precede the noun or the verb and take on structural behaviour of other classes, mostly nouns and adverbs. The first quantifiers in the learner language analysed in this study are 'takusan'-'many, much', which can be nominal or adverbial, 'sukoshi'-'a little, a few', which is only adverbial, and 'iroiro (na)'-'various', a nominal adjective that can be used adverbially:

26. *Zoo   wa   takusan   no   ringo   o   taberu.*
    elephant (top-p)   many   (con-p) apple   (obj-p) eat
    Elephants eat many apples.

27. *Zoo   wa   ringo   o   takusan   taberu.*
    elephant (top-p)   apple   (obj-p) many   eat
    Elephants eat many apples/Elephant eat apples a lot

28. *Zoo   wa   ringo   o   sukoshi   taberu.*
     elephant (top-p) apple (obj-p)   a bit/little   eat
     Elephants eat few apples/Elephants eat apples rarely

29. *Kinoo   iroiro   na   nomimono   o   nonda.*
     yesterday   various   (con-p) drinks   (obj-p) drink(-past)
     Yesterday I drank various drinks.

30. *Kinoo   ringo   nado   iroiro   tabeta.*
     yesterday apple   and so on various eat(-past)
     Yesterday I ate apples and other fruits.

2.1.8 Verb morphology and verb phrases

Japanese verbs are marked for tense and negation. They appear in the "plain form" or the polite "masu-form". The order of morphology is negation-before-tense:

<u>plain form</u>   <u>polite form</u>

tabe- ru   *tabe- masu*
eat   plain (non-past)   eat   polite (non-past)
(I) eat

tabe- ta   *tabe- mashita*
eat   (past)   eat   polite (past)
(I) ate

tabe na-   i   *tabe- mas- en*
eat   plain(neg) (nonpast)   eat   polite (neg) (non-past)
(I) do not eat

tabe- na-   katta   *tabe- mas- en-   deshita*
eat   plain (neg) (past)   eat   polite (neg) (past)
(I) did not eat

Japanese has no subject-verb agreement, but the verb shows

> *"a high degree of agglutination involving a fair number of suffixes in a row. As in many other languages, the order of these verbal affixes is generally fixed, though alternate orders are infrequently observed ... the following is the typical order:*
> *Vstem - causative - passive - aspect - desiderative - NEG - tense. "*
> (Shibatani 1990, 306f).

Verb clusters often describe aspects of actions such as beginning, end, doing in preparation or trying to do. The verb phrase then contains a verb in the non-finite, serial inflection '-te' and a finite verb, carrying the aspectual meaning, as is illustrated in the following:

31. *Tomoko   ga   Kimiko   ni   denwa   o   shite   mita.*
    (name)   (subj-p) (name)   (i.o.-p) telephone (obj-p) do(-serial) try(-pst)
    Tomoko tried giving Kimiko a ring.

The form 'V-te iru' describes progressive or resultive aspects:

32. *Tomoko   ga   gohan   o   tabete   iru.*
    (name)   (subj-p) rice   (obj-p) eat(-serial) be
    Tomoko is eating rice.

33. *Tomoko   ga   kekkon   shite   iru.*
    (name)   (subj-p) wedding   do(-serial) be
    Tomoko is married.

In the same way as adjectives precede nouns, so do adverbs precede verbs. Shibatani (1990, 281ff) discusses the Japanese verb phrase in detail. One of his points is of relevance to our present discussion, i.e. that directly verb-preceding adverbs are possible:

34. *Zoo   wa   hayaku   hashiru.*
    elephant (top-p)   fast   run
    Elephants run fast.

2.1.9 Complex sentences

Complementizers stand in sentence-final position behind the verb, and the modifying clause precedes the modified:

35. *Tenki   ga   ii   kara   sanpoo o   shimashoo.*
    weather (sub-p)   good   because   walk (obj-p)   do-let's
    Because the weather is good, let's have a walk.

Some complementizers subordinate, others coordinate. Subordination is marked with a verb form that that is also the finite plain form. The complementizers 'kara'-'because' and 'ga'-'but' are coordinating:

36. *Tenki   ga   ii   ga sampoo shitakunai.*
    weather (subj-p) good   but   walk   do-(want-not-pres)
    The weather is nice but I don't want to take a walk.

Complementizers such as 'toki ni' - 'when' and 'mae ni' - 'before' are subordinating. Although originally nouns modified by relative clauses, they function as complementizers and are treated as such.

37. *Nihon   ni   sunde   ita   toki ni takusan sakana*
    Japan   (loc-p) live (-serial)   (-progr) when   much   fish
    o   tabeta.
    (obj-p)   eat(-past)
    When I was in Japan, I ate a lot of fish.

Relative clauses precede the head noun directly. There are no relative pronouns or other complementizers. Relative clauses can be sentence-initial or embedded, depending on the noun that they relativise:

38. *Asoko   ni   mieru   hito   wa   Tanakasan   da.*
    over there (loc-p) be visible person (top-p) (name) (-title) (cop)
    The person that you see over there is Mister Tanaka.

39. *Konban   kinoo   katta   hon   o   yomitai.*
    evening   yesterday bought book (obj-p) read(-des)
    Tonight I want to read the book that I bought yesterday.

Japanese has two nominalisers, 'no' and 'koto', which nominalise complete sentences. These sentences precede the nominalisers and are structurally relative clauses:

40. *Tomoko   ga   ringo   o   tabete   iru   no   o   mimashita.*
    (name)   (subj-p) apple   (obj-p) eat (-ser) (progr) (nom) (obj-p) saw
    I saw Tomoko eating an apple.

2.1.10   Passives and causatives

Passives are formed by adding the suffix '(r)areru' to the verb root. The agent is marked with the particle for the indirect object, 'ni', and the object of the action is marked by 'wa' or 'ga'. The passive is often used as an adversative passive "which suggests that one has suffered or been inconvenienced by the action of another" (Clarke and Hamamura 1981, 222). '(r)areru' is also a respect marker. The hearer derives the specific function of the passive from the context:

41. *Taroo   wa   Tomoko   ni   nagurareta.*
    (name)   (top-p) (name)   (i.o.-p) hit(-pass-past)
    Taroo was hit by Tomoko.

42. *Ame ni   furareta.*
    rain (i.o.-p) rain(-pass-past)
    It rained on me/I got wet, because it rained.

43. *Sensei   ga   senshuu   Yooroppa   kara   kaeraremashita..*
    teacher   (subj-p) last week (Europe) from   return(-pass)
    The teacher returned from Europe last week.

The **causative** is formed by adding '(s)aseru' to the verb root. The causer is marked by 'ga' or 'wa', and the causee is marked by the object particle 'o'. Passive and causative can be combined.

44. *Tomoko   ga   Kimiko o   nakaseta.*
    (name)   (subj-p) (name) (obj-p) cry(-caus-past)
    Tomoko made Kimiko cry.

2.2 Previous studies on the acquisition of Japanese

This section reviews literature on studies of Japanese interlanguage, with a specific focus on studies explaining and accounting for the development of interlanguage grammar. As a result, studies such as Shirai's (1995) on the development of tense-aspect marking are excluded from the discussion because of their concentration on acquisition of semantic notions rather than syntactic development. The studies reviewed in this section will provide a comparative framework for the findings from the present study, to test if the phenomena of Japanese interlanguage development are similar across different types of acquisition and different learning conditions.

2.2.1 Clancy (1985)

Clancy (1985) provides a detailed survey of the major studies of Japanese first language (JFL) acquisition and infers characteristics of Japanese language development from them. The following table lists those structures for which Clancy suggests a sequence of acquisition (Clancy 1985, 381-383) and which are of relevance in the current context:

Table 2-1: JFL acquisition stages, following Clancy (1985)

1. One-word stage	names, things, formulae
2. First stage of grammatical development	two-word utterances verb morphology (usu. tense, negation) sentence-final particles N *wa* and possessive N *no* Yes/No and wh-questions
3. Frequent two-word utterances	more verb morphology: *V-te iru, V-te oku* case particles N *no* N, N *mo* N *mo* first conjunctions (*V-te, V-temo*)
4. Expansion of morphological devices	more verb morphology (*V-te kuru*) complex locatives, N *no* not only possessive conjunctions (coordinating) one-word relative clauses
5. Further expansion	conjunctions (subordinating: *toki, tokoro, koto*) passives and causatives

Canonical word order is acquired early, and children tend to produce adverbials and topicalised elements after the core sentence (Clancy 1985, 420f), i.e. in the salient sentence position in which second language learners also tend to produce all information that is not part of the canonical word order (see ch. 1. 4.2). Sentence-final particles, which also stand at this salient position, are acquired as early as logically possible, i.e. at the two-word stage (Clancy 1985, 381).

Case particles have obviously no case-marking function in early speech. Clancy assumes that particle choice depends on the noun position in the sentence (e.g. 'ga' for the first noun in sentence; 1985, 390) or on semantic notions such as agency or animacy, or that particles are associated with particular verbs (Clancy 1985, 391). The fact that most errors occur where functional and grammatical roles do not map (as in constructions with receiving and giving verbs and passives) suggests that semantic notions of agency have a strong influence on particle choice. Clancy explains the fact that particles are produced at all by suggesting that they might function as phrase boundary markers. This is supported by the observation that case particles are not produced earlier than the two-word, or two-phrase, stage, i.e. when word delimitation is necessary.

Verb morphology is acquired earlier in JFL than in EFL (relative to MLU; Clancy 1985, 426); some inflections occur before MLU reaches 2.0 (Clancy 1985, 381). This might be due to the fact that Japanese is a pro-drop language, which results in MLU's being shorter because there is no subject. In early JSL learner language, on the other hand, there is a strong tendency to provide the hearer with all information pertinent to the topic, i.e. the subject is almost always produced (Kawaguchi 1996). Inflection for past tense and negation occurs earlier than aspect marking. The first type of aspect marking is *V-te iru*; other forms with full verbs as auxiliaries (e.g. 'oku' - 'to put', 'kuru' - 'to come') follow later.

The first **modifications** in the noun phrase occur with noun phrases **NP -> N no**, then with **NP -> N no N**. Sometimes there is an intermediate step with the structure **NP -> N N** (Clancy 1985, 483) before **N no N** is produced. 'no' is often overgeneralised and used for modifiers such as adjectives and relative clauses as well (Clancy 1985, 458f)[2]. The relative time of acquisition of **adj-N-phrases** cannot be clearly defined, but it must be assumed to be after **N no N** and **adj no N**-phrases have been acquired.

Clancy suggests a developmental path for the acquisition of **adjective morphology** (Clancy 1985, 403ff). The crucial point is that children add negation and past tense marker to the adjective, leaving it uninflected, before they inflect the adjective itself (sentences 45-47 from Clancy 1985, 403f)):

45.   *Atsui- nai.*
       hot   (neg)
       (It) is not hot.

46.   *Samui- kunai.*
       Cold   (neg)
       It is not cold.

---

[2] Analysis of data in this study will show that JSL learners tend to overgeneralize 'no' and link adjectives to nouns by it as well. Huter (1992) shows that JSL learners also tend to link relative clauses to the head noun by 'no'.

47. *abunai-   katta.
    dangerous (past)
    (It) was dangerous.

Negated past is the last inflection acquired. Clancy (1985, 405) describes an interim stage, in which children place, incorrectly, the past before the negation marker: yo-katta-kunai' - 'It was not good'. **na-adjectives** are used and inflected like adjectives before their specific morphology is acquired (examples from Clancy 1985, 403f):

48. *Suki-   nai.
    likable- (neg)
    I don't like it.

49. *Kirei   katta.
    beautiful (past)
    It was beautiful.

Coordination is also acquired after **N no** N-phrases. Like verb morphology, conjunctions are produced relatively early (Clancy 1985, 439). According to Clancy (1985, 439), the first conjunctions are **V-te** and **V-temo**, i.e. verbal morphemes. It seems, however, that conjunctions such as 'kedo' - 'but' and 'kara' - 'because' should for the first phase be interpreted as verb morphology as well, or as information added to the canonical word order in final position rather than as complementizers, because in the beginning phase of acquisition there follows, according to Clancy, no second clause. An example from Clancy (1985, 504) is illustrative:

50. (h)atte   ageru   kara,   mama.
    paste   give   because mama
    Because I'll paste it for her, mama.

The acquisition of **relative clauses** starts at the same time as the first coordinating conjunctions with one-word (i.e. verb) relative clauses. More complex relative clauses and subordination are acquired later (Clancy 1985, 382). In the acquisition of relative clauses, several reorganisations of the rule system are necessary (Clancy 1985, 466ff); in comprehension, children tend to understand relative clauses as sequential clauses, perhaps due to the lack of relative clause markers. Leftstanding versus embedded position and the grammatical role of the head noun appear to be the main factors influencing the order of acquisition.[3] The acquisition of all types of relative clauses therefore stretches over a long period. The same is true for passives and causatives, whose acquisition goes through several stages of reorganisation (Clancy 1985, 463). The onset-time of acquisition for passives and causatives is, in relation to other structures, late.

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[3] Huter (1992) finds that in JSL acquisition, the order of acquisition of relative clauses follows the order of the noun phrase accessibility hierarchy (Keenan and Comrie 1977). The same may be true for JFL.

In summary the following sequence of acquisition can be inferred from the results of different studies as quoted in Clancy (1985):

1-word utterance -> N no and tense/negation marking -> N no N, V-te V and V-te S -> adj N, coordination and 1-word relative clause -> subordination and relative clause -> passive and causative.

Clancy suggests explanations for the findings on several levels; perceptual salience, which causes unit-final features to be acquired earlier than others, Slobin's operating principles, and contextual-pragmatic support. A strong point is made for developmental sequences in JFL acquisition, and it will be worthwhile to compare the findings Clancy quotes to JSL development.

2.2.2 Nagatomo et al. 1993

Nagatomo et al. (1993) conducted a longitudinal study on JSL acquisition by six informants with different first language backgrounds. The syntactic features investigated are conjunctive expressions, particles 'wa' and 'ga', and the adjectival past form. Results show that the incorrect choice of 'wa' and 'ga' increases over time, which might be due, according to Nagatomo et al., to the acquisition of new grammatical structures and thereby new environments for the particles. It should be added that both particles have several semantic-pragmatic functions each. From the data presentation in Nagatomo et al. (1993) it is not clear which particle choice was used to mark which function. In cases of incorrect particle choice the correct particle was identified, but this tells neither about the discourse environment nor about semantic functions.

The error of marking **adjectival past** with the copula instead of adjective inflection occurs with all of Nagatomo et al.'s informants (as it does in JFL acquisition, see above). This sometimes occurs parallel with correct productions. In the paper available to me (K. H.), no differentiation according to the lexical and syntactic environment of the **adj+cop**-structures has been made, and it is not clear on which factors and which functions the choice of form depends. This makes it difficult to place the structure (at a specific point) in the course of interlanguage development and to infer its temporal relationship to the development of other structures. For current purposes, the data on **conjunctive expressions** are equally problematic, because they are from written data; presumably, different strategies of information processing and of rule application apply to written and spoken production, and therefore the results of written data analysis are not taken into account here. (For a more detailed discussion of this see ch. 3.3.1).

However, data from Nagatomo et al. clearly show that in language development, incorrect usage of forms often occurs after apparently correct usage. This indicates the learners' reorganisation of their rule-system; the presentation of how exactly this process takes place is the aim of the present study.

The studies by Doi and Yoshioka (1990) and Kanagy (1991) both focus on developmental aspects of syntax acquisition, using the Pienemann-Johnston Model and the Multidimensional Model respectively for the explanation of findings. They will now be presented.

2.2.3 Doi and Yoshioka 1990

Doi and Yoshioka (1990) studied the acquisition of the particles 'wa', 'ga' and 'o'. They describe the function of 'wa' as topic continuation and claim that it should be acquired at the stage of adverb fronting, because no analysis of sentence-internal elements is necessary. 'ga' and 'o', on the other hand, denote subject and object, the recognition of which requires the analysis of sentence-internal elements. Doi and Yoshioka further claim that their usage should be acquired at the stage of inversion, because two categories have to be recognised.

The results of the experiment support the hypothesis that 'wa' is acquired earlier than 'ga' and 'o'. However, it is problematic that Doi and Yoshioka do not consider the possibility of comprehension being influenced by semantic notions rather than particle choice, and that in production, particle choice may depend on factors entirely different from grammatical roles - which rely on the existence of a case system in the first place -, e.g. noun phrase position in the sentence (as has been suggested for JFL by Clancy 1985), or verb-particle combinations as lexical chunks. The major problem in their analysis is that 'wa' and 'ga' can mark plus and minus values of the same feature, e.g. 'specificity'. As both particles depend on the same feature, one can obviously not be acquired without the other; so it seems reasonable to assume that the reason for incorrect usage must lie elsewhere.[4]

2.2.4 Kanagy 1991

A detailed longitudinal study on Japanese interlanguage development has been carried out by Kanagy (1991, 1994). The development of negation in oral production by 34 JSL learners with different first language background and knowledge of Japanese was observed over one academic year. Based on studies on interlanguage development in Indo-European languages and in JFL acquisition, Kanagy's research questions are whether there is a developmental pattern observable in JSL development; how it manifests itself; whether it is similar to developmental patterns

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[4] I would like to thank S. Kawaguchi for pointing this out to me (personal communication).

of negation in Indo-European languages; whether there are similarities between L1 and L2 development in Japanese; and whether there is a range of variation at different points of acquisition (Kanagy 1991, 7f).

Kanagy analyses the data from each interview according to the category environment of negation produced, because in target-Japanese, the form of negation varies according to its scope over nouns, verbs and adjectives. Verbal negation is marked by a negative suffix that is attached to the verb stem. Example sentence (51) below from Kanagy (1991, 27) illustrates this:

51. *Tabe - na- i*
     eat-   NEG- NONPAST
     (I) don't/won't eat

All regular adjectives (as opposed to nominal adjectives, see ch. 2.1.6) can be inflected to show tense and mood, including negation. To express nonpast negation, the nonpast-suffix '-i' is replaced by '-ku', followed by the negator '-na' and the nonpast form '-i'; i.e. the adjective receives the suffix '-nai' as does the verb in sentence (51) (Kanagy 1991, 32). Examples from Kanagy (1991) illustrate this:

52. *Aka- i*
     red- NONPAST
     (It) is red

53. *Aka- ku- na- i*
     red   NEG- NONPAST
     (It) isn't red

Nominal negation is marked either in the plain style by a verbal complex which is derived from the copula 'da', or in the polite style by the negated form of the existential verb:

54. *Hon ja-na- i*
     book   NEG- NONPAST
     (It) isn't a book.

55. *Hon ja-arimase-n*
     book   be   NEG
     (It) isn't a book.

Results of Kanagy's study strongly indicate that the development of negation is similar between learners, that its order is independent of instruction, and that it shows similarities to first language acquisition (Kanagy 1991, 234ff). In the beginning phase of acquisition, JSL learners tend to use unanalysed 'ja-nai', a noun negation in target-Japanese, in all environments, and then gradually specify their negation patterns:

"At the beginning of the study N negations are most often produced in the standard pattern (60% of the time) followed by V (43%), with A predicates least likely to be negated appropriately (only 4% of the time). Four months later (time 3), the gap between N and V closes and each type of utterance contains the category-specific negator 70% of the time. By time 4 low beginners' production of context-appropriate negation of V (at 82%) surpasses N (68%). Their A utterances, however contained few A-specific negators, reaching only a 30% rate at the end of the study."
(Kanagy 1994, 267)

In other words, negation is first marked by a lexical item, 'ja-nai'. This makes the noun negation being the first to be correct. This analytic construction that marks each function (here: negating and negated element) with another lexical item is a typical pattern of not fully developed languages; Schumann (1978) mentions similar constructions in pidgin-languages. Then, verb morphology which marks negation is acquired in a stepwise pattern with nonpast negations occurring before past tense forms (Kanagy 1991, 236). The acquisition of adjective inflection seems to occur much later.

Results from the studies summarised above clearly indicate developmental patterns in the acquisition of Japanese which are similar in different environments and similar for learners with different first languages. However, because most studies focus on only one grammatical phenomenon each, it is not possible to come to a conclusion about the interaction of different syntactic rules, nor is it possible to plot a picture of the overall development of syntax and morphology in JSL. The interlanguage development inherent in the data of the present study will be tested against the findings in the studies described in this section in order to ascertain whether they concur, and to what extent.

3. THE STUDY

3.1 Introduction

This chapter presents information relevant to the design of the study, including data type and analysis, and elicitation methodology. First, biographical information about the informants and their linguistic background is given. This includes their first language, prior knowledge of Japanese and other second languages, and details of the language instruction they were receiving during the period of this study. The next section concerns the data type and the acquisition criterion needed for this study. A case is made for the use of a corpus of oral production data. It will be demonstrated that the aim of this study, i.e. the description of the acquisition of production skills, leads to the application of an emergence criterion (cf. Pienemann and Hyltenstam 1985, Pienemann 1987, 1995).

This is followed by a discussion of the methodology of data analysis. It was decided to conduct a distributional analysis (Harris 1951, 1954, Mosel 1987, Croft 1991) because, as will be explained in detail, underlying assumptions and fixed points of reference in this study can be explicitly and systematically incorporated in that analysis methodology. Distributional analysis also makes it possible to conduct an exhaustive grammatical analysis of the data, which is essential to this study.

The choice of tasks for the data collection sessions is based on research on second language discourse and the elicitative potential of different communication tasks (Long 1983, 1985a, b, Long and Porter 1985, Gass and Varonis 1985, Pica, Kanagy and Falodun 1993). Relevant research and the conclusions arising from them are described. The chapter concludes with an explanation of the tasks used in each data collection session.

3.2   Informants

3.2.1 Biographical information

All learners are native speakers of English. Learner M started her university course when she was 32 and has no previous second language learning experience.

Learner K was 18 at the beginning of the Japanese course. After five semesters learning Japanese, she spent three weeks in Japan. She had learned French at school for one year and at university for six months.

Learner B was 19 when she started her university course, having spent the previous six weeks as a an exchange student in Japan. Her previous language learning experience consisted of four years of French and two years of intensive Japanese at High School.

Learner D was 23 when he started the Japanese language course. He had never been to Japan. His second language learning experience consisted of one year Chinese at High School, and four years of German. After the first year of Japanese, D went to Costa Rica for three months where he learned some basic Spanish.

Learner J, 20 at the beginning of the Japanese course, had never been to Japan, but experienced natural acquisition during the course of this study because he had Japanese friends with whom he spoke in Japanese. He also worked part-time in a Japanese restaurant, and so had ample opportunity (and pressure) to speak and understand Japanese. This difference in the acquisition environment leads to some observable differences between J and the other learners, which will be discussed later. J dropped out of the Japanese course after four semesters. His language learning experience is: 3 years Chinese at university; 8 weeks at school; 6 months German at High School; 1 year Latin (auditing) at university; and 6 months Korean at university (after giving up Japanese).

In the course of the study, the informants grew more familiar with the researcher and the task types that were used, and the regular sessions became part of the informants' study routine.

3.2.2 Language instruction

All informants were studying the same undergraduate Japanese language course at the University of Sydney. Until the middle of their third semester of instruction, the course was based on language material from "Colloquial Japanese" (Clarke and Hamamura 1981), and instruction followed the lessons in the book.

In the first semester, teaching proceeded up to lesson 13. By the end of the second semester lesson 20 was reached. In the first half of the third semester, the last chapters were repeated. After this, further instruction relied on authentic material like newspaper articles, and grammatical explanations were given according to the problems occurring in this material.

Summarised below are the grammatical structures explicitly taught in "Colloquial Japanese". Where necessary for coherence with grammatical terms used later in data analysis and description, structures are summarised under terms that might not occur in "Colloquial Japanese". Sentence and phrase structures are described in terms of phrase structure rules, with the usual abbreviations. Chapter numbers in brackets indicate where a structure is explained in Chapter 2. 1 of this thesis.

The order of acquisition in JSL (as inferred from the data in the following chapter) will subsequently be compared to this order of instruction (ch. 5). It will be shown that learners do not acquire structures in the order in which they have been taught the language. Some structures, although taught in detail, never occur in informants' production.

Table 3-1: Grammatical contents of informants' language learning material

Chapter	Contents
Semester 1:	
1:	verb sentence: S -> V, S -> Adv V verb morphology: past, negated non-past, negated past (2.1.8) mashoo, question marker, formulae
2:	unmarked sentence structure: incl. canonical word order: S -> Adv+PrepNP+NPdat+NPacc+V+qu.part (ie incl. prodrop) case markers and postpositions *o, ni, de, e* and *mo* (2.1.3) sentence-final particles *ne* and *yo*.
3:	copula-sentence: S -> N wa N desu (2.1.1) NP -> N no N p, possessive (2.1.4) postposition 'de' for instrumentalis, 'kara' for 'from' (2.1.3) ko-so-a-do-system for dem. pronouns and spatial adverbs; personal pronouns; suffixes 'jin', 'go' and 'sei'
4:	N no N locational (2.1.4), existential verbs (2.1.1) 'ni' vs 'de'; numbers, dates; interrogative pronouns + 'mo'
5:	NP -> adj N p (2.1.6); NP -> noAd na N p (2.1.6) full inflectional paradigm of adjectives and nominal adjectives (tense, negation, adverbial marking) (2.1.6) dem. adjectives; desid. '-tai'; case-particle 'ga' for accusative; 'no' as nominaliser w. preceding adjective/nominal adjective; postpositions 'to', 'made', 'kara', 'ka', 'ya'; 'soshite'
6:	Numbers and classifiers; verb 'shimasu' with incorporated nouns; verb stem + 'ni'
7:	Serial form '-te' of verbs, adjectives and copula, incl. V-te iru and V-te aru (2.1.8) S -> S V-te S (2.1.8) conjunctions 'to shite', 'keredomo', 'ga', 'kara' (2.1.9)
8:	Plain form of verbs, morph: non-past, past-tense (2.1.8) nominalisation with 'no', 'koto ga dekimasu', 'koto ni shimasu' and 'koto ga arimasu' relative ('adjectival') clauses (2.1.9) 'deshoo'; 'moo'-'more', 'moo'/'mada'+negation
9:	V-te forms incl. permission and prohibition; demonstratives for 'that kind of ...' and 'like this'; interrogative pronouns+ 'ka'; V-plain+'ka mo shiremasen'
10:	V-te+conjunctions 'kara', V-u+'mae ni' and 'to'; V-plain+'soo desu' (2.1.9)
11:	V-plain morph: past, negation, te-form, comparative and superlative
12:	Verb suffices; 'n desu', 'hazu desu'; repetition of 'wa' and 'ga'
13:	conditional conjunctions; verb suffices for 'have to', 'ought to'; conjunction 'to' for indirect speech (2.1.9)
Semester 2:	
14:	Verbs of giving and receiving and other auxiliaries
15:	V-oo to V; sentence-final particle 'no ni'; 'no de'; adj+garu; V-plain+tokoro desu; conjunction V stem+nagara
16:	V-eru; V-stem+tari; forms for 'to seem to be, to be like'; V-i+V
17:	passive (2.1.10), 'N no tame ni' for; conjunction V-plain+'ba'ai'
18:	causative; passive of the causative (2.1.10) ; verb stem as a connective (of clauses)
19:	respect language, o-V-i ni naru, o-V-i desu, o-V-i suru, 'o' and 'go'+N/Adj/QN, honorific adj
20:	plain style pronouns; sent.-final particles; imperative; contractions

3.3   Data analysis methodology

3.3.1 Data type

The choice of data type for this study results from the study's aim: the description of interlanguage development in JSL. In the following, a case is made for the use of corpus data from oral production in the pursuit of these aims. The methodology of data analysis is then presented in the next chapter.

Intuitively, the methodology yielding most results about the description of IL development might appear to be the "non-biased" observation, description and rule-inference of learner data, and it was the methodology used in the 1960s and 70s (e.g. Schumann 1978a, Hatch 1974). However, there are several problems with this empiricist approach. First, an interlanguage description without preconceived labels, categories and concepts of what is being observed and described is not possible[5]. This can be observed in many studies that rely on a relatively simple descriptive grammar of the TL for the description of learner language, without being aware of it (see the example from Schumann's study below). This leads to overlooking forms and structures in the interlanguage in question and subsequently to an incorrect description of the rule system, because the categories and labels used in the analysis are neither made explicit nor discussed.

An example of the restricted approach arising from the researcher's lack of awareness of preconceived rules (from the TL) is Schumann's (1978a) analysis of his informant's past tense marking. Schumann claims that his informant has not acquired it (see ch. 1.2.4). Meisel et al. (1981), however, make the point that "Alberto only deletes the endings when there is an adverbial like *yesterday, after ... three years*, etc." (Meisel et al. 1981, 112, italics in original). Here it is obvious that Alberto was able to provide past tense markers, but that his rule-system assigned a non-targetlike function to it: past tense was marked by a verbal morpheme only when no other elements marked it. Apparently, there was a non-targetlike rule, "mark tense only once", in Alberto's interlanguage, which Schumann had not anticipated and therefore not noticed.

This highlights the fact that in order to have a consistent analysis of interlanguage, it is essential to have a theory-based and explicit definition of the concepts, categories and anticipated structures with a well-delimited range of application.

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[5] There is a whole epistemological and methodological discussion on the why, how and where from of concepts (cf. Bechtel 1988). It is not necessary to go into the details here; it is sufficient to point to the conclusion arrived at by philosophers of science, which is that 'value-free' description is actually not possible.

An additional problem with the empiricist approach is that the inherent variability of interlanguage allows for a wide range of different structures. This variability is due to developmental change, to individual differences (e.g. the learner's orientation, see ch. 1.4.2), and to changing external factors (e.g. motivation, language instruction). For a description of the structures whose acquisition takes place similarly for all learners, it is important to differentiate between structures that are products of variation and those that mark a new developmental stage. It is essential to follow an approach that distinguishes individual, variational and developmental phenomena in addition to a database which is broad enough to allow for data to be compared.

It might seem logical and justifiable to deal with this problem by formulating predictions about structures in JSL interlanguage and about the order of their acquisition, and then gearing the data collection and analysis towards testing those predictions. This is not possible, however, because the interlanguage concept (as explained earlier in Chapter 1) assumes a *creative construction process* in language acquisition, which means that an infinite number of logically possible interlanguage structures must be assumed. The following diagram illustrates this:

logically possible
structures = IL (infinite)

actual TL
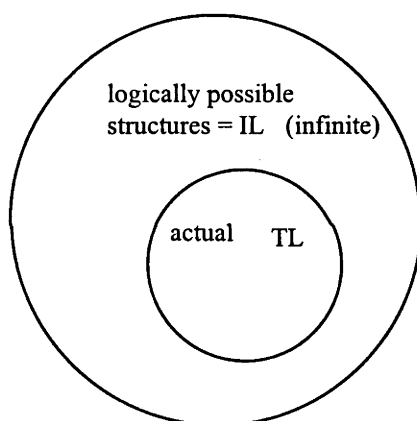
There are several ways of constraining this infinite set of possibilities. One is to base predictions about JSL acquisition on a specific language acquisition theory, e.g. Processability Theory, because the possible structures that a learner can produce at a specific point in time, i.e. the hypothesis space of the learner, can thereby be delimited:

logically possible structures

hypothesis space =
theoretically
possible structures

TL
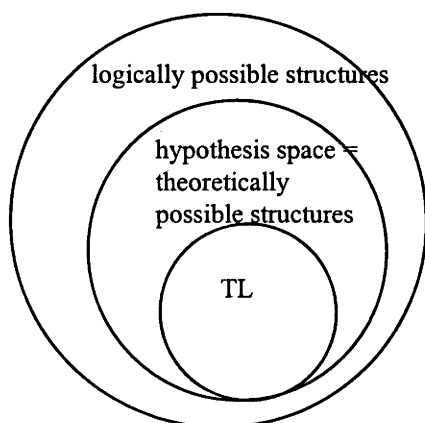
Such a constraint on the basis of Processability Theory is inadequate, because only the underlying information processing skills could be used to formulate predictions about JSL interlanguage, so that there would still be an immense number of possible structures. All the actual grammatical structures so far described in Processability Theory occur in the interlanguages of Indo-Germanic TLs, and there is no reason to presume that the syntactic structures in interlanguages from a typologically different TL are limited to the same forms. So one cannot anticipate which of the possible structures will be realised[6]. Stating and testing predictions about specific structures in the IL would also be practically impossible.

There are a number of potential candidates for constraining the range of logically possible structures, but none of them provides a solution. One possibility could be the results from previous studies on JFL or JSL interlanguage (cf. Clancy 1985, Kanagy 1991, 1994). However, most studies on the acquisition of Japanese focus on specific, relatively small syntactic or semantic areas. Their scope is naturally limited, and constraining predictions to their findings would not be based on any methodologically or theoretically justifiable considerations.

Also, Clahsen et al. (1983) showed that the sentence structure in GSL interlanguage **Adv S V V O** does not occur in first language acquisition. This makes clear that structures known from first language acquisition are not a sufficient basis for the description of interlanguage development either.

Another possibility as a means for limiting anticipated structures could be the teaching curriculum itself. The teaching curriculum, however, contains a subset of TL structures, and it is assumed (see above) that learners will not produce target-like structures only. An example from the acquisition of German as a second language (GSL) makes it clear why target-like structures alone cannot adequately describe interlanguage development: Clahsen et al. (1983) show that all GSL learners go through a stage where they produce the non-targetlike structure **S -> Adv S V V O**. Learners who do not go through this stage cannot progress, that is the structure is a necessary part of the development. This means that a structure which is necessary for progress cannot be predicted on the basis of the target-language only. It is therefore not sufficient for a complete description of syntactic development to base predictions about SLA interlanguage structures on the teaching curriculum.

The only conclusion to be reached is that it is impossible to predict which of all possible structures will occur in a learner's interlanguage. The shaded area in the following diagram represents this non-predictable IL:

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[6] It follows that Processability Theory cannot be tested by hypothesising structures occurring in the acquisition process; it is only possible to test counterevidence to Processability Theory. In order to test Processability Theory it would be sufficient to predict structures which are, in terms of Processability Theory, 'impossible structures' for an interlanguage at a specific point in the acquisition process. This, however, is not sufficient for the description of the developmental process as it occurs.
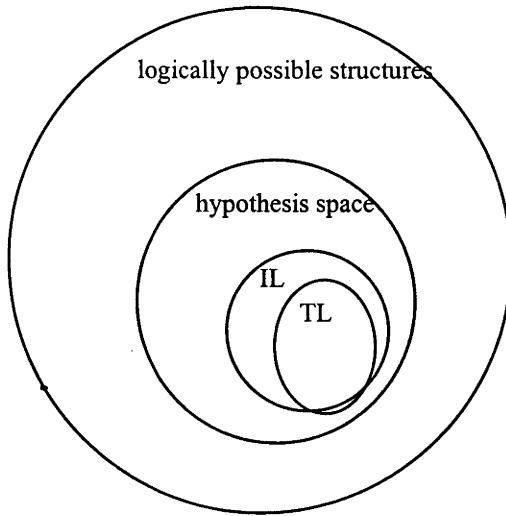
In summary, an empiricist approach that does not make underlying assumptions explicit must be rejected for the present study. On the other hand, there are no other adequate, theoretically acceptable methods for predicting IL structures, the testing of which could serve to describe syntactic development in JSL.

However, there is a solution. The problem can be avoided by conducting a distributional analysis of a broad data corpus. Psycholinguistic research (cf. Levelt 1989) makes clear assumptions that constituent structures and grammatical categories constitute elements of natural languages. These assumptions form the basis of the analysis and description of the data, and all statements made concern categories and constituent structures in JSL interlanguage only.

Distributional analysis is one methodology that is designed to describe language data in terms of constituent structures and grammatical categories. It also allows for an exhaustive analysis of a data corpus. In this study, the data corpus consists of data from different informants and different points in time in order to be able to distinguish the above mentioned developmental and individual variation. In summary, the methodology of distributional analysis makes it possible to explicitly constrain the phenomena described, to provide a complete picture of the grammatical development, and to distinguish developmental and variational factors.

The type of data in this corpus is spontaneous oral production data, consistent with the goal of this study. Interlanguage is understood, as explained in Chapter 1, as the "internal grammar of the learner." Data are needed that test this autonomous rule-system without the interference of other factors. Based on psycholinguistic research, the internal rule-system must be assumed to consist of automatised operations: The existence of processing components that work in a highly automatised fashion is assumed, in order to account for the speed of on-line production:

" ... processing components are specialised and [that] they do their work in rather autonomous fashion. Most of the components underlying the production of speech ... function in a highly automatic, reflex-like way. This automaticity makes it possible for them to work in parallel, which is a main condition for the generation of uninterrupted speech."
(Levelt 1989, 2)

As a consequence of this, Processability Theory even states that language acquisition "has to be viewed as the process of automatization of linguistic operations" (Pienemann and Håkansson 1996, 4).

The internal rules can best be tested in oral on-line production, because then the learner must apply internal, automatised rules, as time constraints do not allow him/her to resort to the time-consuming application of consciously learned rules and their monitoring. If we define, in accordance with this psycholinguistic approach, interlanguage rules as automatised operations, then it must be concluded that data from verbal production are a valid test for them.

Taking all the above considerations into account, it seems reasonable to conclude that an exhaustive analysis of oral production data from different learners and from different times in the learning process provides the most appropriate data basis for the description and interpretation of JSL acquisition.

3.3.2 Acquisition criteria

In Chapter 1 it was explained that SLA is conceptualised here as a creative construction process. Interlanguage grammar is understood as the sum of structures acquired by a specific learner at a specific point in time. In order to describe the acquisition process, it must be made clear at which point in the interlanguage development a specific structure can be defined as acquired.

An acquisition criterion that is commonly applied is the degree of accuracy. This is based on Brown's (1973) study on first language acquisition, which found that children usually do not slide back once they have reached the level of 90% accuracy. Therefore, the 90% mark for a minimum of five utterances in three successive interviews is a safe measure for the definition of acquisition, and widely applied in L1 research.

However, it is problematic to transfer these criteria to SLA, because, as has been widely shown (cf. Meisel 1991), the accuracy level is often much lower there than in first language acquisition. Johnston's (1985) observation that new structures often spread through the lexicon slowly, entails a low accuracy rate for the first phase of acquisition of a given structure. In the light of a relatively long phase of low accuracy in SLA, the question arises as to whether produced structures should not be considered acquired, even if they are non-targetlike or applied in a non-targetlike way.

Several researchers decided to lower the threshold to 70 or 60% (Schumann 1978a, Pica 1983), because with a 90% criterion few structures can be identified as acquired even if the interlanguage clearly shows changes and development. In Dulay and Burt's (1972) morpheme order studies a structure, when incorrectly produced, is tallied as "half-acquired" (see ch. 1.2.3). This kind of focus on accuracy does not allow for insights into "incorrect" aspects of the developmental path and therefore does not solve the problem of a definition of "acquisition"; the lowering of the accuracy threshold only shifts the problem towards a direction with more manageable results.

An accuracy-based acquisition criterion is problematic. The fact that a specific structure is not supplied in correct contexts does not provide insights into the learner's ability to produce this structure or the existing internal rules, but it does provide insights into (in)correct lexical choices or form-function relationships in the interlanguage. Anderson (1984) demonstrates how form-function relationships are systematically built up in the process of language acquisition and also shows that form-function-relationships do not necessarily copy target-like or first-language rules, but rather adhere to the systematicity of their own developmental process.

Meisel et al. (1981) suggest that

> "... the most satisfying results are obtained by quantifying all features under consideration in the same fashion ... it allows for a description of linguistic development as well as of variation in the development, for standard-like structures as well as for features which deviate from the standard norm."
> (Meisel, Clahsen and Pienemann 1981, 112)

On this basis they decide to avoid the problems of an accuracy-based criterion by using an **emergence criterion**, which considers that a produced structure is acquired, i.e. the rules for its production must be part of the interlanguage grammar, even if it is produced only once (see also Clahsen et al. 1983, Pienemann and Håkansson 1996).

The use of the emergence criterion is consistent with the theoretical basis of this study, because the interlanguage description in this study focuses on the acquisition of a grammatical rule-system and its development, rather than changes in the functions assigned to specific structures. Therefore, it is important to be able to separate the acquisition of the skill of forming a certain structure from the acquisition of rules concerning its application. A once-only production of a syntactic structure indicates that the underlying structural rule and production skills must have been acquired. Therefore, the emergence criterion allows for a continuous and dynamic description of interlanguage development by representing the onset time of structures.

The emergence criterion must be complemented in two separate ways. First, data must be "factorised" for the analysis of morphology (Pienemann 1987), because there is a paradigmatic difference between syntax and morphology. It is possible that a specific morpheme and a verb, for example, have been learned together as one chunk. Therefore a morpheme such as a past or negation marker is considered acquired in the

analysis if it occurs with three different verbs or adjectives in one data collection session, and if these verbs also occur with other morphemes (for a more detailed presentation of the analysis of morphology, see the following section).

Second, a single utterance as indicator of an acquired rule is the ideal situation. The productiveness of a structure, i.e. the fact that it is constructed on the basis of interlanguage rules, can only be assumed. As it is possible that a seemingly productive utterance has been rote-learned, or that it is based on rules different from the one inferred by the researcher, for this study it was decided to apply the measure of a minimum of three productive utterances of an identical structure per one data collection session to consider it acquired.

In order for the emergence criterion to provide meaningful evidence, a data analysis methodology is needed that allows for a clear definition of all elements and structures occurring. Distributional analysis, the methodology used in this study to this end, is presented and discussed next.

3.3.3 Distributional analysis

As discussed above, the purpose of the data analysis is to (re)construct the rule-systems underlying the informants' language production. As demonstrated in the last section, it is not feasible to simply "describe all structures that are there", nor is it feasible to make predictions about the forms and functions occurring in the developmental process, so that they provide a description of the JSL acquisition process. The proposed solution was to establish a large data corpus, analyse it exhaustively, consistent with the stated assumptions, i.e. on the basis of constituent structures and grammatical categories.

Pienemann (1987, 1995, 1996) suggests distributional analysis as a methodology with which "the logic of interlanguage forms can be captured" by defining forms according to their functional and structural contexts ((Pienemann 1995, 79). Distributional analysis enables JSL interlanguage to be analysed as an "unknown grammar" and allows for a finely grained, exhaustive analysis, defining forms and functions and presenting the interdependence of elements in the interlanguage systems of different learners and at different points in time. Individual learners grammars can then be written, and interlanguage development can be represented by grammars written for interlanguages from successive points in the language acquisition process.

Distributional analysis has been developed as a tool for the description of unknown languages and is widely used in the field of descriptive linguistics (see DeCamp 1971, Mosel 1987). Greenberg (1987, 1) describes it as "inductive", because all rules are inferred from the data corpus only:

"We have to investigate some actual corpus of utterances, and derive therefrom such regularities as would have generated these utterances - and would presumably generate other utterances of the language than the ones in our corpus."
(Harris 1954, 161)

This purely empiricist approach, which attempts to avoid any presumed structures or any other factors influencing the analysis or its object, does work on assumptions of systematicity and specific kinds of relationships between the elements of the observed structures. Assuming the existence of constituents and categories, it serves to complement the acquisition criterion and provides evidence for the emergence of structures. The following presentation of the analysis methodology of this study reveals how the structuralist method of distributional analysis is woven into the present rationalist approach, rather than dominating it.

Distributional analysis divides "any flow of speech into parts" (Harris 1954, 158), i.e. into elements, which are defined by their distribution:

"The distribution of an element will be understood as the sum of all its environments. An environment of an element A is an existing array of its co-occurrents, i.e. the other elements, each in a particular position, with which A occurs to yield an utterance."
(Harris 1954, 146 ff.)

Harris (1954) defines the first step in a distributional analysis as "purely segmenting" and "arbitrary if need be" (Harris 1954, 158). Groups of elements, i.e. phonemes, morphemes or categories, follow from this segmenting. The validity of the assumption of these categories is tested later by comparing their elements' distribution within structures. Harris, like Bloomfield (1933), suggests substitution as a test for the grouping of elements into classes:

"The basic operations are those of segmentation and classification ... Classification is used to group together elements which substitute for or are complementary to one another. "
(Harris 1951, 367)

As elements are strictly defined according to their structural behaviour - i.e. their relations to the other elements, in this approach - "elements are merely symbols of particular conjunctions of relations, particular privileges of occurrence and particular relations to all other elements" (Harris 1951, 370).

In typological and descriptive linguistics, on the other hand, linguists resort to semantics in order to represent categories cross-linguistically. This is because it has been shown that basic categories in all languages have some semantic similarities, or core features:

"*Now each language arranges the types into a small number of groups - these groups are its major parts of speech. Motion, Affect, Giving, Corporeal, and other types seem almost always to be classed together - this is the class that is in all languages called Verb. Objects, Kin, and other types are almost always classed together - this is the class that is in all languages called Noun. ... Languages ... that have an open class of adjectives include in this a constant array of types: Dimension, Colour, Value, and four or five others.*"
(Dixon 1977, 28 ff.)

Croft (1991) goes beyond structuralists like Bloomfield or Harris by suggesting a fixed point of reference for the categories defined within distributional analysis that lies beyond the structural scope. He assumes universal semantic categories and shows a prototypical correlation of semantic and syntactic categories. In this way he connects the closed system of distributional analysis with additional factors against which it can be tested.

Because he states a typologically universal connection between meaning and word class (1991, 99), Croft suggests that the meaning of elements can form the basis for the first segmenting of data. Building on typological definitions of grammatical categories like the one above, he claims that:

"*The establishment of the typological pattern necessitates the recognition of two independent external parameters, lexical semantic class ... and pragmatic function.*"
(Croft 1991, 99)

Croft represents these functions in the following table:

Table 3-2: Prototypical Correlations of Syntactic Categories (Croft 1991, 55)

Syntactic Category			
	Noun	Adjective	Verb
Semantic class	Object	Property	Action
Pragmatic function	Reference	Modification	Predication

This approach to the definition of basic categories will be taken up in the data analysis of this study. It will be demonstrated that the meaning of lexical items in the data is close to the semantic core features named above, and that a segmentation of elements according to these semantic features is a productive step in the analysis of learner grammar.

It was argued above (ch. 3. 3.2) that form-function relationships must be considered carefully in the data analysis, because a form often marks a function in the interlanguage that it does not mark in the TL. Andersen (1984) systematises the observation of different form-function relationships in IL and TL with his "one to one principle of interlanguage construction" which he shows has the potential to explain phenomena of structural development.

The following matrices exemplify the importance of an examination of form-function relationships in interlanguage analysis. Table 3-3 depicts such relationships for a part of verb morphology in Standard English, table 3-4 shows how a hypothetical interlanguage is depicted within the matrix for Standard English - obviously inappropriate, as there is no proper fit of forms and functions -, and table 3-5 shows how a matrix appropriate to the interlanguage in question should be constructed:

Table 3-3: Matrix of form-function relationships in Standard English

form/function	present	3rd Ps. Sg. Pres.	simple past	progressive
V-/	X			
V-s		X		
V-ed			X	
V-ing				X

Table 3-4: Matrix of a possible ESL learner grammar

form/function	present	3rd Ps. Sg. Pres.	simple past	progressive
V-/			X	
V-s				
V-ed				
V-ing	X			

In the case of the learner grammar of table 3-4, the matrix assuming target-language forms and functions cannot account for the rules of the learner language. For this learner grammar, the following matrix is appropriate:

Table 3-5: Matrix of a hypothetical ESL learner grammar

form/function	present	past
V-/		X
V-ing	X	

In the following analysis of JSL interlanguage, verb morphology will be carefully analysed in terms of assumptions about their forms and functions, because the informants were taught many structures as chunks. Verbs, for instance, were initially taught only in the polite form, i.e. with the '-masu' ending. This will not be considered productive morphology, because it can be assumed that the ending does not carry a specific function in the interlanguage. Only when additional inflection is being produced, and on different verbs, is it possible to distinguish different forms and assign them specific functions.

3.4 Data elicitation methodology

3.4.1 Task type

All data collection sessions consist of communication tasks and free conversations between me (K.H.) and one informant, as this combination is considered most supportive of informants' oral production. In the following, the data collection methodology is presented in detail.

Conversation

Larsen-Freeman and Long (1991, 31) make the point that subjects' performance varies from task to task. It was attempted to cover this variation by encouraging free conversation, which allows for a diversity of topics and supports varied production.

An intuitive reason for the choice of free conversation as an elicitation device is that JSL learners initially feel insecure when talking in Japanese, and that they feel more relaxed if they can chose topics themselves. Ample experience shows that Japanese is a "difficult" language for a longer period than e.g. in English, and that second language learners feel that they cannot express themselves to any great extent. Therefore, it was important in the data collection sessions to encourage confidence and communication, and avoid communication breakdown. This was encouraged by leaving the choice of topic partially to the participants. Usually, the topics of conversation were weekend activities, cinema, holidays and the Japanese language course.

Another rationale for free conversation is that they are open-ended, so that the interviewer is free to ask for an infinite amount of further information. Pica et al. (1980) found that open-ended clarification requests elicit much interlanguage modification:

> *"Pica et al. (1980) found that open-ended clarification requests such as 'what?' or 'could you say that again?' led learners to modify their interlanguage significantly more often than the more containing confirmation checks which repeated the learner's production with rising intonation, e.g. 'books, did you say books?'"*
> (Pica, Kanagy and Falodun 1993, 28)

Johnston (1985) observes that new structures initially co-occur with one or a few lexical items only, and are then incrementally used with a wider variety of words. It is therefore important to cover a wide range of topics and subtopics, so that the learner produces as many different lexical items and, perhaps, structures as possible. In conversations, the interviewer has the chance to steer the discourse and initiate new topics or a further elaboration of the current topic in direct reaction to the informant.

In short, conversation provides the researcher with the chance to influence the dialogue by prompting the informant, initiating new topics and offering the environment for a variety of structures, thereby supporting varied production.

Tasks

The choice of tasks for this study is based on research on communication tasks and the output they elicit (cf. Long 1983a, b, 1985a, b, Varonis and Gass 1985, Gass and Madden 1985, Doughty and Pica 1986, Duff 1993). Pica, Kanagy and Falodun (1993) summarise research of the field and propose a task typology which characterises different tasks according to the factors they found to be the most influential for the linguistic outcome.

Tasks are, in the current context, instruments designed to elicit production data (Larsen-Freeman and Long 1991, 27). Pica, Kanagy and Falodun (1993) define a task as a goal-oriented activity or work and make the point that

> " ... *a task is not an action carried out on task participants, rather a task is an activity which participants, themselves, must carry out.*"
> (Pica, Kanagy and Falodun 1993, 12)

Pica et al.'s (1993) task typology differentiates tasks according to the parameters of interactant relation, interaction requirement, goal orientation and outcome option (Pica et al. 1993, 14f). They examine whether:

- the interaction goal is for the involved subjects identical, convergent or different;
- subjects have identical or different information at their disposal;
- there is a one-way or two-way information flow; and
- one or several outcomes are possible.

They conclude that tasks elicit the highest amount of interlanguage modification if interactants have different information, if a two-way information flow is required, if participants have same or convergent goals, and if there is only one acceptable outcome (Pica et al. 1993, 17). Learners should have to achieve a goal in cooperation, because then they are under pressure to make themselves understood and negotiate meaning where necessary. This leads to a "modification of interlanguage" (Pica et al. 1993, 13), i.e. to richer data.

These parameters were taken into consideration when selecting tasks for the present study. The results for the implementation of specific factors, however, differ from Pica et al.'s parameters because most data collection sessions in this study are dyads between one informant and the researcher. Data from the researcher are not of interest, so a one-way flow of information from the informant to the researcher is desirable. The informant has to provide all information that is necessary to the goal of the task, which is the interlocutor understanding the informant's story.

The possible outcome of the task varies from session to session. There are picture stories that allow one interpretation only, and this restricts the possible outcome, which has the advantage that data from different informants are highly comparable. In other tasks, the material allows different interpretations. This has the advantage that informants can choose the interpretation they are able to describe, which helps to avoid a communication breakdown.

One further factor needs mentioning. In most studies on dyads, the interviewer-interlocutor is a native speaker of the target language in question. In the present study, the researcher who conducts the sessions is a second language learner of Japanese and has a first language (German) different to the informants' first language (English). This should not pose a problem, as Gass and Varonis' (1985) study on differences between NS/NNS- and NNS-NNS-dialogues found that more negotiation occurs when both participants are from different language backgrounds and are at different proficiency levels.

3.4.2 Data collection sessions

Data collection sessions were conducted at the end of each semester. "Session 1" is therefore the session at the end of the first semester, i.e. after three months of instruction, and "session 6" was conducted after the sixth semester. As the study progressed, the friendly acquaintance between the five informants and the researcher grew, and the informants developed a relaxed attitude to the sessions. From the learners' point of view, the sessions were part of their study routine, and they enjoyed the rare chance of being allowed to try out their Japanese for as long as they liked.

All communication tasks are based on visual aids like pictures and picture-stories. In the first session, two informants work together on a picture description and drawing-task. In all following sessions, informants are asked to describe picture-stories to their interlocutor.

The majority of the pictures that are used are from Rapid Profile, a tool designed to measure ESL development and define the developmental stage at which a speaker is (Pienemann 1992). However, the pictures themselves are designed to promote conversational interaction in English as well as other languages and are appropriate for all levels (Mackey 1994). The pictures used in this study are not necessarily used in the way suggested in the accompanying booklet (Mackey 1994), but for story retelling and as a starting point for further conversation on topics related to the stories.

<u>First session</u>

In the first data collection session, informants were asked to work in pairs and engage in an **information gap task: a picture description**. Each informant was given one picture and instructed to describe it to the partner, who then had to draw it. The information flow was one-way, but as informants swapped roles, data could be collected from the informants in both roles. Only one outcome was possible, which was expected to motivate negotiation between the informants. Results showed that in the main, the informant with the information produced more talk than the drawer. Most questions by the drawer were related to comprehension and only rarely demanded further information.

All pictures (see Appendix II - IV) were designed by the researcher except one (Appendix IV), which was part of the Rapid Profile package. Pictures contained only items for which the subjects knew the Japanese words. As a precautionary measure, and to create a more relaxed atmosphere, subjects were familiarised with a word list prior to the task.

After the tasks had been finished, the sessions continued in dyads between the researcher and one informant at a time. First, informants were asked to fulfil another **picture description-task**. In this task, the interviewer could motivate elaboration of utterances by asking questions. In the following **conversation** it was talked about what informants had done the evening or the weekend before, whether they did sport, worked part-time, etc. As this session was held after only three months of instruction, the informants felt insecure and easily frustrated and conversations were short.

<u>Second session</u>

This time, informants produced more and more varied data, as they had grown familiar with the situation and their interlocutor, were more relaxed and higher skilled in JSL. From the second session on, all data collection sessions were conducted between the researcher and one informant at a time.

The task in this session was the **retelling of a picture story** about a family-picnic. The pictures (see Appendix V) were part of the Rapid Profile package. Subjects were asked to put the six pictures that made up the story into a meaningful order and then tell the story. The fact that they had to order the pictures first gave them the chance to grow familiar with the contents. There was only one possible outcome. The one-way information flow of this set-up was the most productive, as it made the informant talk most. The researcher provided support where necessary and asked questions to elicit further information. The second data collection session also included free **conversation**. Informants talked about their weekend activities, study experience and other daily-life topics.

<u>Third session</u>

In the third round, another **storytelling-task** was set. Informants were provided with about 25 little cards, depicting everyday items including trees, a park, a bird, a dog, a bone, a restaurant, a supermarket, the ocean, a swimmer, a television set, a radio, etc. They were asked to choose as many of these pictures as they wished and make up a story with them. Again, this ensured that the informants were familiar with the story's contents.

This task was similar to the one in session 2, because it was another storytelling with a one-way information flow. The difference was that now the informants themselves defined the outcome of the story. In this session as well, questions were asked that provided an environment for different structures. The topics of the following free **conversation** covered again informants' every day life experience, holiday trips and films. Fourth session

The first task was the **retelling of a picture story** from the Rapid Profile-package, this time with a "surprise-effect", where learners found themselves in a situation where they had to find an explanation for how a big meal had suddenly disappeared out of a pan (see Appendix VI). The other task consisted of five **pictures**, each depicting an aspect of a police woman's job (see Appendix VII). Here, not a coherent story was to be described, but a typical working life, from paper work to arrests, had to be talked about. Informants played the role of the police woman and told the researcher about their work. This story, too, provided an opportunity for a wide range of questions by the interlocutor. Parameters of both tasks are identical to those described for sessions 2. The conversation covered the usual topics.

<u>Fifth session</u>

The fifth session included another Rapid-Profile **picture-story** that subjects were asked to retell; this time a little girl's visit to the circus (see Appendix VIII). This story was longer and more complex than the previous ones, and the interlocutor supported the informants by supplying vocabulary where necessary and by asking questions. Again, informants had to put the pictures into order and so defined the outcome themselves.

Informants were also asked to talk about a little fish that they saw on several pictures, each of which was only shown after the previous one had been described. In later pictures, the little fish was eaten by a bigger one (see Appendix IX). The idea for this task, which has been designed to elicit passive-constructions, was borrowed from Tomlin (1995); however, after two and a half years of instruction, and in spite of its having been taught for more than a year at that stage, only one student produced a passive-construction. This task formed only a small part of the session; the main parts consisted of the picture-description and a **conversation** on university, holidays, films, and books, among other topics.

<u>Sixth session</u>

Again, the main part of the session consisted of **conversation**. The main topics were jobs and plans for the following year, after the learners left university. A **picture description task** (see Appendix X) with the usual conditions was also part of the data collection.

Learner M did not join in on the last two rounds of the data collection.

4.   DATA ANALYSIS

4.1   Introduction

This chapter presents the analysis and description of all collected data. There are six data collection sessions with four informants, and four sessions with a fifth informant who could not join the last two rounds. Data collection sessions were conducted at the end of each semester.

Data are analysed for each individual informant. The presentation of analysis is structured such that in part 1 of each analysis, the informant's first interview is analysed, so that it provides a basis for the analysis of all further data. In part 2 of each analysis, data from sessions 2-6 are presented together. The analyses build the basis for an interlanguage grammar to be written for each data collection session. The analysis of each informant's data is followed by a summary of the interlanguage grammars from the different sessions, their rules and their development. For clarity, structures are presented in form of simplified phrase structures rules.

Part 1 of the first section in this chapter provides a particularly detailed analysis of the first interview with informant M. On the basis of an analysis of all grammatical features, structures and names are defined. This provides the basic definitions on which all further analyses and descriptions are based: data from the following data collection sessions with learner M are analysed with reference to the findings and definitions from the first analysis. The analysis will show that M's grammatical categories cumulate features, so that the interlanguage system develops by extension rather than by a change or substitution of rules. This characteristic of interlanguage development justifies using identical names, i.e. referring to the same structures, throughout the analysis of M's data.

Analyses of all other informants' data follow, again structured such that data from the first session are analysed in part 1, and all subsequent ones together in the second part. The analyses will show an extensive overlap of informant M's and the other learners' interlanguage. Because of that, linguistic terms and categories in the analysis of the learners' data analysis can be based on the definition of the analysis of M's first interview. Explanations or conclusions will not be repeated in subsequent learners' data analyses if they have been given before in M's data analysis, but it will be referred back to the earlier passage.

The final summary compares and contrasts the features of the five interlanguage grammars at the different points in time and presents a synopsis of all interlanguages examined. This comparison will strongly support the hypothesis of a developmental course of grammatical structures that is common to all learners of JSL.

4.2   Analysis

4.2.1 Informant M

Part 1:   Data collection session 1
1.   Analysis
1.1   Sentence structures
1.2   Structural elements
         1.2.1   Nouns
         1.2.2   Particles
         1.2.3   Predicates
1.3   Summary
1.4   Complex structures
         1.4.1   N to N-phrases
         1.4.2   N no N-phrases
         1.4.3   adj N-phrases
         1.4.4   Predicate morphology
         1.4.5   Complex sentence structures
         1.4.6   Question marking
2.   Summary

Part 2:   Data collection sessions 2-4
3.   Continuation of established structures
3.1   Sentence structures
3.2   Structural elements
3.3   Complex structures
4.   New structures and elements
4.1   Noun phrases
         4.1.1   N no N-structures
         4.1.2   Adjectives
         4.1.3   Quantifiers
         4.1.4   Nominal adjectives
4.2   Predicate morphology
4.3   Sentence structures
         4.3.1   Elements in sentence-initial position
         4.3.2   Elements in verb-preceding position
         4.3.3   Complex sentence structures

Part 3:
5.   Summary and conclusion: The development of M's interlanguage grammar

PART 1

1. Analysis

This section consists of an in-depth analysis of learner M's data. In the first part, a distributional analysis of the data from the first data collection session is conducted, whilst the second part analyses data from all subsequent sessions simultaneously. In part 3, the summary and conclusion, the interlanguage grammars for each session will be shown and thereby the development of M's interlanguage presented.

The first section starts with an analysis of sentence structures. For this analysis, predicates are called "verbs" and constituents are labelled "A" or "B" until their distributional analysis is presented in the subsequent section and suggests more exact category names.

1.1 Sentence structures

M's interlanguage in session 1 (Sss. 1) consists of a limited set of three different sentence structures with clearly distinct functions. There is only one occurrence of one other structure. Those three sentence structures are formally similar to the canonical word order and to the copula sentence in target Japanese (TJ), but their functions differ partially from those. Table 4-1 below shows the distribution of sentence structures. Numbers in all tables indicate absolute numbers, not percentages.

Table 4-1: Sentence structures in M's Sss. 1

sentence structure 1: (A) B 'desu'	17
sentence structure 2: A 'arimasu'	11
sentence structure 3: A B (C) V	7
other structures	1
total	36

Sentence structures can be defined unambiguously here, because their elements can be unambiguously defined: a lexical item that stands in sentence-final position will never stand in a non-final position (see section 1.2.3 below[7]), and a particle will never follow a sentence-final element (see section. 1.2.2 below). The three sentence structures of M's interlanguage grammar at the time of session 1 are now presented in detail, before the constituents are analysed. The sentence structure that M produces most is:

---

[7] "Section" refers to a section of the data analysis. "Chapter" refers to a chapter or subchapter of the thesis.

Sentence structure 1:   (A) B desu

1. *Yuugata   desu*
   evening   (cop)
   It is evening

This structure is similar to the correct form of the Japanese equational sentence
S -> N p N cop (see ch. 2.1.1). Element A, if realised, consists in M's interlanguage of
noun+particle, thereby forming a noun phrase constituent that is correct in terms of
target-Japanese (TJ). Element B consists of a noun only, which is target-like as well.
The copula is invariant and always realised as 'desu'. In TJ, noun phrase and copula
can occur in other forms as well. M's interlanguage therefore seems to be a subset of
the target-language (TL) structures.

However, the IL-form of the copula sentence shows several differences to the form
that is correct in TJ:
- The first constituent of this sentence structure has the noun phrase structure
noun+particle; the second has the structure **nou+n'desu'**. Because 'desu' is never
inflected and always follows a noun, it behaves identically to particles. It only has the
additional feature "follows last noun in sentence". Structurally, there is no reason to
assign to the form 'desu' a status different to that of particles.[8] If we analyse 'desu' as a
particle, sentence structure 1 can be described as "NP NP".
- The **(A) B desu**-structure in M's IL does not have, as is the case in TJ, the function of
an equational sentence, but marks topic and comment only, as the following sentence
from the data shows:

2. *Em hoka no em hito   wa em zu zubon   desuka?*
      other (gen-p) person (top-p)   pants cop (-quest-p)
  Is the other man pants? (TL)/ Does the other man wear pants? (IL)

    [*Hoka no hito wa*]A [*zubon*]B *desu.*

Topic and comment can stand in a relationship of equation, but this is not necessarily
so in M's interlanguage. On the basis of the other data of this session, we can also rule
out that 'hoka no' is a topic that stands in front of a copula sentence with no first noun
phrase (see ch. 2, sentence 17). Presumably, M uses sentence structure 1 when she does
not have available a more specific verb that could indicate the relationship of the
involved constituents. The following table shows that the topic-comment order is
unambiguous in M's interlanguage of session 1, because the A-constituent is either
omitted or carries old information, and the B-constituent always carries new
information (about A):

---

[8] I would like to thank M. Johnston for pointing this out to me.

Table 4-2: Topic-comment order in structure 1-sentences in M's Sss. 1

A is produced	10
A carries old information	9
A carries new information	1
B is mentioned	17
B carries new information	16
B carries old information	1

Sentence structure 2:   **A arimasu**

3. *Tsukue   ni   arimasu.*
    desk   (loc-p)   exV
    There is a desk.

Structurally, this is a simple verb sentence (see ch. 2.1.1). Here, too, the A-element has the form of a noun phrase **N + p**. This is correct in terms of the target language. However, some structural features and discourse function are different to TJ rules, suggesting that M has built up her own system of forms and functions for the Japanese input that she receives. The differences are as follows:

'arimasu', the only verb that M inserts into the predicate slot of sentence structure 2, is one of two existential verbs (exV) of TJ. Here she produces no other action-describing verb - which is possible in TJ -, nor does she produce 'imasu', the second existential Japanese verb. In M's session 1-interlanguage, the **A arimasu**-structure has a limited, clearly defined function: it signals the existence of an object or a person, i.e. it serves as a presentative. This is a subset of the verb's functions in TJ. In structural terms, too, sentence structure 2 is a subset of the TJ-forms, because in TJ, sentences with existential verbs can contain more than one noun phrase. M introduces new topics in the discourse only with this structure, and never uses it for any function but introducing a new topic, as table 4-3 below shows:

Table 4-3: New and old elements in structure 2-sentences in M's Sss. 1

A is new information	11
A is old information	/
total	11

Sentence structure 3:   **A B (C) V**

4. *Hito   wa   doresu   ni   kirimasuka?*
    person (top-p) dress   (i.o.-p) wear-(quest-p)
    Does the person wear a dress?

In terms of sentence constituents, this structure is similar to sentence structure 2 (above). There is one structural difference: in sentence structure 3, two or three noun phrases can be inserted. The function of sentence structure 3 differs from the function of sentence structure 2, because a variety of verbs can be used, and actions or states are

described. Noun phrases mark agents, and patients or beneficiaries. Agents always stand in the first sentence position, i.e. they are element A. With one exception, agents have already been introduced in the discourse. Patients and beneficiaries, which stand in the position of element B, are new discourse elements. It follows that sentence structure 3 has a topic-comment order. Table 4-4 below shows the distribution of old and new elements in structure 3-sentences:

Table 4-4: Topic-comment order in structure 3-sentences in M's Sss. 1

A is known	10
A is not known	1
B is known	/
B is not known	11

Summary of sentence structures

The following table summarises the different sentence structures in the data from M's session 1. Each constituent is assigned one sentence position; a discussion of the assignment of sentence positions to sentence elements will follow below.

Table 4-5: Sentence structures with elements ordered according to position in M's Sss. 1

	position 1	position 2	position 3
sentence structure 1	(A)	B	'desu'
sentence structure 2	A	'arimasu'	
sentence structure 3	A	B (C)	V

Table 4-5 above suggests a relationship between sentence position and discourse functions: the first element of structures 1 and 3, A, has already been established in the discourse. The second element, on the other hand, carries new information. In sentences with action verbs (sentence structure 3) it refers to a not yet mentioned object, in sentence structure 1 (the 'desu'-sentence) to the comment, which also carries new information. The following table shows that the distribution of known and unknown elements is unambiguous:

Table 4-6: Discourse functions in M's Sss. 1

A in sentence structure 1 is known	17
A in sentence structure 3 is known	11
B in sentence structure 1 is not known	17
B in sentence structure 3 is not known	11
sentence structure 1 total	17
sentence structure 3 total	11

It is obvious from utterances like example sentence 2

(2.)   *Em   hoka   no em   hito   wa em zu   zubon   desuka?*
       other   (gen-p) person (top-p)   pants   cop-(quest-p)
   Is the other person pants? (TL)/ Does the other person wear pants? (IL)

that sentence structure 1 has the function of marking topic and comment, not of marking equation. In the early learning phase, when the lexicon for a detailed description of relationships is not yet established, this is an extremely productive means of expression.

Sentence structure 2 contains a predicate and one further constituent. This constituent is new in the discourse, and introduced by a verb that only occurs in this sentence structure: 'arimasu'. This structure has been shown to have presentative function and serves to introduce the initial discourse topic and topic shifts.

Table 4-5 above contained sentence positions and sentence elements but did not indicate a systematic relationship between both. Because there is a clear relationship of sentence position and news value of the elements, the elements of structure 2 in table 4-5 above should now be shifted to the right. Thereby, all predicates are now in the same sentence-final position, and nominal elements stand in positions according to their information value: the constituent that carries new information directly precedes the predication, which has, as the sentence-final element, the only fixed position.

Table 4-7: Sentence structures in M's Sss. 1

	known information	new information	predication
sentence structure 1	(A)	B	'desu'
sentence structure 2		A	'arimasu'
sentence structure 3	(A)	B	V

1.2   Structural elements

In the preceding section, elements were called "nouns" or "verbs" in order to mark the constituents of the sentence structures that were being discussed, although the terms had not been defined yet. In this section a distributional analysis of the different elements of the sentence structures from section 1.1 is presented and their structural features are described. Table 4-8 below demonstrates that the unambiguous assignment of A and B-elements to non-final positions and predications to sentence-final positions - there is only one exception - justifies a grouping of elements according to their sentence position:

Table4- 8: Category distinction in M's Sss. 1

A, B-elements in sentence-final position	0
predicates in non-final position	1
A, B-elements in non-final position	64
predicates in sentence-final position	36

1.2.1 Nouns

Usually, categories of a specific language are grouped together according to their language-specific structural behaviour. In order to label categories cross-linguistically, however, typological linguistics has to resort to semantics (Greenberg 1978, Comrie 1989), because structural features can vary extremely between languages, while it has been shown that basic categories have some semantic similarities in all languages. Dixon (1977) summarises them as follows:

> "*Now each language arranges the types into a small number of groups - these groups are its major parts of speech. Motion, Affect, Giving, Corporeal, and other types seem almost always to be classed together - this is the class that is in all languages called Verb. Objects, Kin, and other types are almost always classed together - this is the class that is in all languages called Noun. ...Languages...that have an open class of adjectives include in this a constant array of types: Dimension, Colour, Value, and four or five others.*"
> (Dixon 1977, 28 ff)

Croft (1991), building on typological definitions of grammatical categories like the one above, sets semantic and pragmatic functions of categories into relation:

> "*The establishment of the typological pattern necessitates the recognition of two independent external parameters, lexical semantic class ... and pragmatic function.*"
> (Croft 1991, 99)

He represents these functions in the following table:

Table 4-9: Prototypical Correlations of Syntactic Categories (Croft 1991, 55)

Syntactic Category			
	Noun	Adjective	Verb
Semantic class	Object	Property	Action
Pragmatic function	Reference	Modification	Predication

There are at least two categories in all natural languages (Dixon 1977). As is obvious from the analysis of sentence structures above, M's grammar consists of two categories, A and B-elements, that were called nouns, and predicates. Particles form a closed class. A and B-elements in M's session 1-grammar mainly refer to objects or persons or to location, which is expressed in Japanese by a nominal construction (like English "on top of X", see ch. 2.2.3):

Table 4-10: Semantic content of A and B-elements in M's Sss. 1

element referring to object	30
element referring to person	16
element referring to location	13
element is proper name	2
others	3
total	64

As this table shows, the semantic content of A and B-elements fits the typological core features of nouns well. Therefore it is justified to call A and B-elements "nouns". All nouns in M's session 1 are part of the Japanese lexicon of nouns.

The internal structure of noun phrases is principally "noun + particle", except for the copula complement, where it is only "noun" if not the copula itself is understood as a particle (see section 1.1 above, sentence structure 1). "noun + particle" is a correct noun phrase structure in terms of TJ. No non-nouns are followed by a particle in M's session 1, as table 4-11 below shows. This identifies nouns unambiguously. We can conclude from this that the elements that were so far called A and B-elements have semantic core features (on a typological level) as well as structural core features (in comparison to TJ).

Table 4-11: Noun phrases in M's Sss. 1

nouns with particles	56
without particle (except cop. compl.)	8
non-nouns with particle	/
nouns total	64

1.2.2 Particles

Particles comprise a small and closed class. Six different lexical items occur in M's session 1 as parts of noun phrases, following the noun directly (see table 4-12 below). Because particles follow nouns, they can, in reverse logic, serve to define nouns. Their unique position makes an unambiguous definition of particles possible.

Table 4-12: Particles in M's Sss. 1

particles following nouns	27
particles in other positions	/
particles total	27
nouns total (except copula compl)	35

It is doubtful whether M has established a case system by the time of the first data collection session. There are no indications for a case marking system in the data. Presumably, it is sentence structure and sentence position of the noun that the particle follows which determines particle choice. The following table shows the particle choice in relation to the syntactic-semantic-pragmatic functions that they have in TJ: topic, subject, agent (T/S/A), direct object, indirect object, patient, and 'mo' - 'also' (the last replacing topic, subject and direct object particles). It is not possible to separate syntactic, semantic and pragmatic functions of nouns in M's session 1, as they are overlaid on one element. Therefore they will be treated here as one function.

Table 4-13: Semantic functions of particles in M's Sss. 1

	T/S/A Str .1	T/S/A Str .2	T/S/A Str. 3	dir.Obj.	ind.Obj.	'also'	possess/loc
'wa'	3	1	4	/	/	/	/
'ga'	/	2	/	/	/	/	/
'o'	/	2	/	1	/	/	/
'ni'	1	1	1	3	1	/	/
'mo'	1	/	/	/	/	2	/
'no'	2	/	1	1	/	/	7
no p	2	5	4 (1 no pr)	/	/	/	/

The only regularity in particle choice can be found in the marking of the first element in sentence structures 1 and 3 with the particle 'wa'. Subject marking in structure 2 does not seem to be subject to any regularity; in most cases, the particle is omitted. Direct objects are always marked with 'ni', except when there is an indirect particle in the sentence as well, preceding the direct object. This suggests that the choice of particle depends on the noun phrase's sentence position: the first element is always marked with 'wa', the second with 'ni', and the third with 'o'. This rule explains the tendency towards 'wa'-marking in structure 1-sentences and five of the six sentences with object; in the sixth sentence, the subject is not marked at all, and the object is marked with 'no', which is irregular in M's interlanguage. The verb of that sentence shows a complicated morphology ('itte koto ga arimasu'), which is certainly formulaic. This formula might have had an influence on the particle choice.

The rule system for particle choice in M's session 1-interlanguage, in which the particle choice depends on the sentence position, is speculative in nature; it seems, however, that at the early learning stage, particles are produced for their structural features rather than for reasons of case marking. The latter would presume the existence of a grammatical system that contains a notion of case in the first place.

The function of particles seems to be the marking and also delimitation of noun phrases. This is evidenced by the fact that in most cases the particle is omitted in structure 2-sentences, i.e. in sentences with one noun phrase only. The only instance of a particle omitted in a structure 3-sentence occurs when it also contains only one noun. Table 4-14 demonstrates this:

Table 4-14: Particle ellipsis in different sentence structures in M's Sss. 1

A-particle omitted in sentence structure 1	2
B-particle omitted in sentence structure 1	/
A-particle omitted in sentence structure 2	5
A-particle omitted in sentence structure 3	1 (no object noun here)
B-particle omitted in sentence structure 3	/
omitted particles total	8

1.2.3 Predicates

Predicates are a necessary part of a complete sentence in M's interlanguage; all utterances without these elements are contentswise clearly incomplete. As utterances without a predicate are often one-word comments or exclamations, an analysis of them is not meaningful. The lexical items in sentence-final position - 'desu', 'arimasu' and verbs - share some structural features, as table 4-15 below shows: they are the only elements not followed by a particle (except by 'ka' in sentence-final position, which is not part of the phrase, see 1.4.6 below), and they always stand in sentence-final position. This justifies to summarise them in one category.

Table 4-15: Predicates in M's Sss. 1

predicates in non-final position	/
predicates with following particle	/
predicates in sentence-final position	36

The semantic content of these elements - discusses in section 1.1 above - justifies to call them predicates:

Table 4-16: Semantic content of predicates in M's Sss. 1

topic-comment marker ('desu')	17
presentative ('arimasu')	11
verb	7
others	1
total	36

The large number of 'desu'-structures is noticeable. It seems that M only marks the fact that the involved nouns - or rather, the objects they refer to - stand in some relationship, without marking its type. In most cases, the objects stand in a relationship of equation, and once of possession (see example sentence 2 in section 1.1). Verb morphology in M's session 1 is extremely limited; only one negated existential verb ('arimasen') is produced. Verb morphology will be discussed in detail in 1.4.4 below.

1.3 Summary

Basic category features in M's session 1 are, according to sections 1.2.1, 1.2.2 and 1.2.3, the following:

Table 4-17: Category features in M's Sss. 1

NP:	NP -> N
	NP -> N p
	never sentence-final
	N marks focus, topic, comment, agent, subject, object, beneficiary
pred:	V
	cop
	always sentence-final
	never followed by particle
	V marks predication

Sentence structures in M's session 1 are structurally target-like and form a subset of TJ-structures:

Table 4-18: Sentence structures in M's Sss. 1

	(NP)	NP	desu
S ->		NP	arimasu
	NP	(NP)	verb

Basic structures of M's interlanguage at the time of session 1 can be summarised as follows:

Table 4-19: Interlanguage grammar in M's Sss. 1

	(NP)	NP	desu
S ->		NP	arimasu
	NP	(NP)	verb
NP -> N			
	N p		

1.4   Complex structures

In addition to the sentence and constituent structures presented in the previous section, several complex structures occurred in data collection session 1. They are called "complex structures", because they are extensions of the structures described above.

These complex structures are modifications of form as well as of meaning. Semantically, complex structures qualify and specify a predicate - with inflection or question marker - or a noun, like adjectives and relative clauses do (see ch. 2.1.6 for adjectives and ch. 2.1.9 for relative clauses in TJ):

5. *Atarashii   kuruma*
   new   car
   (the) new car

6. *Kinoo   katta ringo*
   yesterday   bought apple
   the apple that I bought yesterday

Most complex structures in M's session 1 are noun phrases extended by elements that are dependent on the head noun, as exemplified in example sentences 5 and 6. The complete list of complex structures occurring at least once in M's session 1 is, described in TJ terms, as follows:

1 complex noun phrase with the structure *N to N*;

7 complex noun phrases with the structure *N no N*;

2 complex noun phrases with the structure *adj N*;

1 verb inflection;

6 sentence-final question markers;

2 relative clauses.

1.4.1 N to N-phrases

In Japanese, two nouns can be connected by the particle 'to' (see ch. 2.1.4), resulting in a duplicated noun phrase with the structure **N p N** (when copula complement) or **N p N p**: NP -> N p

　　　NP -> N p N (p).

7. *Kinoo   ringo   to   orenji   o   katta.*
   yesterday apple   and   oranges (obj-p) bought
   Yesterday I bought apples and oranges.

This noun phrase fills one sentence position, and the main verb has scope over both nouns. In the further analysis, the duplicated noun phrase will be referred to as **N p N**.

M answers the question, 'Have you ever been to Europe?' as follows:

8. *Ee,   Sukottorando to em England   e   mo (laughs) em itte*
         Scotland   and   (loc.p.) also   go-ser
   koto ga arimasu.
   (have exper.)
   Yes, I went to Scotland and England.

'Scotland' and 'England' are connected with the particle 'to' - 'and'. The verb is a verb complex with the meaning have the experience of going (there)', which should be regarded here as a rote-learned chunk. Example sentence 8 is the only occurrence of 'to' in session 1.

1.4.2 N no N-phrases

In TJ, the particle 'no' connects two nouns, as 'to' does, but rather than being additive, the **N no N**-construction marks that the first noun is structurally dependent of the second (see ch. 2.1.4). The relationship of both nouns can, but needs not necessarily be possessive. The **N no N**-structure is also used to indicate locality:

9. *Kore   wa   nihonjin   no   tomodachi desu.*
   this   (top-p)   Japanese   (gen-p)   friend   (cop)
   This is my Japanese friend, or: This is a/the friend of a/the Japanese.

10. *Yane   no   ue   ni   neko ga   imasu.*
    roof   (gen-p) top   (loc-p) cat (subj-p) be
On the roof is a cat.

Japanese is a consistently leftbranching language, and all modifiers, such as quantifiers, adjectives, or relative clauses, precede their heads. In order to consistently produce structures like those above, the speaker therefore needs the following prerequisites:
- the ability to build constituent structures with more than one terminal element;
- the ability to order elements according to the branching direction.

In session 1 M produces six noun phrases, which indicate locality, and no other **N no N**-construction. Two problems occur. First, the order of both nouns seems to be arbitrary as is indicated by table 4-20 below, which demonstrates the position of **N1** and **N2**, i.e. the verbs that would stand in first resp. second noun position if TJ rules were applied:

Table 4-20: **N no N**-structures in M's Sss. 1

N1 no N2	4
N2 no N 1	2
total N no N	6

Second, M uses the copula instead of the correct existential verbs in sentences with noun phrases indicating locality. This leads to two mutually exclusive rules in M's interlanguage grammar: the information of locality is the comment to an already introduced topic. Being the comment, it stands in the position of the second noun phrase, the copula complement, and should therefore have no following particle. However, locality-noun phrases end on the particle 'ni'-'at', and M is obviously hesitant to omit it, as it contains semantic information. M makes several hypotheses about the possible sentence and phrase structures which could solve her dilemma. She changes the order of both nouns, and omits alternatively both particles in order to fulfil the rule of "no particle before copula complement":

Table 4-21: **N no N**-structures and their environment in M's Sss. 1

(NP) N1 no N2 cop	1
(NP) N2 no N1 cop	1
(NP) N2 ni N1 cop	1
(NP) N1 ni N2 cop	1
N1 no N2 NP cop	1
(NP) N1 no N2 ni arimasu (rel. clause)	1
total N no N	6

The last sentence in the table should perhaps be excluded from analysis, because here M constructs a kind of relative clause, which cannot be assumed to underlie identical rules. The other sentences clearly show that M has not yet decided which particle to sacrifice to her rule system. This phenomenon of contradictory rules in M's grammar is a classic example of the way learners build up a grammar by hypothesis generation and testing.

M has neither acquired the semantic differences of copula and existential verb that TJ rules state, nor has she acquired the rule of Japanese being leftbranching, i.e. the fact that a dependent element has to precede its head. However, from the six structures listed in table 4-21 it is clear that M has acquired the ability to produce constituent structures of the form **N p N**, i.e. constituent structures containing more than one terminal element.

1.4.3 adj N-phrases

The Japanese grammar contains complex noun phrases of the type:

11. *Onnanohito   wa   aoi   yoofuku   o   kaimasu.*
    woman   (top-p) blue   dress   (obj-p)   buy
    The woman buys a blue dress.

According to descriptive grammars of Japanese (see ch. 2.1.6) and to typological definitions (see section 1.2.1) , 'aoi' is an adjective. In TJ, adjectives differ from nouns syntactically in that they directly precede their head, i.e. without a connecting particle like 'no'. Further features of Japanese adjectives (like inflection for tense and negation) do not occur in M's first interview and do not need to be taken into account here. Adjectives are the first open class of dependent elements in M's grammar.

In session 1, M produces several adjectives, all of semantically typical adjectival character (see section 1.2.1), denoting colours or characteristics like "difficult" and "easy". However, most of these lexical items in M's session 1 stand in the position of the copula complement, and only two adjectives stand in the unique adjective position preceding the noun:

12. *Em (laughs) (...) oh em em   hito hm hit hito   ni   suwatte*
                                   person   (loc-p) sitting
    em   aoi   no no   doresu eh aoi doresu em ni   kirimasuka?
          blue (gen-p) dress   (i.o.-p) wear-(quest-p)
    Does the person that is sitting wear a blue dress?

13. *Em   aoi   doresu?*
         blue   dress
    Is it a blue dress?

In example sentence 12, M produces the structure **adj no N**, thereby treating the adjective as a noun. The analysis of data from other learners will show that this form is frequently produced. It is the consequence of an avoidance strategy at a time when **adj N p** cannot yet be produced, but the discourse requires a semantic modification of a noun. There are two solutions to this problem. First, the proposition can be broken down into single pieces of information. This results in sentences of the type 'The woman has a dress. The dress is blue' for 'The woman has a blue dress'. The other solution is to treat the modifying lexical item as the only modifier that is known so far, i.e. as (the first) noun in an **N no N**-structure. The result is a sentence of the type **adj no N**, whereby the adjective can be called "adjective" only on grounds of semantics or the target grammar[9]. In the structure **adj no N p**, no adjective-distinguishing features are visible, and the syntactic category "adjective" can therefore not be regarded as acquired on the basis of such a structure.

In example sentence 13, M produces an adjective that precedes its head directly, but is not embedded in a full sentence. Because only two noun-preceding adjectives are produced, and both in different syntactic environments, the category "adjective" cannot be regarded as acquired in M's session 1. This non-acquisition seems logical, considering that this category presupposes the acquisition of two new features: of a branching direction, and of some lexical items being dependent and preceding the head directly. As M has not acquired the first of these features (see section 1.4.2), she has no chance to apply the second one.

1.4.4 Predicate morphology

In M's session 1 there are five verbs that do not have the '-masu'-ending, which is the default form of Japanese verbs that students learn. Two of the five verbs occur in the relative clauses analysed below in section 4.3.3; both have the non-finite non-past-marker '-u'. This ending does not occur in any other position in this corpus. Twice, M produces the serial verb form -te, once incorrectly with the copula following:

14. *Em em otokonohito   suwatte desu.*
          man   sit-serial (cop)
    The man is sitting.

The second -te- form occurring in the corpus is definitely formulaic, as the semantics of the expressions have not been taught at that stage:

15. *em   doa   no em   shimete   imasu.*
          door   (gen-p)   close-(non-finite)   exV
    (The man) is closing the door / The door has been closed/the door is   closed)

Only one sentence contains a negation:

---

[9] The same phenomenon occurs when learners produce noun phrases with relative clauses of the structure 'rel.cl. no N'. In this case the relative clause in inserted into the noun position (see Huter 1992).

16. *Em   mado arimasen.*
      window be-neg
  It is not a window (in TJ: There is no window)

This negation seems to be formulaic, because the meaning of 'arimasen' is not that of a negated presentative, which 'arimasu' is in M's grammar: the sentence does not mean 'there is no window', but 'it is not a window' (but a blackboard). 'arimasen' has the meaning of a negated copula and is therefore rather an independent lexical item indicating negation than an inflected form of 'arimasu'.

This was a complete presentation of verb morphology in M's session 1 data. The analysis shows that neither non-finite or seriality markers have been acquired nor negation, although the conversation dealt with past-tense topics like M's trip to England. No other verb morphology, for instance tense marking, occurs. Verb inflection cannot be regarded as acquired.

1.4.5 Complex sentence structures

There are two constructions in M's session 1 data that have the function of relative clauses. TJ relative clauses precede the head noun like adjectives and N *no*-modifiers do (see ch. 2.1.9):

17. *Kinoo   katta   ringo   wa   oishii   desu.*
    yesterday   bought   apple   (top-p)   delicious (cop)
    The apple that I bought yesterday is delicious.

M produces two relative clauses, both restrictive and out of pragmatic necessity:

(12.) *Em (laughs) (...) oh em em   hito   hm   hithito   ni   suwatte*
                        person   loc-p sitting
    em   aoi   no no   doresu eh aoi doresu em   ni   kirimasuka?
         blue   (gen-p) dress   (i.o.-p) wear-quest-p
  Does the person that is sitting wear a blue dress?

18. *Em em em fu futari em futari   ga em   no futari no   em futari   wa*
           two persons   (sub-p) (gen-p)   (top-p)
    em   ki   no   soba soba? soba   ni em
       tree   (gen-p)   near   (loc-p)
    em   aru em eh ki em doresu   ni   kirimasuka?
       be   dress   (i.o.-p) wear-(quest-p)
  Do the people that are under the tree wear dresses?

M constructs both sentences with much time and effort. The verb morphology, which is different but in both cases non-finite, may indicate that there is some notion of clause level in M's interlanguage, or that the differently marked verbs are transferred structures of non-finite verbs like gerunds in English. There is no indication that the

sentences that were suggested as relative clauses are produced according to a productive grammatical rule that is part of M's interlanguage grammar, and it is not valid to consider subordinate or relative clauses acquired.

1.4.6 Question marking

In Japanese, wh- and Yes/No-questions are marked not by word order, but with the question marker '-ka' after the verb and thereby after the sentence. The following table shows M's production of question markers, which all occur in Yes/No-questions:

Table 4-22: Question marker '-ka' in M's Sss. 1

no -*ka* after 'arimasu'	4
-*ka* after 'desu'	3
-*ka* after 'kirimasu'	3
-*ka* after 'arimasu'	/
no -*ka* after 'desu'	5
no -*ka* after 'kirimasu'	/
other	/
questions total	15

This table shows that the production of question markers does not depend on verb choice in M's session 1. It seems that M is able to insert question markers and knows the TJ rules about when to do so, but often drops them, due to their low semantic-pragmatic value that results from the fact that questions can be sufficiently marked by prosody, as is the case in English.

2. Summary and conclusion

The analysis of session 1 with learner M showed that her interlanguage grammar consists of two clearly distinguishable categories and three clearly distinguishable sentence structures:

Table 4-23: Interlanguage grammar in M's Sss. 1

```
         (NP)  NP    'desu'
S ->     NP          'arimasu'
         NP    (NP)  V


         N
NP -> N p
         N to N
       · N no N

         'desu'
V ->     'arimasu'
         V
```

There is one function assigned to each sentence structure. The copula sentence continues an already introduced topic and comments on it. The presentative sentence, with 'arimasu', presents the existence of a subject and thereby introduces a new topic into the discourse. The third sentence structure describes an action and its agents and patients or beneficiaries.

These structures can be modified. In M's session 1, the majority of (semantic) modifications is achieved by an extension of the noun phrase. The simplest of these structures is coordination of nouns of the type 'I was in Scotland and England'. This is achieved by duplication of the noun phrase **N to N** ("N and N"). M has acquired the ability to produce this structure.

Another form of noun modification in TJ, **N no N**, has the same structure as **N to N**, but the order of nouns depends on the branching direction. M is able to produce **N p N**-structures, but in her grammar the order of nouns and particles depends on factors other than branching direction. M has not established any headedness rule and consequently, cannot consistently produce constituents with non-head elements.

A further form of noun phrase modification in TJ is the structure **NP -> adj N p**. In the data are two instances of this structure. Once, M inserts the noun-connecting particle 'no' between adjective and noun, thereby treating the adjective as a noun (in the **N no N**-structure). The adjective in M's interlanguage grammar has therefore no structural features to distinguish it from nouns and it must be concluded that adjectives as a grammatical category have not been acquired. As the feature "leftbranching" has not been acquired, as shown above, it is consequent that the structure **NP -> adj N p** could not be acquired either.

The last form of modification in M's sessions 1 data is the relative clause. Out of pragmatic necessity, M produces two restrictive relative clause constructions, but here, too, the order of modifying and modified element is not subject to a rule determining their order. It is not clear from the data if these structures should be analysed as clauses or gerundival constructions.

M has also acquired the question marker '-ka'. No productive verb morphology has been acquired.

In summary, M has acquired one structure additional to those in section 1.3, which is constructed by a duplication of the simple noun phrase: **NP -> N p N p**. Several noun phrase structures are based on this pattern. That means that M has not acquired any category or constituent other than the basic ones noun and verb. According to the above analysis, the following structures on sentence and phrase level , and only they, have been acquired:

Table 4-24: Acquired structures in M's Sss. 1

cop-sent	+
exV-sent	+
V-sent	+
N to N p	+
N no N p	+
N1 no N2	-
S-ka	+
pred-past	-
pred-neg	-
adj N p	-

PART 2

The following analysis of the data from M's sessions 2, 3 and 4 will be conducted with reference to part 1. The comparison of the data shows where the learner changes forms or functions, how this takes place, which new elements are added, and which may have been lost. The comparison thus shows the development of M's interlanguage grammar, and it will become clear that all further development is based on the structures that were part of the interlanguage grammar of the first data collection session.

3. Continuation of established structures

The analysis of session 1 showed that M had established three sentence structures and two syntactic categories after three months of instruction. The sentence structures had one function each - introduction of a topic, comment on a topic, and description of action or state. The two categories which occurred were defined by their sentence positions and their lexicon. There was also a closed class of particles. The following modifications were possible: extension of noun phrases by duplication, and extension of sentence structures with the question marker -ka.

3.1   Sentence structures

Table 4-25 below shows that M continues to produce all sentence structures that have been established in session 1:

Table 4-25: Clause structures in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
sentence str. 1	17	35	11	14
sentence str. 2	11	9	10	10
sentence str. 3	7	49	33	28
utterances with no pred/ unclear	1	15	5	1
utterances with pred total	36	108	59	53

From session 3 on, clauses are tallied (not sentences, as before). M here begins to produce coordinate clauses, which means that sentences and clauses need to be distinguished. M introduces no new basic sentence structures. Although she continues production of all structures throughout sessions 2, 3, and 4, the proportion of the different structures changes.

Structure 1-sentences, i.e. copula sentences with the function of topic continuation and comment on this topic, maintain a high percentage of the total. The percentage of presentatives, however, drops dramatically in session 2. It seems that M has gained an overview of more than one sentence at a time while speaking. Thus from session 2 on she is better able to introduce a new topic by first producing it in the second noun position of structure 3-sentences. Presentatives become thereby increasingly obsolete.

3.2   Structural elements

In session 1, noun phrases were characterised by their internal structure $N\ p$ and by their non-final sentence position, and this is maintained, as table 4-26 below shows. It is clear that particles mark and delimit noun phrases throughout the study period. They always stand in the final position of noun phrases.

Table 4-26: Nouns in M's Sss. 2-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
in clause final position	/	/	/	/
without p (except cop. compl)	5	30	6	11
nouns total	35	121	58	58

Predicates were characterised by their sentence-final position and the fact that they are not followed by particles. These characteristics are still valid:

Table 4-27: Predicates in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
non-cl. final	/	/	/	/
followed by p	/	/	/	/
predicates total	36	108	59	53

3.3   Complex structures

The complex noun phrases **N to N** and **N no N** can be found in all sessions. From session 2 on, the order of nouns within the phrase becomes increasingly consistent, as visible in table 4-28 below. M has obviously acquired a rule governing the branching direction. This will be further discussed in section 4 below.

Table 4-28: Extended noun phrases in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
N to N p	1	10	/	3
N1 no N2	3	13	7	6
N2 no N1 p	3	3	/	/

M does not produce any more question markers '-ka', because the discourse in all following interviews does not necessarily demand question formation.

Table 4-29: Question marker -ka in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
question marker -ka	16	/	/	/

In summary, M maintains all structures acquired except sentence-final '-ka', and they form the basis of the further grammar development.

4. New structures and elements

This section differs in structure from the analysis of session 1; the presentation of the new forms of modification begins with the analysis of the noun phrase, then move to the predicate and its morphology, and finishes with sentence modifications.

4.1   Noun phrases

4.1.1 N no N-structures

In session 1, M had acquired the skills to produce extended noun phrases of the structure **N p N p/desu**, but her grammar did not include a rule governing the order of both nouns. From session 2 on, M produces **N no N**-structures with a consistent word order (see table 4-30 below). That is some indication that she has acquired a rule governing the branching direction, and can apply it to her language production. In part 1 it was argued that **adj N**-structures cannot be acquired as long as this knowledge is not present, and it seems that from now on M should be able to acquire the category "adjective".

Table 4-30: **N no N**-structures in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
N1 no N 2	3	13	7	6
N2 no N1	3	3	/	/
N no N total	6	16	7	6

4.1.2 Adjectives

M creates a new category that includes quantifiers and adjectives and is structurally a subset of nouns, differing from them in only one feature. Adjectives go through an interim phase before **det N**-structures are produced targetlike: they are a subset of nouns, because they can occur in the same position into which nouns can be inserted, i.e. the position of the copula complement. Adjectives within the noun phrase precede their head noun, but differently to nouns. While a noun in this position is linked to the following noun by the particle 'no', the adjective precedes the head directly. The adjective is a dependent part of a noun phrase and extends it.

19. *Nihonjin   no   tomodachi*
     Japan -person (gen-p) friend
     the Japanese friend

20. *Wakai   tomodachi*
     young   friend
     the young friend

The establishment of the new category "adjective", i.e. the step from "nominal" to "adjectival" behaviour of lexical items with adjectival meaning (which were used before as copula complements only) creates several problems for a learner. Acquiring the ability to produce an **adj N**-structure has a number of prerequisites: first, the learner must be able to produce complex noun phrases with more than one element. Second, s/he must have acquired a rule governing the branching direction as a general

characteristic of the grammar. Third, s/he must create a category which is neither head of phrase nor has features mutually exclusive with those of the other existing categories, as was the case for nouns and verbs. The structure **adj no N** is an interim step in this development and a typical learner error:

(12.) *Em (laughs) (...) oh em em   hito hm   hithito ni   suwatte*
                                person   (loc-p) sitting
    em   aoi   no no   doresu eh aoi doresu em   ni
           blue   (gen-p) dress   (i.o.-p)
    kirimasuka?
    wear(-quest-p)
    Does the person that is sitting wear a blue dress?

In 'aoi no doresu' - 'a blue dress', M still treats the adjective as a noun, linking it to its head with the particle 'no'. The following table shows adjective-constructions in M's data:

Table 4-31: **adj-N-structures** in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
adj no N	1	/	/	/
adj N	1 (no pred)	11 (3 no pred)	3	1+1demonstrativ

At the time of session 2, M has acquired the specific feature of adjectives "preceding head directly" and the rule of Japanese being leftbranching. In sessions 3 and 4, she produces only very few **adj N**-structures, so that her communicative versatility decreases in this respect. This phenomenon of backsliding in both structural and communicative terms is noticeable with other features as well.

The first adjective inflection occurs in M's data in session 2. By the end of the second semester, she has been taught the whole inflection paradigm (see ch. 2.1.6). In TJ, adjectives can be inflected for seriality (non-finiteness), adverbiality, and for tense, aspect and negation, and so assume "verbal" features.

Table 4-32: Adjective inflection in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
adj-neg	/	/	/	/
adj-past	/	1	/	/
adj-neg past	/	/	/	/
adj-ku V	/	/	/	/
adj V	/	2	/	/
adj-kute	/	1	/	/
adj-soo	/	1	/	/
adj+deshita	/	1	5	2
total	/	6	5	3

Again, we find a backsliding in the complexity of M's structures. M appears to be at the point of acquiring adjective inflection in session 2, but it does not occur again in sessions 3 and 4. On the contrary, M produces 'adj deshita'-sentences, i.e. uninflected adjectives followed by the past tense form of the copula. This is incorrect in TJ, where the tense should be marked on the - thereby finite - adjective[10].

M has acquired the category "adjective", the first class of dependent elements, with the feature "preceding head directly" by the time of session 2, but shows no consistent production of any other feature that goes with adjectives in TJ.

4.1.3 Quantifiers

Quantifiers show a strong semantic and syntactic similarity to adjectives. Both characterise nouns and precede them directly in M's interlanguage. The morphological difference that they show in TJ (see ch. 2.1.7), i.e. the inflection of adjectives, does not play any role in M's interlanguage grammar, as she does not acquire it. The only difference between adjectives and quantifiers in M's interlanguage grammar is that quantifiers also mark the intensity of an adjective.

Table 4-33: Quantifiers in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
quant N	/	18	4	1
quant cop	/	/	/	/
quant adj	/	/	3	1
quant adj cop	/	4	/	/
total	/	22	7	2

Table 4-33 above shows that M quantifies nouns as well as (the intensity of) adjectives, whereby the quantification of nouns might have been the first step, because most quantifiers precede nouns and not adjectives in session 2.

M quantifies nouns or adjectives, but she quantifies a noun modifying adjective: **quant adj N**, only once. It seems that the length of a phrase is proportional to the difficulty of its being produced. The analysis of other learners' interlanguages will show that learners never insert quantifiers in long noun phrases in the first phase of their acquisition, but build up their different environments step by step, starting with a simple **det** N-phrase that is not embedded in any sentence structure.

Quantifiers are the first open class of elements that occur in dependent positions only. They never occur in the position of a copula complement, although this is possible for some quantifiers in TJ.

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[10] However, the fact that Japanese first language learners make the same error (see ch. 2.2) shows that it is, in some sense, difficult to inflect the adjective.

4.1.4 Nominal adjectives

Nominal adjectives, or qualitative adjectives, are elements of TJ which syntactically belong to the class of nouns. Semantically, however, they belong to the class of adjectives, because they characterise objects (see ch. 2.1.6). Nominal adjectives precede the noun with the connection particle 'na', in the way that nouns are connected with the particle 'no'. Because of this, nominal adjectives are also called "na-adjectives". The following is an example of a **NoAd na N**-structure:

21. *Kirei   na   yoofuku*
     beautiful (conn-p) dress
     a beautiful dress

Experience shows that it is difficult for JSL learners to acquire the category of nominal adjectives. This might be due to the fact that form-function distinctions are extremely unclear with this category: so far, all categories in M's interlanguage showed a one-to-one relationship of form and function. This regularity is interrupted by nominal adjectives, which semantically behave like adjectives, but syntactically behave more like nouns. So far, particles had the function of marking phrase boundaries. The only exception was the particle 'no', which connects two nouns. The no-construction, however, was a duplication of a noun phrase. Now, M has to introduce a second connecting particle, which connects some adjectives to their head nouns, in spite of the fact that it was the distinguishing feature of adjectives not to be connected to their heads by a particle. This revision of rules may pose problems to language learners.

The following table shows that although M has introduced some lexical items from the TJ-category "nominal adjectives", she avoids its new structural requirements by using it mainly in copula-complement position. Only for the word 'iroiro' ('several'), she has acquired the na-particle when preceding a noun (in session 2):

Table 4-34: Nominal adjectives in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
NoAd cop/exV	1	16	2	/
NoAd na N	/	2	/	/
NoAd N	/	/	/	/
NoAd na pred[11]	/	1	/	/
NoAd NoAd cop	/	1	/	/
NoAd ni V	/	1	/	/
NoAd V	/	1	/	/
total	1	22	2	/

---

[11] Students sometimes learn nominal adjectives together with the following particle 'na' as a chunk, which results in structures where this particle directly precedes the predicate.

Here we find a backsliding similar to that in the production of adjective inflection. M does not continue and refine structures that she started to produce in session 2, but drops all structures in which no clear feature distinctions and no one to one-relationship of form and function can be found. The grammatical class of nominal adjectives cannot be described as acquired by M throughout the time of the study.

4.2   Predicate morphology

Predicate morphology develops appreciably. There is a much stronger development of (action) verb morphology than of existential verb and copula morphology. The different predicates' division of labour in marking different kinds of predications, and consequently different types of tense, aspect etc., crystallises out increasingly clearly. The comparison with other learners' data will later show regularities in this process. In sessions 2-4, morphology of all predicates increases, and the percentage of "action" verbs grows, as illustrated in the following tables:

Table 4-35: Copula morphology in Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
pres pos	17	30	4	11
past pos	/	4	7	3
pres pl	/	1	/	/

Table 4-35 shows that there is a small increase in copula morphology. The lack of all morphology except past tense marking might be due to the copula's restricted discourse function; the relation of two sentence elements is increasingly qualified, therefore verbs are used rather than the copula, and most marking of tense, aspect, etc. occurs on them.

Table 4-36: Morphology of existential verb 'arimasu' in Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
pres pos	10	3	1	8
past positive	/	2	2	1
pres neg	1	/	4	/
past neg	/	3	2	/
serial form	/	/	/	1
total	11	8	9	10

Table 4-36 shows that M has acquired the marking of positive past tense for the copula, and past tense and negated past tense for 'arimasu' by the time of the second session. At this point, a division of labour becomes visible: there is no negation marking for the copula, because the marking of non-existence as well as non-equality, which M does not seem to distinguish, is the task of the existential verb 'arimasu'. 'arimasu' and 'imasu' do not mark identical functions for animate and inanimate objects (as is the case in TJ, and as M had been taught in class), but 'arimasu' still

denotes presentation and its negation, while 'imasu' is used for serial constructions 'V-te imasu' (seech. 2.1.8). M uses 'imasu' in session 3 once as an existential verb and once in a'V-te imasu'-structure for aspect marking, and for aspect marking only in session 4.

Table 4-37: Morphology of existential verb 'imasu' in Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
as existential verb/present've	/	/	1 (neg)	/
V-te pres pos	/	/	1	4
V-te pres neg	/	/	/	6
V-te past pos	/	/	/	1
V-te past neg	/	/	/	1
total	/	/	/	12

Table 4-38: Verb morphology in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
pres pos	7	18	4	7
past pos	/	19	14	6
pres neg	/	2	3	2
past neg	/	1 (attempt, fails)	3	1
pres pl	/	6	2	/
pres pl neg	/	/	1	/
plain past	/	/	3	/
serial	/	(5)	1	7
unclear	/	/	1	/
total	7	51	32	16

Table 4-38 shows that M has acquired positive and negative past tense marking of verbs as well as the plain form. The plain form occurs in positive present tense only, although the whole paradigm had been taught. The third interview shows no progress for copula and existential verb, but full verbs are used proportionally more and with a much more varied morphology. The increased production of verbs is the obverse side of the coin of decreased copula production. The strong development of the verb is not surprising, as verbs are much more expressive than the semantically invariable copula.

The serial form *V-te* cannot be regarded as acquired for session 2, because M produces it only in 'sunde imasu' - 'to live' and 'suwatte imasu' - 'to sit'; they are surely formulaic expressions, as these verbs tend not to be taught in any other form.

Session 4 shows the by now familiar backsliding. Different to the development of other structures mentioned above, verb morphology develops up to session 3. However, in session 4, M produces only the morphology that she produced at least three times in session 3 and drops those inflections that she could not produce easily and in varied contexts before. The number of verbs in session 2 is not 49 (number of sentences in the interview), but 51, because twice, the plain form occurs in a verb cluster and so, for two sentences four verb endings were counted.

4.3   Sentence structures

The first sentence modifications occurring in M's data, beside the question marker '-ka', are preposed adverbial phrases, which serve to express spatial and temporal information, and co- and subordinate clauses.

4.3.1 Elements in sentence-initial position

In M's production, adverbial phrases and sentence-initials (SI) always precede the sentence. Adverbial phrases have the structure of noun phrases **N p**: 'suiyoobi ni' - 'on Wednesday'. Sentence-initials are single lexical items like 'dakara' - 'that's why' or 'demo' - 'nevertheless, in spite of that, but'. These elements often create a meaningful connection of sentences. M also inserts what are conjunctions in TJ into the sentence-initial position, which seems to be her first step towards the syntactic conjunction of two sentences.

Table 4-39: Elements in sentence-initial position in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
AdvP	/	2	3 + 1	9
demo	/	7	/	/
soshite	/	2	4	/
ga	/	7	3	1
other SI	/	5	/	8
total	/	23	11	18

The elements in table 4-39 that are subsumed under "other SI" are: 'to' - 'and', which serves in TJ to connect nouns and which M uses to connect sentences, temporal information like 'kinoo' - 'yesterday' or 'senshuu' - 'last week', and two further adverbs which in TJ should directly precede the verb; but as M has not established this position, she inserts these elements into the sentence-initial position. This is the same system of using the existing grammar for as much communicative value as only possible that underlies the **adj no** N-constructions.

It is not surprising that in session 3, M produces only half as many sentence modifications as in session 2, because she produces only half as many utterances overall. It is interesting, however, that she still produces twice as many adverbial phrases, one of them in sentence-internal position (therefore the notation "3+1" in the table). M's ability to mark more information in one sentence than before may be a reason for the smaller number of sentences in session 2.

With the introduction of the sentence-initial position, M now has the possibility of denoting a logical (additive, causal, adversative ...) relation between two sentences. This is the prerequisite for the production of coordinate sentences, because it requires the cognitive skill of maintaining scope over two sentences.

4.3.2 Elements in verb-preceding position

In session 4 the first adverbs occur, i.e. directly verb preceding elements which break up the canonical word order. In TJ, those elements can be either genuine adverbs like 'mata' - 'again' or adjectives with the adverbial ending '-ku', which is similar in its syntactic function to the English '-ly'.

22. *Asuko   ga   mata nakimasu.*
    (name) (sub-p) again cry
    Asuko cries again.

23. *Uma wa   hayaku hashiru.*
    horse (top-p) fast   run
    Horses run fast.

M produces no adverbs at all in the first three sessions and two adverbs with the adverbial ending '-ku' and one genuine adverb in session 4. The sentence-internal adverb position could be described as being "about to be acquired" for session 4.

Table 4-40: Verb-preceding elements in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
genuine adv	/	/	/	1
adj-ku	/	/	/	2
total	/	/	/	3

4.3.3 Complex sentence structures

In TJ, subordination is indicated by the plain form of the verb. In polite speech this creates a difference between non-finite verbs (with no marking of politeness level) and finite verbs (with marking of politeness level) (see ch. 2.1.8).[12]

The data of M's sessions 2 and 3 contain coordinate clauses as well as subordinate clauses with complementizers, but no relative clauses, which have no complementizer or relative pronoun in TJ (see ch. 2.1.8). All subordinate clauses seem to be formulaic and could serve as the first step towards productive subordination, but are not exploited for that end, as session 4, which is devoid of all co- and subordinate clauses, shows:

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[12] In less polite registers this differentiation is not apparent, because the plain form is finite as well; however, in the language classes, studentes are taught the polite form, so that the plain form functions as a subordination marker.

Table 4-41: Co- and subordinate clauses in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
'to' ('and') (coord)	/	1	/	/
'ga' (coord)	/	3	1	/
'kara' (coord)	/	/	1	/
nomin. (subord)	/	/	2	/
relativ. (subord)	/	/	/	/
total	/	5	5	/

Table 4-41 shows that subordination has not been acquired until the end of the study period, although there are some attempts to produce it. Coordinate sentence with 'ga' are acquired by session 2, but produced only twice in session 3 ('ga' and 'to') and not at all in session 4. One construction with 'kara' and one with 'toki' was attempted but broken off. All **V-u nominaliser**-constructions have the same verb and are likely to be formulaic. It follows that M has acquired coordinate clauses by the time of session 2, but never acquired subordinate clauses.

PART 3

5. Summary and conclusion: The development of M's interlanguage grammar

In this section, the grammatical rules in M's interlanguage grammar at different points in time are presented and discussed. This will first be done separately for each structure, and then the full picture will be presented. The summary begins with the presentation of sentence structures and then moves on to noun phrases and predicate morphology. The order of acquisition for the different structures will be shown; rules that underlie these acquisitions will be looked at; and regularities of the acquisition process will be pointed out.

Summary

Sentence structures

By the end of the first semester of instruction, M has established the canonical word order and the copula sentence of target Japanese. There is no other sentence structure that she produces consistently. The canonical word order sentence is split up into the arimasu-sentence and the verb sentence in order to mark different discourse function (topic introduction and topic continuation resp.). Here, we encounter a clear example of language beginners establishing a one form-one function relationship in their language. M produces the same sentence structures throughout the study period.

Table 4-42: Basic sentence structures in M's Sss. 1- 4

S ->	(NP)	NP	cop
		NP	exV
	NP	(NP)	V

These structures contain two, later three element categories: nouns, verbs and adjectives. Noun and verb show mutually exclusive features, which again makes for unambiguous definitions of forms and functions:

Table 4-43: Categories in M's Sss. 1- 4

NP ->	N p
	N
	NP NP
	never clause-final
	N marks focus, topic, comment, agent, subject and object
pred ->	exV
	V
	cop
	always clause-final
	never followed by particle
	marks presentation, comment, or describes action
det:	NP -> adj N (p)
	NP -> quant N (p)
	NP -> quant adj N (p)

The following features of sentence structures have been acquired:

Table 4-44: Structures in M's Sss. 1-4: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
cop-sent	+	+	+	+
exV- sent	+	+	+	+
verb-sent	+	+	+	+
AdvP S	-	(2)	+	+
SI	-	+	+	+
coordination	-	+	(2)	-
subordination	-	(1)	(2)	-
adv	-	-	-	+

In this and all following tables, "+" marks acquisition, "-" marks non-acquisition, and numbers in brackets are given when the structure in question has been produced only once or twice and it is not possible to safely determine if it has been acquired. Table 45 demonstrates the results if all these structure are defined as "not acquired".

Table 4-45: Acquired structures in M's Sss. 1-4: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
cop-sent	+	+	+	+
exV-sent	+	+	+	+
verb-sent	+	+	+	+
Adv P S	-	-	+	+
coordination	-	+	-	-
SI	-	+	+	+
adv	-	-	-	+

Table 4-45 suggests that adverbial phrases in sentence-initial position are acquired later than coordination. This should not be taken at face value. It is important to note that sentence-initials have the same structural position as adverbial clauses, preceding the basic sentence structure. The sentence-initial position has been acquired earlier than the coordinate clause. This becomes clear when **AdvP S** and **SI** are summarised in the structure **XP S**. The following table demostrates the results:

Table 4-46: Acquired structures in M's Sss. 1-4: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
cop-sent	+	+	+	+
exV-sent	+	+	+	+
verb-sent	+	+	+	+
XP S	-	+	+	+
coordination	-	+	-	-
adv	-	-	-	+

It is noticeable from the data (see section 4.3) that M inserts lexical items that are coordinating conjunctions in TJ into the sentence-initial positions before she uses them as conjunctions. The distinction is marked by different sentence prosody. This means that sentence-initials are the first step in conjoining two sentences, as they mark a logical relationship (causative, adversative, ...) without marking this connection syntactically. Only in a second step are both propositions conjoined syntactically. The third step turns up in M's subordinate clauses, where a logical dependency is being marked by a structural dependency. We will re-find this pattern of stepwise acquisition of complex structures (where only one feature at a time is acquired) in the acquisition process of other syntactic features, and in other learners' interlanguage development.

Stepwise acquisition results in an implicational pattern of acquisition. All acquired structures, if presented in their temporal order of acquisition, show an implicational pattern, where later structures are based on earlier ones, and where, when a later acquired structure is produced, the earlier ones are in most cases produced as well. This will be discussed in detail in Ch. 5.

Coordinate clauses are produced in session 2, but not in sessions 3 and 4. This is an example of the backsliding that is obvious in most areas of M's grammar acquisition. It is to be expected that an informant does not always produce all structures that s/he is able to produce, and that therefore there are "gaps" in the implicational pattern.

However, it is interesting to note that in the majority of cases, the structures being dropped are those that have been the last ones acquired. That suggests that it is not arbitrary which structures are dropped, but the omission of structures follows the acquisition process in the opposite direction, thereby underpinning the assumption of implication.

Noun phrases

Table 4-47: Structures in M's Sss. 1-4: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
N p	+	+	+	+
N to N	(1)	+	-	+
N no N	+	+	+	+
N1 no N2	-	+	+	+
adj no N	(1)	-	-	-
adj N	(1)	+	+	(2)
quant N	-	+	+	(1)
quant adj	-	+	-	-
NoAd	(1)	+	(2)	-
adj-neg.	-	-	-	-
adj-past	-	(1)	-	(1)
adj V	-	(2)	-	-
adj-kute	-	(1)	-	-
adj-soo	-	(1)	-	-

Again, it is worthwhile to reduce those structure from the table about whose acquisition no clear statements can be made:

Table 4-48: Acquired structures in M's Sss. 1-4: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
N p	+	+	+	+
N p N	+	+	+	+
N1 no N2	-	+	+	+
adj N	-	+	+	-
quant N	-	+	+	-
quant adj	-	+	-	-

By the time of the first session, M has established the basic noun phrase structure **N p**, and also the rule that the duplicated noun phrase forms one constituent. Although there are a few instances of adjective morphology, it is not at any point possible to regard them as acquired.

The acquisition of the **N p N**-structure, which has the semantic function of modification, is structurally extremely important, as it constitutes the first step in the acquisition process of phrase extension. It should be noted that the first noun phrase extension is performed without the insertion of any other category, i.e. M has divided the acquisition of the function "modification" into two separate steps: first the new position, and later a new category to fill it. Again the stepwise pattern is observable.

The new categories that can fill the position of the modifying element in a complex noun phrase are adjectives and quantifiers. The feature that distinguishes them from nouns is that they precede the head noun directly. For the establishment of these new categories, several new rules have to be acquired:

First, a rule governing branching direction must be acquired. This is necessary in order to produce **adj** N-phrases consistently. Neither M nor the other informants have ever produced incorrect phrases of the structure **N adj.** However, it is clear (see section 1.3.2) that in the beginning phase, **N p** N-structures are produced without application of a branching rule, resulting in inconsistent production. M consistently produces **adj** N-structures only after a headedness rule has been acquired and applied to the **N p** N-phrases. The acquisition of a rule governing the branching direction is also vital for the acquisition of further structures like nominal adjectives, coordinate and subordinate clauses and relative clauses.

Another important factor in the acquisition of adjectives is that the rule of one form-one function principle must be dropped. As was shown above, nouns and verbs have mutually exclusive features, and are so unambiguously identifiable. Adjectives and nouns, on the other hand, no longer have mutually exclusive features. They can both be copula complement, and as modifiers can both precede the head noun.

The category of nominal adjectives has not been acquired. While M has acquired several items that belong, in TJ, to the class of nominal adjectives, she never produces them in their specific environments, i.e. in the structure **NoAd na N.** As is explained at length in section 4.1.4, the category of nominal adjectives has no distinctive features at all, but shows a mixture of noun and adjective features that together form the specificity of nominal adjectives.

Neither has adjective morphology been acquired. Adjective morphology has the characteristic of changing an adjective's category assignment: adjectives can function as adverbs, and when marked for tense and/or negation, they become finite and so assume verbal features.

This analysis reveals a hierarchy of categories that is formed by their kind of form-function relationship and the order of acquisition becomes apparent:
First, there are two categories with mutually exclusive features.
Then, with adjectives and quantifiers, there is a category that shows characteristics that are partially unique and partially overlap with those of another category.
A category that has only characteristics that it shares with other categories, the nominal adjective, has not been acquired.
Adjective morphology, which changes a lexical item's category annotation, has not been acquired either.
The uniqueness of category features is obviously an important trait of M's interlanguage grammar and can be removed only step by step.

Predicate morphology

The detailed list of acquisition of verb morphology looks as follows:

Table 4-49: Structures in M's Sss. 1- 4: Predicates

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
cop pres pos	+	+	+	+
'aru' pres pos	+	+	(1)	+
'iru' pres pos	-	-	(1)	+
verb pres pos	+	+	+	+
cop past pos	-	+	+	+
verb past pos	-	+	+	+
'aru' past pos	-	(2)	(2)	(1)
'iru' past pos	-	-	-	(1)
verb pres neg	-	(2)	+	(2)
'aru' pres neg	(1)	-	+	-
'iru' pres neg	-	-	-	+
'aru' past neg	-	+	(2)	-
'iru' past neg	-	-	-	(1)
verb past neg	-	-	+	(1)
cop pres pl	-	(1)	-	-
verb pres plain	-	+	(2)	-
verb past plain	-	-	+	-
verb pres pl neg	-	-	(1)	-
'aru' serial	-	-	-	(1)
verb serial	-	(5)	(1)	+
'iru' pres neg	-	-	(1)	+

Reduced to unambiguous statements, the table looks as follows:

Table 4-50: Acquired structures in M's Sss. 1-4: Predicates

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
cop pres pos	+	+	+	+
'aru' pres pos	+	+	-	+
verb pres pos	+	+	+	+
cop past pos	-	+	+	+
verb past pos	-	+	+	+
verb pres plain	-	+	-	-
'aru' past neg	-	+	-	-
verb serial	-	-	-	+
verb pres neg	-	-	+	-
verb past neg	-	-	+	-
'aru' pres neg	-	-	+	-
'iru' pres pos	-	-	-	+
'iru' pres neg	-	-	-	+

Although it is clear that there is an implicational pattern, there are gaps in the picture. It seems that the principle of one form-one function can be transferred to morpheme positions in predicate morphology as well: one position - one function. M has the strong tendency to mark either tense or negation on a verb and to avoid marking of

multiple functions. The negated past, where this is the case, is first acquired for a restricted environment only: on the presentative verb 'arimasu', and it is only later that negated past is also acquired for other verbs.

It should be noted that in the beginning phase, all three predicate forms, that is, the equation marker, presentative and other verbs, have approximately the same amount of morphology. Later, however, morphology develops mostly on the verb. This makes sense pragmatically, as the verb is the predicate form most versatile in meaning.

In order to provide a summary of the whole acquisition process, the following table shows all acquired structures:

Table 4-51: Interlanguage grammar development in M's Sss. 1 - 4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
cop-sent	+	+	+	+
exV-sent	+	+	+	+
verb-sent	+	+	+	+
XP S	-	+	+	+
cop pres pos	+	+	+	+
'aru' pres pos	+	+	-	+
verb pres pos	+	+	+	+
NP -> N p	+	+	+	+
N p NP	+	+	+	+
cop past pos	-	+	+	+
verb past pos	-	+	+	+
N1 no N2	-	+	+	+
adj N	-	+	+	-
quant N	-	+	+	-
quant adj cop	-	+	-	-
coordination	-	+	-	-
NoAd cop	-	+	-	-
verb pres plain	-	+	-	-
'aru' past neg	-	+	-	-
verb pres neg	-	-	+	-
verb past neg	-	-	+	-
'aru' pres neg	-	-	+	-
verb serial	-	-	-	+
'iru' pres pos	-	-	-	+
'iru' pres neg	-	-	-	+
adv	-	-	-	+

While an implicational pattern is apparent, there are also clear gaps. They regard noun phrases with adjectives and quantifiers, coordinate clauses and verb inflections. The discernible pattern is that while in sessions 1 and 2, basic sentence and phrase structures are established, all further acquisitions in sessions 3 and 4 belong to verb morphology.

When the above structures are described in the form of phrase structures, it becomes clear that they are based on only a few structural rules. The table below presents the above findings in form of phrase structure rules. Verb morphology is in table 4-52,

below, summarised as "affix" for "predicate affixation" and "multiple affix" for affixation of more than one morpheme. The latter describes those cases where M has marked negation as well as past tense on a predicate. Data suggest that the acquisition of multiple affixation, i.e. the marking of two or more pieces of information in a consistent order, is acquired later than "single" affixation.

Table 4-52: Interlanguage grammar development in M's Sss. 1-4

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
S ->	(NP) NP 'desu' NP exV ('arimasu') NP NP V	(NP) NP cop NP exV NP NP V XP S coordination	(NP) NP cop NP exV NP NP V XP S coordination	(NP) NP cop NP exV NP NP V XP S (adv)
NP ->	N N p NP	N N p NP N1 no N2 adj N quant N	N N p NP N1 no N2 adj N quant N	N N p NP N1 no N2 (adj N)
pred ->	cop ('desu') exV ('arimasu') verb	cop ('desu') exV ('arimasu') verb cop-affix exV-affix verb-affix exV-mult affix	cop ('desu') exV ('arimasu') verb cop-affix exV-affix verb-affix verb-mult affix	cop ('desu') exV ('arimasu') verb cop-affix exV-affix verb-affix V-te iru

The following tables separate out the developments of sentence and noun phrase structures and predicate morphology:

Table 4-53: Development of sentence structures in M's Sss. 1-4

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
NP NP	+	+	+	+
NP NP V	+	+	+	+
XP S	-	+	+	+
coordination	-	+	-	-

Table 4-54: Noun phrase development in M's Sss. 1-4

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
N p	+	+	+	+
N p N	+	+	+	+
N1 no N2	-	+	+	+
adj N	-	+	+	-
quant N	-	+	+	-

Table 4-55: Development of predicate morphology in M's Sss. 1-4

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
cop	+	+	+	+
exV	+	+	+	+
V	+	+	+	+
V-affix	-	+	+	+
exV-affix	-	+	+	+
cop-affix	-	+	+	+
exV-mult affix	-	+	-	-
V-mult affix	-	-	+	-
V-te iru	-	-	-	+

This analysis will form the basis for comparisons with the development of other learners. An implicational pattern is not clearly discernible from these tables, because most acquisitions take place in the same period. However, the comparison with further learner grammars will show that there is a regularity in the order of acquisition, and an implication that suggests that certain structures are prerequisites for others.

Conclusion

Several patterns of the acquisition process have become obvious from the findings above. First, it is clear that M establishes obligatory, static structures before she goes over to acquire optional structures. Canonical word orders and the categories noun and verb - necessary for every sentence structure - are established first, then adjectives and predicate morphology follow.

Acquisition occurs in a step-by-step fashion, in such a way that only one new feature at a time is taken up in the grammar. This is most obvious in the modification of the noun phrase. The first extension is the qualification of a noun by another noun in the same phrase: **NP -> N no N p**. In a second step, a rule governing the branching direction is added: **NP -> N1 no N2**. Only after this is done, quantifiers and adjective with the new feature "preceding head directly" are created: **NP -> det N p**. At sentence level, a similar development takes place: modification takes place first by an adverbial phrase or a sentence-initial that is placed before the CWO-structure: **S -> AdvP NP NP V**. Then some of these sentence-preceding lexical items are inserted into a new sentence-final position for conjunctions, and coordinate structures can be produced: **S' -> S conj S**. In the next step, the rule governing the branching direction is applied to these sentences, and coordinate clauses are produced consistently: **S' -> S1 conj S2** (in the analysis, only the consistent coordinate structures were counted as "acquired"). The next steps are the marking of the subordinate clause by verb morphology, and then the inclusion of clauses as modifiers into noun phrases, i.e. relativisation. M makes a few attempts at those structures, but for no point in time can subordination or relativisation be regarded as acquired.

Another feature of M's language development is her marking of <u>form-function relationships</u>. An example for the sentence level is the presentative. M separates a further sentence structure out of the verb sentence, so that **NP arimasu**-sentences, and only they, have the function of presentatives, and CWO-sentences have the function of describing an action performed by a continued topic. Copula sentences provide topic-comment structures for the marking of equalisation and also all cases where a suitable verb is not part of the learner's lexicon.

At the phrase level, verbs and nouns have <u>mutually exclusive features</u>, which creates an unambiguous relationship of categories and their features. As more categories are introduced in the grammar, features are no longer mutually exclusive, and so the form-function relationship becomes incrementally more ambiguous: determiners as well as nouns precede their head noun, i.e. they have a feature in common. Nominal adjectives are a category with no features at all unique to them, but only have features that are part of other categories' definitions as well. M does not succeed in acquiring nominal adjectives. The acquisition of adjective morphology, which changes the adjective's category annotation (to adverbs or finite verbs), would be the next step in the acquisition process, because then the assignment of category and lexical item is absolutely ambiguous. M does not acquire this either.

The last feature that we encountered in the analysis of M's data corpus is the phenomenon of <u>backsliding</u>. We find it with adjectives, which M can produce from session 2 on, but does not produce in session 4, in predicate morphology, and with coordination, which she produces in session 2, but not or only in very few instances in sessions 3 and 4. It is, as mentioned before, not surprising that a learner does not always produce all structures that s/he is capable of producing. On the other hand, it is interesting that in the majority of cases M omits those structures that she has learned last. The analysis of other learners' data will show that this is a common pattern. It can be analysed as an underpinning of the hypothesis of an implicational relationship of the acquired structures, because no other structures are based on those structures that were acquired last, i.e. they can be omitted without an interruption of the implicational hierarchy. This might explain that M does not, for instance, acquire nominal adjectives, after she does not produce adjectives any more.

One further observation deserves special mention. It does not show up in the summary of acquired structures, because it concerns structures that have not been acquired: errors can be particularly revealing of the sequence of acquisition. Two typical <u>learner errors</u> occurred in M's data corpus:

In session 2, M produced an **adj no N**-structure (see section 4.1.2). JSL teachers are familiar with this frequent error. It is a developmental error: M produces this structure at a time when she has not yet acquired the category "adjective". However, for pragmatic reasons she tries to produce the **adj N**-structure, which had been introduced in the language class. As she cannot produce it, she "pulls back" the adjective to a structure that is functionally similar and that she can produce, i.e. the **N no N**-structure.

Another developmental error is the production of utterances with the structure **CWO + AdvP-CWO**, in which the adverbial phrase is a lexical item that in TJ is a conjunction. Again, M "pulls back" the structure of a coordinate clause, which she cannot produce yet. It is a highly constructive solution to the problem of not being able to produce a specific structure to insert lexical items that require a structure that is not possible to be produced, into a position of a known structure that marks the same semantic-pragmatic function.

Below, data from the other informants are analysed and described, and it will be investigated whether they show the same patterns as M's data. In the next chapter, data will then be compared and evaluated in regard to the aspects of acquisition discussed in this conclusion and interpreted in regard to their universal patterns and the influence of the instruction the informants received.

<u>4.2.2</u>   <u>Informant K</u>

PART 1

1.   Analysis

In Chapter 4.2.1 above, learner M's data were analysed, and the rule system of her interlanguage grammar was presented. Here, data from informant K are analysed. The presentation follows the structure of M's data analysis. As results of the analyses will show, the similarities in interlanguage development between informants are strong.

Learner K is a reticent student for whom accuracy is very important. In order to speak correctly, she reduces her speech to those forms that she feels confident about. As a result, K's data show only a small range of structures, which all seem to be acquired in the sense that K is able to produce them spontaneously and consistently.

1.1   Sentence structures

K produces, like M, the canonical word order **(NP) NP V** and the copula sentence. In the analysis of M's data, a distinction between verb sentences and existential-verb sentences was necessary, due to the number of their arguments and to functional reasons. K uses the same structures, but with different functions.

Table 4-56: Sentence structures in K's Sss. 1

sentence structure 1: (A) B desu	2
sentence structure 2: (A) B exV	19
sentence structure 3: (A) B V	5
others	/
total	26

Again, sentence structures can be unambiguously defined, because all predicates stand in sentence-final position. There are three utterances with no predicate, but they are clearly performance errors, as is obvious from the utterances' incomplete contents, and suggest no structure additional to the ones shown above.

Sentence structure 1:   **(A) B desu**

Both copula sentences in session 1 are equational. One sentence has one, the other two noun phrases. K tends to omit subjects once they have been established in the discourse. In the copula sentence with the subject expressed, this subject is being restricted and its mentioning therefore necessary for pragmatic reasons:

1. *Kusa   no   ue   ni   hito   wa   onnanohito   desu.*
   grass   (gen-p) top (loc-p) person   (top-p) woman   (cop)
   The person that is on the grass is a woman. (as opposed to the
   person under the tree who is a man).

K's copula sentences are correct in TJ-terms in that they are equational and that they both follow the topic-comment order:

Table 4-57: Topic-comment order in structure 1-sentences in K's Sss. 1

A is produced	1
A carries old information	1
A carries new information	/
B is mentioned	2
B carries new information	2
B carries old information	/

As with M's copula sentences, the status of the copula cannot be clearly defined; it may be a noun marker for the last noun in equational sentences.

Sentence structure 2:   (A) B exV

Sentences with existential verbs mostly include two noun phrases. When describing a picture, K uses exV-sentences both as presentatives and to mark location. Both are correct in terms of TJ. K uses both existential verbs, 'aru' and 'iru', according to (in)animateness, which is target-like as well. She reduces her picture description to the establishment of elements and the description of their spatial relations to already introduced elements. She uses only one presentative, which is the first sentence in the picture-description task, and introduces all other elements by setting them into a relation to the element last mentioned. All sentences, then, strictly follow topic-comment order.

Table 4-58: Structure 2-sentences in K's Sss. 1

NP aru (presentative)	1
NP iru (presentative)	/
NP-loc NP-subj aru	8
NP-loc NP-subj iru	5
NP-loc (NP omitted)	4
others	1
total	19

Sentence structure 3:   (A) B V

K uses three different verbs ('agemasu', 'kimasu', 'hairimasu') in five verb sentences. In the majority of these sentences, she produces subject and object noun phrase. K consistently follows the topic-comment order in structure 3-sentences. All A-elements are known, all B-elements unknown except one; in that sentence, the action is the new information. It follows that K maps subjects and topics onto each other. Once, K omits an animate, known subject. The following tables demonstrate sentence structures and topic-comment structures:

Table 4-59: Structure 3-sentences in K's Sss. 1

A B V	4
B V	1
total	5

Table 4-60: Topic-comment order in structure 3-sentences in K's Sss. 1

A is known	4
A is not known	/
B is known	1
B is not known	4

Summary of sentence structures

In the analysis of M's data, it was necessary to distinguish between structure 2 and structure 3-sentences, because function and form of both were different; the form clearly indicated the function of the sentence. For K's data, a distinction of structure 2 and 3-sentences is not necessary, because both have the same form of one or more noun phrases, and their function is marked by the predicate.

Table 4-61: Sentence structures in K's Sss. 1

	known information	new information	predicate
sentence structure 1	(A)	B	'desu'
sentence structure 2	(A)	(B)	exV
sentence structure 3	(A)	(B)	V

1.2   Structural elements

Elements in K's session 1-utterances can be distinguished clearly, because there is no overlap of lexical items in sentence-final and non-final positions, as table 4-62 shows:

Table 4-62: Category distinction in K's Sss. 1

A, B-elements in sentence-final position	/
predicates in non-final position	/
A, B-elements non-final position	64
predicates in sentence-final position	24

1.2.1 Nouns

K's A and B-elements are nouns according to the typological definition quoted in M's data analysis. Table 4-63   below shows that there are no elements which denote objects, persons or locations, in non-final position:

Table 4-63: Semantic content of A and B-elements in K's Sss. 1

element referring to object	32
element referring to person	15
element referring to location	17
element is proper name	/
others	/
total	64

Nouns are always followed by particles or the copula 'desu' (which may be interpreted as a particle, see section 1.2.1 in ch. 4.2):

Table 4-64: Noun phrases in K's Sss. 1

noun phrases (except copula complement)	62
N cop	2
noun (exc. cop compl) without p	/
nouns total	64

1.2.2 Particles

In K's session 1, there are six particles, which all follow the noun and thereby mark phrase boundaries. All particles follow the noun directly:

Table 4-65: Particles in K's Sss. 1

particles following nouns	62
particles in other positions	/
nouns total (except copula compl)	62
particles total	62

Table 4-66 below demonstrates that all particles have a clear, exceptionless distribution. All subjects of existential verbs, and only they, are marked with 'ga'. The agent/subject of action verbs is marked with 'wa', the direct object with 'o'. Indirect objects/beneficiaries do not occur. Location and direction marker 'ni' and possession/genitive marker 'no' are used in semantically target-like contexts. 'to' is used once, also in a target-like context.

Table 4-66: Semantic functions of particles in K's Sss. 1

	T/A/S str. 1	T/A/S str. 2	T/A/S str. 3	dir. Obj	location/ direction	possessio n	'and'
'wa'	1	/	4	/	/	/	/
'ga'	/	14	/	/	/	/	/
'o'	/	/	/	4	/	/	/
'ni'	/	/	/	/	18	/	/
'no'	/	/	/	/	/	17	/
'to'	/	/	/	/	/	/	1
no p	/	/	/	/	/	/	/

1.2.3 Predicates

In all utterances, predicates stand in a sentence-final position. They never go with particles. Features of verbs and nouns can therefore be said to be mutually exclusive.

Table 4-67: Predicates in K's Sss. 1

predicates in non-final position	/
predicates followed by particle	/
predicates in final position	24
predicates not followed by particle	24
predicates total	24

The semantic content of these elements justifies labelling them as "verbs", because they function as predicates, as table 4-68 below shows:

Table 4-68: Semantic content of predicates in K's Sss. 1

equation	2
presentative and location pres. ('arimasu' and 'imasu')	19
action	5
others	/
total	26

M mainly uses topic-comment structures with 'desu' to mark a relationship of objects described. K fulfils the picture description-task by consistently describing spatial relations; this she does, target-like, with the existential verbs 'imasu' and 'arimasu'.

1.3   Summary

Basic category features and sentence structures in K's Sss. 1, according to the analysis above, are as follows:

Table 4-69: Basic category features in K's Sss. 1

	N
NP ->	N p
	never sentence-final
	N marks focus, topic, comment, agent, subject, object
pred:	'desu'
	exV
	V
pred:	always sentence-final
	never followed by particle
	V marks predication
	valency for one or more NP's

Table 4-70: Basic sentence structures in K's Sss. 1

	(NP)	NP	'desu'
S ->	(NP)	NP	V

In summary, K's interlanguage grammar of session 1 can be written as:

Table 4-71: Basic structures of K's learner grammar in Sss. 1

	(NP)	NP	'desu'
S ->	(NP)	(NP)	V
NP -> N			
	N p		
pred ->	'desu'		
	V		

1.4   Complex structures

K produces more complex structures than M. They are the following:

1 **N to** N-phrases;
17 **N no** N-phrases;
6 **adj** N-phrases;
2 elements in verb-preceding position;
1 relative clause.

As in M's data, the most modifications occur in the noun phrase. The following section analyses which of these structures should be regarded as acquired.

1.4.1 N to N-phrases

There is one instance of 'to', adding two nouns within a noun phrase:

2. *Ki no   shita   ni   kusa   to   onnanoko ga im*
   tree   (gen-p) below (loc-p) grass   and   girl   (subj-p)
   i kusa   ga arimasu.
                exV (animate/ inanimate)
   Under the tree there (are) grass and a girl (is) grass.

K is confused here, because 'grass' and 'girl' require different existential verbs, according to their animateness vs. inanimateness. However, the **N to** N-structure is being produced.

1.4.2 N no N-phrases

K produces 17 **N no** N-structures. All describe locations like 'ki no shita ni' - 'under the tree'. No possessives occur. The order of nouns in this structure is always consistent and target-like, and it can be concluded that K has included the rule governing the branching direction in her interlanguage grammar.

Table 4-72: **N no N**-structures in K's session 1

N1 no N2-structures	17
N2 no N1-structures	/
N no N-structures total	17

1.4.3 adj N-phrases

K produces six **adj** N-phrases with four different adjectives: 'ookii' - 'big', 'aoi' - 'blue', 'akai' - 'red', and 'onaji' - 'same'. The structure 'ookii ki' - 'big tree' is repeated once, the structure 'onaji isu' - 'same chair' is not embedded in a sentence structure:

Table 4-73: **adj** N-structures in K's session 1

adj N-structure, embedded in sentence	5
adj N-structure, not embedded	1
adj N-structure total	6

K's adjectives are therefore semantically "typical" adjectives (see Dixon 1977 in ch. 4.2.1), and are produced in the target-like position, preceding the verb directly. For **adj** N-structures, a rule for the branching direction is necessary, and K's learner grammar must also include an additional rule that allows adjectives to precede the head noun directly (see ch. 4.2.1).

K produces one utterance which cannot be easily analysed:

3. *Kusa   ga   ue   ni   hito   wa   onnanoko   desu.*
   grass   (sub-p)   top   (loc-p)   person   (top-p)   girl   (cop)
   The person on the grass is a girl.

Here, 'kusa ga ue ni' - 'on the grass' cannot be analysed as a clause, because it contains no predicate. It should rather be analysed as an adjective, because it characterises the 'hito' and directly precedes the head noun, as adjectives do. The same structural rules as for adjectives apply. It is interesting to note that K inserts this modification in a structure that she cannot have learned in the language class. This supports the assumption that she has mastered the rule for the construction of **adj-N-phrases**.

1.4.4 Predicate morphology

The existential verb 'imasu' is once modified with a negation marker. This verb occurs in "positive" aspect as well:

4. *Ki   no   shita   ni   imasen.   Ki no   chikaku   ni imasu.*
   tree   (gen-p)   below   (loc-p)   be-(neg)   near   be
   (She) is not under the tree. (She) is near the tree.

As this negation is the only example in the data from session 1, negation should not be analysed as acquired. The data show one **V-te** *V*-construction: 'tabete imasu' - '(he) is eating', which is not embedded in a sentence-structure. It is highly probable that this utterance is formulaic; at this stage, it cannot be analysed as acquired. There is no past tense or any other marking.

1.4.5 Elements in verb-preceding position

Twice, the predicate is preceded by a number+classifier. The structure and position are target-like. The number+classifier could be interpreted as an adverb, because it directly precedes the verb and thereby breaks up the canonical word order:

5. *Michi   no   ue   ni   kuruma ga   sandai   ari   ga*
   road   (gen-p) top   (pl-p) car   (sub-p) three-(class) be (sub-p)
   nidai   arimasu.
   two-(class)   be
   On the road are three two cars.

6. *Onnanohito   ga   futari   imasu.*
   woman   (sub-p) two-(class) be
   The women are two (women)/There are two women.

It is also possible to interpret these sentences as equational constructions, whereby 'nidai' and 'futari' are nominal, and the existential verbs carry the function of the copula. The learner had been taught in the class that classifiers go with the existential verbs, and it is not possible to define if these structures are rote-learned or productive, and if so, which grammatical rules exactly underlie these structures.

1.4.6 Question marking

K asks two questions, but marks them by prosody only. No question particle occurs.

2.   Summary

As K has acquired the ability to produce several complex structures, the learner grammar description from 1.3 must be extended:

Table 4-74: Learner grammar in K's Sss. 1

S ->	(NP) NP cop ('desu')
	(NP) (NP) V
	N
NP ->	N p
	NP NP
	adj N p
pred ->	'desu'
	V

K's basic grammatical structures are extremely similar to M's. Both interlanguage grammars contain copula and verb sentences. Their functions, however, differ: in K's grammar, copula sentences clearly have equational meaning. Verb sentences can contain up to three noun phrases, and there is no structural difference in sentences with action or existential verbs.

K modifies noun phrases by duplication: **N to N p**, or **N to N desu**. She has acquired the rule of leftbranchingness, and produces only **N1 no N2**-structures, in which dependency is marked by noun position. As the latter structure is similar to **N to N**, requiring one additional rule, the structure **N to N** can be regarded as acquired as well, although there is only one instance of it.

K also modifies the noun phrase by adjective insertion, which requires a rule that allows specific lexical items to precede the head directly. This structural feature differentiates adjectives from other categories, and it should be analysed as acquired. No predicate morphology has been acquired.

K has acquired the following structures by the time of session 1:

Table 4-75: Acquired structures in K's Sss. 1

cop-sent	+
exV-sent	+
V-sent	+
N to N	+
N no N	+
N1 no N2	+
S-ka	-
pred-past	-
pred-neg	-
adj N p	+

When we compare this table to the parallel one in M's data analysis, it becomes clear that K has not acquired qualitatively different structures, but additional ones to those that she shares with M.

PART 2

3. Continuation of established structures

In K's sessions 2-6, a cumulation of features occurs. This section will show where previously established structures continue and which new structures and elements are acquired. Only new structures will be commented on.

By the time of session 1, verb and copula sentences, the categories noun, verb and adjective, and the branching direction had been acquired.

3.1 Sentence structures

K continues to produce those sentence structures that she had established by session 1. The number of sentences increases steadily, and proportionally, structure 3-sentences increase, while the percentage of copula and existential verb sentences decreases. This leads to higher versatility of expression. K also acquires new sentence structures. They will be analysed below.

Table 4-76: Clause structures in K's Sss. 2- 6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
sentence str. 1	7	10	13	18	8
sentence str. 2	2	12	7	12	15
sentence str. 3	36	24	36	55	71
adj-finite	/	/	/	/	6
utt. with pred. total	45	46	56	85	100

3.2 Structural elements

In session 1, nouns were defined by their semantic content, their non-final sentence position and by being followed by a particle. Verbs were defined by their semantic contents of predication and their sentence-final position. Adjectives had been established and characterised by their noun preceding position. All these features were continued throughout all interviews. Additional features will be analysed in section 4 below.

3.3   Complex structures

K continues to produce all noun phrase modifications that she produced in session 1:

Table 4-77: Extended noun phrases in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	4	3	9	12	6
N no N	8	9	12	20	19
adj N	/	1	1	3	5
total	12	13	22	35	30

4.   New structures and elements

4.1   Noun phrases

4.1.1 Adjectives

N no N-structures and **adj** N-structures had already been acquired by session 1. Adjective morphology increases, as table 4-78 below shows:

Table 4-78: Adjective morphology in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj-neg	/	1	2	/	3
adj cop-past	/	/	/	1	/
adj-past	/	/	2	/	3
adj adj	/	/	/	1	/
total	/	1	4	2	6

In session 6, K produces six sentences with a finite adjective. These adjectives are different lexical items, and "finiteness" as a category feature of adjectives can be analysed as acquired. The first attempt to inflect adjectives occurs in session 2 and shows that K knows about the inflectional features, but has no means to produce them meaningfully or to integrate them into her sentence structure. In session 2, she makes one attempt to inflect for negated past: 'yokattanai desu'. Here the order of morphemes is past-negation, although the form received in the input is negation-past. This error is very common in JFL and JSL acquisition (see ch. 2.2).

K has acquired the feature "finiteness" for the adjective by session 6, but is not fully in control of tense marking. Also, she has not acquired morphology changing the adjective's category assignment to "adverb" by -ku or -kute.

4.1.2 Quantifiers

From session 3 on, K uses quantifiers in an increasing number of environments:

Table 4-79: Quantifiers in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
quant N	/	1	/	/	1
quant adj (alone)	/	1	1	1	/
quant adj cop	1	/	1	2	3
quant adj N cop	/	/	/	/	1
total	1	2	2	3	5

Although the absolute number of quantifiers is pitily small, a tendency to first produce quantifiers isolated or in simple phrases before producing them in more complex phrases can be hypothesised. Quantifiers are analysed as being acquired from session 5 on, because there are three instances of quantifiers preceding the adjective and thereby behaving differently from noun preceding adjectives.

4.1.3 Nominal adjectives

K, a student who is careful to maintain a high degree of accuracy, produces hardly any nominal adjectives at all. Only in sessions 5 and 6, she starts to do so. However, at no stage the nominal adjective can be regarded acquired.

Table 4-80: Nominal adjectives in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NoAd na N	/	/	/	1	2
NoAd na cop/exV	/	/	/	/	/
NoAd to adj	/	1	/	/	/
NoAd ni V	/	/	/	/	/
total	/	2	/	/	2

4.2　　Predicate morphology

4.2.1 Morphology

K's morphology is limited; the only function she marks early and consistently is past tense. No further predicate morphology can be analysed as acquired, because it is produced only rarely and may be formulaic (so for 'nakereba narimasen' and 'V-u tsumori desu'). Only in session 6, a larger range of morphology occurs. K had been in Japan for three weeks and apparently learned there to use more plain verb forms. This leads to an increase in plain forms both in existential and other verbs:

Table 4-81: Verb morphology in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
pres neg	/	3	/	1	/
past pos	23	3	20	19	20
past neg	/	/	3	1	1
pl pres pos	1	2	/	/	3
pl past pos	/	/	/	/	8
pl pres neg	/	/	/	/	1
V-u tsumori	1	1	2	/	1
V-nakereba narimasen	/	/	1	1	/
passive	/	/	/	2	/
V-te iru	/	/	/	6	9
V-te nai	/	/	/	/	1
V-te S	/	/	/	/	1

Table 4-82: Existential verb morphology in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
past pos	/	/	/	/	2
pres neg	/	3	/	/	/
past neg	/	/	/	/	/
plain pr pos	/	/	/	/	7
plain pr neg	/	/	1	/	7
plain past pos	/	/	/	/	1

Table 4-83: Copula morphology in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
past pos	/	/	/	2	4
'deshoo'	/	/	/	/	1

Like M, K also uses existential verbs to mark negation. In session 6, K produces the negated existential verb each time when a negated copula should be used according to TJ-rules or according to rules for the positive copula in her own interlanguage grammar. Also, past tense is not marked on existential verbs until session 6, indicating their reduced function as "existential" verbs in its very sense; only (non)-existence, and no other qualities, can be marked with them until the last data collection session.

4.3   Sentence structures

Sentence modifications occur in K's data in form of sentence-preceding elements and in form of co- and subordinate clauses. She does not acquire relativisation.

4.3.1 Elements in sentence-initial position

It is probable that sentence-initial elements like 'kara' and 'ga' form the first step towards the formation of coordinate clauses. Again, the highest progression occurs between sessions 5 and 6.

Table 4-84: Sentence-preceding elements in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'demo'	1	/	/	/	6
'kyoo'	1	/	/	/	/
'tokidoki'	/	1	1	/	/
other SI	/	/	3	5	9
AdvP	/	/	2	8	3
total	2	1	6	13	18

4.3.2 Elements in verb-preceding position

Table 4-85: Elements in verb-preceding position in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
genuine adv V	/	/	/	/	5
genuine adv in S	/	/	/	1	4
adj-ku V	/	/	/	/	/
classifier	3	3	/	/	/
total	3	3	/	1	9

It is not clear if the classifiers in sessions 2 and 3 should be counted as adverbs, because they fill the adverb position, i.e. are directly verb-preceding, or if they should be interpreted as nominal, the existential verb in that case having the function of a copula. Again, it is between sessions 5 and 6 that K acquires new structures; for session 6, the directly verb-preceding position can be analysed as acquired. It is interesting to note that only "genuine" adverbs are inserted in that position; no adjective, neither with nor without target-like adverb-morphology, is produced. This indicates that category features in K's interlanguage are more restricted than in TJ; adjectives are annotated for noun-preceding positions only, and are produced in no other position.

4.3.3 Complex sentence structures

Sentence-modification with a coordinate sentence occurs first in session 2. In session 3 one subordinate clause occurs, in session 4 two occur. By session 6, subordination has been acquired, also seriality/non-finiteness marked by the **V-te** form.

Table 4-86: Complex sentence structures in K's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'ga' (coord)	1	/	/	1	/
'kara'/'node' (sub)	/	/	/	/	3
nom. 'koto' (sub)	/	/	/	1	2
relativisation (sub)	/	1	/	1	1
S V-te S	/	/	/	/	2
quotation (sub)	/	/	/	/	2
'toki' (sub)	/	/	/	/	2
'V-te kara' (non-fin)	/	/	/	/	1
total	1	1	/	3	13

PART 3

5. Summary and conclusion: The development of K's interlanguage grammar

Summary

The following summary shows the development of sentence structures, phrase structures and categories in K's interlanguage grammar throughout the study period.

Sentence structures

By the time of session 1, K has established copula and verb sentences, which she produces highly accurately. Sentences with existential verb have the same structure as sentences with action verbs.

Table 4-87: Basic sentence structures in K's Sss. 1-6

S ->	(NP)	NP	cop
	(NP)	(NP)	V

The CWO and the copula sentence are formed with the categories noun and predicate, which are first defined by their positions only, and later by morphology and dependent elements as well.

Table 4-88: Basic categories in K's Sss. 1-6

nouns:	NP -> N p N never sentence-final N marks focus, topic, comment, subject, object
pred:	V cop always clause-final never followed by particle opens valency for 0-3 noun phrases

The following variations of the canonical word order structures have been acquired:

Table 4-89: Acquired structures in K's Sss. 1-6: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop- sent	+	+	+	+	+	+
verb-sent	+	+	+	+	+	+
XP S	-	(2)	(1)	+	+	+
coordin	-	(1)	-	-	(1)	+
subordin	-	-	(1)	-	(2)	+
adv	(2)	(3)	(3)	-	(1)	+

In this table it becomes clear that K's sentence structures do not change until session 4. By then, fronting of adverbial elements has been acquired. In session 6, complex sentence structures - both coordinate and subordinate - and the insertion of adverbs into the canonical word order structure have been acquired. When listening to the recordings, one gets the impression that K is able to produce those structures before the time of session 6; however, she feels insecure about their accuracy and avoids producing them.

Noun phrases

The following categories and structures occurred in K's noun phrases:

Table 4-90: Structures in K's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N to N	+	+	+	+	+	+
N no N	+	+	+	+	+	+
adj N	+	-	(1)	(1)	+	+
adj-neg	-	-	(1)	(2)	-	+
adj-past	-	-	-	(2)	-	+
adj adj	-	-	-	-	(1)	-
quant N	-	-	(1)	-	-	(1)
quant adj	-	(1)	(1)	(2)	+	(1)
quan adj N	-	-	-	-	-	(1)
NoAd cop	-	-	(1)	-	-	-
NoAdnaN	-	-	-	-	(1)	(2)
relativ'n	(1)	-	(1)	-	(1)	(1)

In table 4-91 below, all structures where acquisition can be doubted are removed:

Table 4-91: Acquired structures in K's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N to N	+	+	+	+	+	+
N no N	+	+	+	+	+	+
adj N	+	-	-	-	+	+
quant adj	-	-	-	-	+	-
adj-fin	-	-	-	-	-	+

It is clear from table 4-91 that K's acquisition follows an order similar to that of M. It cannot be determined if *adj N*-phrases have been acquired by session 1 and then "forgotten", or if the three productions of these phrases were "lucky hits". My (K.H.) intuition would judge that this structure has been acquired by session 1, and was not produced again in order to secure accuracy.

However, this question does not make a fundamental difference for the acquisition order: first, K acquires a rule for the extension of noun phrases by another noun. The order of elements is always correct, which indicates that K has acquired the headedness direction early. Once this is established, she inserts a new category in the slot of the modifying element, the adjective and also the quantifier. As soon as K produces quantifiers, she produces them before nouns as well as before adjectives. Only in a separate step, K produces her first instances of adjective morphology, indicating a new rule in her learner grammar that makes the change of a lexical item's category annotation possible.

Nominal adjectives are never produced in their specific structural position before the head noun, linked to it by the connector 'na'. In all aspects that have been explained for informant M, K's acquisition process of noun phrase extension is similar.

Predicate morphology

Table 4-92: Structures in K's Sss. 1-6: Predicate morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'desu'	+	+	+	+	+	+
'imasu'	+	+	+	+	+	+
'arimasu'	+	+	+	+	+	+
V pres pos	+	+	+	+	+	+
V pres neg	-	-	+	-	(1)	-
V past pos	-	+	+	+	+	+
V past neg	-	-	-	+	(1)	(1)
V pl pres pos	-	(1)	(2)	-	-	+
V pl past pos	-		-	-	-	+
V pl pres neg	-	-	-	-	-	(1)
V-u (tsumori)	-	(1)	(1)	(2)	-	(1)
V-nakereba narimasen	-	-	-	(1)	(1)	-
passive	-	-	-	-	(2)	-
V-te iru	-	-	-	-	+	+
V-te nai	-	-	-	-	-	(1)
S V-te S	-	-	-	-	-	(1)
exV past pos	-	-	-	-	-	(2)
exV pres neg	-	-	+	-	-	-
exV pl pr pos	-	-	-	-	-	+
exV pl pr neg	-	-	-	(1)	-	+
exV pl past pos	-	-	-	-	-	(1)
cop past pos	-	-	-	-	(2)	+
'deshoo'	-	-	-	-	-	(1)

Again, this table will tell more if all uncertain cases are eliminated:

Table 4-93: Acquired structures in K's Sss. 1-6: Predicate morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'desu'	+	+	+	+	+	+
'imasu'	+	+	+	+	+	+
'arimasu'	+	+	+	+	+	+
V pres pos	+	+	+	+	+	+
V past pos	-	+	+	+	+	+
V pres neg	-	-	+	-	-	-
exV pres neg	-	-	+	-	-	-
V past neg	-	-	-	+	-	-
V-te iru	-	-	-	-	+	+
V pl pr pos	-	-	-	-	-	+
V pl past pos	-	-	-	-	-	+
exV pl pr pos	-	-	-	-	-	+
exV pl pr neg	-	-	-	-	-	+
cop past pos	-	-	-	-	-	+

As in M's data, there is no clear implicational relation in the acquisition of the different morphemes. It is observable that the rule of one form-one function holds for K's data as it does for M's. K produces the past tense marking of verbs before the marking of negation, and only in a next step combines them, thereby abandoning the rule of marking one function on a predicate only. Morphology for existential verbs and the copula is, again as in M's data, extremely limited. K's three-week stay in Japan between sessions 5 and 6 may be the reason for her development of predicate morphology, esp. plain forms of the verbs and the past tense of the copula.

The following table summarises all structural acquisition presented above, and gives a full picture of K's acquisition process:

Table 4-94: Interlanguage grammar development in K's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'desu'	+	+	+	+	+	+
exV	+	+	+	+	+	+
verb pres pos	+	+	+	+	+	+
NP -> N p	+	+	+	+	+	+
N to N	+	+	+	+	+	+
N no N	+	+	+	+	+	+
adj N	+	-	-	-	+	+
verb past pos	-	+	+	+	+	+
verb pres neg	-	-	+	-	-	-
exV pres neg	-	-	+	-	-	-
XP S	-	-	-	+	+	+
verb past neg	-	-	-	+	-	-
V-te iru	-	-	-	-	+	+
quant adj	-	-	-	-	+	-
coordinat	-	-	-	-	-	+
subordinat	-	-	-	-	-	+
adv	-	-	-	-	-	+
adj-neg	-	-	-	-	-	+
adj-past	-	-	-	-	-	+
verb plain pres pos	-	-	-	-	-	+
verb plain past pos	-		-	-	-	+
verb plain pres pos	-	-	-	-	-	+
verb plain pres neg	-	-	-	-	-	+
cop past pos	-	-	-	-	-	+

The phrase structures for the learner grammar at the time of sessions 1-6 look as follows:

Table 4-95: Interlanguage grammar development in K's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
S ->	(NP) NP cop (NP) NP exV (NP) (NP) V	(NP) NP cop (NP) NP exV (NP) (NP) V	(NP) NP cop (NP) NP exV (NP) (NP) V	(NP) NP cop (NP) NP exV (NP) (NP) V XP S	(NP) NP cop (NP) NP exV (NP) (NP) V XP S	(NP) NP cop (NP) NP exV (NP) (NP) V XP S NP adv pred coordinat subordinat
NP ->	N N p N to N N no N adj N	N N p N to N N no N	N N p N to N N no N	N N p N to N N no N	N N p N to N N no N adj N quant adj N	N N p N to N N no N adj N
pred ->	cop exV V	cop exV V V-affix	cop exV V V-affix exV-affix	cop exV V V-affix V-mult affix	cop exV V V-affix V-te iru	cop exV V V-affix V-te iru V-subord. cop-affix (exV-mult affix)
adj ->	adj				adj	adj adj-finite

Phrase structure development is as follows for sentence structure, noun phrase structure, and predicates:

Table 4-96: Development of sentence structures in K's Sss. 1-6

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop-sent	+	+	+	+	+	+
verb-sent	+	+	+	+	+	+
XP S	-	-	-	+	+	+
coordinat	-	-	-	-	-	+
subordinat	-	-	-	-	-	+
adv	-	-	-	-	-	+

Table 4-97: Development of noun phrase structures in K's Sss. 1-6

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N to N	+	+	+	+	+	+
N no N	+	+	+	+	+	+
adj N	+	-	-	-	+	+
quant adj N	-	-	-	-	+	-

Table 4-98: Development of predicate morphology in K's Sss. 1-6

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop	+	+	+	+	+	+
exV	+	+	+	+	+	+
V	+	+	+	+	+	+
V-affix	-	+	+	+	+	+
exV-affix	-	-	+	-	-	-
V-mult affix	-	-	-	+	-	-
V-te iru	-	-	-	-	+	+
V-u (sub)	-	-	-	-	-	+
cop-affix	-	-	-	-	-	+
adj-finite	-	-	-	-	-	+
exV-mult affix	-	-	-	-	-	(+)

Conclusion

Several characteristics of the acquisition process that were observed in the development of M's learner grammar have been found in K's data as well. K, too, establishes obligatory structures before optional ones, i.e. canonical word order, N p-phrases and the three types of predicates before any modifications of any of these.

The pattern of stepwise acquisition of new features is not as clearly observable here as in M's data. In sentence structures, K follows the order of canonical word order - adverb fronting - complex sentence structures and adverbs. A differentiation of the time of acquisition for coordinate and subordinate clauses and adverb insertion is not possible for K's data; an order of acquisition can only be deduced in comparison with other learners' data. In the noun phrase, modification by nouns and adjectives is observable from the first interview on. Only later is the noun phrase further extended to quantifier + adjective + noun.

The clearest pattern is obvious in the development of the predicate. Here, past tense and negation is first marked on the verb, then on the existential verb. Then, both are marked together on one verb, and in another step, new information like aspect (V-te iru) and subordination can be marked. The stepwise abandonment of the one form-one function-rule applies to this development. K marks adjectives for past tense and negation only after she marks verbs for this and other information.

The phenomenon of backsliding is not a strong feature of K's learner grammar. It is found in her non-production of adj N-phrases and in her non-production of some verb inflection after producing them in one interview each. Backsliding may be a minor factor in K's learner grammar because she is an accurate speaker who avoids many structures because she feels insecure about their accuracy.

4.2.3   Informant B

Part 1: Data collection session 1
1.   Analysis
1.1   Sentence structures
1.2   Structural elements
      1.2.1   Nouns
      1.2.2   Particles
      1.2.3   Predicates
1.3   Summary
1.4   Complex structures
      1.4.1   N no N-phrases
      1.4.2   N no N-phrases
      1.4.3   adj N-phrases
      1.4.4   quant N-phrases
      1.4.5   Predicate morphology
      1.4.6   Elements in sentence-initial position
      1.4.7   Question marking
      1.4.8   Complex sentence structures
2.   Summary

Part 2: Data collection sessions 2-6
3.   Continuation of established structures
3.1   Sentence structures
3.2   Structural elements
3.3   Complex structures
4.   New structures and elements
4.1   Noun phrases
      4.1.1   Adjectives
      4.1.2   Quantifiers
4.2   Predicate morphology
4.3   Sentence structures
      4.3.1   Elements in sentence-initial position
      4.3.2   Elements in verb-preceding position
      4.3.3   Complex sentence structures

Part 3
5.   Summary and conclusion: The development of B's interlanguage grammar

PART 1

1. Analysis

In this analysis, we find another accurate speaker who carefully applies the rules taught and who avoids attempting hazardous structures (and so forsakes greater expressiveness). However, B enjoys speaking Japanese, and her data are rich. Session 4 had to be short due to commitments on the informants' side, and its data lack some structures which B might have been able to produce but did not, because of time constraints.

1.1 Sentence structures

B, too, produces copula as well as verb sentences in session 1:

Table 4-99: Sentence structures in B's Sss. 1

sentence structure 1: (A) B desu	9
sentence structure 2: (A) B exV	20
sentence structure 3: (A) B V	8
others	/
no pred	1
total	38

Sentence structure 1:   (A) B cop

B uses the copula only to mark equation; it neither indicates a general relationship, as in M's session 1, nor has it the function of a presentative. B produces two different forms of the copula (marked for past and non-past). Thus, sentence structure 1 will not be presented with 'desu', but with 'cop'. The order of elements always follows the topic-comment structure, as table 4-100 below clearly shows:

Table 4-100: Topic-comment order in structure 1-sentences in B's Sss. 1

A is produced	5
A carries old information	5
A carries new information	/
B is mentioned	9
B carries new information	9
B carries old information	/
structure 1-sentences total	9

Sentence structure 2:   (A) B exV

B produces both existential verbs and uses them according to the (in)animateness of their objects, which is target-like. Like K's session 1 sentences, B's are highly structured: for the picture description, a new element is established by describing its spatial relation to an already mentioned one; this results in a regular sentence structure, where the second noun phrase of the preceding sentence is also the first phrase of the new sentence. So sentences with existential verbs often contain two noun phrases, but sometimes B drops the subject when it has already been established as a topic. Sentences with existential verbs also serve as presentatives. In those cases, sentences contain only one noun phrase.

Clearly, B follows topic-comment structures consistently:

Table 4-101: Topic-comment order in structure 2-sentences in B's Sss. 1

A is known	8
A is not known	/
B is known	2
B is not known	14
presentative (one element only)	4

Sentence structure 3:   (A) (B) C V

B's verb sentences contain one to three noun phrases. In these structures, too, she tends to omit those subjects that have already been established. The first element is always known and often omitted; the verb and/or its object always carry new information:

Table 4-102: Topic-comment order in structure 3-sentences in B's Sss. 1

A is mentioned and known	3
A is new	/
B is new	8
B is known	/

Summary of sentence structures

Table 4-103: Sentence structures in B's Sss. 1

	position 1	position 2	predicate
sentence structure 1	(A)	B	cop
sentence structure 2	(A)	(B)	exV
sentence structure 3	(A)	B	V

As in K's data analysis, it does not make much sense structurally here to distinguish between structure 2 and 3. Functionally, however, there is a difference, because structure 2 -sentences function as a presentative and location marker only, whereas in structure 3-sentences, actions are described. This has repercussions for the sentence structure insofar as structure 2 consists of maximally two A, B-elements (subject and location), and sentence structure 3 has a potentially open number of positions for A, B-elements.

1.2   Structural elements

B's phrases have consistently similar structures: non-final elements are followed by a particle, sentence-final elements are not. There is no lexical overlap in final and non-final positions. All this justifies the distinction of two main categories for B's data in session 1.

Table 4-104: Category distinction in B's Sss. 1

A, B-elements in sentence-final position	/
predicates in non-final position	/
A, B-elements in non-final position	62
predicates in sentence-final position	37

1.2.1 Nouns

Non-final elements in B's session 1 all refer to persons, place names or objects. This justifies calling them "nouns" (see ch. 4.2.1, section 1.2.1 for a definition of nouns by their semantic content).

Table 4-105: Semantic content of A and B-elements in B's Sss. 1

element referring to object	30
element referring to person	16
element referring to location	13
element is proper name	3
others	/
total	62

The internal structure of A, B-elements is $N\ p$, except for copula complements. No particle follows any other element.

Table 4-106: Noun phrases in B's Sss. 1

noun phrase (except cop.compl.)	50
noun phrase without p	3
copula complement	9
cop. compl. with p	/
nouns total	62

1.2.2 Particles

Particles form a closed class of six elements. Their usage strictly depends on the verb choice; subjects of existential verbs always go with 'ga', subjects of action verbs with 'wa'. 'ni' marks location and direction, 'o' direct objects, and 'to' adds two nouns. There are only two exceptions, as visible in table 4-107 below: 'no' marks the topic/subject/agent twice. Once, B places a sentence-topic before the ga-marked subject in a sentence with an existential verb, thereby already indicating the ability to distinguish between topic and subject, i.e. to topicalise.

Table 4-107: Semantic functions of particles in B's Sss. 1

	T/S/A str. 1	T/S/A str. 2	T/S/A str. 3	dir. obj.	location/ direction	possessiv e	'and'
'wa'	3	/	3	/	/	/	/
'ga'	1	16	/	/	/	/	/
'o'	/	/	/	3	/	/	/
'ni'	/	/	/	/	9	/	/
'no'	1	1	/	/	/	17	/
'to'	/	/	/	/	/	/	1

1.2.3 Predicates

All predicates in B's session 1 stand in sentence-final position, and they are never followed by a particle:

Table 4-108: Predicates in B's Sss. 1

predicates in non-final position	/
predicates with following particle	/
predicates in final position, no particle	37

This definition distinguishes predicates structurally from nouns. Their semantic content justifies calling them "verbs":

Table 4-109: Semantic content of predicates in B's Sss. 1

equation	9
presentative and location marker	20
action	8
others	1 (no pred, utt. unfinished)
total	37

1.3   Summary

In B's interlanguage grammar at the time of session 1, the following basic categories and structures have been established:

Table 4-110: Basic sentence structures and categories in B's Sss. 1

	(NP) NP	cop	
S ->	(NP) NP	exV	
	(NP) (NP) NP	V	
NP ->	N p		
	N		
pred ->	V		

1.4   Complex structures

B produces several modifications in session 1. They occur on noun phrase, predicate and sentence level:

1 **N to** N-phrases;
16 **N no** N-phrases;
4 **adj** N-phrases;
2 **quant** N-phrases;
predicate morphology;
question marker -ka;
1 element in sentence-initial position;
1 coordinate clause.

1.4.1 N to N-phrases

B produces one **N to** N-phrase:

1. *Kono   heya   ni eh   tsukue   to   isu   o   arimasu.*
   this ·   room   (loc-p)   desk   and   chair (obj-p)   be
   In this room are a table and a chair.

1.4.2 N no N-phrases

B produces 16 **N no** N-phrases, three of which are not location markers. All nouns are ordered consistently, the modifying element preceding the modified. B has obviously established a rule governing the direction of headedness. The complex noun phrase **N1 p N2 p** is therefore considered acquired.

Table 4-111: **N no** N-structures in B's Sss. 1

location marker	13
possessive	3
total	16

1.4.3 adj N-phrases

By the end of her first semester, B has already acquired the "new" category of quantifiers and adjectives. She produces four **adj** N-phrases, three of which modify the subject of an existential verb:

Table 4-112: Adjectives in B's Sss. 1

adj N ga arimasu	3
adj N cop	1
others	/
total	4

1.4.4 quant N-phrases

B is the sole informant to use a quantifier at the time of session 1. She produces one quantifier: 'taihen' - 'very' on a number of occasions. For one instance the syntactic environment cannot be analysed, due to bad recording quality. In the other instance, 'taihen' quantifies an adjective in copula complement position.

1.4.5 Predicate morphology

Inflection occurs on existential and other verbs as well as on the copula in B's session 1. Although instances of inflection are scarce for the different forms, predicate inflection as a position on which to mark certain functions (tense, negation) should be analysed as acquired.

Table 4-113: Verb morphology in B's Sss. 1

pres neg	/
past pos	1
past neg	/
plain pres pos	/
V-te iru	1

Table 4-114: Existential verb morphology in B's Sss. 1

pres neg	1
past pos	3
past neg	/

B negates only the existential verb 'aru' to 'arimasen'. Past tense she marks on both existential verbs. In the data from session 2 this division of labour will become clearer.

Table 4-115: Copula morphology in B's Sss. 1

pres neg	/
past pos	3
past neg	/

B's past tense marking on the copula is remarkable, as she is the only informant to inflect the copula at the time of the first data collection session.

1.4.6 Elements in sentence-initial position

B produces one sentence-initial element. It is 'to', which in TJ connects nouns. In B's interlanguage, however, it also connects two sentences:

2. *Eh eh to em otokono eh nohitowa em   onnano onnanohito ni*
    and   man   (top-p)   woman   i.o.-p
  hon   o   agemasu.
  book   (obj-p)   give
  And the man gives the woman a book.

From the prosody of this sentence and the preceding one it is clear that B produces them as two distinct sentences. The production of 'to' indicates that B is able to produce a sentence structure with a preposed element. One instance is not enough to mark the feature "adverb fronting" as acquired, but it may be the first step towards its acquisition.

1.4.7 Question marking

There is one question in B's session 1, and it is marked with the question marker -ka. The question is a structure 1-sentence with one noun phrase.

1.4.8 Complex sentence structures

B produces one complex sentence structure, a coordinate structure:

3. *Rondon   ni   ikitai   desu   kara   tomodachi wa   Rondon*
  London   (loc-p)   go-(want) (cop)   because friend   (top-p)
  ni   sunde   imasu.
  (loc-p)   live (non-fin) (progr)
  (I) want to go to London, because friends of mine live there. (IL) / Friends of mine live in London, because I want to go there. (TL)

This coordinate sentence is not leftbranching, although B's **N no N**-and **adj** N-structures are. This results in a rather presumptuous sentence, if read with TL-rules. One could state that this sentence indicates the acquisition of coordination, i.e. of relating two propositions. However, the rule governing the branching direction has not yet been transferred from noun phrase to sentence level, and therefore coordination is not defined as acquired in this context.

2.   Summary

B has acquired the CWO and the copula sentence. She extends these structures by verb and copula morphology, noun duplication and adjectives. One quantifier ('taihen') shows structural behaviour different from adjectives, because it is the only one that precedes an adjective.

Adjectives and quantifiers are produced on the basis of the acquisition of a rule governing the branching direction. B has acquired this rule; however, she cannot transfer it from noun phrase level to sentence level, as the only production of a coordinate sentence shows, whose clauses stand in an order not according to the rule of leftbranchingness.

B's learner grammar in session 1 is structured as follows:

Table 4-116: Learner grammar in B's Sss. 1

	(NP)	N	cop	
S ->	(NP)	NP	exV	(both exV)
	(NP)	NP	V	
	(XP S)			
	N			
	N p			
NP -> N to N				
	N no N			
	adj N			
	quant adj N			
	V			
	(V-neg.)			
pred ->	(V-past)			
	exV			
	(exV-neg)			
	cop			
	cop-past			

Table 4-117: Acquired structures in B's Sss. 1

cop-sent	+
exV-sent	+
V-sent	+
N to N	+
N no N	+
N1 no N2	+
pred-neg	(1)
pred-past	+
S-ka	-
adj N	+
XP S	(1)
adv	-
coordination	(1)
subordination	-

PART 2

3.   Continuation of established structures

As in all the prior analyses, we find continuity in B's grammar as it develops over time. She does not drop or change existent rules, but rather adds features to a subset of the lexical items annotated for a category and so creates new categories (as already happened for adjectives and quantifiers) and new sentence types (as indicated by the development of subordinate clauses).

3.1   Sentence structures

The tendency of producing less copula and more verb sentences is evident in B's data, as it is in the prior analyses. In addition, B acquires the feature "finite" for adjectives by the time of session 6:

Table 4-118: Clause structures in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
sentence str. 1	31	13	35	7	27
sentence str. 2	28	18	22	2	11
sentence str. 3	58	62	71	29	71
adj-finite	/	/	3	/	8
no pred	6	6	2	3	7
total	123	99	133	41	124

3.2 Structural elements

As in M's and K's data analyses, it is found here that the structural features of nouns, predicates, adjectives, and particles stay the same throughout the time of data collection. Also, the semantic content of lexical items belonging to the different categories does not change qualitatively.

3.3 Complex structures

B produces **N to N-** and **N no** N-structures throughout the time of the study:

Table 4-119: Extended noun phrases in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N p	4	8	9	9	8
N no N p	26	33	37	7	43
total	30	41	46	15	51

B produces no further question markers. Features of all complex structures - adjectives, quantifiers, verb inflection, adverb fronting and complex sentence structures - increase, and are discussed in the following section.

4. New structures

4.1 Noun phrases

4.1.1 Adjectives

Although B steadily produces **adj** N-structures, their number in each data collection session is too small to regard the structure as acquired. There are no instances of nominal adjectives in noun-preceding position in B's data.

Table 4-120: adj N-structures in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj N p	4	2	2	1	1

In spite of low production of **adj** N-structures, B adds more features to the category "adjective" by increasing its morphology in session 6:

Table 4-121: Adjective morphology in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj-neg (fin)	/	/	/	/	3
adj-past	/	/	1	/	/
adj-pos (fin)	/	/	/	/	3
adj-ku	/	/	/	/	1
adj-kute	/	/	/	/	2
total	/	/	1	/	9

By session 6, B has acquired the feature "finite" for adjectives, which is the logical prerequisite for marking tense, negation and seriality ('adj-kute') on the adjective. B marks negation and seriality, but no past tense. In earlier sessions, B often uses the phrase 'to omoimasu' - 'I think that', which is subordinating in TJ and therefore calls for the copula not being produced when the subordinate clause contains an adjective. Her interlanguage grammar contains the rule that the copula be dropped before 'to omoimasu'. However, because she does so not only when adjectives are copula complements, but also when nouns are, it cannot be concluded that it indicates a marking of the adjective for finiteness. In session 6, B drops the copula only when adjectives are the copula complement in the quoted, subordinate clause. This indicates that she has by then acquired the notion of finiteness and is able to mark it on the adjective. It must be concluded that the acquisition of adjective morphology begins in the period between the fifth and the sixth interview.

4.1.2 Quantifiers

Although B does not extend the production of adjectives, she increasingly uses quantifiers in different environments. The big step in progression seems to be again between sessions 5 and 6. However, no new structures occur in session 6; only the number of occurrences shows that B is more in control of the structures she produces.

Table 4-122: Quantifiers in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
quant N	5	/	2	/	3
quant adj cop	1	2	22	4	8
quant adj N	/	/	/	/	/
quant NoAd	1	3	2	1	21
total	7	5	26	5	32

4.2   Predicate morphology

Table 4-123: Verb morphology in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
pres neg	2	11	4	/	2
past pos	7	5	13	18	24
past neg	/	1	/	/	/
pl pr pos	/	8	1	1	9
pl past pos	1	2	/	/	/
V-te iru	/	14	9	1	3
V-te V/S	/	/	1	/	2
V-nakereba narimasen	/	1	2	/	1

Table 4-124: Existential verb morphology in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
pres neg	11	3	/	/	1
past pos	5	1	7	3	4
pl pres pos	/	2	/	/	1
pl pres neg	/	1	1	/	/
exV-te	/	1	/	/	2

Table 4-125: Copula morphology in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
pres neg	1	/	2	/	1
past pos	/	/	/	1	/
pl past pos	1	/	/	/	/
serial 'de'	/	/	/	/	2

Again, we find in B's morphology patterns similar to those that we found with other learners: the morphology of the copula hardly develops at all - in session 5 there are still 5 present tense forms in environments that demand past-tense marking. Also, the existential verbs develop different morphology: in session 2, all present tense negations are marked on 'aru', and all past tense forms are marked on 'iru'. However, from session 3 on, negation is marked both on 'iru' and 'aru', and past tense on both from session 4 on.

It is noticeable that morphology of all predicates increases between sessions 5 and 6; however, B still avoids marking negation, and especially the marking of both negation and past tense together on one predicate. Because of that, several negated verbs and copulas which should have been marked for past tense, according to the context in the discourse, appear in the above tables as "pres neg".

4.3   Sentence structures

4.3.1 Elements in sentence-initial position

Table 4-126: Elements in sentence-initial position in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
SI	10	4	21	7	12
AdvP	16	13	3	3	12
total	26	17	24	8	24

In session 1, B has produced one fronted adverb. From session 2 on, she makes extensive use of this communicatively highly effective means.

4.3.2 Elements in verb-preceding position

B seems to have established a directly verb-preceding sentence position by the time of session 4. In session 6, she produces many adverbs, but they are not embedded in a sentence structure.

Table 4-127: Elements in verb-preceding position in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj-ku	/	/	/	/	/
gen adv in S	/	1	8	/	/
gen adv V	/	/	/	/	5
class	1	/	/	/	/
total	1	1	8	/	5

4.3.3 Complex sentence structures

From session 2 on, B produces complex sentence structures. She begins with coordinate clauses and then acquires successively subordinating complementizers, as table 4-128 below shows. The notations "(co)" and "(sub)" indicate whether the complementizers in question are coordinating or subordinating. Again, a gap in the data from session 5 is evident; by session 6, B seems in full mastery of subordination and marks it consistently with the appropriate verb form.

Table 4-128: Complex sentence structures in B's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'kara' (co)	1	3	4	/	2
'ga' (co)	3	2	6	/	7
nominal(sub)	/	1	1	1	/
'toki ni' (sub)	1	/	2	/	/
'ato de' (sub)	/	2	/	/	/
'mae ni' (sub)	/	1	/	/	/
'nagara'	/	1	/	/	/
quot/tsumori (subord)	/	/	/	/	7
'to' (sub)	/	/	/	/	6
relativis'n	/	5	1	/	/

PART 3

5. Summary and conclusion: The development of B's learner grammar

Summary

In the following, the development of sentence structures, noun phrase structures and predicates of B's interlanguage grammar is summarised.

Sentence structures

By the time of session 1, B has already established all basic sentence structures and categories. As in the other informants' grammar, B's categories "noun" and "verb" have mutually exclusive features of sentence position. They can also be modified by preceding modifiers for the noun and morphology for the predicate.

Table 4-129: Basic sentence structures in B's Sss. 1-6

```
S ->      (NP)  NP    cop
          (NP)  NP    (ex)V
```

Table 4-130 below shows that the development of sentence structure in B's data shows the same stagnation up to session 5 and further acquisition in session 6 that is observable with K's data (see ch. 4.2.2).

Table 4-130: Structures in B's Sss. 1-6: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop-sent	+	+	+	+	+	+
verb-sent	+	+	+	+	+	+
AdvP S	(1)	+	+	+	+	+
SI	(1)	+	+	+	+	+
coordinat	-	+	+	-	-	+
subordinat	-	-	+	+	-	+
relativisat	-	-	+	(1)	-	-
adv	-	(1)	(1)	+	-	+

The following table gives a clearer picture:

Table 4-131: Acquired structures in B's Sss. 1-6: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop-sent	+	+	+	+	+	+
verb-sent	+	+	+	+	+	+
AdvP S	-	+	+	+	+	+
SI	-	+	+	+	+	+
coordinat	-	+	+	-	-	+
subordinat	-	-	+	+	-	+
relativisat	-	-	+	-	-	-
adv	-	-	-	+	-	+

It seems that B has acquired all types of complex clauses by session 3; however, she never produces relative clauses again.

Noun phrases

B modifies the noun phrase from the first data collection session on, as table 4-132 below shows:

Table 4-132: Structures in B's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	(1)	+	+	+	+	+
N no N	+	+	+	+	+	+
adj N	+	+	(2)	(2)	(1)	(1)
dem.pr.	-	-	(1)	(1)	-	-
quant N	(2)	+	-	(2)	-	+
quant adj cop	-	(1)	(2)	+	+	+
quant adj N	-	-	-	-	-	-
NoAd na N	-	(1)	(3)	(2)	(1)	(1)
adj-neg	-	-	-	-	-	+
adj-past	-	-	-	(1)	-	-
adj-fin	-	-	-	-	-	+
adj-ku	-	-	-	-	-	(1)
adj-kute	-	-	-	-	-	(2)
relativisat	-	-	+	-	-	-

Because the nominal adjectives in session 3 occur in an extremely restricted environment, their acquisition should be doubted, even though there are three instances, which usually is regarded as enough to consider a structure as acquired. Table 4-133 summarises Table 4-132:

Table 4-133: Acquired structures in B's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	-	+	+	+	+	+
N no N	+	+	+	+	+	+
adj N	+	+	-	-	-	-
quant N/adj	-	+	-	+	+	+
relativis'n	-	-	+	-	-	-
adj-fin	-	-	-	-	-	+
adj-neg	-	-	-	-	-	+

B produces adj-noun-phrases earlier than any other learner, but never produces noun phrases which include quantifiers and adjectives together. B never acquires demonstrative pronouns or nominal adjectives; her noun phrase structures do not show much development throughout the time of the study.

Predicate morphology

Table 4-134: Acquired structures in B's Sss. 1-6: Predicate morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop	+	+	+	+	+	+
ex V	+	+	+	+	+	+
verb pr pos	+	+	+	+	+	+
cop past pos	+	(1)	-	(2)	-	(1)
verb past pos	+	+	+	+	+	+
exV past pos	-	+	(1)	+	+	+
verb pr neg	-	(2)	+	+	-	(2)
exV pr neg	-	+	+	-	-	(1)
verb past neg	-	-	(1)	-	-	-
verb pr plain pos	-	-	+	(1)	(1)	+
verb past plain pos	-	(1)	(2)	-	-	-
V-te iru	-	-	-	(1)	-	(2)
V-te V/S	-	-	-	(1)	-	(2)
V-nakereb narimasen	-	-	(1)	(2)	-	(1)
exV pl pr pos	-	-	(2)	-	-	(1)
exV pl pr neg	-	-	(1)	-	-	(2)

Table 4-135: Acquired structures in B's Sss. 1-6: Predicate morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop	+	+	+	+	+	+
ex V	+	+	+	+	+	+
verb pr pos	+	+	+	+	+	+
verb past pos	+	+	+	+	+	+
cop past pos	+	-	-	-	-	-
exV past pos	-	+	-	+	+	+
exV pr neg	-	+	+	-	-	-
verb pr neg	-	-	+	+	-	-
verb pl pr pos	-	-	+	-	-	+

B acquires negation and past tense marking, but never combines both. By the time of session 3, she has acquired the plain form of verbs, which is necessary to mark subordination. The plain form, too, is never marked for additional information like past tense or negation.

The following table summarizes all information given above:

Table 4-136: Interlanguage grammar development in B's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop-sent	+	+	+	+	+	+
verb sent	+	+	+	+	+	+
verb past pos	+	+	+	+	+	+
cop past pos	+	-	-	-	-	-
N no N	+	+	+	+	+	+
adj N	+	+	+	+	-	-
AdvP S	-	+	+	+	+	+
SI	-	+	+	+	+	+
N to N	-	+	+	+	+	+
quan N/adj	-	+	-	+	+	+
exV past pos	-	+	-	+	+	+
exV pr neg	-	+	+	-	-	-
coordinat	-	+	+	-	-	+
subordinat	-	-	+	+	-	+
relativisat	-	-	+	-	-	-
verb pr neg	-	-	+	+	-	-
verb pr pl	-	-	+	-	-	+
adv	-	-	-	+	-	+

Table 4-137 presents the information in Table 136 as phrase structures:

Table 4-137: Interlanguage grammar development in B's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
S ->	(NP) NP cop (NP) NP exV (NP) (NP) V	(NP) NP cop (NP) NP exV (NP) (NP) V XP S coordinatio	(NP) NP cop (NP) NP exV (NP) (NP) V XP S coordinatio subordinati relativisatio	(NP) NP cop (NP) NP exV (NP) (NP) V XP S subordinati adv	(NP) NP cop (NP) NP exV (NP) (NP) V XP S	(NP) NP cop (NP) NP exV (NP) (NP) V XP S coordinatio subordinati adv
NP ->	N N p N to N N no N adj N	N N p N to N N no N adj N quant N/adj	N N p N to N N no N	N N p N to N N no N quant N/adj	N N p N to N N no N quant N/adj	N N p N to N N no N quant N/adj
pred ->	cop exV V verb-affix cop-affix	cop exV V verb-affix exV-affix	cop exV V verb-affix exV-affix V-te V	cop exV V verb-affix exV-affix V-te V	cop exV V verb-affix exV-affix	cop exV V verb-affix exV-affix V-te V
adj ->	adj	adj				finite pos finite neg

Table 4-138: Development of sentence structures in B's Sss. 1-6

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP NP	+	+	+	+	+	+
(NP) NP V	+	+	+	+	+	+
XP S	-	+	+	+	+	+
coordinat	-	+	+	-	-	+
subordinat	-	-	+	+	-	+
relativisat	-	-	+	-	-	-
adv	-	-	-	+	-	+

Table 4-139: Development of noun phrase structures in B's Sss. 1-6

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N to N	+	+	+	+	+	+
N no N	+	+	+	+	+	+
adj N	+	+	-	-	-	-
quant adj/N	-	+	-	+	+	+
adj-fin	-	-	-	-	-	+

Table 4-140: Development in the predicate in B's Sss. 1-6

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop	+	+	+	+	+	+
exV	+	+	+	+	+	+
verb	+	+	+	+	+	+
verb-affix	+	+	+	+	+	+
cop-affix	+	-	-	-	-	-
exV-affix	-	+	+	+	+	+
V-te V	-	-	+	+	-	+

Conclusion

It is clear that B's learner grammar development progresses similarly to that of the other learners'. At the level of sentence structure, development follows the order canonical word order - adverb fronting - coordinate clauses - subordinate clauses - and adverbs. At noun phrase level, modification occurs first with nouns and adjectives, then with quantifiers as well, and after that - also after the above mentioned development of the sentence - follows the inflection of the adjective which makes it finite.

In the verb phrase there is yet another instance of single function marking being acquired before multiple affixation is produced. Like other learners, B develops the inflection of the copula much less than that of other predicates. Although there are "holes" in the tables, it is mostly the structures acquired last that are omitted, i.e. we find the phenomenon of backsliding again.

In summary, a pattern of a specific order of acquisition and of implication can be observed. With this order, B also follows the regularities of stepwise acquisition and of one form - one function-relationships that were first found and explained in M's data analysis.

<u>4.2.4</u>   <u>Informant J</u>

Part 1: **Data collection session 1**

1.   Analysis
1.1   Sentence structures
1.2   Structural elements
         1.2.1   Nouns
         1.2.2   Particles
         1.2.3   Predicates
1.3   Summary
1.4   Complex structures
         1.4.1   N to N-phrases
         1.4.2   N no N-phrases
         1.4.3   adj N-phrases
         1.4.4   dem N-phrases
         1.4.5   Predicate morphology
         1.4.6   Elements in sentence-initial position
         1.4.7   Question marking
2.   Summary

Part 2: **Data collection sessions 2-6**

3.   Continuation of established structures
3.1   Sentence structures
3.2   Structural elements
3.3   Complex structures
4.   New structures
4.1   Noun phrases
         4.1.1   Adjectives
         4.1.2   Quantifiers
         4.1.3   Nominal adjectives
4.2   Predicate morphology
4.3   Sentence structures
         4.3.1   Elements in sentence-initial position
         4.3.2   Elements in verb-preceding position
         4.3.3   Complex sentence structures

Part 3:

5.   Summary and conclusion: The development of J's interlanguage grammar

PART 1

1.   Analysis

In contrast to all other informants, J had experienced some "natural" acquisition as well as instruction at the University of Sydney. From first semester he had Japanese friends with whom he spoke in Japanese, and he also worked part-time in a Japanese restaurant where he had ample opportunity (and pressure) to comprehend and speak Japanese. J has never been to Japan. He stopped attending the Japanese language course after four semesters, but maintained contact with his Japanese friends.

J produces roughly twice as many utterances as the other informants to describe the same stories. He also has, for every interview, acquired more structures than the other informants. It also seems that he is more confident in the usage of his grammar, because he produces almost all structures many times, in contrast to other learners who may produce a recently acquired structure only two or three times in one interview.

1.1   Sentence structures

By the time of session 1, J has acquired all basic sentence structures:

Table 4-141: Sentence structures in J's Sss. 1

sentence structure 1: (A) B desu	37
sentence structure 2: (A) B exV	16
sentence structure 3: (A) B V	20
others	/
total	73

Sentence structure 1:   (A) B desu

Structure 1-sentences all have 'desu' in final position, i.e. the copula is never inflected, so that the distinction between copula or particle of the sentence-final noun phrase cannot be clearly made (see M's analysis, section 1.1 for this distinction). Functionally, all structure 1-sentences mark equation. J strictly follows the topic-comment order, and often marks topic continuation by ellipsis:

Table 4-142: Topic-comment order in structure 1-sentences in J's Sss. 1

A is produced	15
A carries old information	15
A carries new information	/
B is mentioned	37
B carries new information	35
B carries old information	2

Sentence structure 2:   (A) B exV

J produces the existential verb 'imasu' only once, in all other instances 'arimasu'. He uses the 'arimasu' as a presentative and also when describing the location of an object; for the latter function, however, he also produces copula structures. The functions of 'arimasu' are not unambiguously defined in his learner grammar, as table 4-143 below shows:

Table 4-143: Functions of 'arimasu' and 'desu' in J's Sss. 1

'aru': presentative, inanimate	4
'aru': presentative, animate	/
'aru': location, inanimate	8
'aru': location, animate	/
'aru' total	16
'desu': presentative	1
'desu': location	10
'aru' others	4
'desu' total	11

Table 4-143 clearly shows that 'aru' has presentative function; for the specification of an object's location, however, J uses 'aru' as well as 'desu'. The number of noun phrases in structure 2-sentences depends on the function that 'aru' fulfils in it; there are maximally two. In all utterances describing location, J follows the order location - subject - predicate, and thereby forms the utterance according to the topic-comment order. The morphology of 'aru' in J's session 1 will be analysed in section 1.4.5.

Sentence structure 3:   (A) (B) V

J produces nine different verbs (except the existential verbs), more than all other informants. The number of verb sentences is higher than that of other learners as well. J marks the agent by ellipsis in five cases, thereby avoiding any sentences with more than two noun phrases. Only one sentence has three noun phrases, which indicate agent, indirect object and direct object. In all cases, the first or the omitted element is known, i.e. the topic-comment order is consistently applied in verb sentences.

Summary of sentence structures

J follows the topic-comment order consistently; agents, which are always identical with the topic, are often marked by ellipsis.

Table 4-144: Sentence structures in J's Sss. 1

	known information	new information	predication
sentence structure 1	(A)	B	'desu'
sentence structure 2	(A)	(B)	'imasu'/'arimasu'
sentence structure 3	(A)	(B)	'V'

1.2   Structural elements

J's nouns and predicates show the same structure that we find in other learner grammars.

1.2.1 Nouns

Again, there is no lexical overlap of sentence-final and non-final elements:

Table 4-145: Category distinction in J's Sss. 1

A, B-elements in sentence-final position	/
predicates in non-final position	/
A, B-elements in non-final position	128
predicates in sentence-final position	73

J never produces a noun phrase in a sentence-final position. The vast majority of noun phrases is marked with particles, and particles do not follow any other element:

Table 4-146: Noun phrases in J's Sss. 1

noun phrase	89
noun phrase without p (except cop.compl.)	1
nouns as cop. compl.	37
cop. compl. with p	1
nouns total	128

J is the only informant who produces pronouns in session 1:

Table 4-147: Semantic content of A and B-elements in J's Sss. 1

element referring to object	70
element referring to person	21
element referring to location	16
element is proper name	5
element is pronoun	10
others	6
total	128

1.2.2 Particles

With ten different lexical items, J produces a wider range of particles than any other informant in session 1. Their functions, however, are not absolutely clear; the subject of 'aru' is as often marked with 'wa' as with 'ga'. There is a tendency in J's session 1 to mark all first noun phrases in a sentence with 'wa', independent of their semantic or grammatical role (agent, location, subject) or the predicate. Only once, a particle ('ni') follows a copula complement, and once, a particle is dropped (for the subject of 'aru').

Table 4-148: Particles in J's Sss. 1

nouns total (exc. cop.compl.)	83
particles following nouns	82
particles in other positions	/
particles total	82

Table 4-149: Semantic functions of particles in J's Sss. 1

	TSA str. 1	TSA str. 2	TSA str. 3	dir. object	posse ssion	locati on	ind. obj.	'from'	'also'	'and'	sent. topic
wa	13	1	3	/	/	/	/	/	/	/	2
ga	/	4	/	/	/	/	/	/	/	/	/
o	/	/	/	7	/	/	/	/	/	/	
no	/	/	/	/	28	/	/	/	/	/	/
ni	/	/	/	/	/	6	4	/	/	/	/
de	/	/	/	/	/	2	/	/	/	/	/
kara	/	/	/	/	/	/	/	2	/	/	/
mo	/	/	/	/	/	/	/	/	3	/	/
to	/	/	/	/	/	/	/	/	/	4	/
no p	/	1	/	/	/	/	/	/	/	/	/

1.2.3 Predicates

Verbs never stand in a non-final sentence position, and never go with a particle, thereby having features mutually exclusive to those of nouns:

Table 4-150: Predicates in J's Sss. 1

predicates in non-final position	/
predicates with following particle	/

Their semantic content is always predicative:

Table 4-151: Semantic contents of predicates in J's Sss. 1

equation	20
presentative and location pres.	24
action	15
others	1
total	60

J inflects verbs to mark negation and past tense. This will be discussed in section 1.4.5.

1.3   Summary

The following table shows that J's basic categories and sentence structures in session 1 are very similar to those of the other informants:

Table 4-152: Learner grammar in J's Sss. 1

	(NP)	NP	'desu'
S ->	(NP)	NP	exV
	(NP)	(NP)	NP V
NP ->	N		
	N p		
	V		
pred ->	exV		
	'desu'		

1.4   Complex structures

In session 1, J modifies noun, verbs and sentence structures in several ways:

  4 **N to** N-phrases;

  28 **N no** N-phrases;

  3 **adj** N-phrases;

  7 **dem** N-phrases;

  predicate morphology;

  2 elements in sentence-initial position; and

  14 question markers **-ka.**

1.4.1 N to N-phrases

J produces 'to' four times in one long noun phrase:

1. *am hm   getsuyoobi to nichiyoobi to kayoobi to suiyoobi*
            Monday   and Sunday   and Tuesday and Wednesday
   to kinyoobi mo em hatarakimasu.
   and   Friday   too   work
   I work on Mondays and Sundays and Tuesdays and Wednesdays and Fridays, too.

1.4.2 N no N-phrases

J produces 28 **N no** N-phrases, which mark location as well as possessive and general characteristics like 'christmas no ki' - 'christmas tree' and also 'hoka no tsukue' - 'another desk':

Table 4-153: **N no** N-structures in J's Sss. 1

location	17
characteristic/possession	11
total	28

J produces **N no** N-phrases consistently in the order modifying-modified element. The different environments of this structure show clearly that J has acquired it as a marker for modification in general, rather than a location or possession marker only.

1.4.3 **adj** N-phrases

J produces three **adj** N-phrases, all embedded in a sentence. Twice, 'ookii' - 'big' is used as an adjective, the third time J uses 'na' to link it to the head noun. This may be due to the sound of the words: in 'ookii ki' - 'big tree' words are less clearly distinguishable than in 'ooki na ki' - 'big tree'. The third adjective is a colour term: 'akai iro' - 'red colour'.

J also produces one adjective inflection: 'nemukatta desu' - 'I was tired', where he marks the adjective for tense, i.e. for finiteness. As this is only a single occurrence, it is not possible to describe adjective morphology as acquired.

1.4.4 **dem** N-phrases

J produces demonstratives like 'kono hito' -'this man'. This shows an increased ability to connect sentences contentswise to other sentences or to the non-verbal environment, and therefore indicates a broader "overview" over his production. Structurally, demonstratives can be regarded as adjectives, because they share the feature "directly noun-preceding" and also modify the head noun.

Table 4-154: Demonstratives in J's Sss. 1

deictic reference	5
anaphoric reference	2
total	7

1.4.5 Predicate morphology

J produces a relatively rich verb morphology:

Table 4-155: Verb morphology in J's Sss. 1

pres neg	2
past pos	2
past neg	/
plain pres pos	2
V-u/ta koto ga aru/dekiru	2
V-te imasu (progr)	1

It is noteworthy that J marks negation as well as past tense, but does mark both these functions on one verb. J once produces 'suru koto dekimasen' - 'cannot do X' and once 'kiita koto ga arimasen' - 'never having heard X'. We can assume that these are not productive structures, but that they have been rote-learned like other inflections, e.g. the past marker '-mashita'.

Table 4-156: Existential verb morphology in J's Sss. 1

pres neg	3

Again, we find a reluctance to mark past tense on existential verbs. While other interlanguage grammars show a division of labour - with negation only marked on existential verbs, and past tense only marked on action verbs -, J marks both functions on the (action) verb; but in his production, too, past tense marking on existential verbs does not occur. There is no copula morphology in J's session 1.

Although numbers for no specific morphology are high enough to mark them as "acquired", it can be safely stated that J has acquired the concept of morphology, i.e. a verb-final position at which to mark various functions.

1.4.6 Elements in sentence-initial position

J modifies his sentences with adverbial phrases twice, but does not produce sentence-initials (for definition of both, see ch. 4.2.1):

Table 4-157: Adverbial phrases and sentence-initial elements in J's Sss. 1

Adverbial phrases	2
sentence-initial elements	/
total	2

1.4.7 Question marking

J asks comparatively many questions, often to help his insecure partner in the picture-description task. All questions are marked with -*ka*. Questions include Yes/No-questions as well as wh-questions. The topic/subject is often omitted, as it is in statements:

Table 4-158: Questions in J's Sss. 1

wh-questions	7
Yes/No-questions	7
total	14

2. Summary

J is further advanced than all others informants, presumably due to the reasons explained in the introduction. Still, the similarity of acquisition processes is striking. J has acquired sentence structures, nouns and verbs identical to those of other informants, and his interlanguage grammar shows similar patterns in phrase and sentence modification and verb inflection. His interlanguage grammar in session 1 is represented as follows:

Table 4-159: Interlanguage grammar in J's Sss. 1

	(NP) N 'desu'
S ->	(NP) NP exV
	(NP) N V
	(XP S)
	N
	N p
	N to N
NP ->	N no N
	adj N
	dem N
	V
pred ->	V-neg.
	exV-neg
	V-past

The list of acquired structures is as follows:

Table 4-160: Acquired structures in J's Sss. 1

cop-sent	+
exV-sent	+
V-sent	+
N to N	+
N no N	+
N1 no N2	+
V-neg	+
V-past	+
S-'ka'	+
det N	+
XP S	(+)

J has acquired more structures than any other informant at the time of session 1. Comparing the above table with those from later interviews with the other informants, we will find that they will next acquire those structures that J has already acquired here.

PART 2

3.   Continuation of established structures

It will become clear in the following analysis that J's interlanguage grammar, like the grammars of the other learners, does not change in that already established features are abandoned; rather, new features, categories and sentence forms are added. The developmental process is clearly cumulative.

3.1   Sentence structures

The table below shows that the tendency to use less copula and more full verb sentences is followed throughout the development:

Table 4-161: Clause structures in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop-sent	21	16	15	13	18
exV-sent	4	20	11	6	14
V-sent	65	69	74	56	62
adj-finite	6	3	/	4	6
no pred	2	7	5	7	4
total	96	108	100	79	104

3.2   Structural elements

In session 1, J' s learner grammar contained three major categories: noun, verb, and adjective. Sentence positions of all three categories stay the same throughout the study period; nouns are always followed by particles, verbs increase their morphology, and the features of adjectives increase, while their position and function stay the same.

3.3   Complex structures

Complex structures that were unambiguously acquired by the time of the first interview were **N to** N-phrases, **N no** N-phrases, and **adj** N-phrases. These noun phrase modifications are produced throughout all interviews:

Table 4-162: Extended noun phrases in J's Sss. 1

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	7	9	2	6	13
N no N	18	29	15	18	43
dem N	3	3	3	8	4
adj N	2	1	4	4	5
total	30	42	24	36	65

4.   New structures and elements

4.1   Noun phrases

4.1.1 Adjectives

Most adjective inflections seem to be formulaic; especially past tense and negation are marked on a few lexical items only. The **adj ku** *V*-construction stands with different adjectives, but always with the verb 'narimasu'; J has acquired the ability to change the adjective's ending, but in his grammar, this rule applies to the environment of 'narimasu' only. Finiteness of the adjectives occurs mostly with 'to omoimasu' or 'to kikimashita', i.e. in quotations and thereby in a restricted environment as well.

Table 4-163: Adjective morphology in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj-neg	/	1	1	2	/
- past	2	2	3	/	/
- soo	/	1	/	/	/
- neg past	/	2	/	/	/
- ku V	3	/	4	4	/
-kute	/	/	/	/	1
finite	6	3	/	3	6
total	9	9	8	9	7

4.1.2 Quantifiers

From session 2 on, J produces a number of quantifiers which is small but large enough to consider quantifiers acquired. However, the number is big enough, and the occurrence steady enough, to analyse the quantifier as acquired from session 2 on.

Table 4-164: Quantifiers in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
quant N	3	1	1	1	1
quant adj	2	2	1	2	2
quant adj N	/	/	1	1	3
quant cop	/	/	/		/
total	5	3	3	4	6

4.1.3 Nominal adjectives

In spite of some occurences of nominal adjectives, it is not possible to claim acquisition of the category "nominal adjective" at any time. In session 3, all three nominal adjectives are the same lexical item, and the single nominal adjective occurring in session 4 stands with the (incorrect) particle 'no', suggesting that the nominal adjective is treated as a noun (see table 4-165 below). In session 5, all **NoAd na** N-constructions have the lexical items 'chiisa' and 'ooki', which occur in the same interview without the particle 'na', i.e. as adjectives, as well (which is correct in TJ).

Table 4-165: Nominal adjectives in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NoAd na N	/	3	/	7	/
NoAd no N	/	/	1	/	/
total	/	3	1	7	/

4.2   Predicate morphology

Table 4-166: Verb morphology in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
pres neg	/	2	7	3	2
past pos	18	13	14	6	8
past neg	2	4	/	1	1
pl pr pos	8	10	12	8	8
pl pr neg	/	1	1	/	2
pl past pos	/	3	5	3	3
pl past neg	/	1	/	/	1
V-te iru	6	3	9	4	11
XP V-te S	5	(1) 2	14	17	2
V-tari	/	4	/	/	/
V-ba	/	/	/	/	2
V-eru	/	/	/	/	1
Vi-nagara	/	/	/	/	1

Table 4-166 shows that from session 3 on, J inflects the polite form as well as the plain form, which occurs first in session 2, for tense and negation. From session 4 on, he uses the V-te-form to form verb clusters with those verbs that mark aspects like "beginning to, ending to, doing for later purpose" etc, in session 6 also to link full sentences. The steady increase in verb morphology is obvious; by session 6, J has firmly mastered past tense and negation of plain and polite form, seriality/non-finiteness (**V-te**) and progressive marking (**V-te iru**).

Table 4-167: Existential verb morphology in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
pres neg	1	11	2	3	1
past pos	1	3	2	/	1
past neg	/	1	/	/	1
pl pres pos	/	1	/	2	3
pl pres neg	/	/	4	/	/
neg -ku	/	/	1	/	/
V-te	/	/	/	/	1

J's morphology for existential verbs is relatively small, but its acquisition can be assumed. There is no copula inflection in J's data until session 6. Then, there occur one serial form 'de' and two past tense forms 'deshita', i.e. no morphology can be regarded as acquired for the copula.

4.3   Sentence structures

4.3.1 Elements in sentence-initial position

Having acquired the ability to have an element precede the canonical word order by session 1, J uses this to its full communicative function from session 2 on, as table 4-168 below shows:

Table 4-168: Elements in sentence-initial position in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
SI	12	23	18	19	34
AdvP	4	2	10	5	11
total	16	25	28	24	46

4.3.2 Elements in verb-preceding position

Although a slight increase is observable, J never produces many adverbs:

Table 4-169: Verb-preceding elements in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj-ku	3	/	4	4	/
"pure" adv	1	1	4	2	4
total	4	1	8	6	4

4.3.3 Complex sentence structures

By the time of session 3, J has acquired the ability to produce co-and subordinate sentences and relative clauses, and uses this skill often. The high amount of complex sentence structures, as shown in table 4-170 below, is target-like and increases the communicative strength of expression. In table 4-170, "f" stand for "formulaic", i.e. the construction is assumed to have been acquired as a chunk.

Table 4-170: Complex sentence structures in J's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'tsumori' (f)	9	1	2	1	/
nomin. (sub)	/	1	1	3	1
nom. koto (f)	1	8	1	/	/
'kara' (co)	2	1	1	5	7
'ga' (coord)	8	8	14	1	2
'kedo' (co)	/	/	/	1	/
to' (quot)	5	3	3	8	3
'to' (subord)	/	1	1	/	1
'toki' (sub)	/	/	/	1	1
'kara' (sub)	/	1	5	2	/
'aida' (sub)	/	/	/	1	/
'mae' (sub)	/	/	/	/	1
'ato' (subord)	1 (ser)	/	1	/	/
'V-te kara'	3	1	2	2	/
XP V-te S	2	1	4	4	3
'V-tara'	/	/	/	2	/
V-tari	/	1	/	/	/
V-nara	1	1	1	/	/
V-nagara	/	/	1	/	1
relativisat'n	/	5	4	/	2

Obviously, J has a wide range of complementizers at his disposal. It is interesting to note that 'ga' - 'but', which seems always to be the first complementizer to be acquired, is used only little in the last sessions. Other complementizers with more specific meaning have taken over. Also noteworthy is the fact that the nominaliser 'koto' is used only in connection with 'ga aru' or 'ga dekiru', i.e. in fixed environments, whereas the nominaliser 'no' is used productively for all other nominalisations.

As indicated in table 4-170, it is assumed that the structures 'tsumori desu', 'koto ga aru' and 'to omou' are formulaic and that they should be regarded as one long verb inflection rather than a subordinate sentence structure. If these structures are therefore withdrawn from the analysis, we find that in session 2, coordinate structures are acquired, and from session 3 on, J has clearly established subordination in his interlanguage grammar. The complex sentence **S -> XP V-te S** is acquired by the time of the fourth session.

PART 3

5. Summary and conclusion: The development of J's learner grammar

Summary

By the time of session 1, J has acquired the canonical word order and the copula sentence, and modifies them by preposing of adverbials ("adv-front"). He has acquired the basic categories of noun and verb, also adjectives and demonstratives. Verb morphology marks past tense and negation.

In the following sessions, the number of structural features of the existing categories grows, adverbs in verb-preceding position are included in the interlanguage grammar, verb morphology marks more and different functions, and complex sentence structures are being produced.

Sentence structures

J acquires coordinate and subordinate clauses, all based on the canonical word order structure which were established by the time of session 1:

Table 4-171: Basic sentence structures and categories in J's Sss. 1-6

```
pred ->   V
          exV
          'desu'

NP ->     N
          N p

          (NP)  NP           'desu'
S ->      (NP)  NP           exV
          (NP)  (NP) NP      V
          AdvP S
```

Table 4-172: Structures in J's Sss. 1-6: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
AdvP S	(2)	+	+	+	+	+
SI	-	+	+	+	+	+
adv	-	+	-	+	+	+
coordinat'n	-	+	+	+	+	+
subordin	-	-	+	+	+	+
relativis'n	-	-	+	+	-	(2)
S V-te S	-	2	1	4	4	3

If we remove instances of uncertainty from table 4-172, and order it so that implicational relations become visible, the above table looks as follows:

Table 4-173: Acquired structures in J's Sss. 1-6: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
AdvP S	-	+	+	+	+	+
SI	-	+	+	+	+	+
coordinat	-	+	+	+	+	+
adv	-	+	-	+	+	+
subordinat	-	-	+	+	+	+
relativisat	-	-	+	+	-	-
XP V-te S	-	-	-	+	+	+

Noun phrases

Table 4-174: Structures in J's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	+	+	+	+	+	+
N1 no N2	+	+	+	+	+	+
adj N	(3)	2	1	+	+	+
dem N	+	+	+	+	+	+
quant N	-	+	?	?	?	-
quant adj	-	(2)	(2)	(1)	(2)	(2)
quant adj N	-	-	-	(1)	(1)	+
NoAd na N	-	-	(3)	(1)	(7)	-

After elimination of those cases where the acquisition is unsure, and by combining all forms of quantifiers in one row, table 4-174 looks as follows:

Table 4-175: Acquired structures in J's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	+	+	+	+	+	+
N1 no N2	+	+	+	+	+	+
adj N	-	-	-	+	+	+
dem N	+	+	+	+	+	+
quant	-	+	-	-	-	+
relativisat	-	-	+	+	-	-

J acquires the basic structures of noun phrase modification by the time of the first data collection session; acquisition of further forms of noun phrase modification takes place, but the forms are always produced in small numbers, so that acquisition can be intuitively assumed (due to J's fluency in production), but not statistically based.

Adjective morphology

Table 4-176: Structures in J's Sss. 1-6: Adjective morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj-finite	-	+	+	-	+	+
adj-neg.	-	-	(1)	(1)	(2)	-
adj-past	-	(2)	(2)	+	-	-
adj-neg-past	-	-	(2)	-	-	-
adj-ku V	-	(3)	-	(4)	(4)	-
adj-kute	-	-	-	-	-	(1)
adj-soo	-	-	(1)	-	-	-

J seems to have acquired the knowledge that adjectives can function as finite elements. There is also a weak indication that he might have acquired **adj-ku** and **adj-kute**, both marked for non-finiteness. Perhaps the acquisition of a notion of (non)finiteness for adjectives is the first step towards the ability to mark tense or negation on them.

Table 4-177: Acquired structures in J's Sss. 1-6: Adjective morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj-finite	-	+	+	+	+	+
adj-past	-	-	-	+	-	-

Predicate morphology

Table 4-178: Structures in J's Sss. 1-6: Predicates

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop pr pos	+	+	+	+	+	+
exV pr pos	+	+	+	+	+	+
V pres pos	+	+	+	+	+	+
V past pos	(2)	+	+	+	+	+
cop past pos	-	-	-	-	-	-
exV past p	-	(1)	(3)	(2)	-	(1)
V pres neg	(2)	-	(2)	+	+	(2)
exV pres neg	(+)	(1)	+	(2)	+	(1)
exV past neg	-	-	(1)	-	-	(1)
V past neg	-	(2)	+	-	(1)	(1)
V pl pr pos	(2)	+	+	+	+	+
exV plain pres pos	-	-	(1)	-	(2)	+
V plain past pos	-	-	+	+	+	+
V pl pr neg	-	-	(1)	(1)	-	(2)
exV plain pres neg	-	-	-	+	-	-
V-te iru	-	+	+	+	+	+
V-te V/S	-	+	(2)	+	+	(2)

In more cases than not, J produces only one or two predicates with the same morphology, so that there are many uncertainties. The following table summarises these results:

Table 4-179: Acquired structures in J's Sss. 1-6: Predicates

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop pr pos	+	+	+	+	+	+
exV pr pos	+	+	+	+	+	+
V pres pos	+	+	+	+	+	+
exV pr neg	+	-	+	-	+	-
V past pos	(2)	+	+	+	+	+
V pres plain pos	-	+	+	+	+	+
V-te iru	-	+	+	+	+	+
V-te V	-	+	-	+	+	-
V past plain pos	-	-	+	+	+	+
V past neg	-	-	+	-	-	-
V pres neg	-	-	-	+	+	-
exV plain pres neg	-	-	-	+	-	-
exV plain pres pos	-	-	-	-	-	+

This table shows that J, too, never starts a new structure with marking two functions on one predicate at once; it happens stepwise, with "present pos" as the "unmarked" form, to which one piece of information can be added. J's morphology, too, develops with the full verb first and is then transferred to the existential verb. Astonishingly, there exists absolutely no copula inflection. The table also suggests a development in the order of marking of past tense and negation before serial verbs with **-te iru**, and then other aspect forms.

The whole acquisition process is presented in the following table. All acquisitions discussed above are summarised, except some details of verb morphology for reasons of space and clear overview:

Table 4-180: Interlanguage grammar development in J's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop-sent	+	+	+	+	+	+
verb sent	+	+	+	+	+	+
N to N	+	+	+	+	+	+
N1 no N2	+	+	+	+	+	+
pred-morp	+	+	+	+	+	+
adj N	+	-	-	+	+	+
XP S	(+)	+	+	+	+	+
adv	-	+	+	+	+	+
coordinat	-	+	+	+	+	+
quant	-	+	-	-	-	-
subordinat	-	(+)	(+)	+	+	(+)
V-te V	-	+	-	+	+	-
relativis'n	-	-	+	+	-	(+)
XP V-te S	-	-	-	+	+	+

Table 4-181 below describes the same acquisition process in form of phrase structure rules:

Table 4-181: Interlanguage grammar development in J's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
S ->	(NP) NP cop (desu) (NP) NP exV (NP) (NP) V XP S (?)	(NP) NP cop (desu) (NP) NP exV (NP) (NP) V XP S (?) adv V coordinat	(NP) NP cop (desu) (NP) NP exV (NP) (NP) V XP S coordinat subord relativisat'n	(NP) NP cop (desu) (NP) NP exV (NP) (NP) V XP S adv V coordinat subordinat relativisat'n S V-te S	(NP) NP cop (desu) (NP) NP exV (NP) (NP) V XP S adv V coordinat subordinat S V-te S	(NP) NP cop (desu) (NP) NP exV (NP) (NP) V XP S adv V coordinat subordinat S V-te S
NP ->	NP -> N p N N to N N no N adj N dem N	NP -> N p N N to N N no N adj N dem N quan (adj) N	NP -> N p N N to N N no N adj N dem N relativisat'n	NP -> N p N N to N N no N adj N dem N relativisat'n	NP -> N p N N to N N no N adj N dem N	NP -> N p N N to N N no N adj N dem N
pred ->	V-affix exV-affix	V-affix exV-affix V-te iru V-te V V-subord	V-affix exV-affix V-te iru V-subord V-mult affix	V-affix V-te iru V-te V V-subord (V-mult affx) (exV-multaf)	V-affix exV-affix V-te iru V-te V V-subord (V-mult affx)	V-affix V-te iru V-subord V-mult affx
adj ->		adj-fin	adj-fin	NP -> adj N adj-fin	NP -> adj N adj-fin	NP -> adj N adj-fin

The following tables separates out the different phrase and sentence levels:

Table 4-182: Development of sentence structure in J's Sss. 1-6

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP -> N p	+	+	+	+	+	+
NP NP	+	+	+	+	+	+
NP NP V	+	+	+	+	+	+
XP S	-	+	+	+	+	+
adv	-	+	-	+	+	+
S X S	-	+	+	+	+	+
subordinat	-	-	+	+	+	+
relativisat	-	-	+	+	-	-
XP V-te S	-	-	-	+	+	+

In the presentation of table 4-182, the implicational character of J's acquisition of sentence structures becomes clearly visible.

Table 4-183: Noun phrase development in J's Sss. 1-6

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N p N	+	+	+	+	+	+
adj N	+	(+)	(+)	+	+	+
quan adj N	-	+	-	-	-	-
relativisat	-	-	+	+	-	(+)

Again, we can assume an implicational relation of the acquired noun phrase structures; only the specific feature of quantifiers which allows them to precede adjectives may not be part of the implicational hierarchy. A comparison with other learners' grammar development will justify this assumption.

Table 4-184: Predicate morphology development in J's Sss. 1-6

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
V	+	+	+	+	+	+
exV	+	+	+	+	+	+
cop	+	+	+	+	+	+
pred-affix	+	+	+	+	+	+
V-te V	-	+	+	+	+	+
subord.	-	-	+	+	+	+
mult affix	-	-	+	(+)	(+)	+

J is the only informant who has acquired not only the progressive form *V-te iru*, but also marks other aspects with the *V-te V*-structure. He is also the only one who has acquired a rule about finite adjectives by the time of sessions 2, as table 4-185 below shows:

Table 4-185: Adjective development in J's Sss. 1-6

adj ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP -> adj N p		-	-	+	+	+
adj-fin	-	+	+	-	+	+

Conclusion

Features of the learning process that we found in M's data analysis, i.e. the acquisition of obligatory elements first and the step-by-step fashion of acquisition, can be observed in J's data as well, as the tables above clearly demonstrate. There are not many instances of backsliding; as already mentioned in the introduction to this section, J had the chance to talk Japanese outside the classroom. This presumably explains the fact that his data are "denser" than those of the other informants, i.e. that he usually uses most structures he has acquired and that he produces most structures in a high number.

PART 1

1. Analysis

D is a keen learner who enjoys the data collection sessions as an opportunity to try out his Japanese. His choice of topic seems to depend on his interests rather than his Japanese skills. His data are rich, with a high amount of utterances from the second session on and many structures which are incorrect in terms of target Japanese, but revealing of his internal grammar. Unfortunately, session 4 was short due to time constraints on the side of the informant, and many structures that D might have been able to produce do not occur.

1.1 Sentence structures

D produces copula sentences as well as verb sentences. There are no sentences with the existential verbs 'imasu' or 'arimasu' in D's data. The copula fulfils the functions that in other grammars existential verbs have, i.e. it marks not only topic-comment structures, but also locatives and presentatives. All predicates stand in sentence-final position.

Table 4-186: Sentence structures in D's Sss. 1

sentence structure 1: A B desu	15
sentence structure 2: A desu	2
sentence structure 3: (A) B V	6
no pred	6
others	/
total	29

Sentence structure 1: **A B desu**

'desu' is the only form of the copula that D produces. Its functions are equation, locative marking and the establishment of a new object in the discourse. There are 17 copula sentences altogether:

Table 4-187: Structure 1-sentences in D's Sss. 1

A B desu	15
B desu	2
others	/
total	17

Sentences with only one nominal element (two sentences, see above) are presentatives. The structure **B desu** could therefore be described as parallel in form and function to sentence structure 2 in M's data. Most other utterances describe the location of an object:

Table 4-188: Functions of 'desu' in D's Sss. 1

equation	4
locative	10
presentative	2
others	1
total	17

The meaning of the sentence under "others" in table 4-188 is not clear. In sentences with two nominal elements, D always follows the order of known-new:

Table 4-189: Topic-comment order in structure 1-sentences in D's Sss. 1

known-new	15
new-known	/

Twice, a locative construction directly precedes the copula. Once, D produces the correct **N no N** p-structure, so that the particle directly precedes the copula. Once, D changes the order of elements to **no N ni N**, so that the copula is preceded by a noun. Therefore, the status of the copula - predicate or particle - can again not be fully defined.

Sentence structure 2:   **A desu**

This structure, in D's interlanguage with the copula and not the existential verb as in other informants' data, appears twice (see above) and both times introduces a new element into the discourse, i.e. it has the function of a presentative. Copula sentences with other functions have always more than one element.

Sentence structure 3:   **(A) B V**

As in copula sentences, in verb sentences D never omits the subject. Five out of six verb sentences have two nominal elements, only once no object is mentioned; it follows in the next sentence. All verbs describe actions: 'kimasu' - 'to wear' (3), 'tabemasu' - 'to eat' (1), 'dekiru' - 'to be able to' for 'to eat' (1), and *'deguchimasu' - 'to leave' (1). Again, D strictly follows the topic-comment order.

Table 4-190: Structure 3-sentences in D's Sss. 1

A B V	5
A V	1
others	/
total	6

Table 4-191: Topic-comment order in structure 3-sentences in D's Sss. 1

A is known	6
A is not known	/
B is known	5
B is not known	/

<u>Summary of sentence structures</u>

D strictly follows the topic-comment order in all sentences and never omits a subject or topic. Structure 2-sentences are the only sentences with only one element except the predicate. They serve as presentatives like structure 2-sentences do in the other informants' interlanguage, but in contrast to the other learners, D uses 'desu' in the predicate position of sentence structure 2.

Table 4-192: Sentence structures in D's Sss. 1

	known information	new information	predication
sentence structure 1	A	B	desu
sentence structure 2		B	desu
sentence structure 3	A	B	V

1.2   Structural elements

As in all other data, we find in D's production a clear differentiation of sentence positions for predicates and non-predicates. The majority of non-predicates behave identically, as table 4-193 below demonstrates:

Table 4-193: Category distinction in D's Sss. 1

A, B-elements in non-final position	72
A, B-elements in sentence-final position	1
predicates in sentence-final position	23
predicates in non-final position	1

1.2.1 Nouns

A and B-elements have the semantic content typical of nouns (see. ch. 4.2.1). D's nouns refer mostly to objects and often, due to the task, to location. He also produces two pronouns. Colour terms are in his learner grammar nouns, because there is no category "adjective" at the time of session 1. Section 1.4.4 will discuss this in more detail.

Table 4-194: Semantic content of A and B-elements in D's Sss. 1

element referring to object	37
element referring to person	9
element referring to location	18
element referring to colour	4
element referring to number	2
element is proper name	/
element is pronoun	2
others	/
total	72

Structurally, D's A and B-elements show the behaviour of nouns in TJ; they are followed by a particle or the copula (once by both, which is not target-like) and thereby form basic noun phrases:

Table 4-195: Noun phrases in D's Sss. 1

noun phrase (except copula complement)	46
N with no following particle	5
N cop	15
N p cop	1
noun phrase without particle	1
nouns total	72

1.2.2 Particles

Almost all particles follow a noun. Only twice, when D changes an **N no N** p-structure to no N ni N, an utterance starts with a particle.

Table 4-196: Particles in D's Sss. 1

particles following nouns	46
particles in phrase-initial position	2
particles in other positions	/
nouns total	72
particles total	48

There are six different particles in the data from D's session 1:

Table 4-197: Semantic functions in D's Sss. 1

	T/A/S str. 1	T/A/S str. 2	T/A/S str. 3	dir.obj.	possession	noun-connect	location	'and'	topic
wa	3	/	7	/	/	/	1	/	3
ga	1	/	/	/	/	/	/	/	/
o	/	/	/	2	/	/	/	/	/
no	1	/	/	/	24	3	/	/	/
ni	/	/	/	/	/	/	13	/	/
to	/	/	/	/	/	/	/	1	/
no p	/	/	/	2	/	/	1	/	/

Three times, D produces sentences with a topic which is not identical with the agent/subject: "Kono heya wa A wa B desu". Once, the particle 'ga' is substituted by 'no', once, the sentence is interrupted after the second noun. It seems that D uses 'wa' to mark all first noun phrases in a sentence, except when it is a local phrase, which goes with 'ni'. He is able to produce a topic phrase before the agent/topic, which is a step towards adverb-fronting.

1.2.3 Predicates

As shown above, all predicates in D's session 1, and only they stand in sentence-final position. Thereby, their structural behaviour can be defined unambiguously. Their function is the denotation of equation, existence and action and as presentatives:

Table 4-198: Predicates in D's Sss. 1

predicates in non-final position	/
predicates with following particle	/

Table 4-199: Semantic contents of predicates in D's Sss. 1

equation	4
presentative and locative pres.	12
action	6
others	1
total	23

1.3 Summary

The basic categories in D's learner language at the time of session 1 are nouns and verbs. Their features are as follows:

Table 4-200: Basic category features in D's Sss. 1

	N
NP ->	N p
	never sentence-final
	marks focus, topic, comment, agent, subject, object
	V
	'desu'
pred->	marks predication
	always sentence-final, never followed by particle
	opens valency for one or more NP's

Table 4-201: Basic sentence structures in D's Sss. 1

```
S  -> (NP)  NP    'desu'
       (NP)  NP    V
```

This can be summarised as follows:

Table 4-202: Basic structures of D's learner grammar in Sss. 1

```
S      -> (NP)  NP     pred

NP     -> N
          N p

pred   -> 'desu'
          V
```

1.4 Complex structures

The following complex noun phrase structures appear in D's session 1. There are no modifications on the predicate or on sentence level:

1 **N to N**-phrase;
15 **N no N** -phrases;
3 **dem N**-phrases;
4 **adj N**-phrases.

1.4.1 N to N-structures

D produces two structures with the noun connector 'to':

1. *Ehkono heya   wa ehtsuk teburo   no is eh teburo   to   isu*
   this   room   top-p   table   poss-p   and   chair
   to eh aki   no oh   bowl?
   and   red   poss-p
   (In) this room, (there is) a table and a chair and a red bowl?

2. *... hidari   no   kabe wa ... am doa   to   kokubin   desu.*
      left   poss-p   wall top-p   door and   blackboard cop
   On the left wall, (there) are a door and a blackboard.

These utterances show that D has acquired a rule to extend noun phrases by addition of further nouns, and the principle of recursiveness.

1.4.2 N no N-structures

D produces 14 noun phrases which contain two or three nouns and the noun connector 'no'. Four times, the order of nouns does not follow the rule of "modifying element before modified" or of leftbranchingness. Three of these phrases have the structure **no N2 ni N1 p**, which may suggest a certain systematicity; but D expresses the same kind of meaning - description of location - also in phrases whose elements stand according to a rule ordering their position. Because D produces 10 out of 14 phrases in the order "modifying element before modified", it can be concluded that he has acquired a rule governing branching direction. There is also recursiveness in these structures, as three sentences with three nouns and two 'no' suggest:

Table 4-203: **N no N**-structures in D's Sss. 1

N1 no N2 p	7
N1 no N2	1
N1 no N2 no N3 p	2
N1 no N3 ni N2 cop	1
no N2 ni N1	3
total	14

1.4.3 dem N-structures

D produces the demonstrative 'kono' five times; all times in description of the second picture, i.e. in the second task. He says 'kono heya' - 'this room' three times, and 'kono uchi' - 'this house' twice. Because the pragmatic and lexical environment of 'kono' is extremely limited, it is not possible to firmly define the **X** N-structure as acquired, especially because **adj-N-structures**, which are constructed according to the same underlying structure, are not acquired by the time of session 1 either (see below).

1.4.4 adj N-structures

Three times, D produces adjectives in the adjective-slot before the noun; however, he does not seem to have acquired the adjective-specific feature "directly noun-preceding". In each instance, the adjectives - all colour-terms - behave like nouns in that they are connected to the following noun by the connector 'no' (see example sentence 3 below). Therefore, "adjective" as a category cannot be regarded as acquired.

3. *Kanojo wa aoi no aoi no   doresu kimasu.*
   she   top-p blue conn-p   dress   wear
   She wears a blue dress.

2.   Summary

D has acquired two rules additional to the basic structures described in section 1.3. They allow the extension and modification of the noun phrase, and govern the branching direction. Although not all of D's noun structures adhere to the branching direction, more than chance do. D also produces structures with a demonstrative preceding a noun; however, because they occur in a very restricted environment, and because there are no structures with other elements, like quantifiers or nouns, preceding the noun, a category with features differing from those of nouns and verbs cannot be analysed as acquired.

D's learner grammar in session 1 is limited in comparison to that of the other informants, because it consists basically of copula expressions, including locative expressions of the form of "X is on/in/at Y". There are no existential verbs, no attempts of coordinate or subordinate clauses, and no further categories. The basic structures of D's learner grammar of session 1, presented in section 1.3 above, must be extended as follows:

Table 4-204: Learner grammar in D's Sss. 1

S ->	(NP) NP	pred	
	N		
NP ->	N p		
	N to N		
	N no N		
pred ->	'desu'		
	V		

Table 4-205: Acquired structures in D's Sss. 1

cop-sent	+
exV-sent	-
verb-sent	+
N to N	+
N no N	+
N1 no N2	+
S-ka	-
pred-past	-
pred-neg	-
adj N	-

PART 2

3.   Continuation of established structures

Like all other informants, D had established the canonical word order, the copula sentence and the basic categories noun and verb by the time of session 1. He has also acquired a rule for the extension of noun phrases, and a rule governing branching direction. Like all other informants, so D does not abandon any structure once acquired.

3.1   Sentence structures

From session 2 on D produces sentences with existential verbs. As D uses existential verbs for locative description and as presentatives, the label "structure 2" will from now on denote the structure *(NP) NP exV*. This makes for consistency in the different informants' data description. Also for reasons of consistency, clauses with a finite adjective are included in the table below; however, D never uses this structure productively, and it will not be discussed further.

Table 4-206: Sentence structures in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
sentence str. 1	7	30	7	20	22
sentence str. 2	5	2	1	8	1
sentence str. 3	66	57	11	55	79
adj-finite	/	(5)	/	1	/
utter. with pred. total	78	94	19	84	102

This table shows that D's interlanguage follows the development that was observable in the other informants' data in that the relative number of verb clauses increases considerably. His production of existential verbs stays extremely low because its functions have been taken over by copula-constructions. Unfortunately, session 4 had to be very short; however, the relative amount of structures is similar to that in other interviews.

3.2 Structural elements

Nouns and verbs, the categories that were described for session 1, keep their features in all following interviews. Predicates, and only predicates, take the clause-final position. Particles follow nouns, and only nouns, throughout the data collection.

3.3 Complex structures

In session 1, D modified nouns by extending the noun phrase with a further noun, connecting it to the head noun with 'to' or 'no'. Also, **dem N**-structures occurred. There is a steady increase in the production of noun phrase modifications, as table 4-207 below shows. Although D clearly has acquired the structures listed, he continues to make the typical learner error of connecting a noun-preceding element to the noun by 'no'. In session 2, the utterance 'sono no gakusei' occurs twice. For adjectives this will be analysed under the section "**adj N**-structures".

Table 4-207: Extended noun phrases in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	18	8	1	12	16
N no N	25	33	3	39	40
dem N	2	16	/	16	14
total	45	57	4	67	70

4. New structures and elements

4.1 Noun phrases

4.1.1 Adjectives

Throughout the study period, D does not acquire **adj-N-structures** (see table 208 below). There is only one production of adjective morphology in D's data: when he talks about Canberra's hot summers, he says 'atsuku sugimasu' - 'it is too hot'. There is no past tense marking on the adjective; often, D produces **adj deshita**-structures, i.e. he marks tense on the copula.

Table 4-208: adj-N-phrases in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
adj N	/	/	/	/	/
adj no N	/	1	/	/	/

4.1.2 Quantifiers

From session 2 on, D produces quantifiers. The quantifier is the only acquisition on noun phrase level after the time of session 1. It precedes both adjectives and nouns. As D does not produce **adj N**-structures, he does not produce **quant adj N**-structures either.

Table 4-209: Quantifiers in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
quant N	3	1	/	4	4
quant adj cop	3	11	/	11	10
quant adj no N	/	/	/	1	/
others	/	/	/	/	/

4.1.3 Nominal adjectives

D does not acquire nominal adjectives with their specific syntactic behaviour throughout the study period:

Table 4-210: Nominal adjectives in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NoAd na N	/	1	/	/	1

4.2 Predicate morphology

D, like all other informants, produces more verb morphology than existential verb or copula morphology. Interestingly, he hardly ever produces verb negation in the form usually taught in Japanese instruction: 'V-masen'. Rather, he produces the plain form when negating: 'V-nai'. Most past tense forms of the copula, 'deshita', occur after adjectives, which is non-targetlike.

Table 4-211: Verb morphology in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
past pos	19	8	1	25	9
pres neg	2	4	1	/	/
pres plain	6	2	/	5	11
V-te S	2	1	/	/	8
V-te iru	/	1	1	2	3
V-te for other functions	/	1	2	/	2
past neg pl for past neg	/	/	/	1	/
pres neg pl for pres neg	/	/	/	/	3
past pos pl	/	/	/	/	1

Table 4-212: Existential verb morphology in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'aru' pres neg	1	/	/	/	/
'iru' past pos	/	1	/	2	1
'iru' pres neg	/	/	/	1	/
'ja nai' for exV pr neg	/	/	/	1	/

Table 4-213: Copula morphology in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
past pos	4	11	/	2	2
pr neg pl. for pr neg.	/	4	/	/	/
pr pos plain	/	/	/	/	3

4.3 Sentence structures

4.3.1 Elements in sentence-initial position

D uses the sentence-initial position for temporal and spatial information as well as for indicating the logical relationship between two sentences, and mostly for 'dewa', which does not carry any specific meaning, but makes the flow of sentences smoother. From session 5 on, 'soshite' - 'and' takes over the position from 'dewa'.

Table 4-214: Elements in sentence-initial position in D' Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
sent-initial	7	2	/	4	4
AdvP	3	17	/	5	13
'keredomo', 'demo'	3	5	/	10	6
'to'	3	/	/	1	/
'dewa'	2	13	/	/	/
'ga'	/	1	/	/	/
'dakara'	/	1	/	/	/
'soshite'	/	/	/	10	10
total	18	39	/	30	33

4.3.2 Elements in verb-preceding position

Table 4-215: Elements in verb-preceding position in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
"genuine" adverbs in S	/	2	/	/	/
adj-ku	/	/	/	/	/
quant exV	1	1	/	2	1
total	1	3	/	2	1

The utterance 'takusan arimasu', occurring in sessions 3, 5 and 6, is very similar to a noun-copula-construction and should not be used for arguing for the acquisition of a rule determining the interruption of the canonical word order by an adverb. Until the end of the data collection period, D has not acquired a rule allowing a non-nominal phrase in sentence-internal position.

4.3.3 Complex sentence structures

D produces coordinate and subordinate clauses, but never acquires relative clauses. He produces only one structure which has the function of a relative clause, but it is neither similar to relative clauses in TJ nor to any structure in his own data. There is a surprisingly high amount of serial sentences, i.e. **S -> XP V-te S**, in the data from session 6.

Table 4-216: Complex sentence structures in D's Sss. 2-6

	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
XP V-te S	2	1	1	1	8
'to' 'and' (coord)	2	/	1	/	/
'to' (subord)	1	/	1	/	1
'mae ni' (subord)	1	/	/	/	1
V-u for nominal. (subord)	/	1	/	2	/
'ga' (coord)	/	0	/	/	/
'to omou' (quot)	/	3	/	/	2
'hanashi' (quot)	/	2	/	/	1
V-te for nominal. (sub)	/	/	2	/	/
'kedo' (coord)	/	/	/	1	2
'V-u no aida ni' (subord)	/	/	/	1	1
'V-u no tame ni' (subord)	/	/	/	/	2
relativisation	1	/	/	/	/
total	7	7	5	5	18

D never produces more than two coordinate clauses in one interview. There are two ways of quotation in D's grammar: one structure contains 'X hanashi' - 'X says', with the quotation following with a finite verb. The other form says 'X to omotte imasu' - 'I think'. Only with 'to omou', the quoted contents precedes the main clause. Because there are only few instances of this structure, and because it must be assumed to be highly formalised, it is not regarded as subordination. 'aida ni' and 'tame ni' function as subordinating conjunctions in TJ. D connects the preceding subordinate clauses to these conjunctions with 'no', thereby having them behave like modifying nouns in an **N no N**-phrase. If quotations and **clause no clause**-structures are subtracted from the calculation, neither coordination nor subordination marked by "V-plain", nor relative clauses can be considered acquired. The only complex structure acquired is the serial sentence **S -> XP V-te S**.

PART 3

5. Summary and conclusion: The development of D's learner grammar

Summary

Like all other informants, D has acquired the canonical word order and the basic categories noun and verb by the time of session 1. The only complex structure in session 1 is the extended noun phrase containing a second noun and particle. In the following sessions, the complex structures he acquires are verb morphology, *det*-N-phrases, adverb-fronting and subordination.

Sentence structures

Table 4-217: Basic sentence structures and categories in D's Sss. 1-6

```
S  ->    (NP) NP    pred

NP    -> N
            N p

pred -> cop
           V
```

D extends these basic structures with sentence-initial elements and by subordinate clauses. He does not seem to acquire adverbs, i.e. he does not insert non-nominal elements into the canonical word order-structure. He does not acquire the skills to produce relative clauses either.

Table 4-218: Structures in D' s Sss. 1-6: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
SI	-	15	22	-	25	20
AdvP S	-	3	17	-	5	13
adv	-	1	3	-	2	1
coordinat	-	2	2	1	1	(3)
subordinat	-	-	1	1	2	2
XP V-te S	-	2	1	1	1	8
relativisat	1	-	-	-	-	-

D is the only informant who acquires the **XP V-te S**-structures without acquiring coordination.

Table 4-219: Acquired structures in D' s Sss. 1-6: Sentence structures

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
XP S	-	+	+	-	+	+
serial S	-	-	-	-	-	+

Noun phrases

D extends his noun phrase with nouns, demonstratives and quantifiers, but never with adjectives or nominal adjectives. There is no adjective morphology in D's data.

Table 4-220: Structures in D's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	2	18	8	1	12	16
N1 no N2	10	25	33	3	39	40
dem N	(5)	2	16	-	16	14
adj N	(3)	-	-	-	-	-
quant N	-	3	11	-	4	4
quant adj cop	-	3	11	-	11	10
NoAd	-	-	1	-	-	1

Table 4-221: Acquired structures in D's Sss. 1-6: Noun phrases

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N to N	+	+	+	-	+	+
N1 no N2	+	+	+	+	+	+
quant N	-	+	+	-	+	+
dem N	-	-	+	-	+	+

Predicate morphology

Table 4-222: Structures in D's Sss. 1-6: Predicate morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop	+	+	+	+	+	+
exV	-	5	2	1	8	1
V	+	+	+	+	+	+
V past pos	-	19	8	1	25	9
V pres neg	-	2	4	1	-	-
V pr plain	-	6	2	-	5	11
V-te iru	-	-	1	1	2	3
V-te; other functn	-	-	1	2	-	2
V pl past neg for past neg	-	-	-	-	1	-
V pl pr neg for pr neg	-	-	-	-	-	3
V plain past pos	-	-	-	-	-	1
'aru' pr neg	-	1	-	-	-	-
'iru' past pos	-	-	1	-	2	1
'iru' pr neg	-	-	-	-	1	-
exV pl pr neg	-	-	-	-	1	-
cop past pos	-	4	11	-	2	2
cop pl pr neg for pr neg	-	-	4	-	-	-
cop pl pres pos	-	-	-	-	-	3

Table 4-223: Acquired structures in D's Sss. 1-6: Predicate morphology

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop	+	+	+	+	+	+
V	+	+	+	+	+	+
V past pos	-	+	+	-	+	+
exV	-	+	-	-	+	-
cop past pos	-	+	+	-	-	-
V pres plain	-	+	-	-	+	+
V pres neg	-	-	+	-	-	-
cop pl pr neg for pr neg	-	-	+	-	-	-
V-te iru	-	-	-	-	-	+
V pl pr neg for pr neg	-	-	-	-	-	+
cop pl pres pos	-	-	-	-	-	+

D uses plain forms when negating a predicate. This is true for the copula, verbs and also existential verbs, even though the latter appear only in a small number. As opposed to all other informants, D marks the presentative not with the existential verb, but with the copula. The existential verb 'imasu' is only used in verb clusters, where aspect is marked. D produces these clusters only rarely. This might explain why there is no existential verb morphology produced in numbers high enough to mark it as acquired at any stage.

The following tables summarise all acquired structures shown above, so that the overall development becomes visible:

Table 4-224: Interlanguage grammar development in D's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP pred	+	+	+	+	+	+
NP NP pred	+	+	+	+	+	+
N to N	+	+	+	-	+	+
N1 no N2	+	+	+	+	+	+
XP S	-	+	+	-	+	+
quant	-	+	+	-	+	+
dem N	-	-	+	-	+	+
V past pos	-	+	+	-	+	+
cop pastpos	-	+	+	-	-	-
V pr plain	-	+	-	-	+	+
V pr neg	-	-	+	-	-	-
copplpr neg for pr neg	-	-	+	-	-	-
subordin	-	-	-	-	+	+
XP V-te S	-	-	-	-	-	+
V-te iru	-	-	-	-	-	+
V-te V	-	-	-	-	-	+
V pl pr neg for pr neg	-	-	-	-	-	+
cop plprpos	-	-	-	-	-	+

Table 4-225: Interlanguage grammar development in D's Sss. 1-6

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
S ->	(NP) NP cop (NP) NP V	(NP) NP cop (NP) NP V XP S exV	(NP) NP cop (NP) NP V XP S	(NP) NP cop (NP) NP V	(NP) NP cop (NP) NP V XP S exV	(NP) NP cop (NP) NP V XP S XP V-te S
NP ->	N N p N to N N no N	N N p N to N N no N quant N	N N p N to N N no N quant N dem N	N N p N no N	N N p N to N N no N quant N dem N	N N p N to N N no N quant N dem N
pred		V-affix cop-affix	V-affix cop-affix		V-affix	V-affix V-te iru
adj	-	-	-	-	-	-

As is evident from tables 4-222 and 4-223 above, D produces plain forms of verbs and copula only when negating. This should not be interpreted as multiple affixation, i.e. as plain form + negation marking, because the negation of the plain form seems to be the "unmarked" negation for D, as he produces no negation of the polite verb form.

The development of phrase structure rules, ordered according to the level, looks as follows:

Table 4-226: Development of sentence structure in D's Sss. 1-6

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP -> N p	+	+	+	+	+	+
NP NP	+	+	+	+	+	+
NP (NP) pred	+	+	+	+	+	+
XP S	-	+	+	-	+	+
XP V-te S	-	-	-	-	-	+

Table 4-227: Noun phrase development in D's Sss. 1-6

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
NP NP	+	+	+	+	+	+
quant N	-	+	+	-	+	+
dem N	-	-	+	-	+	+

In both sentence structure development and noun phrase development the implicational character is clearly visible, only interrupted by the poor data of session 4, and the lack of coordinate clauses, a phenomenon unique to D's data.

Table 4-228: Predicate morphology development in D's Sss. 1-6

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
pred-affix	-	+	+	-	+	+
V-te iru	-	-	-	-	-	+

Conclusion

It seems that D has acquired a smaller number of structures than any other informant. The order of acquisition seems, however, to be in line with the observations made on the other learners' data. There is only one exception: data did not show the acquisition of coordinate sentences. Because D acquires the serial sentence, this produces a gap in the assumed implicational hierarchy. The interpretation of data in the next chapter (ch. 5) will investigate this phenomenon. The well-known phenomenon of backsliding supports the assumption of this implicational hierarchy.

4.3 Summary

In the previous sections, data of a longitudinal study on five JSL learners have been analysed. The results are summarised in the following tables which provide an overview of the acquisition of structures on the levels of noun phrase, adjective phrase, predicate and sentence as well as an overview over the whole acquisition process in the learner grammars. Also, features of the language learning process that were evident in the analysis are presented.

In this section, several structures with similar underlying structures are summarised under identical tags:
- sentence structures are reduced to **NP NP** and **NP V**. That means that the difference between exV-sentences and verb sentences is no longer considered. This is justifiable because the difference is important with respect to semantics, but not syntax;
- **quant N-**, **dem N-** and **adj** N-phrases are summarised under **det N**, because they show the same behaviour in (semantically) modifying and (syntactically) directly preceding the noun;
- the description of the different sentence-preceding elements is summarised under **adverb fronting**;
- the description of verb, existential verb and copula morphology is reduced to **predicate affixation** and **multiple affixation**; and
- past tense and negation marking of the adjective is summarised under **adj-fin.**

First, the acquisition process is shown for sentence structures, phrase level structures and predicate morphology for each informant. Then the whole acquisition process is summarised, first for each informant and then in one table providing an overview of all data together. The summary presented in this chapter will serve as the basis for the definition of the sequence of acquisition in JSL and further conclusions about the development of learner language in the data interpretation chapter.

Acquisition of sentence structures

The numbers in the first row of the following tables mark the data collection session numbers. "J3", then, means "session 3 with informant J".

Table 4-229: Acquisition process of sentence structures in J's interlanguage grammar

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP NP	+	+	+	+	+	+
NP V	+	+	+	+	+	+
adv-fronting	-	+	+	+	+	+
coordination	-	+	+	+	+	+
adv	-	+	-	+	+	+
subordination	-	(?)	+	+	+	+
relativisation	-	-	+	+	-	-
XP V-te S	-	-	-	+	+	+

Table 4-230: Acquisition process of sentence structures in K's interlanguage grammar

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP NP	+	+	+	+	+	+
NP V	+	+	+	+	+	+
adv-fronting	-	-	-	+	+	+
coordination	-	-	-	-	-	+
subordination	-	-	-	-	-	+
adv	-	-	-	-	-	+

Table 4-231: Acquisition process of sentence structures in B's interlanguage grammar

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP NP	+	+	+	+	+	+
NP V	+	+	+	+	+	+
adv-fronting	-	+	+	+	+	+
coordination	-	+	+	-	-	+
subordination	-	-	+	+	-	+
relativisation	-	-	+	-	-	-
adv	-	-	-	+	-	+

Table 4-232: Acquisition process of sentence structures in M's interlanguage grammar

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
NP NP	+	+	+	+
NP V	+	+	+	+
adv-fronting	-	+	+	+
coordination	-	+	-	-

Table 4-233: Acquisition process of sentence structures in D's interlanguage grammar

S ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
NP NP	+	+	+	+	+	+
NP V	+	+	+	+	+	+
adv-fronting	-	+	+	-	+	+
XP V-te S	-	-	-	-	-	+

The following table summarises the information from tables 4-229 - 4-233. Bold lines mark successive interviews; data from the first data collection session are shown on top, those from the last session at the bottom:

Table 4-234: Overview of sentence structure development for all informants

M	D	K	B	J
NP NP	NP NP	NP NP	NP NP	NP NP
NP V	NP V	NP V	NP V	NP V
adv-fronting	adv-fronting	adv-fronting	adv-fronting	adv-fronting
coordination	XP V-te S	coordination	coordination	coordination
adv		subordination	subordination	adv
		adv	relativisation	subordination
			adv	relativisation
				XP V-te S

This table suggests a similar order of development of sentence structures in all learner languages. The development goes from copula sentence and canonical word order via topicalised elements to coordinate, subordinate and relative clauses and serial sentences. The comparison with the informants' language instruction material will show that although all these structures were taught in the first semester, they were acquired over a three-year period.

Acquisition of noun phrases

Table 4-235: Acquisition process of noun phrase structures in J's interlanguage grammar

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N p NP	+	+	+	+	+	+
N1 no N2	+	+	+	+	+	+
adj N	+	-	-	+	+	+
dem N	+	+	+	+	+	+
quant N	-	+	-	-	-	+
relativisat	-	-	+	+	-	-
adj-finite	-	-	+	-	+	+
adj-past	-	-	-	+	-	-

Table 4-236: Acquisition process of noun phrase structures in K's interlanguage grammar

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N p NP	+	+	+	+	+	+
N1 no N2	+	+	+	+	+	+
adj N	+	-	-	-	+	+
quant N	-	-	-	-	+	+
adj-neg	-	-	-	-	-	+
adj-past	-	-	-	-	-	+

Table 4-237: Acquisition process of noun phrase structures in B's interlanguage grammar

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N p NP	+	+	+	+	+	+
N1 no N2	+	+	+	+	+	+
adj N	+	+	-	-	-	-
quant N	-	+	-	+	+	+
relativisat	-	-	+	-	-	-
adj-past	-	-	-	-	-	+
adj-neg	-	-	-	-	-	+

Table 4-238: Acquisition process of noun phrase structures in M's interlanguage grammar

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
N p	+	+	+	+
N p NP	+	+	+	+
N1 no N2	-	+	+	+
adj N	-	+	+	-
quant N	-	+	+	-

Table 4-239: Acquisition process of noun phrase structures in D's interlanguage grammar

NP ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
N p	+	+	+	+	+	+
N to N	+	+	+	-	+	+
N1 no N2	+	+	+	+	+	+
quant N	-	+	+	-	+	+
dem N	-	-	+	-	+	+

Table 4-240: Overview of noun phrase development for all informants

D	M	B	K	J
N p	N p	N p	N p	N p
N p NP	N p NP	N p NP	N p NP	N p NP
N1 no N2	N1 no N2	N1 no N2	N1 no N2	N1 no N2
quant N	adj N	adj N	adj N	adj N
dem N	quant N	quant N	quant N	dem N
		relativisation	adj-fin	quant N
		adj-fin		relativisation
				adj-fin

Again, a similarity of development for the learner language of all informants is observable.

Acquisition of predicate morphology

Table 4-241: Acquisition process of predicate morphology in J's interlanguage grammar

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop pres pos	+	+	+	+	+	+
exV pres pos	+	.+	+	+	+	+
V pres pos	+	+	+	+	+	+
exV pres neg	+	-	+	-	+	-
V past pos	-	+	+	+	+	+
V pl pres pos	-	+	+	+	+	+
V-te iru	-	+	+	+	+	+
V-te V	-	-	+	+	+	+
V past plain pos	-	-	+	+	+	+
V past neg	-	-	+	-	-	-
V pres neg	-	-	-	+	+	-
exV pl pr neg	-	-	-	+	-	-
exV pl pr pos	-	-	-	-	-	+

Table 4-242: Acquisition process of predicate morphology in K's interlanguage grammar

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
'desu'	+	+	+	+	+	+
'imasu'	+	+	+	+	+	+
'arimasu'	+	+	+	+	+	+
V pres pos	+	+	+	+	+	+
V past pos	-	+	+	+	+	+
V pres neg	-	-	+	-	-	-
exV pres neg	-	-	+	-	-	-
V past neg	-	-	-	+	-	-
V-te iru	-	-	-	-	+	+
V pl pres pos	-	-	-	-	-	+
V pl past pos	-		-	-	-	+
exV plpr pos	-	-	-	-	-	+
exV plpr neg	-	-	-	-	-	+
cop past pos	-	-	-	-	-	+

Table 4-243: Acquisition process of predicate morphology in B's interlanguage grammar

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop	+	+	+	+	+	+
exV	+	+	+	+	+	+
V	+	+	+	+	+	+
V past pos	+	+	+	+	+	+
cop past pos	+	-	-	-	-	-
exV past pos	-	+	-	+	+	+
exV pres neg	-	+	+	-	-	-
V pres neg	-	-	+	+	-	-
V pl pres pos	-	-	+	-	-	+
V-te iru	-	-	+	+	-	+

Table 4-244: Acquisition process of predicate morphology in M's interlanguage grammar

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4
'desu'	+	+	+	+
'arimasu'	+	+	-	+
V pres pos	+	+	+	+
cop past pos	-	+	+	+
V past pos	-	+	+	+
V pres plain	-	+	-	-
'aru' past neg	-	+	-	-
V pres neg	-	-	+	-
V past neg	-	-	+	-
'aru' pres neg	-	-	+	-
V pl past pos	-	-	+	-
'iru' pres neg	-	-	-	+
V-te iru	-	-	-	+

Table 4-245: Acquisition process of predicate morphology in D's interlanguage grammar

pred ->	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
cop pres pos	+	+	+	+	+	+
V pres pos	+	+	+	+	+	+
exVpres pos	-	?	?	?	?	?
V past pos	-	+	+	-	+	+
cop past pos	-	+	+	-	-	-
V pres plain	-	+	-	-	+	+
'aru' past pos	-	+	-	-	-	-
V pres neg	-	-	+	-	-	-
cop pl pres neg for pres neg	-	-	+	-	-	-
V-te iru	-	-	-	-	-	+
V pl pres neg for pres neg	-	-	-	-	-	+
cop pl pres pos	-	-	-	-	-	+

Table 4-246: Overview of predicate morphology development for all informants

D	M	B	K	J
cop pres pos	'desu'	cop	'desu'	cop pres pos
V pres pos	'arimasu'	exV	'imasu'	exV pres pos
exV pres pos	V pres pos	V	'arimasu'	V pres pos
V past pos	cop past pos	V past pos	V pres pos	exV pres neg
cop past pos	V past pos	cop past pos	V past pos	V past pos
V pres plain	V pres plain	exV past pos	V pres neg	V pres plain pos
'aru' past pos	'aru' past neg	exV pres neg	exV pres neg	V-te iru
V pres neg	V pres neg	V pres neg	V past neg	V-te V
cop pl pres neg for pres neg	V past neg	V pl pres pos	V-te iru	V past plain pos
V-te iru	'aru' pres neg	V-te iru	V pl pres pos	V past neg
V pl pres neg for pres neg	V pl past pos		V pl past pos	V pres neg
cop pl pres pos	'iru' pres neg		exV pl pres pos	exV pl pres neg
	V-te iru		exV pl pres neg	exV pl pres pos
			cop past pos	

Developmental process of learner grammars

The following tables summarises the whole acquisition process for all informants. The description of predicate morphology is summarised in "predicate affixation (pred-affix)" for the marking of one function on the predicate, and in "multiple affixation (mult affix)" for the marking of two or more functions on a predicate. Brackets are used when a predicate occurs in the plain form and is marked with one additional function. As explained above, it is not clear whether for the informants, the plain form should be considered as morphology marking a specific function.

Table 4-247: Acquisition process in J's interlanguage grammar

	J1	J2	J3	J4	J5	J6
S -> NP NP	+	+	+	+	+	+
S -> NP V	+	+	+	+	+	+
NP -> N p	+	+	+	+	+	+
N p NP	+	+	+	+	+	+
pred-affix	+	+	+	+	+	+
N1 no N2	+	+	+	+	. +	+
det N	+	+	+	+	+	+
adv-fronting	-	+	+	+	+	+
adv	-	+	+	+	+	+
coordinatin	-	+	+	+	+	+
V-te V	-	+	+	+	+	-
subordinati	-	-	+	+	+	+
relativisat	-	-	+	+	-	-
adj-fin	-	-	+	-	+	+
muliple affixation	-	-	+	(+)	(+)	+
XP V-te S	-	-	-	+	+	+

Table 4-248: Acquisition process in K's interlanguage grammar

	K1	K2	K3	K4	K5	K6
S -> NP NP	+	+	+	+	+	+
S -> NP V	+	+	+	+	+	+
NP -> N p	+	+	+	+	+	+
N p NP	+	+	+	+	+	+
N1 no N2	+	+	+	+	+	+
det N	+	-	-	-	+	+
pred-affix	-	+	+	+	+	+
adv-fronting	-	-	-	+	+	+
multiple affixation	-	-	-	+	-	(+)
V-te V	-	-	-	-	+	+
coordinatio	-	-	-	-	-	+
subordinati	-	-	-	-	-	+
adv	-	-	-	-	-	+
adj-fin	-	-	-	-	-	+

Table 4-249: Acquisition process in B's interlanguage grammar

	B1	B2	B3	B4	B5	B6
S -> NP NP	+	+	+	+	+	+
S -> NP V	+	+	+	+	+	+
NP -> N p	+	+	+	+	+	+
pred-affix	+	+	+	+	+	+
N p NP	+	+	+	+	+	+
det N	+	+	-	+	+	+
N1 no N2	+	+	+	+	+	+
adv-fronting	-	+	+	+	+	+
coordinatio	-	+	+	-	-	+
subordinati	-	-	+	+	-	+
relativisat	-	-	+	-	-	-
adv	-	-	-	+	-	+

Table 4-250: Acquisition process in M's interlanguage grammar

	M1	M2	M3	M4
S -> NP NP	+	+	+	+
S -> NP V	+	+	+	+
NP -> N p	+	+	+	+
NP -> N p NP	+	+	+	+
N1 no N2	-	+	+	+
adv-fronting	-	+	+	+
pred-affixation	-	+	+	+
det N	-	+	+	-
coordination	-	+	-	-
multiple affix	-	+	+	-
V-te V	-	-	-	+
adv	-	-	-	+

Table 4-251: Acquisition process in D's interlanguage grammar

	D1	D2	D3	D4	D5	D6
S -> NP NP	+	+	+	+	+	+
S -> NP V	+	+	+	+	+	+
NP -> N p	+	+	+	+	+	+
N p NP	+	+	+	-	+	+
N1 no N2	+	+	+	+	+	+
adv-fronting	-	+	+	-	+	+
det N	-	+	+	-	+	+
pred-affix	-	+	+	-	+	+
(multiple affixation)	-	-	(+)	-	-	(+)
V-te V	-	-	-	-	-	+
XP V-te S	-	-	-	-	-	+

Table 4-252: Overview of order of acquisition for all informants

D	M	B	K	J
S -> NP NP	S -> NP NP	S -> NP NP	S -> NP NP	S -> NP NP
S -> NP V	S -> NP V	S -> NP V	S -> NP V	S -> NP V
NP -> N p	NP -> N p	NP -> N p	NP -> N p	NP -> N p
N p NP	NP -> N p NP	pred-affix	N p NP	N p NP
N1 no N2	N1 no N2	N p NP	N1 no N2	pred-affix
adv-fronting	adv-fronting	N1 no N2	det N	N1 no N2
det N	pred-affix	det N	pred-affix	det N
pred-affix	det N	adv-fronting	adv-fronting	adv-fronting
(multiple affix)	coordination	coordination	multiple affix	adv
V-te V	multiple affix	subordination	V-te V	coordination
XP V-te V	V-te V	relativisation	coordination	V-te V
	adv	V-te V	subordination	subordination
		adv	adv	relativisation
			adj-fin	adj-fin
				multiple affix
				XP V-te S

This table is the final summary of all informants' JSL acquisition. A regularity in the developmental process of all learners is obvious:

First, all learners establish the basic items of sentence structures and categories noun and verb before they acquire any forms of modification like adjectives or adverb phrases.

Acquisition of new structures takes place incrementally. The first step is to satisfy a pragmatic need like modification by using categories that have already been established. Only after a new sentence or phrase position is opened, a new category is created whose specific feature is this position (for determiners and sentence-initials).

It is generally evident that functions are marked unambiguously first. The one form - one function-relationship is dissolved only stepwise, as is clear in category annotations, where nouns and verbs have mutually exclusive features. Adjectives (including quantifiers), then, have features that overlap with those of nouns (as they both can build copula complements), but also have the unique feature of being directly head-preceding. The annotation of a lexical item for more than one categorial behaviour (like the finite adjective) is, if at all, only acquired late.

All this implies that there is a similar order of acquisition to all learners' interlanguage development, and that the acquired structures stand in an implicational relationship, i.e. one structure is only acquired when all earlier ones are acquired as well. The implicational relationship of structures is obvious not only with the order of acquisition, but also with the "loss" of structures. In some sessions, informants do not produce a structure that they have produced before. Interestingly, it is in most cases the structures acquired last that are not produced again. By this backsliding, the implicational relationship of the produced structures remains.

The similarity in the order of acquisition is remarkably strong. The next chapter will investigate and discuss this.

5. INTERPRETATION OF DATA ANALYSIS

5.1   Introduction

In this chapter, the findings from the data analysis in the previous chapter will be interpreted as to the dynamic and systematic aspects of interlanguage development. The first section (ch. 5.2) will deal with the order of acquisition: first with the acquisition of syntax, and then with the acquisition of morphology. In each section, the acquired grammatical structures will be described, the sequence of their acquisition will be derived from the data description, and the implicational relationship of structures will be demonstrated.

A comparison with the informants' language instruction material in Chapter 5.3 will show that the similar order of acquisition across all informants cannot be a result of the order of their instruction. Following this, there will be an examination of the relationship between instruction and acquisition: the potential effect of teaching on the acquisition process will be discussed with reference to relevant research conducted in recent years (e.g. Pienemann 1989, Long 1991), and after this potential consequences of the reported findings about the sequence of JSL acquisition for JSL teaching will be presented.

In Chapter 5.4 I will, in reference to Chapter 2.2 of this thesis, compare the developmental sequence of different types of acquisition. Parallels between first and second language acquisition will be pointed out, which again support the independence of the developmental process of various factors like type of acquisition and type of instruction.

5.2   Sequence of JSL acquisition

5.2.1 Sequence of syntax acquisition

Table 5-1 is a duplicate of table 4-252 from Chapter 4.5 above. It represents the summary of the data analysis in Chapter 4.5 by showing all grammatical structures acquired by the five informants throughout the study period. The structures are displayed in the order in which they were acquired by each individual learner in such a way so that the structures acquired earlier are positioned above those that were acquired later.

Table 5-1: Overview of structures acquired

D	M	B	K	J
S -> NP NP	S -> NP NP	S -> NP NP	S -> NP NP	S -> NP NP
S -> NP V	S -> NP V	S -> NP V	S -> NP V	S -> NP V
NP -> N p	NP -> N p	NP -> N p	NP -> N p	NP -> N p
NP -> N p NP	NP -> N p NP	*pred-affix*	NP -> N p NP	NP -> N p NP
NP -> N1 no N2 p	NP -> N1 no N2 p	NP -> N p NP	NP -> N1 no N2 p	*pred-affix*
NP -> det N p	NP -> det N p	NP -> N1 no N2 p	NP -> det N p	NP -> N1 no N2 p
adverb fronting	*pred-affix*	NP -> det N p	*pred-affix*	NP -> det N p
pred-affix	adverb fronting	adverb fronting	adverb fronting	adverb fronting
(multiple aff)	coordination	coordination	*multiple affix*	coordination
V -te V	*multiple affix*	subordination	*V-te V*	*V-te V*
serial sentence	*V-te V*	relativisation	coordination	subordination
		V-te V	subordination	relativisation
		finite adjective	*finite adjective*	*multiple affix*
				finite adjective
				serial sentence

Morphological structures are marked by italics in the table above. For reasons of clarity, syntactic and morphological structures are dealt with separately in the following analysis of the JSL acquisition process. The following table (table 5-2) displays only the syntactic structures that have been acquired by the informants during the three-year period of this study. They will be analysed first.

Table 5-2: Overview of syntactic structures acquired

D	M	B	K	J
S -> NP NP	S -> NP NP	S -> NP NP	S -> NP NP	S -> NP NP
S -> NP V	S -> NP V	S -> NP V	S -> NP V	S -> NP V
NP -> N p	NP -> N p	NP -> N p	NP -> N p	NP -> N p
NP -> N p NP	NP -> N p NP	NP -> N p NP	NP -> N p NP	NP -> N p NP
NP -> N1 no N2 p	NP -> N1 no N2 p	NP -> N1 no N2 p	NP -> N1 no N2 p	NP -> N1 no N2 p
NP -> det N p	NP -> det N p	NP -> det N p	NP -> det N p	NP -> det N p
adverb fronting	adverb fronting	adverb fronting	adverb fronting	adverb fronting
serial sentence	coordination	subordination	coordination	coordination
		relativisation	subordination	subordination
				relativisation
				serial sentence

It is evident from table 5-2 above that all informants have acquired syntactic structures in a similar order, and that the main difference is in the number of structures acquired. However, informants did not always acquire structures at the same point in time. Time and sequence of acquisition will be analysed for each informant below (table 5-3 - table 5-7).

Tables 5-1 and 5-2 above contain descriptions of structures which are basically labels. These names were established in the data analysis of Chapter 4. For convenience, a legend to these labels is provided now before further analysis is undertaken. The numbers of the structures will serve as future reference points.

Structure 1:   **NP -> N p**

> 1. *hito*   *wa*
>   person   (top-p)
>   *the person*

> 2. *Hito*   *desu.*
>   person   (cop)
>   *It is a person (TL) / There is a person (IL)*

The first structure which appears in early JSL interlanguage, and forms its smallest unit, is the noun phrase, which consists of a noun and a particle. As shown in the data analysis (ch. 4), interlanguage nouns and particles are a subset of target-Japanese (TJ)-nouns and TJ-particles. The choice of particle at this stage does not depend on the noun's case (as is the case in TJ). The copula can be analysed as a particle with the specific feature "sentence-final" at an early stage of acquisition, because it does not necessarily have the function of marking an equational sentence and the interpretation as an unagi-bun with a sentence-preceding topic is not appropriate here (see section 1.1 of all data analyses in ch. 4).

Structure 2:   S -> NP NP   equational sentence

3. *Hito   wa   onnanohito   desu.*
person   (top-p)   woman   (cop)
The person is a woman.

4. **Onna   wa   doresu   desu.*
woman   (top-p)   dress   (cop)
The woman wears a dress.

In target-Japanese, the complete equational sentence consists of a noun phrase (as above, structure 1), a copula complement and the copula. For early JSL interlanguage, however, a more general analysis may be appropriate. This is indicated in example sentence 4, above, which obviously does not have equational meaning, but generally marks a relationship between the first and the second noun described (for a detailed analysis of this, see ch. 4.2.1-1.1). In early JSL interlanguage, all copula complements behave in a structurally similar fashion to nouns - the category "adjective" does not yet exist - and the copula can be analysed as a particle with the feature '"sentence-final" (see above). Therefore, copula complement and copula form a second noun phrase, and the equational sentence can be analysed as a duplicated noun phrase.

Structure 3:   S -> NP (NP) V

5. *Hito   wa   tabemasu.*
person   (top-p)   eat
The person eats.

6. *Hito   wa   gohan   o   tabemasu.*
person   (top-p)   rice   (obj-p)   eat
The person eats rice.

The structure **NP NP V** describes canonical word order in TJ. When learners have established the noun phrase (structure 1) and also the verb, they combine both existing categories, noun and verb, in a target-like fashion in this canonical word order schema.

Structure 4:   NP -> N no/to N p

7. **doresu   no   onnanohito   wa*
dress   (poss-p)   woman   (top-p)
the woman of the dress (TL)/the dress of the woman (IL)

In target-Japanese, a noun phrase can contain two nouns, which are connected by 'to' - 'and' or 'no' - 'of'. The structure **N to/no N p** has the function of coordinating both nouns or modifying the second noun with the first, respectively, and represents a duplication of the basic noun phrase as in structure 1. With structure 4, learners do not apply a word order rule to the noun phrase, i.e. there is no fixed word order. Therefore modifying and modified element are recognisable on semantic, but not on structural grounds.

Structure 5:   **NP -> N1 no N2 p**

8. *onnanohito   no   doresu   wa*
   woman   (poss-p) dress   (top-p)
   the dress of the woman

Structure 5 is a duplicated noun phrase like structure 4, above; the difference is that here, modifying and modified elements are ordered consistently and in accordance with the branching direction of TJ.

Structure 6:   **NP -> det N p**

9. *akai / takusan / kono   kuruma wa*
   red   many   this   car   (top-p)
   a red / many / this car(s)

Structure 6 is a noun phrase (structure 1) containing an element from an additional category: namely, the determiner in the position directly preceding the noun. This structure is target-like. Determiners that occur in the data are, in terms of TJ, adjectives, quantifiers and demonstratives. The category of determiners is structurally defined by its unique feature, "directly noun-preceding".

Structure 7:   **adverb fronting**

10. *Kinoo   resutoran de   sushi   o   tabemashita.*
    yesterday restaurant (loc-p)   sushi   (obj-p) eat(-past)
    Yesterday I ate sushi in a restaurant.

Adverbial phrases have either the form of a simple noun phrase (structure 1) or a sentence-initial element like 'kinoo' (for a more detailed description, see ch. 4.2.1), and mark spatial or locative information or a causal, adversative, or other kind of relationship between the preceding and the current sentence. Adverbial phrases precede the canonical word order structure (structure 3).

Structure 8:   **coordination**

11. *Tanjoobi   desu   kara   circus   ni   ikimasu.*
    Birthday   (cop)   because circus   (loc-p) go
    Because it is (her) birthday, (they) go to the circus.

Coordinated sentences consist of two main clauses. The conjunction is in the final position of the first clause. In TJ, the clause with the conjunction always precedes the other clause. Some learners produce coordination with a flexible order of clauses before they produce them consistently; structure 8 is only considered acquired when its order of clauses has been acquired, because it is this that requires the acquisition of a new rule.

Structure 9:   subordination

12. *Nihon   ni   ita   toki ni takusan gohan   o   tabemashita.*
    Japan (loc-p) be-(past) when   much   rice (obj-p) eat-(past)
    I ate much rice when I was in Japan.

Structure 9 is constructed in a similar fashion to structure 8 (coordination); the difference between the two structures is that in structure 9, complementizers like 'toki ni' - 'when' or 'to' - 'when, if' demand subordination. In JSL-interlanguage as in TJ, subordination is marked by a specific verb inflection, the plain form. In target-Japanese, the marking of subordination is also marked by additional features.

Structure 10:   relativisation

13. *Rondon ni   sunde   iru   tomodachi wa*
    London (loc-p) live-(ser) (progr) friend   (top-p)
    the friend who lives in London

Relative clauses are part of the noun phrase and directly precede the head noun, like the determiners in structure 6. Subordination is marked with the plain verb form as in structure 9. There is no complementizer connecting a relative clause to its head. These features are target-like. No non-targetlike features were found to have been produced consistently.

Structure 11:   serial sentence

14. *Gakkoo ni   itte   benkyoo shimashita.*
    school (loc-p) go-(serial) study   do-(past)
    I went to school and studied.

In the serial sentence, two or more clauses are connected in order to describe successive or simultaneous actions. The subject is identical for all clauses of the serial sentence. It is either not mentioned at all or only mentioned in the first clause. The non-finite verb form **V-te** marks the subordination of all clauses except the last, which has a finite verb ending.

In Chapter 4, I analysed the occurrence of the above eleven structures in the interlanguage samples of all informants. Below, I will proceed to analyse the common developmental patterns in these samples. In Chapter 1, I presented the interlanguage concept that underlies this study. A basic assumption of this concept is the notion of a fixed order in the acquisition of grammatical structures. Corder (1967) was one of the first to describe the notion of interlanguage development, and studies such as Dulay and Burt (1973) suggest a universal order of acquisition for key grammatical phenomena (see ch. 1.2). Similarities in interlanguage development were found in different types of acquisition and different first languages. These findings gave rise to questions concerning similar patterns of development across different target languages, the reasons for these phenomena, and the effects of teaching on the course of language development.

DeCamp (1971), Bickerton (1975) and others developed tools for the description of language varieties within a dynamic paradigm, i.e. within a framework that takes the systematic relationship of language varieties into consideration. DeCamp (1971) applied Guttman's (1944) data analysis method of implicational scaling to linguistic data (see ch. 1.3.1).

Interlanguages can be understood as different linguistic varieties, and can be arranged in an implicational scale. Meisel, Clahsen and Pienemann (1981) have shown that cross-sectional samples can be arranged in such a way as to reflect the implicational nature of interlanguage rules. The implicational scale shows whether structures form an implicational hierarchy, and whether it is the same for all informants' interlanguages. Gaps in the implicational table indicate that a structure that had been previously acquired has not been produced at a later point in time, and determine the *scalability* of structures. A high scalability of cross-sectional data shows that informants have acquired the same structures in a similar order and that the implicational relationship of structures is the same across all informants.

Implicational scaling has been used for second language acquisition in studies like Hyltenstam's (1977) and incorporated in the Multidimensional Model (Meisel et al. 1981; see ch. 1.3). It is used in that model to order cross-sectional data and to determine developmental stages, namely for each structure that forms a step in the implicational hierarchy. This methodological approach has since been applied in many studies on interlanguage development, and will be used here for ordering the data from this JSL study. The notion of "stages", however, is currently associated with more specific cognitive models of language acquisition (e.g. Processability Theory). The term "stages" will therefore not be used here; we will simply describe a *sequence* in the acquisition of *structures*.

Data from all informants of the present study will be pooled in one implicational scale. The syntactic structures and their implicational relationship will first be analysed for each individual informant, before they are pooled in one table. Data from informant J form the basis for the first assumptions about an order of acquisition, because this informant produced the highest number of structures. The sequence of acquisition as found in J's data will then be checked against the sequences in the other learners' data. This will support the hypothesis about a universal order of acquisition in JSL. Note that in tables 5-3 to 5-7 below, numbers after informants' initials mark the number of the data collection session, i.e. J1 is the first session with informant J.

Table 5-3: Syntax acquisition in J's interlanguage grammar

	J1	J2	J3	J4	J5	J6
1. NP -> N p	+	+	+	+	+	+
2. S -> NP NP	+	+	+	+	+	+
3. S -> NP V	+	+	+	+	+	+
4. NP -> N p NP	+	+	+	+	+	+
5. NP -> N1noN2p	+	+	+	+	+	+
6. NP -> det N p	+	+	+	+	+	+
7. adverb fronting	-	+	+	+	+	+
8. coordination	-	+	+	+	+	+
9. subordination	-	-	+	+	+	+
10. relativisation	-	-	+	+	-	-
11. serial sent.	-	-	-	+	+	+

Table 5-3 above shows that informant J acquires structures 1-6 in session 1. J acquires structures 7 and 8, i.e. adverb fronting and coordination, by session 2. The structures of subordination and relativisation are acquired later still. It is not possible to infer a sequence of acquisition for all occurring structures from this, but we can see that structures 1-6 are acquired before structures 7 - 11 and that structures 7 and 8 are acquired before structure 9 - 11. The serial sentence is acquired in session 4, suggesting that it occurs later in the sequence of structures than all others. These first hypotheses about the order of acquisition can be depicted as follows:

$$\text{structures} \quad 1\text{-}6 \quad < \quad 7, 8 \quad < \quad 9, 10 \quad < \quad 11$$

Table 5-4: Syntax acquisition in K's interlanguage grammar

	K1	K2	K3	K4	K5	K6
1. S -> NP NP	+	+	+	+	+	+
2. S -> NP V	+	+	+	+	+	+
3. NP -> N p	+	+	+	+	+	+
4. NP -> N p NP	+	+	+	+	+	+
5. NP -> N1noN2p	+	+	+	+	+	+
6. NP -> det N p	+	-	-	-	+	+
7. adverb fronting	-	-	-	+	+	+
8. coordination	-	-	-	-	-	+
9. subordination	-	-	-	-	-	+

Informant K acquires six structures in the first data collection session. These are identical with the first six structures acquired by informant J. This confirms the assumption that structures 1-6 are acquired before all others.

In the data from sessions 2 and 3, backsliding can be observed: informant K does not produce structure 6. Structure 6 is the last structure that K had acquired in session 1. As it is not implied by any other structure, its omission does not cause an interruption of the implicational relationship of structures; in other words, the omission of structures adheres to the implicational relationship of structures just as their production does. From this perspective, backsliding is evidence, rather than

counterevidence, of the assumption of an implicational relationship of structures. So far, we have no evidence that structure 6 is indeed the last of the first six structures. However, data from informants M and D, below, will support this ordering of structures.

In sessions 4 and 5, K produces one further structure: adverb fronting. This suggests a sequence of structures 1-7 before structure 8. In session 6, K acquires coordination and subordination, i.e. structures 8 and 9, but neither relativisation nor the serial sentence. The following diagram illustrates the hypotheses about the sequence of JSL acquisition as inferred from J's and K's data:

str. 1-5 < 6 < 7 < 8 < 9 < 10 <11

Table 5-5: Syntax acquisition in B's interlanguage grammar

	B1	B2	B3	B4	B5	B6
1. S -> NP NP	+	+	+	+	+	+
2. S -> NP V	+	+	+	+	+	+
3. NP -> N p	+	+	+	+	+	+
4. NP -> N p NP	+	+	+	+	+	+
5. NP -> N1noN2p	+	+	+	+	+	+
6. NP -> det N p	+	+	-	+	+	+
7. adv fronting	-	+	+	+	+	+
8. coordination	-	+	+	-	-	+
9. subordination	-	-	+	+	-	+
10. relativisation	-	-	+	-	-	-

Table 5-5 shows that informant B acquires the same six structures as informants J and K by the time of the first data collection session. This confirms the sequence of the acquisition of structures 1 - 6 before 7 - 10. The acquisition of adverb fronting and coordination, i.e. structures 7 and 8, confirms the sequence of structures 1 - 8 before structures 9 - 10. In session 3, B acquires subordination and relativisation, i.e. structures 9 and 10. This confirms the sequence of relativisation before the serial sentence.

In sessions 4 and 5, we can again observe the phenomenon of backsliding. In session 4, B produces no relativisation, and in session 5 she produces neither relativisation nor subordination or coordination. This backsliding clearly follows the sequence of acquisition and supports the assumption of an implicational relationship of these structures. B's backsliding provides a further confirmation of the sequence of structure 9 before 10 and structures 7 and 8 before 9. The diagram illustrating the sequence of acquisition does not need to be changed in any way.

Table 5-6: Syntax acquisition in M's interlanguage grammar

	M1	M2	M3	M4
1. S -> NP NP	+	+	+	+
2. S -> NP V	+	+	+	+
3. NP -> N p	+	+	+	+
4. NP -> N p NP	+	+	+	+
5. NP -> N1noN2p	-	+	+	+
6. NP -> det N p	-	+	+	-
7. adverb fronting	-	+	+	+
8. coordination	-	+	-	-

Informant M acquires structures 1 - 4 by the time of the first data collection session, but not structures 5 and 6, i.e. M acquires structures 1-4 earlier than structures 5 - 8. By session 2, M acquires structures 5, 6, 7 and 8, confirming the sequence of structure 1 - 8 before structures 9, 10 and 11.

In M's data, too, we observe backsliding. It concerns the last structure acquired (coordination), and so confirms the notion of an implicational relationship between structures 1 - 7 and structure 8. There is a "gap" in the implication in the data, because M does not produce enough noun phrases with a determiner in session 4 for them to be considered "acquired" for that session and marked with "+". An omission of the same structure occurs in B's data. We can insert one more step in the diagram illustrating the sequence of acquisition:

$$\text{str. 1-4} \quad < \quad 5 \quad < \quad 6 \quad < \quad 7 \quad < \quad 8 \quad < \quad 9 \quad < \quad 10 < \quad 11$$

Table 5-7: Syntax acquisition in D's interlanguage grammar

	D1	D2	D3	D4	D5	D6
1. S -> NP NP	+	+	+	+	+	+
2. S -> NP V	+	+	+	+	+	+
3. NP -> N p	+	+	+	+	+	+
4. NP -> N p NP	+	+	+	+	+	+
5. NP -> N1noN2p	+	+	+	+	+	+
6. NP -> det N p	-	+	+	-	+	+
7. adverb fronting	-	+	+	-	+	+
8. coordination	-	-	-	-	-	-
9. subordination	-	-	-	-	-	-
10. relativisation	-	-	-	-	-	-
11. serial sent.	-	-	-	-	-	+

Informant D acquires structures 1 - 5 by the time of the first session. In sessions 2 and 3, D produces structures 6 and 7 as well. This confirms the sequence of acquisition as described so far. The backsliding that can be observed in D's data also strengthens the assumption of an implicational hierarchy. It confirms the sequence of structures 5 and 6. The diagram displaying the sequence of acquisition as shown above does not need to be changed any further.

In session 6, informant D produces serial sentences, although there are no data that indicate that he has acquired coordination, subordination or relativisation. This finding is at odds with the data from the informants analysed above. At this point it is impossible to define the place in the sequence of acquisition where the serial sentence should be, or to explain the contradictory findings.

As stated above, one of the important notions related to the concept of interlanguage is that its structures form an implicational hierarchy. Tables 5-8 and 5-9 on the next page show the implicational hierarchy of the structures that were acquired by the informants of this study. In table 5-8, data are ordered according to their relative time of production in such a way that for each informant, data from any session stand on the left of the data from all sessions conducted later.

The phenomenon of backsliding occurs in all data from all informants, as shown above. In the majority of cases it is the structures that were acquired last that are not produced again, so that the implicational hierarchy is not interrupted. Therefore in table 5-9, data are pooled not according to their relative time of production, but according to the amount of structures that were produced, i.e. according to the point reached in the implicational hierarchy.

Table 5-9 demonstrates that there are only very few gaps in the table, and thereby illustrates the cumulative nature of interlanguage development. We can also observe a "stair pattern" that emerges at the bottom line of the acquired structures. There is a new "step" for each structure, which indicates that no two structures are acquired at the same point in time, and that they are not interchangeable. From this we can conclude that there are no structures that are not part of the implicational relationship or the sequence of acquisition.

There are only nine "gaps" in tables 5-8 and 5-9; that is, in only nine cases did an informant not produce a structure that is implied by another one that s/he produced in the same session. The inconclusive findings concerning the time of acquisition of the serial sentence are evident from the gaps; three out of the nine gaps are due to the incongruent occurrence of the serial sentence. The scalability of structures in table 5-9 is 95.8%, and would be even higher if we changed the order of relativisation and the serial sentence in the table. The high scalability clearly demonstrates an implicational relationship of the acquired structures.

Table 5-8: JSL syntax acquisition process of all informants, according to time of acquisition

Structure	M	D	K	K	K	B	J	D	M	M	D	D	M	K	K	D	D	J	B	B	B	B	B	K	J	J	J	J
	1	1	1	2	3	1	1	2	2	3	3	4	4	4	5	5	6	2	2	3	4	5	6	6	3	4	5	6
NP -> N p	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
S -> NP NP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
S -> NP V	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NP -> N p NP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NP -> N1noN2 p		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NP -> det N			+			+	+	+	+	+	+	+	-	-	+	+	+	+	+	-	+	+	+	+	+	+	+	+
adverb fronting									+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+
coordination									+							-	-	+	+	+	+		+	+	+	+	+	+
subordination																-	-			+	+		+	+	+	+	+	+
relativisation																				+		+	+	+	-	+	-	-
serial sentence																	+											+

Table 5-9: JSL syntax acquisition process of all informants, according to implication of structures

Structure	M	D	K	K	D	K	B	J	M	D	M	D	K	K	D	B	M	J	B	B	K	B	B	D	J	J	J	J
	1	1	2	3	4	1	1	1	4	2	3	3	4	5	5	5	2	2	2	4	6	6	3	6	5	3	6	4
NP -> N p	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
S -> NP NP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
S -> NP V	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NP -> N p NP	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NP -> N1noN2 p		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
NP -> det N					+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+
adverb fronting					+				+		+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+
coordination															-		+	+	+	+	+	+	+	-	+	+	+	+
subordination															-					+	+	+	+	-	+	+	+	+
relativisation																+					+	+	+	-	-	-	-	+
serial sentence																								+				+

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On the basis of tables 5-8 and 5-9, it is possible to deduce the following sequence for the acquisition of JSL syntax. The first four structures are summarised under "step 1", because they were all acquired by the time of the first data collection session, i.e. there are no data to indicate their relative time of acquisition, and we should therefore treat them as one "step" of the "stair pattern".

Table 5-10: Sequence of JSL syntax acquisition

step 1	NP -> N p
(structures 1-4)	S -> NP NP
	S -> NP V
	NP -> N p NP
structure 2	NP -> N1 no N2 p
structure 3	NP -> det N p
structure 4	adverb fronting
structure 5	coordination
structure 6	subordination
structure 7	relativisation
structure 8	serial sentence

5.2.2 Acquisition of JSL morphology

In the last section, we were concerned with the acquisition of syntax. The duplicate of table 4-252 summarised all structures that were acquired by the informants. Then the syntactic structures and their acquisition were examined. Table 5-11 below displays the morphological structures acquired by the informants. Again, the table is ordered in such a way that the structures acquired earlier are positioned above those that were acquired later.

Table 5-11: Overview of morphological structures acquired

D	M	B	K	J
pred-affix	pred-affix	pred-affix	pred-affix	pred-affix
V-te V	multiple affixation	V-te V	multiple affixation	V-te V
	V-te V	finite adjective	V-te V	multiple affixation
			finite adjective	finite adjective

The structure of this section is identical to the previous one, where the sequence of syntax acquisition was examined. First, a short overview will remind the reader of the structures represented by the abbreviations in table 5-11. Then, each informant's data will be examined as to the order of acquisition that can be inferred from them, and the implicational relationships of structures will be tested.

Structure 1:   **pred-affix**

> 15. *Gakkoo   ni   ikimashita.*
> school   (loc-p)   go(-past)
> *I went to school.*

> 16. *Gakkoo   ni   ikimasen.*
> school   (loc-p)   go(-neg)
> *I don't go to school.*

As TJ is agglutinative, it is possible to attach several suffixes to the verb, each marking one function, for instance, tense or negation:

> *"... inflectional endings are fairly clearly segmentable, and the segmented endings (or suffixes) are correlated with inflectional categories in a one-to-one fashion, rather than in the one-to-many correlation characteristic of the inflectional morphology."*
> (Shibatani 1990, 221)

The label "pred-affix" describes predicates (verbs, existential verbs, copula) with only one suffix. In the data, these are usually the past tense or the negation marker. The label "pred-affix" is used in opposition to "multiple suffixation". The affixation of only one suffix is target-like, in TJ occurring together with multiple suffixation where functionally necessary.

Structure 2:   **multiple affix**

> 17. *Gakkoo   ni   ikimasendeshita.*
> school   (loc-p)   go-(neg)-(past)
> *I did not go to school.*

The label "multiple affix" refers to the marking of two or more functions on the verb. In the JSL data for this study, the first functions marked together are usually past tense and negation, as shown in example sentence 17 above.

The plain form of the verb, marked by '-u', should be mentioned here: in language classes, informants were taught the polite verb form with '-masu' earlier than the plain form. It was not unambiguously clear whether the plain form of a verb, i.e. **V-stem+plain form**, should be analysed as an inflection. I decided against this, because with the plain form, learners seemed rather to have established another verb stem than to have inflected the existing one. The structure
V-stem+plain form+one suffix (e.g. negation) is therefore considered one affixation and not multiple affixation,. This approach also makes the data more consistent.[13]

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[13] A more detailed analysis of the processing of verb morphology is necessary. S. Kawaguchi has already started research on the processing and the acquisition of JSL morphology.

Structure 3:   **V-te V**

> 18.   *Hito   ga   tabete   imasu.*
>   person   (subj-p)   eat-(serial)   ex-V
>   *The person is eating.*

Verbs can be marked for seriality and non-finiteness by the suffix '-te', which Shibatani (1990, 224) describes as a particle. It attaches itself to an inflected verb stem. The second, finite verb either indicates an action performed after the one described in the first verb, or has aspectual meaning. In example sentence 18 above, the existential verb marks progressiveness. This **V-te**-form is the same that is used in the syntax structure 11, the serial sentence.

Structure 4:   **finite adjective**

> 19.   *Otenki   ga   yokatta   desu.*
>   weather   (subj-p)   good-(past)   (cop)
>   *The weather was good.*

In TJ, adjectives are inflected like verbs (Shibatani 1990), and are thereby finite and function as predicates. Affixes marking tense and negation are identical for plain verbs and adjectives. The marking of adjectives for seriality (as in structure 3, above) and for adverbiality with the ending -ku, which is all part of the inflectional paradigm of the adjective in TJ, does not occur in the data.

The following tables show the acquisition of morphology for each informant. Again, the question of whether an order of acquisition can be inferred from the findings will be tested.

Table 5-12: Acquisition of morphology in J's interlanguage grammar

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
1. pred- aff	+	+	+	+	+	+
2. V-te V	-	+	+	+	+	+
3. multiple aff	-	-	+	-	-	+
4. finite adjective	-	-	+	-	+	+

Table 5-12 above shows that J acquires the predicate affixation before all other types of verb morphology. Next, J acquires the complex verb **V-te V**. Multiple affixation and the finite adjective follow in session 3. The data from the other informants will test whether this sequence of acquisition is generalisable as suggested. The sequence of acquisition can be depicted as follows:

structures 1 < 2 < 3, 4

Table 5-13: Acquisition of morphology in K's interlanguage grammar

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
1. pred- aff	-	+	+	+	+	+
2. V-te V	-	-	-	-	+	+
3. multiple aff	-	-	-	+	-	-
4. finite adjective	-	-	-	-	-	+

K acquires the affixation of the predicate by the time of session 2. Unlike J, she acquires **V-te V** before multiple affixation. This may suggest that multiple affixation and the **V-te V**-structure are not in an implicational relationship, so that they do not need to be acquired in a specific order. The acquisition of the finite adjective after the acquisition of structures 1, 2, and 3 is confirmed. The observations in Table 5-13 therefore support the following sequence:

structures 1 < 2 , 3 < 4

Table 5-14: Acquisition of morphology in informant B's interlanguage grammar

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
1. pred- aff	+	+	+	+	+	+
2. V-te V	-	-	+	+	-	+
3. multiple aff	-	-	-	-	-	-
4. finite adjective	-	-	-	-	-	+

B's data again confirm that structure 1, predicate suffixation, is acquired earlier than all others. Structure 3, multiple affixation, is not produced at all, which again suggests that there may be no implicational relationship between structure 3 and the other structures. Like informants J and K, B acquires the finite adjective by the time of session 6. No information can be added to our diagram depicting the sequence of acquisition.

Table 5-15: Acquisition of morphology in M's interlanguage grammar

	Sss. 1	Sss. 2	Sss. 3	Sss. 4
1. pred- aff	-	+	+	+
2. V-te V	-	-	-	+
3. multiple aff	-	+	+	-
4. finite adjective	-	-	-	-

M acquires "single" and multiple affixation together by session 2, which is different from the stepwise acquisition of all other learners. Like K, M produces multiple affixation earlier than the serial verb **V-te V**. She never produces finite adjectives. The sequence of predicate affixation before and finite adjective after structures 2 and 3 is confirmed, but for structure 2 and 3 themselves there does not seem to be a fixed sequence of acquisition. D's data, in table 5-16 below, again confirm the sequence of predicate affixation occurring before all others:

Table 5-16: Acquisition of morphology in informant D's interlanguage grammar

	Sss. 1	Sss. 2	Sss. 3	Sss. 4	Sss. 5	Sss. 6
1. pred- aff	-	+	+	-	+	+
2. V-te V	-	-	-	-	-	+
3. multiple aff	-	-	-	-	-	-
4. finite adjective	-	-	-	-	-	-

Table 5-12 - table 5-16 above strongly suggest that predicate affixation with one suffix is acquired before all other morphology, and that the marking of the adjective for finiteness is acquired last. There is, however, no unambiguous evidence for the order of acquisition for structures 2 and 3, i.e. **V-te V** and multiple affixation. Data about the relative time of acquisition of these structures are inconsistent: informant J has acquired **V-te V** earlier than multiple affixation, but informants K and M acquired multiple affixation before **V-te V**. Informant B acquired **V-te V**, but no multiple affixation at all. It seems that no sequence of acquisition can be inferred for structures 2 and 3. It also seems that there is no implicational relationship existing between all structures involved, as is the case in syntax acquisition. In all data, structure 4 is acquired when either structure 2 or structure 3 is acquired; however, in terms of implicational relationships, structures 2 and 3 seem interchangeable.

Tables 5-17 - to 5-20, below, illustrate the implication of JSL morphology. In table 5-18, data are arranged according to the time of production for each informant. Many gaps are observable in the rows for structures 2 and 3. Tables 5-18 and 5-19 then show the implication for the sequence *structures 1 - 2 - 3 - 4* and for the sequence *structures 1 - 3 - 2 - 4*, respectively. When structures are arranged in such a way that **V-te V** precedes multiple affixation, scalability is 86.8%. When structures are arranged in such a way that multiple affixation precedes **V-te V**, then the scalability of structures is 82.1%. It is not possible to infer an order of structures 2 and 3 from the data; on the contrary, it seems that their order of acquisition is arbitrary and that their relationship is not implicational. Table 5-20 is therefore arranged with the assumption that structures 2 and 3 are interchangeable in regard to their implicational relationship. If we assume that structures 2 and 3 are interchangeable, then the scalability is one hundred per cent.

Table 5-17: JSL morphology acquisition of all informants, according to time of acquisition

	K 1	M 1	D 1	D 2	D 3	B 1	J 1	K 2	K 3	B 2	D 4	D 5	J 2	B 3	B 4	B 5	M 2	M 3	K 4	K 5	M 4	B 6	K 6	J 3	J 4	J 5	J 6
1. pred-morph			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2. V-te V						+	+	+	+	+	+	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	+
3. multiple affix									+							+	+	+	+		+	-	+	+	+	-	-
4. finite adjective												+										+	+	+	-	+	+

Table 5-18: JSL morphology acquisition process of all informants, according to sequence *V-te V before multiple affixation*

	K 1	M 1	D 4	D 2	D 3	B 1	J 1	K 2	K 3	B 2	B 5	D 5	B 4	K 4	J 3	M 3	D 6	B 3	J 2	M 4	K 5	B 6	K 6	J 4	J 5	J 3
1. pred-morph			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2. V-te V						+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	-	-	+	-	+
3. multiple affix											+				+				+	+	+	+	+	-	-	+
4. finite adjective																					+	+	+	+	+	+

Table 5-19: JSL morphology acquisition process of all informants, according to sequence *multiple affixation before V-te V*

	K 1	M 1	D 4	D 2	D 3	B 1	J 1	K 2	K 3	B 2	B 5	D 5	B 4	K 4	M 2	M 3	M 4	J 2	B 3	M 5	K 5	B 6	K 6	J 4	J 5	J 3
1. pred-morph			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3. multiple affix											+				-	-	+		-	+	-	-	+	-	-	+
2. V-te V						+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+
4. finite adjective																					+	+	+	+	+	+

Table 5-20: JSL morphology acquisition process of all informants, according to implication of structures: 1 - 2 + 3 - 4

	K 1	M 1	D 4	D 2	D 3	B 1	J 1	K 2	K 3	B 2	B 5	D 5	B 4	K 4	M 2	M 3	M 4	J 2	B 3	M 5	K 5	B 6	K 6	J 4	J 5	J 3
1. pred-morph			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2.+3. V-te V, m a						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4. finite adjective																					+	+	+	+	+	+

From table 5-17 - table 5-20 we can now conclude the following sequence in the acquisition of JSL morphology:

Table 5-21: Sequence of JSL morphology acquisition

structure 1	predicate affixation
structure 2+3	multiple affix OR *V-te V*
structure 4	finite adjective

This sequence of acquisition seems much less interesting than the sequence of syntax acquisition presented in the last section, because it is intuitively logical that a learner has to be able to produce one predicate affix before s/he can produce several affixes. It also seems clear that a learner will of course acquire verb inflection, before s/he will be able to apply this inflection to another category, the adjective, especially because this category is "usually" (i.e. in the learners' first language and also typologically) not inflectable.

The interesting aspect of the sequence of morphology acquisition seems not to be the findings, but rather the phenomena that could not be found in the data: many inflections, like the inflection of the adjective for adverbiality, are produced only by a few informants or never at all. Informants produce only little aspect marking and no passive and causative morphology. The production of multiple affixation seems to be "difficult" for the learners, as they go through a phase of multiple affixation without a fixed order of morphemes before they can produce it consistently.

There is also a big time gap between the teaching and "learning" of the different forms of morphology, and their production by the informants. The temporal connection of instruction and production of structures will be examined and discussed in the next section.

5.3   Effect of instruction

5.3.1 Comparison of order of JSL instruction and JSL acquisition

It has been demonstrated above that all informants acquired basic syntactic and morphological JSL structures in a fixed order. The ordering of the structures that were acquired in the same sequence by all informants in an implicational scale showed a high scalability of structures, in syntax even more so than in morphology.

The logical next step in the data interpretation is now to investigate the reasons for these findings. An explanation for the similar acquisition pattern which would suggest itself is the fact that all informants underwent the same language instruction. With similar language instruction experience, they had an almost identical input. If we were to test this possibility and find that the order of acquisition is identical to the order of teaching, then that would considerably weaken the assumption of a creative construction process as an influential factor in language acquisition. In this section, the possibility that instruction is an influential factor in the course of interlanguage development is tested by a comparison of the order of acquisition and the order of instruction. This will be done for syntax acquisition first and then for the acquisition of morphology.

Chapter 3.2.2 gave a complete list of the structures that were taught in the informants' language classes. Table 5-22 below provides an overview of those syntactic and morphological structures from the language instruction material that were acquired by the informants; this is presented in the column on the left, while the right-hand column shows the time at which these structures were taught.

Table 5-22: Time of instruction for syntactic structures

structure number	JSL-structure	lesson in language teaching material
step 1-1	S -> NP NP -> N p	L. 2
step 1-2	S -> N p N cop	L. 3
step 1-3	S -> (NP) NP V	L. 2
step 1-4	NP -> N p NP	L. 3 (attributive), L. 4 (locative)
2	NP -> N1 no N2 p	L. 3, 4 (see line above)
3	NP -> det N p	L. 5
4	adverb fronting	L. 2
5	coordination	L. 7
6	subordination	L. 10
7	relativisation	L. 8
8	serial sentence	L. 7

In table 5-23 below, which contains the same information as table 5-22 above, the lessons of the language material are ordered not according to their time of acquisition, but to their time of instruction. Thereby the temporal mismatch of instruction and production is illustrated more clearly. For reasons of clarity, the noun phrase N p N p has been removed from table 5-23, as has the repetition of L. 3, 4:

Table 5-23: Temporal relationship of instruction and production for syntactic structures in JSL acquisition

structure number	JSL-structure	lesson in language teaching material
step 1	S -> NP / NP -> N p	NP -> N p (L. 2)
step 1	S -> N p N cop	S -> (NP) NP V (L. 2)
step 1	S -> (NP) NP V	adverb fronting (L. 2)
2	NP -> N1 no N2 p	N p N cop (L. 3)
3	NP -> det N p	NP -> N1 no N2 p (L. 3, 4)
4	adverb fronting	NP -> det N p (L. 5)
5	coordination	coordination (L. 7)
6	subordination	serial sentence (L. 7)
7	relativisation	relativisation (L. 8)
8	serial sentence	subordination (L. 10)

Several important facts can be derived from table 5-23 above: First, it is important to note that lesson 10 was the last lesson taught in the first semester of instruction. That means that learners did not acquire production skills for any structures that were taught after the first three months of instruction.

Second, in spite of the structures being taught within a narrow time frame, they developed in the learners' interlanguage over a three-year period. Learners obviously did not start to produce structures when they were taught, but mostly much later.

Another important insight that we can gain from table 5-23 above concerns the sequence in which acquisition takes place. It is clearly visible that learners did not start to produce structures in the order in which they were taught.

The independence of time of instruction and time of acquisition strongly suggests that the creative construction process and the inherent systematicity of interlanguage development override instruction. We should now look at the differences in time and order between instruction and acquisition in more detail in order to substantiate this claim.

First, although all occurring structures were taught within the first three months of instruction, learners acquired them over a three-year period. The structures which were taught later, and which were not acquired by the informants, include potential verbs, passives, causatives, suffixes like **V-soo** ("seeming to be about to do V"), honorific expressions, and sentence-final particles. Informants also only acquired very few conjunctions and complementizers and never used the verb stem as a connective. An easy explanation for the non-acquisition of semester 2-structures could be "bad teaching" in the second semester, but considering the finding that semester 1-structures were acquired over a relatively long period of time, this explanation is definitely not sufficient.

The time gap between instruction and production seems especially big with adverb fronting, relativisation and the serial sentence. No informant produced adverb fronting before session 2, although it appears in the first sentence structure that is taught. Subordination was not produced before session 3 (by two learners), and often even later (by another two learners). The serial sentence was acquired by only two learners; learner J produced it first in session 4, and learner D in session 6. Learner D's data are inconsistent with other learners' data in regard to the serial sentence, because D is the only informant who acquired the serial sentence before the other complex structures.

There were also structures which were taught in the first semester, but which were never produced by any informant. Those are, among others, the ko-so-a-do-system for demonstratives. Informants seemed to prefer to rely on the repetition of a full noun rather than on the pronominal system for reference. Kawaguchi (1996) observes that this avoidance strategy is observable in most JSL learners, and that a systematic acquisition process of referential forms underlies this phenomenon.

The sentence-final particles 'ne' and 'yo' are taught in lesson 2; however, informants never produced them. This may be due to the fact that these particles are discourse-phenomena and that learners did not have enough discourse experience to acquire knowledge about the functions of these particles. Verb suffices like 'n desu' or 'hazu desu', classifiers, interrogatives + '-ka' and sentence-internal adverbs were never or hardly ever produced as well.

Perhaps the most interesting structure is the inflectional paradigm of adjectives and nominal adjectives (marking of tense, negation, adverbial function), because informants *partially* acquired it. In the language teaching material, adjectives and nominal adjectives were introduced together with the entire inflectional paradigm for the adjective and with the different particles for the nominal adjective in its different structural environment in lesson 5. It is interesting to observe that learners acquired the **det-N**-phrase relatively soon after instruction, but never **noAd na** N-phrases, and further adjective morphology only after a period of time and only for tense marking.

The authors of the textbook may have assumed that a clear presentation of the different structures will help the learner to develop an overview of the different forms and functions and s/he will therefore not become confused. However, it seems that at an early stage, learners acquire only one structural feature of the adjective, its noun-preceding position. The acquisition of its inflectional paradigm would require the existence of the notion of tense, negation and adverbs in the interlanguage system, the ability to mark them, and the ability to use the same lexical item for different structural functions (i.e. adjective, adverb, finite predicate). The production of the nominal adjective relies on the ability to mark the same function - noun modification - by different forms (adjectives and nominal adjectives). If these skills have not been acquired by a learner, s/he will not be able to acquire the inflectional paradigms of the different adjectives. Therefore it seems that the presentation of an inflectional paradigm does not lead to instantaneous acquisition; the same may be true for paradigms of other grammatical structures such as verb inflection or case marking.

It should be noted here that all claims are made in regard to oral production data. This study does not focus on the acquisition of, for example, reading skills. For those skills, the presentation of an entire inflectional paradigm at one single point in time may indeed be helpful. We can only state about oral production that learners do obviously acquire structures not according to the logic of a well-presented descriptive grammar, but according to the systematicity of interlanguage development.

The comparison of the *relative* time of instruction and production also provides interesting insights. On a large scale, the orders of instruction and acquisition seem to be similar; in both cases, main clauses occur before the different types of coordinate and subordinate clauses. Within the blocks of "main clauses" and "complex sentences", however, there are major differences.

The first observation is with regard to the equational sentence. In the language teaching material, the copula sentence is only introduced in lesson 3. Lesson 1 contains formulae and verbs in present and past tense, and lesson 2 introduces the canonical word order schema, which in its minimal form occurs only with a verb and in its maximal form has a prepositional phrase, indirect object phrase, direct object phrase and verb. The minimal form, verb-only sentences, are correct, as Japanese is a pro-drop language. The early introduction of the verb makes sense if one assumes that learners want to be able to express as much semantic content as possible in as short a time as possible. However, the order of interlanguage development seems to be different again. All learners had acquired both copula and verb sentences by the time of the first data collection session, but they produced many more copula sentences than verb sentences, and the number of different verbs was very small. Data suggest that learners acquire the copula sentence before the verb sentence. This presumably has several reasons, based on semantic as well as on structural grounds:

First, the noun-copula-structure has the form of a noun phrase, because the (uninflected) copula has structural features that are identical to those of particles (see ch. 4.2 for a detailed discussion of this). That means that for the equational sentence, learners do not have to combine two different categories, as is the case in the verb sentence. Such a combination requires the establishment of rules about word order and phrase boundary markers which may not have taken place at an early point in the acquisition process. Also, the equational sentence provides the possibility to cover many more types of relationships between two nouns than verbs can. It is exactly because the meaning of the copula is so "weak" and unspecified, that it can be used much more widely than verbs, which denote very specific meanings. A good example for this is a sentence by informant M, which was already quoted before: 'Onnanohito wa doresu desu' - 'The woman is a dress'. Obviously, M wants to say that the woman wears a dress, and makes up for the lack of the appropriate verb with the use of the copula, whose function it is merely to indicate a relationship between the two nouns. From this perspective, the use of the copula is much more economical than the production of verb sentences in the interlanguage.

Another major difference between instruction and acquisition order concerns the fronting of the adverb. It is taught very early, presumably because here a simple structure seems to provide a high degree of communicative value and versatility. However, learners acquire the ability to place an adverb in front of a canonical word order sentence astonishingly late; more specifically, after the establishment of basic word order and "adjective fronting" on the noun phrase level. The reasons for this may lie in the order in which processing prerequisites are acquired: Processability Theory (see ch. 1.4.2) presents a description of sentence production in which phrase level structures are produced before sentence level structures. This could explain why the sentence-level structure "adverb fronting" is acquired only after the adjective-noun-phrase. However, as we are focussing here on the description of interlanguage development, this explanatory approach will be left unexplored for now.

A third difference that should be mentioned here concerns the times of instruction and acquisition of subordination and relativisation. The reader will remember that the term "subordination" in the data analysis (ch. 4) describes the subordination of a clause that contains a complementizer. Relative clauses, on the other hand, do not contain any complementizers or relative pronouns. Their reference is indicated by the position of the clause, which precedes its head noun directly. Relative clauses and nominalisations - i.e. nouns which, structurally speaking, nominalise relative clauses - are both introduced in lesson 8, two lessons before subordination with complementizers. The language teaching material seeks to explain the structure of the relative ("adjectival") clause by comparing it to the adjective, which is actually a finite predicate and thereby actually forms a one-word relative clause. However, as data show that learners at the stage of relativisation have not necessarily acquired the adjectival inflections, the textbook explanation may not be congruent with their existent interlanguage system. The data also show that all informants acquired the subordinate clause with a complementizer before the relative clause; it seems that

within the interlanguage system, the relative clause is not akin to the adjective, due to semantic reasons, but rather to the subordinate clause, due to its structure as a dependent, subordinate clause.

In conclusion, it was found that informants acquired the skills to orally produce syntactic structures in a time frame that differed significantly from that of instruction. Structures were mostly produced much later than they were taught, and were also acquired in a different order.

I will now turn to the comparison of the teaching and the learning of JSL morphology. This comparison will follow the same steps as the discussion of JSL syntax above.

Table 5-24: Time of instruction for morphological structures acquired

structure	JSL-structure	lesson in language teaching material
structure 1	predicate affixation	L. 1
structure 2+3	multiple affix OR V -> V-te	L. 1 L. 7
structure 4	finite adjective	L. 5

The order of acquisition for the structures "multiple affixation" and "V-te V" was not clear in the data; they were acquired in differing order, or informants did not produce either of them, or one of them, at all. This suggests that there is no implicational relationship between the structures "multiple affixation" and "V-te V". However, neither of the two possible sequences of acquisition is identical to the order of instruction:

Table 5-25: Temporal relationship of instruction and production for morphological structures in JSL acquisition

structure number	JSL-structure	lesson in language teaching material
structure 1	predicate affixation————————————	L. 1 (predicate affix)
structure 2+3	multiple affix —————————————	L. 1 (multiple affix)
	V -> V-te V	L. 5 (finite adjective)
structure 4	finite adjective	L. 7 (V-te V)

Table 5-26: Temporal relationship of instruction and production for morphological structures in JSL acquisition with alternative sequence of structure 2 and 3

structure number	JSL-structure	lesson in language teaching material
structure 1	predicate affixation ——————————	L. 1 (predicate affix)
structure 2+3	V -> V-te V	L. 1 (multiple affix)
	multiple affix	L. 5 (finite adjective)
structure 3	finite adjective	L. 7 (V-te V)

There are several conclusions to be drawn from the comparison of the absolute time of acquisition with the time of instruction. First, it is noticeable that "single" and multiple affixation were taught together in the first lesson. Again, learners were provided with a paradigm for tense and negation endings. However, no informant produced any multiple affixation in the data collection session at the end of the first semester. Although we cannot give any reason for this at this stage, it is clear that learners acquire multiple affixation much later than single affixation.

There is also no consistency in the time of acquisition for the verb complex **V-te V**. The first time of production is different for all informants (in each of the sessions 2, 3, 4, 5 and 6 one informant started to produce **V-te V**).

Again, the findings about adjective inflection is the most interesting. Here, the time gap between instruction and acquisition is largest; those learners who do acquire the rule that the adjective should be finite (3 informants), apply it only in very restricted syntactic environments and only a long time after its teaching.

In summary, the findings about a sequence in the acquisition of JSL morphology are partly inconsistent; but it can be safely stated that learners acquired neither verb nor adjective inflection in the entirety of the paradigm in which it was taught. There is also the finding that there is a significant time gap between instruction and acquisition, especially for the verb complex **V-te V** and the adjective marked for finiteness and/or tense, negation and adverbiality.

The findings on JSL morphology are similar to the findings on JSL syntax and support the inference that JSL acquisition is a dynamic and systematic process, which goes along a specific course of development that cannot be changed by the curriculum. This, again, raises the question of what kind of influence and what benefit instruction can have in the language acquisition process. This question will be discussed in the next section, ch. 5.3.2.

5.3.2 Effect of instruction on second language acquisition

Fixed sequence of syntax and morphology acquisition like those reported above have been found before for many languages, for different types of acquisition and for a range of languages (see ch. 1 for findings on English (Dulay and Burt 1973, Schumann 1978, Huebner 1983, Pienemann et al. 1988), Swedish (Hyltenstam 1977, Pienemann and Håkansson 1996) and German (Meisel et al. 1983), and ch. 2 for Japanese (Clancy 1985, Kanagy 1991)). When it was first found that

> "*the same developmental sequences are observed in the IL's of children and adults, of naturalistic, instructed and mixed learners, of learners from different L1 backgrounds, and of learners performing on different tasks*"
> (Long 1991, 42)

researchers started to question the benefits of instruction. Dulay and Burt (1973) entitled their article "Should we teach children syntax?" and answered it with a convinced "No" on the basis of their finding that children with different first languages and no instruction acquired morphemes in a similar order.

Different conclusions for teaching were drawn on the basis of findings like Dulay and Burt's. It seems logical to suggest that teaching should follow the developmental sequence in order to support the natural acquisition process and enhance its rate. On the other hand, it was also suggested that instruction could not do any more than provide "natural language input". Krashen was a major proponent of the second claim. Krashen's model (1982) is summarised here, because it has had strong influence on SLA research in subsequent years.

Krashen (1982) suggests five hypotheses on which his claims about the effect of instruction are based. The first is the *Acquisition-Learning Distinction*. Acquisition, according to Krashen, is "similar, if not identical to the way children develop ability in their first language" (Krashen 1982, 10). This process is subconscious. Learning, on the other hand, refers to conscious rule-oriented knowledge. The important aspect of this distinction is Krashen's claim that only acquisition can be successful, while learning only supports the learner's monitoring of his speech. The *Monitor Hypothesis* says that "learning comes into play only to make changes in the form of our utterance, after it has been "produced" by the acquired system" (Krashen 1982, 15). The *Natural Order Hypothesis* says that the acquisition of grammatical structures proceeds in a predictable order; this is supported by an abundance of studies (see above).

The *Input Hypothesis* is based on the hypotheses above and has direct consequences for language teaching. On the assumption that "acquisition is central and learning more peripheral", Krashen suggests that "the goal of our pedagogy should be to encourage acquisition" (Krashen 1982, 20). He claims that language development takes place when the acquirer understands the meaning of input which is grammatically one stage

ahead of the developmental stage at which the learner is, i.e. the stage which contains structures at the level "i + 1". In other words, the hypothesis "says we acquire by "going for meaning" first, and as a result, we acquire structure!" (Krashen 1982, 21). Krashen assumes that successful communication automatically provides i + 1, that therefore "the best input should not even attempt to deliberately aim at x + 1" and that "the best way, and perhaps the only way, to teach speaking, according to this view, is simply to provide comprehensible input" (Krashen 1982, 21f). The *Affective Filter Hypothesis* complements the Input Hypothesis by stating that affective variables will "impede or facilitate the delivery of input to the language acquisition device" (Krashen 1982, 32), i.e. influence the amount of learning that results from received input.

In many aspects, Krashen's approach is not testable: the claim that comprehension leads to production is not based on a cognitive theory; nor does Krashen spell out details about the "language acquisition device". The learning-acquisition distinction and the affective filter hypothesis are not falsifiable, because they are not defined by testable parameters, and so any phenomenon of acquisition or non-acquisition can be explained in a post-hoc manner by assigning a low or high affective filter, or a process of either learning or acquisition to the case in question. Most important, in this context, is the fact that the x+1-hypothesis intuitively makes sense, but is not testable, because no linguistic rules are spelled out for the x and the x+1 which could constitute a concrete and testable order for more than a small subset of a TL grammar, or which would be generalisable and thereby become testable.

However, much research, especially in the USA, has tested the influence of comprehension of input - and in this context, of negotiation of meaning and of tasks in language classes - on language development in numerous experimental studies (e.g. Long 1983a, 1983b, Ellis 1984, Gass and Varonis 1985, for overviews: Larsen-Freeman and Long 1991, Lightbown and Spada 1993).

Of most interest in the current context are the studies on input in SLA that focus on the effect of different types of instruction. Long's early review article (1983c) on studies that tested the effect of instruction asks, "Does second language instruction make a difference?" and finds that, by putting the results of different studies into a relationship with each other, instruction has a positive effect on language acquisition:

> *"Put rather crudely, instruction is good for you, regardless of your proficiency level, of the wider linguistic environment in which you receive it, and of the type of test you are going to perform on."*
> (Long 1983c, 379)

An abundance of studies has since then supported the assumption that instruction does have a positive effect on language learning (e.g. Doughty 1991, Spada and Lightbown 1993, for an overview: Ellis 1994, 617ff).

We are now facing an apparent contradiction: It seems beyond doubt that instruction facilitates acquisition. In the data interpretation from the present study, however, we have found that instruction does not affect interlanguage development. It is the same phenomenon of universally similar courses of development that has been found in many studies.

The solution to this contradiction can be found when we start to disentangle the concepts of "increase in accuracy" and "interlanguage development". The confusion of both leads to problematic experimental designs and flawed inferences from their results.

It was explained in detail (see ch. 3.3.2) that in this thesis, interlanguage development is not defined according to a certain degree of accuracy, but according to the acquisition of the skill of producing the structure in question. This is because measuring accuracy cannot take account of changes in the interlanguage development that take place below the aimed-for percentage of accuracy, although such changes might constitute major changes in the interlanguage system. Also, measuring accuracy does not acknowledge progression when it leads to non-targetlike structures. This is problematic, because first and second language learners go through stages that contain incorrect structures. One example is the overgeneralisation that takes place in English first language acquisition: after children produced "went" for a while, and as a rote-learned chunk, they acquire the rule concerning past tense marking and say "goed". Only later, they incorporate exceptions to the rule and produce "went" again. Another example, from second language acquisition, is the incorrect adverb-fronting in the acquisition of German: learners have to go through a phase where they produce this non-targetlike structure, before they can develop further to a stage where they produce a correct syntactic environment for the fronted adverb. Phenomena like these cannot be observed by a measure of language acquisition that focuses on accuracy.

The emergence criterion, on the other hand, describes the development of the grammatical system *per se*, because it marks the point when a new rule appears in the interlanguage. The application of the new structure to different lexical items, in different structural environments and for different functions is then a matter of accuracy and may develop over a long period of time. The confusion of the onset time of acquisition and accuracy in studies on the effect of instruction is problematic for the following reasons:

First, when accuracy is measured, we cannot know whether the acquisition itself or the wider application of an existing rule has taken place. Second, instruction may be perceived and processed differently by learners at different stages of the development process, as Spada and Lightbown (1993) suggest:

"Another finding ... is the lower frequency of errors at all times in the production of the comparison group. This finding suggests several possible hypotheses ... perhaps most interesting, is the possibility that the comparison students were simply at a more advanced level in their acquisition of questions and, thus, better able to benefit from the correction that was offered."
(Spada and Lightbown 1993, 218f)

The assumption that learners perceive input and instruction differently depending on the stage of development that they are at, renders meaningless those studies which provide learners who are at different points in their development with the same instruction and then measure and compare their increase in accuracy without taking those differences into account. If one assumes that a universal course of development determines what is learned next, then one must assume that a learner's increase in accuracy is dependent on this, and therefore the results of an accuracy measure itself cannot be accepted as meaningful findings about instruction.

What is therefore needed is a methodology that provides the tools to differentiate between progression along the course of development on the one hand, and an increase in accuracy on the other. The Multidimensional Model (Meisel, Clahsen, Pienemann 1981; for a detailed presentation see ch. 1.3.5) as well as Processability Theory (Pienemann in press, see ch. 1.4.2) do this by placing the concepts of *development* and *variation* into a theoretical framework.

According to Meisel et al. (1981), the *developmental dimension* of the Multidimensional Model describes those features that are acquired in a fixed order. The *variational dimension* describes those structures that can be acquired at different times. The copula is an example of a structure that is acquired by informants at different points of their interlanguage development. Accuracy, as the degree of suppliance of a structure in correct environments, is also a notion that is part of the variational dimension. The correctness of expression may be dependent on socio-psychological or other factors, which are different for each individual. Language acquisition can take place along either or both of these dimensions; a learner's interlanguage may progress to the next "stage of development" without becoming any more accurate. A learner may also increase his/her degree of accuracy - for instance, by starting to supply the copula - without acquiring another structure that is part of the course of development. In Processability Theory (Pienemann in press), variation is incorporated in the notion of the *Hypothesis Space*. The Hypothesis Space "contains" all structures that a learner can process and produce at any given time in the language acquisition process; which of the structure s/he chooses, depends on external factors.

Once the two dimensions of language acquisition are separated, it becomes possible to put the above mentioned inconsistent findings about the effect of instruction into context: in short, a positive effect of instruction may have taken place where learners were taught variational features, or structures belonging to the developmental stage

that they are at or to the subsequent stage. Instruction may have been futile where it expected the learners' interlanguage to scramble the fixed order of development, which is impossible.

The relationship of a fixed order in language acquisition - i.e. "development" in terms of the Multidimensional Model - and language instruction was explored by Pienemann (1984, 1985, 1987a, 1989). In reference to the stages of acquisition for German as a second language (GSL) as defined by Clahsen et al. (1983), he taught a structure from GSL stage x+3 to Italian children who were at different stages in their acquisition of German. Pienemann found that the structure in question could only be acquired by children that were at stage x+2, i.e. the preceding stage of acquisition. Children at stage x+1 rote-learned some sentences that contained the new structure, but did not acquire the rule in such a way that they could form new sentences on its basis.

Moreover, Pienemann found that the teaching of a structure too far advanced for a learner even proved counterproductive, as the learner would slide back in his/her development in reaction to the instruction (Pienemann 1989, 72f). This was observed with an informant from the same study who was at stage x+1 - i.e. she could produce adverb-fronting. When she was taught inversion, a structure that in target-German comes with adverb-fronting, she could not acquire it, because inversion is a structure from stage x+3 - i.e. it was beyond her processing skills. As a reaction to the recognition that her adverb-fronting structure was incorrect, but not correctable at that point in time, the informant started to avoid the structure. Her production of adverb-fronting decreased by 75% (Pienemann in press, 272). Pienemann concludes from these findings, in combination with the fact that all learners received the same instruction, "that the different effects of the teaching can be attributed to differences in the stage of development which each informant had reached" (Pienemann 1989, 60).

The explanation for these findings is of psycholinguistic nature; in order to produce, for instance, a structure of stage x+3, according to Pienemann (1984, 1985, in press), a learner needs to have acquired the *processing prerequisites* for stage x+3. These prerequisites allow for the production of stage x+3 structures and also for the acquisition of the processing prerequisites for the next stage, i.e. stage x+4. The processing prerequisites of stage x, stage x+1 and stage x+2 would not be sufficient for the acquisition of the processing prerequisites and therefore of the structures that belong to stage x+4. The definition of these processing prerequisites has changed dramatically in the last few years, and Pienemann (in press) now provides a detailed presentation of the processing mechanisms which relies on current grammatical and psychological theories (for a presentation of Processability Theory, see ch. 1.4.2).[14]

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[14] It is beyond the scope of this thesis to explore the explanatory approaches for the findings, but the application of Processability Theory to JSL acquisition is being approached by S. Kawaguchi and myself.

Pienemann names the conclusion that he draws from the findings about the potential effect of instruction the "Teachability Hypothesis". It predicts that "instruction can only promote language acquisition if the interlanguage is close to the point when the structure to be taught is acquired in the natural setting" (Pienemann 1989, 60). Pienemann stresses the point that this does not render instruction as inefficient *per se*; only in regard to the *developmental features* is the time of instruction of relevance. As part of the same study, Pienemann also taught copula insertion to the same informants, and found that they did increase the suppliance and thereby the accuracy of copula constructions. In regard to *variational features*, therefore, instruction does make a difference.

Another means of measuring development that has been used by several researchers (e.g. Eckman 1977, Doughty 1991) is typologically defined markedness. Studies tested and confirmed the question whether language development takes place along a scale of typological markedness. Doughty's (1991) study had an excellent experimental design and yielded unambiguous results. It is discussed here in order to further clarify the definition and application of the notion of "development".

Doughty (1991) studies the acquisition of relative clauses. Her paper, announcing the result of the study in its title: "Second language instruction does make a difference", starts from the question of whether instruction affects the rate of acquisition, whether meaning-oriented and rule-oriented teaching techniques affects acquisition differently, and whether the instruction of typologically marked clause types facilitates the acquisition of less marked ones. In other words, Doughty (1991) tests the effect of instruction, compares the effect of different types of instruction, and has a theoretical framework - the typologically-defined noun phrase accessability hierarchy - which serves as a point of reference other than accuracy for the definition of language development. She uses computer-based language material which ensured that all learners received the same input, and conducted written as well as oral post-tests in order to avoid a biased evaluation of results.

Her findings are that both instructed groups improved significantly more on the post-test than the control group, which had received "exposure only" (Doughty 1991, 463). The group that had received meaning-oriented instruction performed better in comprehension tasks than the rule-focused group. This was

> "*attributed to the apparently successful combination of a focus on meaning and the bringing to prominence of the linguistic properties of relativization in the MOG (meaning-oriented group, K.H.) treatment.*"
> (Doughty 1991, 463)

Doughty (1991) also found a systematic relationship between the degree of markedness and acquisition: learners generalised instruction on marked data to lower-level data and acquired those structures as well. Ellis (1994) calls this finding, that learners can acquire a higher-level structure and, as part of the package, acquire a similar lower-level structure at the same time, the "Projection Hypothesis". He finds

that "it is not easy to reconcile the theoretical positions of the Multidimensional Model and the Projection Hypothesis" (Ellis 1994, 635), because the Multidimensional Model, and later the Teachability Hypothesis, state that a learner cannot skip stages.

Again, this is only an apparent contradiction that can be solved when disentangling the notions that are worked with. The "developmental stages" of the Multidimensional Model are clearly spelled out, and all claims about development concern only these stages. More concrete, relative clauses - the structure that Doughty has studied - are subordinate clauses, and as such form one developmental stage. Nothing is said about additional factors forming substages. The Noun Phrase Accessability Hierarchy, on the other hand, concerns different types of subordinate clauses. Doughty's (1991) study would only be in contradiction with the Teachability Hypothesis if she had found that some or all relative clauses had been acquired before structures belonging to an earlier stage of development, as spelled out in the Multidimensional Model and the Teachability Hypothesis.

Another factor that indicates the non-comparability of studies on development in terms of markedness, and studies on development in terms of psycholinguistic processability is the acquisition criterion, which has been discussed above. Ellis (1994) himself finds that "it is noticeable that none of the projection studies have examined the effects of instruction on completely new grammatical structures" (Ellis 1994, 660). In other words, "projection studies" have investigated the increase of accuracy and not the acquisition as the first emergence of a structure. This would place the phenomena that these studies examined on the variational rather than the developmental dimension, which renders their results incomparable with those from studies of development as defined by the Multidimensional Model. Pienemann (in press, 264) discusses these points and also provides a cognitively oriented explanation for the markedness hierarchy, the presentation of which extends beyond the scope of this discussion.

Ellis (1994) is especially concerned with the different recommendations that the different hypotheses make for instruction. In light of the discussion above, the answer now seems simple: Different phenomena need to be treated differently. Teach subordination when the learners are "ready" for it, and then teach the different types according to their markedness.

There are some recommendations for teaching that can be made on the basis of the above discussed findings. Long (1991) spells out the benefits of instruction as follows:

"(1) It speeds up the rate of learning (for review, see Long 1983). (2) It affects acquisition processes in ways possibly beneficial to long-term accuracy (Lightbown 1983, Pica 1983). And most crucially, on the basis of preliminary data, (3) it appears to raise the ultimate level of attainment. Further, as White (1987, 1989) has argued, incomprehensible input and drawing learners' attention to inadmissable construction in the L2 (two kinds of negative evidence) may be necessary when learning from positive evidence alone will be inadequate."
(Long 1991, 45, emphasis in the original)

If we relate this to the development-variation distinction, it can be put as follows: For the developmental dimension we find that the sequence of acquisition for basic grammatical structures cannot be changed, but that the speed of its acquisition can be increased. This makes teaching more effective.

On the variational dimension, frequency and accuracy of previously acquired structures can be increased by teaching learners the different obligatory structural and lexical environments for it. Also, valid for both dimensions, is the notion that instruction may be able to prevent fossilisation and promote a higher ultimate level of attainment. Lastly, as White (1987b) points out, where in the first language a rule has to be acquired in a wider range of structures than in the second language, a learner may not be able to notice this and therefore needs negative evidence (i.e. instruction) in order to acquire the knowledge for the correct suppliance of the structure in question.

It is not possible on the basis of the Teachability Hypothesis to make any claims concerning different types of instruction, but Long (1991) suggests a *focus on form* as most effective in second language teaching. This approach takes into regard the fact that "learners do not move from ignorance of a form to mastery of it in one step, as is attested by the very existence of developmental sequences like that for ESL negation. Typically, when a form first appears in a learner's IL, it is used in a non-target-like manner, and only gradually improves in accuracy of use" (Long 1991, 44). Long suggests a meaning-oriented curriculum that is not planned along a sequence of grammatical structures, but allows for form-oriented teaching where necessary:

"the best way to learn a language ... is not by treating it as an object of study, but by experiencing it as a medium of communication ... Whereas the content of lessons with a focus on forms is the forms themselves, a syllabus with a focus on form teaches something else ... and overtly draws the students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning, or communications. Views about how to achieve this vary."
(Long 1991, 45f, emphasis in the original)

Long's position constitutes a compromise between obsolete rule-focused teaching methods and those models that abandon teaching of rules completely, relying on humans' innate ability to acquire languages. His focus-on-*form*, as opposed to focus-on-*forms*, acknowledges the benefits of instruction when embedded in an approach that is meaning-focused.

What can the insights reported in this study contribute to the teaching of JSL? First, it should be stressed that SLA is a field of research with theories which cannot necessarily be directly applied to practice, or in other words: "... practical recommendations are not the immediate domain of research on second language acquisition" (Pienemann in press, 265). No suggestions will be made here as to specific language teaching methods.

However, it seems advisable in face of the current research to distinguish between developmental phenomena on the one hand and variational and accuracy phenomena on the other. The findings of the study reported in this thesis provide the sequence of JSL acquisition as a point of reference for the distinction of "developmental" and "variational" structures and errors, which may contribute to curriculum design, error feedback and assessment.

The most obvious inference to draw from the finding that developmental stages cannot be skipped (Pienemann 1988, 1989), i.e. that the sequence of acquisition cannot be changed and that no structure of the development can be missed, and complemented by the sequence of JSL acquisition as provided here, is that there is no point in expecting a learner to produce structures which are beyond the stage that s/he can process at that point in time. It would be at best inefficient and a waste of time, at worst frustrating for teacher and student and also counterproductive (due to a learner's avoidance strategy, see above).

In concrete terms, this would suggest that the curriculum should not expect learners to produce adverb-fronting before the adjective-noun-phrase, or to produce any complex sentence structures before those. We also inferred from the data that students learn to apply the branching order on noun phrase level before they apply it on sentence level. Data have also shown that learners process relative clauses differently to adjectives; and although both have the same position within the noun phrase, they are acquired at different points in time. The acquisition of the **adj-N-phrase** may be important for the establishment of the position within the noun phrase into which the relative clause is placed later. Also, coordination is "easier" and produced earlier than subordination. This leads to the recommendation of the following order of teaching:

canonical word order schemata > N no N p > adj N p > coordination > subordination > relativisation.

For morphology, the sequence of acquisition is much more intuitively logical: multiple affixation is only produced after learners acquire the ability to mark one function, with one morpheme, on the verb. The most important insight here is the extremely late acquisition of adjective morphology. The reason for it may be the fact that the adjective, when functioning as a finite predicate, changes the annotations for its category features. Passives and causatives were not acquired throughout the whole study period by any informant. For adjectives, nominal adjectives and verbs it was

found that inflectional paradigms were not acquired, even though they had been taught. The different forms within an inflectional paradigm often require different processing prerequisites and are therefore acquired at different points in time.

Another area of interest is the distinction of developmental and non-developmental errors. The developmental sequences for GSL, ESL and JSL all contain non-targetlike structures. As all learners go through these stages, it is obvious that an approach that fights the formation of "bad habits" is not productive, perhaps even counterproductive. On the other hand, once the teacher knows at which stage of development a learner is, it becomes clear what kind of feedback the learner will be able to understand, and acquire: if the correct form of the structure in question is part of the current or the next "stage of acquisition", then error feedback can lead to acquisition; if the correct form is too far advanced, teaching of the correct structure will not be effective.

A "developmental" error that illustrates this point is the Japanese structure **N no N p**, which is produced first by many learners without a consistent application of the Japanese branching direction. The result of this is a structure with an incorrect word order; however, it is an in-between step on the way to the correct structure.

Data from learner M show that she, while producing the incorrect structure, is well aware of this and that she has productive ways of dealing with her problem: table 4-21 from ch. 4.1 (see table below) shows that in the first data collection session, M has not yet acquired the Japanese branching direction. Also, M does not know whether to use the copula or the existential verb in sentences describing the location of the subject (*'hon wa tsukue no ue ni desu', 'hon wa tsukue no ue ni aru' - 'the book is on the table'). This results in sentences with the copula following a particle, which M knows is incorrect. As a consequence, she produces the noun phrase in all possible permutations in order to avoid the particle-copula combination. Her different forms of the **N no N** p-structure are obviously not random, but a systematic testing of all possible hypotheses. The data from the following session show that by then, M has acquired the branching direction, as well as the rule that in the structures in question, she has to use the existential verb. M's **N no N** p-structures are a good example for illustrating that learners often go through incorrect structures, and that they do not necessarily get "stuck" with them.

Table 4-21: **N no N**-structures and their environment in M's Sss. 1

(NP) N1 no N2 cop	1
(NP) N2 no N1 cop	1
(NP) N2 ni N1 cop	1
(NP) N1 ni N2 cop	1
N1 no N2 NP cop	1
(NP) N1 no N2 ni arimasu (rel. clause)	1
total N no N	6

Instruction may be effective in cases like this to explain the branching direction within the noun phrase, because it is a rule that belongs to the next developmental stage and is therefore processable. This can potentially speed up the acquisition process. It is also possible to explain the distinction of copula and existential verb, because that is not dependent on a specific order of acquisition. It may be counterproductive, however, to teach the structure of the noun phrase containing an adjective (**adj N p**): Pienemann (1989) pointed out that the teaching of a structure from the stage x+3 was counterproductive for learners who were at stage x+1, i.e. two stages behind the structure that was taught. If the same is valid for JSL acquisition, then the **adj-N-** structure is not learnable for the student and may lead to the avoidance of noun phrases with a modifier altogether.

It should be noted for all these claims that they are valid only for instruction in oral production. Students may well be able to comprehend those structures much earlier than they can spontaneously produce them.

One more important issue needs to be raised in this context. In the last years, research on foreign language acquisition and teaching has increasingly concentrated on the development of oral skills. This study, in examining learners' oral production, did the same. It is, however, a fact that language classes at different institutions like schools or universities have a variety of teaching objectives. First, not only oral production skills are the teaching objective of most High Schools and universities, but also skills in listening and reading comprehension and writing skills. These skills rely on different processing mechanisms, are not directly dependent on the overall course of development and may benefit from different types of instruction. Another objective is the teaching of metalinguistic knowledge, partially because grammatical knowledge is easier to assess than an overall communicative ability. Also, at universities, metalinguistic knowledge is part of the academic training and a topic of research. What is necessary here is further research on the interaction of acquisition of different skills; it would be helpful to know for an application of findings to classroom practice if an increase in knowledge in one skill has a supportive or an obstructive influence on the learning of other skills.

In summary, this study provides a presentation of the course of development for JSL syntax and morphology. It can serve as a point of reference for an order of instruction in oral production skills which teaches learnable structures and avoids unlearnable ones, which may speed up the acquisition process and so make the instruction more effective. The demonstrated course of development is also a basis from which to assess the type of error that a learner makes, and the realisation of whether the learner will be able at that point in time to acquire the correct form of the structure in question or not. Further research on the influence that the development in one language skill has on the acquisition of other skills is necessary here, in order to find ways of making teaching most effective.

5.4 Comparison with findings from previous studies on the acquisition of Japanese

In Chapter 2.2, several studies on developmental aspects in the acquisition of Japanese were summarised and commented upon. Now, the results of those studies will be compared with the findings of the JSL study presented in Chapters 4 and 5 of this thesis. The studies dealt with in Clancy (1985) and Kanagy (1991) describe a path of development clear enough to provide a point of comparison with the findings from this study. The aspect of Nagatomo et al.'s study which is most interesting in this context is the finding concerning tense marking on adjectives, which is also a finding of Kanagy's, and will be discussed in the context of her study. Doi and Yoshioka's study is too heavily reliant on the acquisition of semantic notions to be valuable in the current context, where an effort is made to isolate the path of structural development. First, Clancy's description of Japanese first language development will be compared with the findings of the presented study. Following this, a comparison of the findings on Japanese second language acquisition by Kanagy and findings from the present study will take place.

5.4.1 Comparison with the order of JFL acquisition (Clancy)

For convenience, the table from Chapter 2. 1 depicting Clancy's findings on acquisition stages in JFL acquisition is repeated here:

Table 5-27: JFL acquisition stages, following Clancy 1985

1. One-word stage	names, things, formulae
2. First stage of grammatical development	two-word utterances verb morphology (usu. tense, negation) sentence-final particles *N wa* and possessive *N no* Yes/No and wh-questions
3. Frequent two-word utterances	more verb morphology: *V-te iru, V-te oku* case particles *N no N, N mo N mo* first conjunctions (*V-te, V-temo*)
4. Expansion of morphological devices	more verb morphology (*V-te kuru*) complex locatives, *N no* not only possessive conjunctions (coordinating) one-word relative clauses
5. Further expansion	conjunctions (subordinating: *toki, tokoro, koto*) passives and causatives

The sequence of acquisition, as inferred from Clancy (1985), for those structures that are relevant in the current context, has been given labels consistent with the terminology of this thesis and summarised in Chapter 2.2 as follows:

1-word utterance -> N no and tense/negation marking -> N no N, V-te V and V-te S -> adj N, coordination and 1-word relative clause -> subordination and relative clause -> passive and causative.

According to Clancy (1985), JFL acquisition begins with a first stage of unconnected **words** and **formulae**. This is unsurprising, and presumably similar to second language acquisition, where learners need to have built up a minimal stock of lexical items before they can align them in a systematic manner. However, as the first data collection of this study was conducted after three months of instruction, all informants were beyond this stage when first interviewed.

Clancy suggests that the next stage involves the first grammatical development in two-word utterances. In first language acquisition, two-word utterances can contain various categories and form different types of structures. The informants of this study were more norm-oriented than children, and the repertoire of structures in early

interlanguage was limited. The canonical word order schema **NP V** could possibly be paralleled with the JFL two-utterance stage, because it, too, constitutes the first systematic structures with the smallest number of elements possible.

Verb morphology, noun phrases, sentence-final particles and questions also occur at this stage. This concurs with the findings from the present JSL study, where the same structures were acquired at early stages.

Question marking does not involve any restructuring of the sentence, as is the case in Indo-European languages, because questions are marked with the sentence-final marker '-ka'. Therefore it presupposes no information exchange and the linguistic knowledge necessary for it. The two-word phase is the earliest in which wh-questions can occur, containing the wh-word itself and one additional item. Most informants in the present study produced questions from the first interview on, i.e. at an early stage as well. Question production had not been analysed in data from further sessions, because they occurred only rarely, due to the nature of the tasks, and because they obviously have been acquired from an early stage on. **Sentence-final particles** do not occur in the present JSL data; but they take the same position as the question marker -ka, which is acquired early in JSL.

Tense and **negation marking** is acquired early in JFL as well as in JSL, because for its production no information exchange needs to take place (see ch. 5.4.2). The marking of negated past and of aspect are acquired later than the marking of only tense or negation. Clancy (1985) summarises studies that show that the marking of progressiveness with the existential verb: **V-te iru**, is acquired earlier than the marking of other aspects, which is done with full verbs in auxiliary position (see ch. 2.2). The same sequence could be observed in the JSL-data presented: learners who acquired the **V-te V**-phrase always produced it with the auxiliary 'iru'. Only informant J produced **V-te V**-phrases with auxiliaries other than the existential verb as well (see ch. 4.2.3), and he acquired them later than **V-te iru**.

Of the most interest is the development of the noun phrase. JFL learners produce as their first structure noun phrases **NP -> N p**, which is an early structure in JSL as well (see ch. 5.2.1). The next step in JSL acquisition is the complex noun phrase **NP -> N no N (p)**; however, in JFL acquisition **N** *no*-structures (at Clancy's stage 2) are produced before full **N no N**-structures, thus forming a further stage which prepares for the production of **N no N**-structures. The elliptic nature of this structure is typical of first language acquisition; early second language learners generally tend to provide as much information as possible and to avoid ellipsis (see Kawaguchi 1996). This might explain the non-occurrence of **N** *no*-structures in JSL acquisition. In any case, the structures that do occur in JSL acquisition develop along the same sequence as JFL structures.

The structure **NP -> N no (N p)** is obviously the first way of indicating relationships between entities in JFL as well as in JSL, and the reasons accounting for its occurrence may be similar. It seems reasonable to assume that the semantic need to indicate relationships or modification arises before the structures for it can be established. The first modification is then realised with categories that already exist in the learner's internal grammar, i.e. with nouns. In a next step, new categories, e.g. adjectives, are inserted in the new position (see ch. 5.2.2) in JFL as well as in JSL: **NP -> adj N p**, requiring phrasal information exchange.

Clancy (1985) shows that **coordination** and **one-word relative clauses** are acquired at the same time or after complex noun phrase structures, and before subordination and relativisation. Coordination is therefore acquired at the same time in JFL and JSL acquisition. One-word relative clauses do not appear in the data of the present study; however, they display structural similarities to adjectives in that they are part of the noun phrase, do not require a clause-internal word order and directly precede the head noun. This may be the reason why they are acquired so early. Multiple-word relative clauses are acquired later in JFL, as they are in JSL acquisition.

The next step in JFL is then subordination under complementizers like 'toki' - 'time, when', 'tokoro' - 'place' and 'koto' - 'thing (nominaliser)'. Only after they are acquired, relativisation occurs. This is a development parallel to that found in this JSL-study (see ch. 5.2.1).

Passives and causatives occur late in JFL. They do so in JSL as well, as evidenced by the fact that neither structure could be found to be acquired by any informant in the present JSL study.

In summary, it was found that there are no JFL structures whose order of acquisition deviates from the order of acquisition as found for JSL acquisition in this study; it can be concluded from this that the acquisition of structures in JFL as discussed so far follows the same route that has been found for JSL acquisition. The following table gives an overview of the sequence of acquisition in JFL and JSL and shows the parallels. The order of JFL structures has been changed only where it does not affect the sequence suggested by Clancy. The structures in brackets are structures for whose acquisition Clancy (1985) does not give a relative time of acquisition in her overview of the sequence of acquisition in JFL (1985, 381-383), but whose approximate time of acquisition could be inferred from the studies she quotes.

Table 5-28: Parallel development in JFL and JSL acquisition

JSL	*JFL*
single words and formulae	names, things, formulae
NP -> N p (noun phrase) S -> NP NP S -> NP V (canonical word order) NP -> N p NP predicate affixation	*N wa* and possessive *N no* two-word utterances verb morphology (usu. marking tense, neg) Yes/No and wh-questions sentence-final particles
multiple affixation N1 no N2 p (complex noun phrase)	more verb morphology complex locatives, *N no* not only possessive
NP -> det NP	(adjectives) (one-word relative clauses)
S -> S conj S (coordination)	conjunctions (coordinating)
S -> S conj S (subordination)	conjunctions (subordinating)
NP -> rel.cl. NP (relativisation)	(relative clauses)

5.4.2 Comparison with the order of JSL acquisition (Kanagy)

Kanagy (1991) found that the JSL learners in her study first expressed negation with unanalysed 'nai' and then differentiated the syntactic environment of negation, starting to inflect the verb for negation. Adjective negation seemed not to be acquired by the end of the study, i.e. the first year of instruction. This results in the order of acquisition N < V < A (Kanagy 1991, 235).

Noun negation is constructed with S -> N ja-nai. The necessary prerequisites for this structure are (1.) a lexical item marking negation, and (2.) the ability to produce a two-word utterance with the canonical word order structure, i.e. in the order noun - verb. The acquisition of a lexical item does not depend on any structural development. The canonical word order was shown to have been acquired very early by the informants of the present JSL study as well; it is part of the "step 1" structures, which were all acquired within the first three months of instruction.

Verb negation is marked by a morpheme: 'tabe-nai' or, in polite form, 'tabe-mase-n'. One prerequisite for verb negation is the ability to differentiate nouns and verbs, i.e. to have two categories established, and the other, to inflect verbs. Verb negation occurred in the data of the present study simultaneously with the canonical word order schema, or in the following data collection session. Again, structures are acquired in the same order in Kanagy's and the present study.

Adjective negation: It has been shown in the data analysis that the marking of the adjective for tense, negation and finiteness is acquired much later than the marking of verbs for these functions: Only three out of five informants acquired "adj-finite", and two of these did so in the last data collection session, i.e. after six semesters of instruction. This order of acquisition and the large time gap between the acquisition of the canonical word schema and the acquisition of adjective inflection is in accordance with Kanagy's findings.

In summary, we found in this section that all structures that Clancy (1985) describes for JFL are acquired in the same relative order as JSL structures, as described in this study (ch. 5.2). It was also demonstrated that the order of acquisition for negation that Kanagy (1991) shows is congruent with the order of acquisition of canonical word order schema, verb morphology and adjective inflection found in the present study.

We can conclude from these findings that not only the developmental order of the acquisition of Japanese as a second language is universal and not alterable, but also that even a similar developmental path is followed in both first language acquisition and in second language acquisition. This supports the point of view presented in section 5.3 above, which saw the potential influence of second language instruction restricted by a universal course of development which follows its own logic and systematicity. The findings of similar acquisition orders raise the question for an explanation. Current SLA theories are advanced enough to approach an answer to this, and as stated above, research into this is under way.

5.5   Summary and conclusion

In the first section of this chapter, the order of acquisition for the syntactic and morphological structures that were acquired by the informants of this study was inferred from the data. It was found that the acquisition of structures took place in such a way that basic phrase and sentence structures were first established and then extended, first on phrase and then on clause level. Syntactic and morphological structures were acquired in an identical order by all informants. An implicational scaling of the data found that the scalability of syntactic structures was 95.8% and the scalability of morphological structures 86.8%, which indicates the systematicity of the acquisition process and its similarity in all informants. Only two structures proved problematic for the definition of their time of acquisition: the serial sentence and the verb phrase **V-te V**. A major characteristic of the acquisition process was that the interlanguage developed through the addition of new rules without deleting existing ones. This is in accordance with the assumed cumulative character of interlanguage development. The following tables 5-30 and 5-31 show the order of acquisition for syntax and morphology respectively:

Table 5-30: Sequence of JSL syntax acquisition

step 1 (structures 1-4)	NP -> N p
	S -> NP NP
	S -> NP V
	NP -> N p NP
structure 2	NP -> N1 no N2 p
structure 3	NP -> det N p
structure 4	adverb fronting
structure 5	coordination
structure 6	subordination
structure 7	relativisation
structure 8	serial sentence

Table 5-31: Sequence of JSL morphology acquisition

structure 1	predicate affixation
structure 2	multiple affix OR *V-te V*
structure 3	*V-te V* OR multiple affix
structure 4	finite adjective

In the next section (ch. 5.3), it was then tested whether this sequence of JSL acquisition was a result of the instruction that the informants received: time and order of acquisition was checked against the time and order of instruction. The comparison of instruction and production showed that learners produced most structures much later than they had been taught them in the language class. It was also found that the order of instruction and the order of acquisition were entirely different. This finding strongly supports the assumption of interlanguage as an independent internal grammar and of its development as a dynamic and systematic process that is largely not dependent on external factors. Tables 5-32, 5-33 and 5-34, below, illustrate the mismatch of time and order in instruction and acquisition. For the illustration of the acquisition and instruction of morphology, two tables are shown because the sequence of acquisition for the structure **V-te V** and "multiple affixation" cannot be clearly inferred from the data. However, in neither case does the sequence of acquisition match the curriculum.

Table 5-32: Temporal relationship of instruction and production for syntactic structures in JSL acquisition

structure number	JSL-structure	lesson in language teaching material
step 1	S -> NP NP -> N p	NP -> N p (L. 2)
step 1	S -> N p N cop	S -> (NP) NP V (L. 2)
step 1	S -> (NP) NP V	adverb fronting (L. 2)
2	NP -> N1 no N2 p	N p N cop (L. 3)
3	NP -> det N p	NP -> N1 no N2 p(L. 3, 4)
4	adverb fronting	NP -> det N p (L. 5)
5	coordination	coordination (L. 7)
6	subordination	serial sentence (L. 7)
7	relativisation	relativisation (L. 8)
8	serial sentence	subordination (L. 10)

Table 5-33: Temporal relationship of instruction and production for morphological structures in JSL acquisition

structure number	JSL-structure	lesson in language teaching material
structure 1	predicate affixation	L. 1 (predicate affix)
structure 2	multiple affix	L. 1 (multiple affix)
structure 3	V -> V-te V	L. 5 (finite adjective)
structure 4	finite adjective	L. 7 (V-te V)

Table 5-34: Temporal relationship of instruction and production for morphological structures in JSL acquisition with alternative sequence of structure 2 and 3

structure number	JSL-structure	lesson in language teaching material
structure 1	predicate affixation	L. 1 (predicate affix)
structure 2	V -> V-te V	L. 1 (multiple affix)
structure 3	multiple affix	L. 5 (finite adjective)
structure 4	finite adjective	L. 7 (V-te V)

The finding that the learners did not follow the curriculum in their acquisition of oral production skills, raised the question as to the potential effect that instruction has on the acquisition process. In view of recent research it was found that "instruction does make a difference", but also that the influence of instruction is restricted by the unalterable sequence of acquisition of main syntactic and morphological features. Pienemann's Teachability Hypothesis takes account of this and draws conclusions for language teaching from it: Instruction is effective at any time in teaching structures whose sequence of acquisition can be altered, in speeding up the acquisition process where its order cannot be altered, and in increasing the accuracy of structures once they are acquired.

The sequence of JSL syntax and morphology acquisition that was presented in the first part of this chapter provides a point of reference for the distinction of *developmental* and *variational* features in JSL, i.e. the distinction of structures whose relative time of acquisition in the developmental process is fixed, and structures whose acquisition sequence is variable. This can be applied to JSL curriculum design, error feedback and assessment. No claims as to specific teaching methods were made.

The order of JSL acquisition as inferred in this study was then compared with orders of acquisition as found in other studies on first and second language acquisition (Clancy 1985, Kanagy 1991). This comparison clearly demonstrated that the developmental order in Japanese interlanguage is not only similar between learners of Japanese as a second language with different instruction, but even between Japanese first and second acquisition interlanguages. This finding strongly supports the concept of universal and independent development of interlanguage.

In summary, it was demonstrated that the concept of interlanguage as a dynamic and cumulative system is supported by the findings of a sequence of JSL acquisition that was identical in all informants and different from the language teaching curriculum. Potential consequences of this for the JSL classroom were discussed, whereby it was stressed that there can be no direct line from research to practice.

6. CONCLUSION

6.1 Summary

This thesis presented a research project on the acquisition of syntax and morphology in Japanese as a second language (JSL) by five Australian university students.

The objective of this three-year longitudinal study was the detailed investigation of the nature of interlanguage development. Interlanguage was understood in this study as the internal grammar of a language learner, and its development was seen as a systematic and dynamic process which takes place through a succession of transitional grammars. The structures of these interlanguage grammars and the sequence of their acquisition were assumed to be similar for all learners. The first chapter of this thesis gave an overview of research on interlanguage and demonstrated how the concept of interlanguage and interlanguage development has evolved in the last thirty years.

The acquisition of Japanese was chosen as a case study because Japanese is a language typologically different from the languages worked on by the scholars who have until now produced the majority of second language acquisition theories and models. So data on the acquisition of Japanese contribute to both the testing and the confirmation of existing models and theories. Chapter 2 provided an overview of the Japanese grammar for those readers not familiar with that language, and reviewed previous studies on the acquisition of Japanese as a first and as a second language.

Then the methodology of data analysis and description was discussed in Chapter 3. Based on the concept of interlanguage as an "internal grammar", oral data were collected and analysed, because it was assumed that speakers draw on the existing internal rule system in spontaneous production. Distributional analysis (Harris 1954, Croft 1991), a methodology used in the description of unknown languages, was chosen for this study, because it allows for an analysis of forms and functions as they exist in the described grammar and for an exhaustive data analysis, which was found necessary for the project. Distributional analysis is based on constituent structures, which is compatible with findings in cognitive psychology.

The approach to the data description followed the dynamic paradigm (as in e.g. Bailey 1973, Bickerton 1975) with implicational scaling (Guttman 1944, DeCamp 1971). Implicational scaling made it possible to pool the informants' interlanguage data and describe them systematically. The adequate acquisition criterion for the description of interlanguage grammar in this study was demonstrated not to be an accuracy criterion, but an emergence criterion. Particularly for the description of morphology, the emergence criterion had to be complemented with a form-function analysis.

The data analysis (ch. 4) was conducted for each individual informant and each data collection session and resulted in the presentation of the informants' transitional interlanguage grammars. It was found that the concept of the dynamic nature of interlanguage development could be confirmed. The interlanguage systems of all informants were found to develop in a cumulative fashion: acquisition took place in such a way that structures, or better the rules forming them, were rarely deleted in the course of development, but that additional rules extended the existing system. The categories noun and verb and the basic structures of copula sentence and canonical word order schema were established first. The structures that were then acquired had the function of modification and led to extensions of structures on phrase level and then on sentence level. They were genitive constructions, determiners, adverb fronting, coordination, subordination, relativisation and the serial sentence construction. Learners also developed predicate morphology with "single" and multiple affixation and serial verb constructions. By the end of the study period, i.e. after three years, learners had not acquired the ability to produce passive or causative sentences.

In Chapter 5, the acquired structures, and the courses of interlanguage development of all informants were compared. The results demonstrated that learners had acquired identical structures, and that the sequence of their acquisition was identical for all informants; differences were found only in pace and in attainment at the end of the study period. The following tables present the order of acquisition for syntax and morphology in JSL and give examples for the acquired structures:

Table 6-1: Sequence of JSL syntax acquisition

step 1	NP -> N p	Ki wa. Ki desu.
(structures 1-4)	S -> NP NP	Zubon wa aoi desu.
	S -> NP V	Hito wa gohan o tabemasu.
	NP -> N p NP	Hito wa shita no ki ni imasu.
structure 2	NP -> N1 no N2 p	Hito wa ki no shita ni imasu.
structure 3	NP -> det N p	Onnanohito wa aoi doresu o kimasu.
structure 4	adverb fronting	Kinoo arubaito o shimashita.
structure 5	coordination	Tanjoobi desu ga sabishii desu.
structure 6	subordination	Nihon ni ita toki ni takusan gohan o tabemashita.
structure 7	relativisation	Ki no shita ni iru hito wa onnanohito desu
structure 8	serial sentence	Daigaku ni itte benkyoo shimasu.

Table 6-2: Sequence of JSL morphology acquisition

structure 1	predicate affixation	Benkyoo shimashita.
structure 2	multiple affix OR V-te V	Okyakusan wa yorugohan o tabemasendeshita.
structure 3	V-te V OR multiple affix	Hito wa tabete imasu.
structure 4	finite adjective	Nihongo wa muzukashikatta to omoimashita.

The pooling and implicational scaling of all data demonstrated that the acquired structures formed an implicational hierarchy; in other words, when a structure was acquired, all earlier structures (in tables 6-1 and 6-2: all structures above the acquired structure) were acquired as well. Some gaps occurred, that is, informants did not produce a structure that they had produced in earlier data collection sessions. Interestingly, in the majority of cases this concerned the last structures acquired. This backsliding ensured that the implication of the produced structures was not violated. When all data were pooled, scalability of syntactic structures was 95.8%, and 86.8% for morphology. Only the order of structures 2 and 3 of morphology acquisition could not be determined on the basis of the data. Data were also incongruent in regard to the serial sentence (JSL syntax structure 8). The strong implication of the structures confirmed the cumulative character of language acquisition.

All informants attended language classes at the same university, and so it would have been probable that the similar sequence of acquisition was due to their similar input. This hypothesis was tested by comparing the order of instruction with the order of acquisition. The following tables (6-3, 6-4, 6-5) illustrate the mismatch between these two sequences, demonstrating that the order of language acquisition is dependent on factors other than the order of instruction:

Table 6-3: Temporal relationship of instruction and production for syntactic structures in JSL acquisition

structure number	JSL-structure	lesson in language material
step 1	S -> NP / NP -> N p	NP -> N p (L. 2)
step 1	S -> N p N cop	S -> (NP) NP V (L. 2)
step 1	S -> (NP) NP V	adverb fronting (L. 2)
2	NP -> N1 no N2 p	N p N cop (L. 3)
3	NP -> det N p	NP -> N1 no N2 p (L. 3, 4)
4	adverb fronting	NP -> det N p (L. 5)
5	coordination	coordination (L. 7)
6	subordination	serial sentence (L. 7)
7	relativisation	relativisation (L. 8)
8	serial sentence	subordination (L. 10)

Table 6-4: Temporal relationship of instruction and production for morphological structures in JSL acquisition

structure number	JSL-structure	lesson in language material
structure 1	predicate affixation —————————	L. 1 (predicate affix)
structure 2	multiple affix —————————	L. 1 (multiple affix)
structure 3	V -> V-te V	L. 5 (finite adjective)
structure 4	finite adjective	L. 7 (V-te V)

Table 6-5: Temporal relationship of instruction and production for morphological structures in JSL acquisition with alternative sequence of structure 2 and 3

structure number	JSL-structure	lesson in language material
structure 1	predicate affixation —————————	L. 1 (predicate affix)
structure 2	V -> V-te V	L. 1 (multiple affix)
structure 3	multiple affix	L. 5 (finite adjective)
structure 4	finite adjective	L. 7 (V-te V)

These graphs show not only the mismatch in the sequence of instruction and acquisition; if we take into account the facts (1.) that the structures were acquired over a three-year period, with relativisation occurring mostly only in the last data collection session, i.e. at the end of the third year, and (2.) that in the first semester, instruction proceeded up to lesson 10, i.e. that all acquired structures were taught in the first semester, then we also realise that there was a large time gap between the input that the learners received and the time that they acquired the structure in question. This conclusively shows the independence of the acquisition process from teaching and strongly supports the assumption of interlanguage development as an independent process that follows its own inherent systematicity.

These findings seems to put into question the role of instruction in the language acquisition process; indeed, scholars have suggested that instruction cannot have an influence beyond the suppliance of input (Dulay and Burt 1973, Krashen 1982). The potential benefit of instruction was investigated and discussed in reference to Long (1982, 1991), Doughty (1991) and Pienemann (1984, 1989) in general, and then more specifically for JSL. In short, studies have shown that instruction does make a difference, but it was also stressed that for the design of an experiment and for the measuring of the effect of instruction, one needs to be aware of the distinctions (1.) between the acquisition (emergence) of a structure and the frequency and accuracy of its suppliance in target-like environments, and (2.) between those structures that are part of a fixed sequence of acquisition and those that are not, i.e. those that can be acquired at any time. If one takes the phenomenon of developmental sequences into account, then one must assume that instruction is perceived and processed differently by learners at different points in their development, which in turn influences their

increase in accuracy and the outcome of experiments investigating the connection between instruction and increase in accuracy.

Pienemann's Teachability Hypothesis (1984, 1988, 1989, in press) tests the interaction of instruction and acquisition and finds that instruction does have a positive effect where it does not attempt to change the sequence of acquisition; instruction can speed up the transition from one developmental stage to the next and also increase the accuracy in the use of structures already acquired. He also found that instruction on a structure that a learner is not "ready" to acquire may be counterproductive, as a learner may tend to avoid the "difficult" structure and thereby revert in his/her course of development. Developmental stages, according to Pienemann, cannot be "skipped".

Several consequences were drawn from this for the teaching of Japanese as a second language. First, the sequence of JSL acquisition as it was described in this study can serve as a point of reference for the distinction of structures that follow a specific order of acquisition and those structures that do not. While the latter structures can be acquired at any point in time, those structures that are part of a sequence of acquisition are learnable only at specific points in time. On the basis of the sequence of JSL acquisition as shown in this thesis, it is possible to make suggestions as to when different structures can be acquired in the course of acquisition. The notion of a sequence of acquisition thereby has the potential to feed into curriculum design and also assessment. If we transfer the sequence of acquisition as it was described in this study directly to curriculum design, the following order of teaching would be suggested for syntax:

canonical word order schemata > N no N p > adj N p > coordination > subordination > relativisation

For the teaching of morphology, the most important consideration seems to be the very late acquisition of adjective inflection, as compared to the acquisition of other structures. Passives and causatives were not acquired at all by the informants of this study.

For error feedback, the distinction between developmental and non-developmental errors may be of help, as the teacher knows whether a learner will be able to produce the intended target-like structure at the given point in time. S/he might decide to correct the non-developmental error and expect the learner to acquire the correct form, or correct a developmental error whose target-like version is within the learner's reach. A teacher might decide not to expect a learner to acquire the correct, target-like form when it is beyond the point of development that the learner can acquire at that moment in time.

One should be aware, in any case, of the fact that the sequence of acquisition as defined here only concerns oral production skills. In writing or comprehension, for example, learners may well be able to draw on additional skills like descriptive grammar rules or semantic clues. Nothing has been said in this study about the acquisition of skills other than oral production. Also, no claims have been made concerning different methods of teaching, because it was felt that it is not academically sound to make claims about a multi-faceted skill like a second language on the basis of research on only one of these skills, without applicable knowledge of their interaction.

Finally, it was tested whether the results of previous studies of Japanese first and second language acquisition showed patterns of acquisition similar to the one described in this study. It was found that Clancy's (1985) presentation of an order of acquisition in Japanese as a first language (JFL) showed strong similarities to the order of acquisition as described in this study. Table 6-6 below illustrates the parallels:

Table 6-6: Parallel development in JFL and JSL acquisition

JSL	JFL
single words and formulae	names, things, formulae
NP -> N p (noun phrase) S -> NP NP S -> NP V (canonical word order) NP -> N p NP predicate affixation	N *wa* and possessive N *no* two-word utterances verb morphology (usu. marking tense, neg) Yes/No and wh-questions sentence-final particles
multiple affixation N1 no N2 p (complex noun phrase)	more verb morphology complex locatives, N *no* not only possessive
NP -> det NP	(adjectives) (one-word relative clauses)
S -> S conj S (coordination)	conjunctions (coordinating)
S -> S conj S (subordination)	conjunctions (subordinating)
NP -> rel.cl. NP (relativisation)	(relative clauses)

Kanagy's (1991) research showed that JSL learners acquire negation in the order of *noun negation* > *verb negation* > *adjective negation*. A similar sequence was found in this study, as one informant's data suggest that the canonical word order schema, the prerequisite for noun negation, is acquired earlier than verb morphology. The data of the JSL study described in this thesis, like Kanagy's study, show a late acquisition of adjective inflection. The similarity of the sequence of acquisition not only across different learners, but also across different acquisition types and makes a further point for the consideration of developmental factors in SLA theory and in the teaching process.

In summary, a universal order of acquisition for JSL syntax and morphology was described on the basis of the comparison, pooling and implicational scaling of data from a three-year longitudinal study of five informants. The comparison with the order of instruction showed that the order of acquisition is independent of it. The comparison with research results from previous studies showed that the same patterns of acquisition were found in other studies and also in another type of acquisition, Japanese first language acquisition. The notion of a creative construction process and of a cumulative development for interlanguage development was confirmed. The potential role of instruction in the acquisition process was investigated, and suggestions for the implementation of findings in the curriculum design and error feedback were made.

6.2   Suggestions for further research

Suggestions for further research can be subsumed under two headings: more work on what has been done, and the interaction of findings with other components of language or language acquisition theory.

This thesis provided a relatively broad view of the first phases of JSL-acquisition. Greater insights could be gained if the acquisition of each specific structure and the transitions from one developmental stage to the next were investigated in detail. Also, the specific environments in which an acquired structure is used, its spread through the learner's lexicon and its application for different functions would be interesting to investigate. An example would be the acquisition of conditional clauses: learners need to develop strategies to cope with the semantic complexity which influences the choice of one of the many different conditional forms. The interaction of these strategies, semantics, the lexicon and the place of the structure within the sequence of acquisition is presumably systematic and deserves further investigation.

Another obvious question which deserves further research concerns the next structures of the developmental sequence. Learners in this study produced only few complex sentence structures, little complex morphology, no passives, no causatives, did not differentiate politeness levels, had only a basic grasp of deictic and anaphoric reference and of ellipsis, did not acquire the category "nominal adjective", hardly ever inflected the adjective, and seemed to have relatively arbitrary systems for the different functions of 'wa' and 'ga'. Presumably, the next structures of the JSL acquisition process will contain many morphological structures. The study of their acquisition is interesting insofar as Japanese is an agglutinative language, and the details of the acquisition of agglutinative morphology may contribute to further development of language acquisition theories. Kawaguchi, at the Language Acquisition Research Centre (LARC) at the University of Western Sydney, has started to work on this.

Beyond a more detailed description of the acquisition process, there are also questions concerning the motivation and the explanation for the patterns of language acquisition as they are found in this study.

I suggest, on the basis of the data analysis, that discourse-pragmatic factors motivate the production of specific structures and are thereby an additional factor in the formation of the order of acquisition, in interaction with the processing constraints (see below) that lie on them. Givon's "functional-typological syntactic analysis" (FTSA, Givon 1979b) can provide a starting point for the description of discourse-pragmatic factors and their interaction with systematic structural development.

FTSA claims that in different forms of language change, e.g. in language learning, "speakers and linguistic systems move from a discourse-based, *pragmatic mode* of communication to a more *syntactic mode*." (Larsen-Freeman and Long 1991, 267; emphasis in the original). In a nutshell, early interlanguage is characterised, among other features, by universally comprehensible structures like topic-comment order and topicalisation. The process of language learning is characterised by a shift from loose coordination to tight subordination. While there is a low information density in the early learning stages, later the proposition-utterance ratio becomes higher, i.e. expression becomes more "economical".

These tendencies are evident in the development of JSL-interlanguage: learners first rely on a universal type of information coding, i.e. topic-comment structures. In copula sentences and in the canonical word order, subject, agent and topic (i.e. here: element already established in the discourse) map onto each other. Adverb-fronting is the first modification of the sentence structures that occurs. It is one form of topicalisation. The development from loose to tight sentence conjunction is also observable in the acquisition order of coordination > subordination > relativisation. Structures like **det-N-phrases** and relative clauses increase the information density of expression, i.e. they make it more economical: where in early interlanguage, two propositions are expressed in two sentences, they can later be expressed in one sentence which contains a **det-N-phrase** or a relative clause.

Both factors, discourse-pragmatic motivation and the systematicity of structural development, complement each other in shaping the course of language development: discourse-pragmatic motivation motivates the acquisition of the next structure, but has no inherent reason for a specific order of acquisition. This may be caused by the systematicity of structural development. This line of argument is only a rough outline, rather monocausal and not more than a tentative suggestion; but the interaction of the sequence of acquisition with other factors of language acquisition is worth further research.

Perhaps the most interesting area of further research is the potential explanation for the findings. This thesis was descriptive, presenting a sequence of acquisition that was similar for different learners and different types of acquisition. An explanation may be provided by Processability Theory (Pienemann, in press), which explains this similarity with the structure of human cognition. As the processing prerequisites that are necessary for the production of different structures are in a specific implicational relationship and are therefore acquired in a specific order along this implicational hierarchy, according to Pienemann, the structures that are based on these processing prerequisites are acquired in a specific order, too. Preliminary research by S. Kawaguchi and by myself has shown that the acquisition of JSL indeed seems to take place according to the order of their underlying processing prerequisites. A further exploration of this is especially insightful as Processability Theory, like most other language acquisition theories, is based on Roman and Germanic languages; the acquisition of Japanese could provide further interesting insights for a testing and an extension of that theory.

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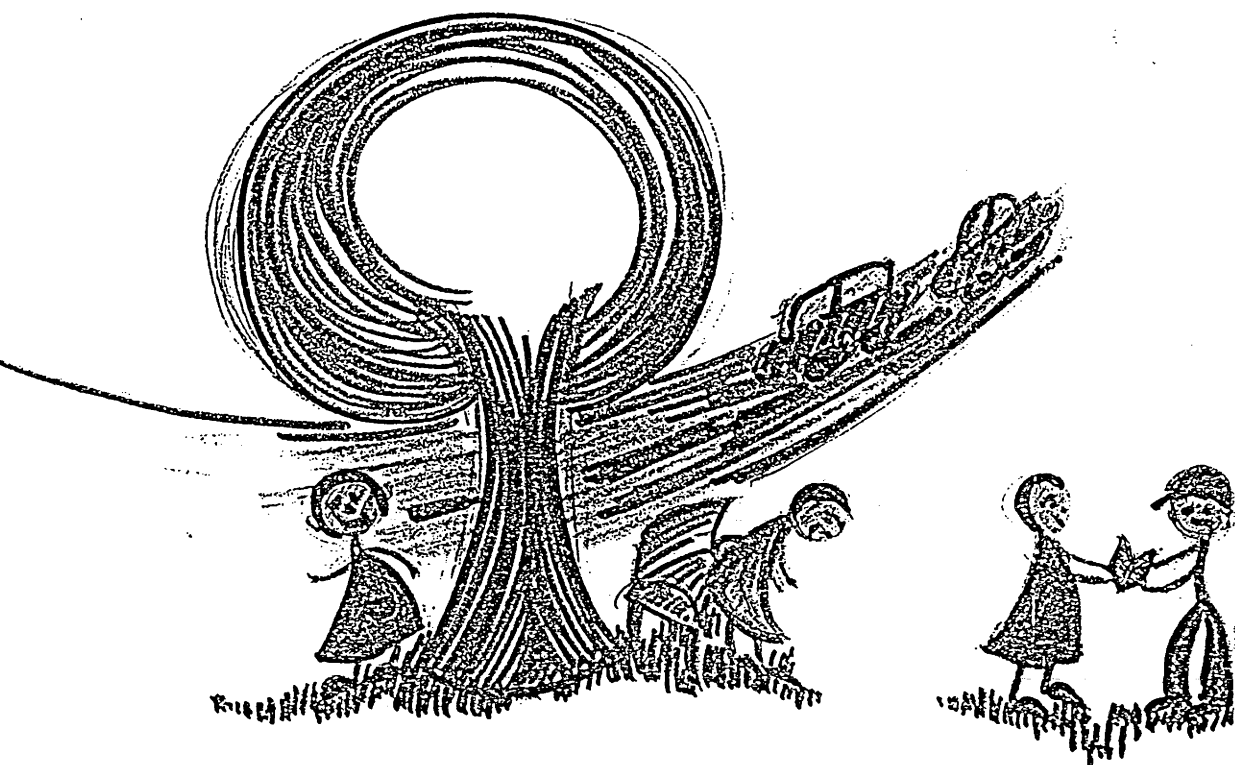
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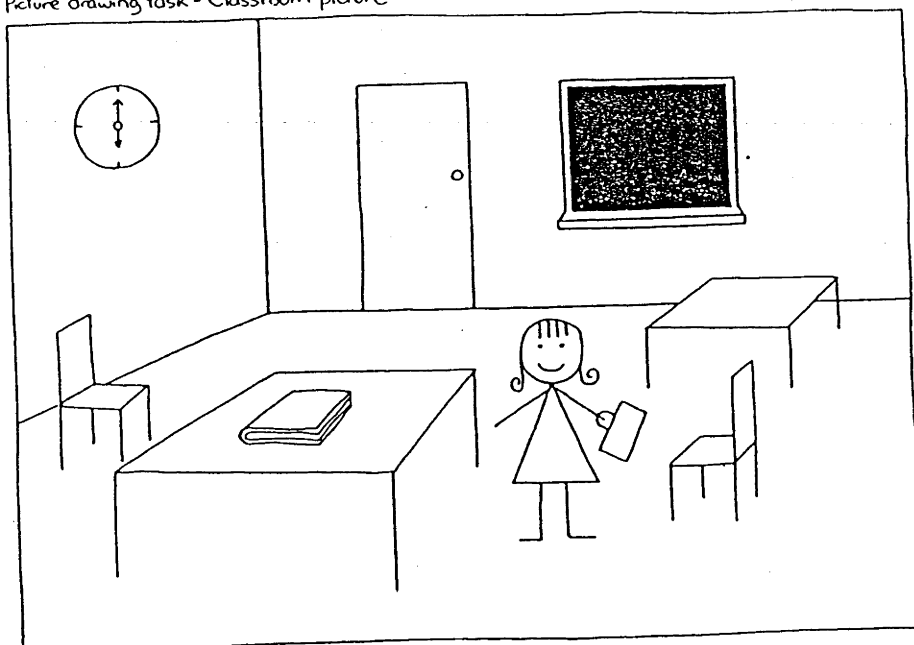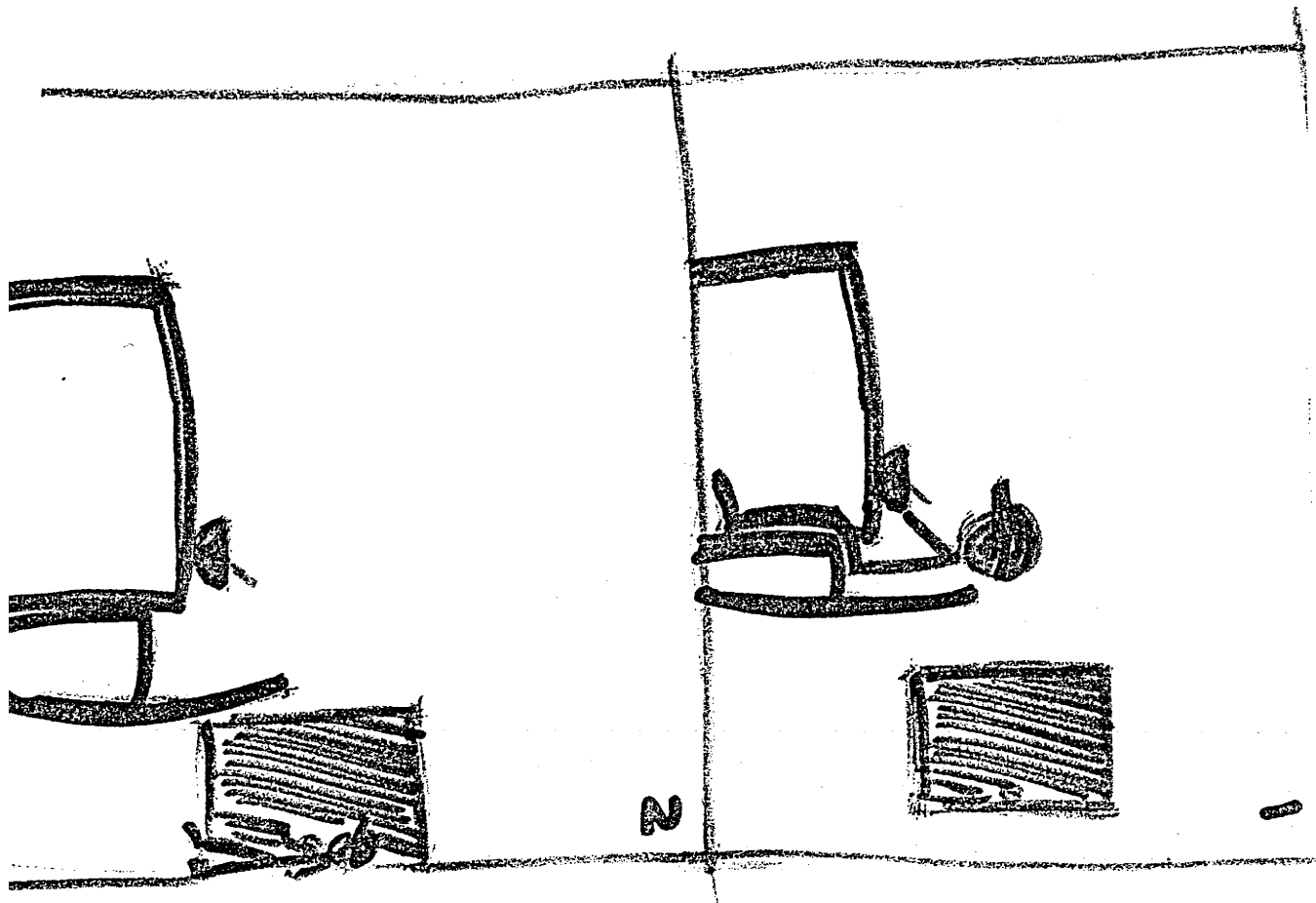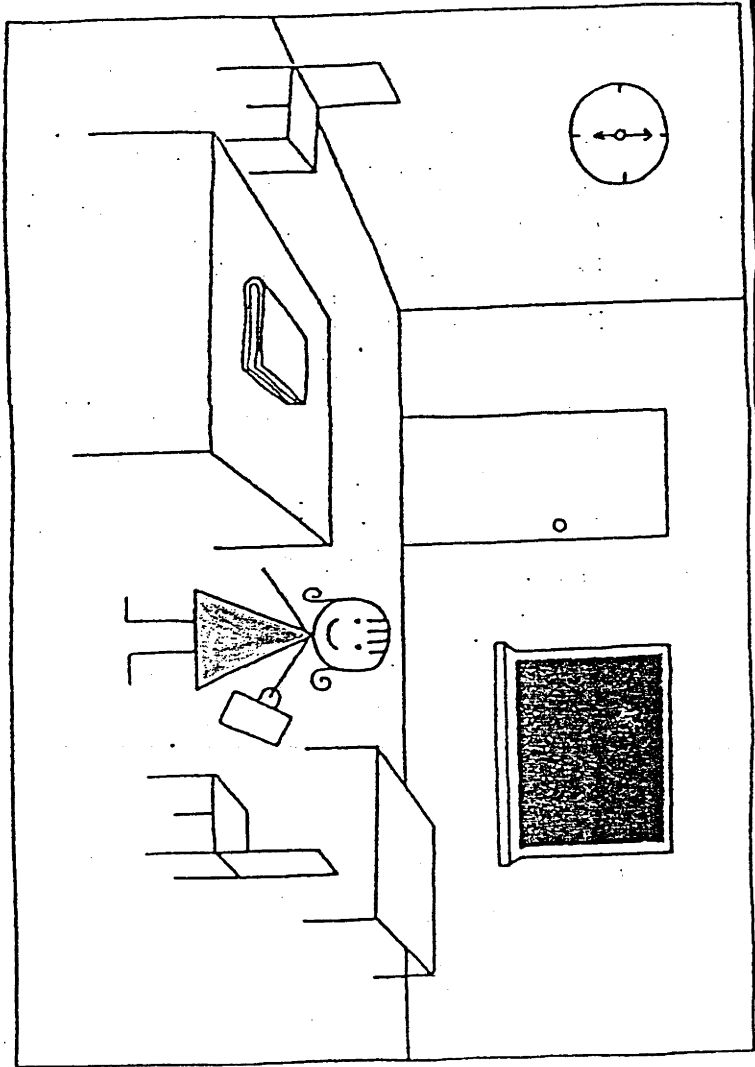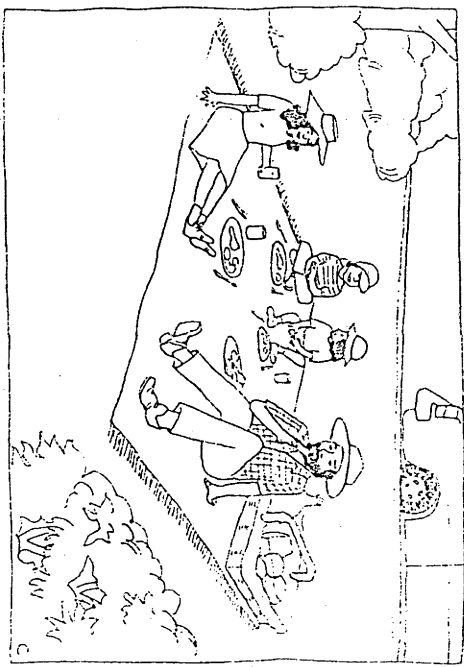
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Picture sequencing - Picnic sequence

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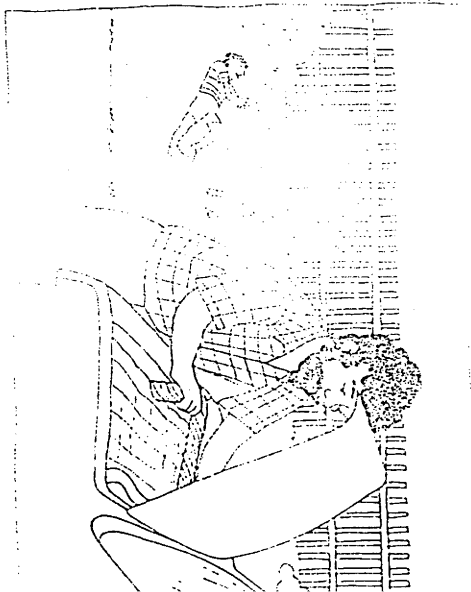
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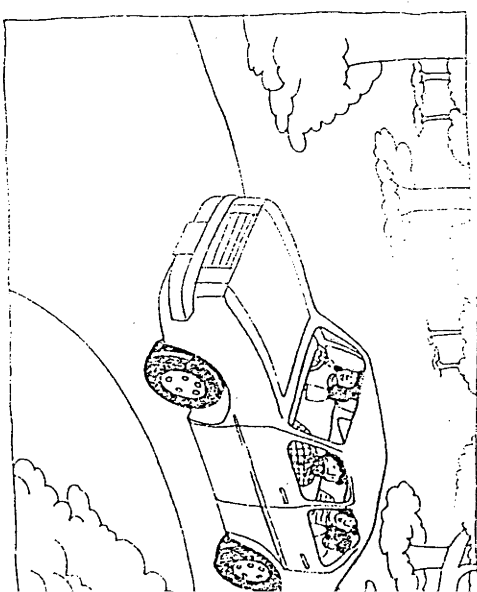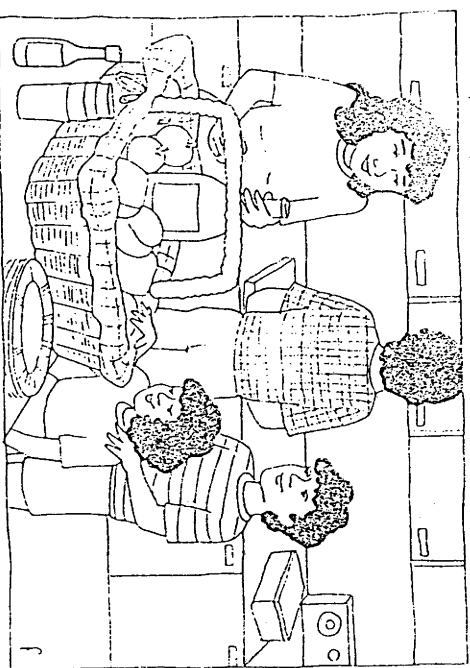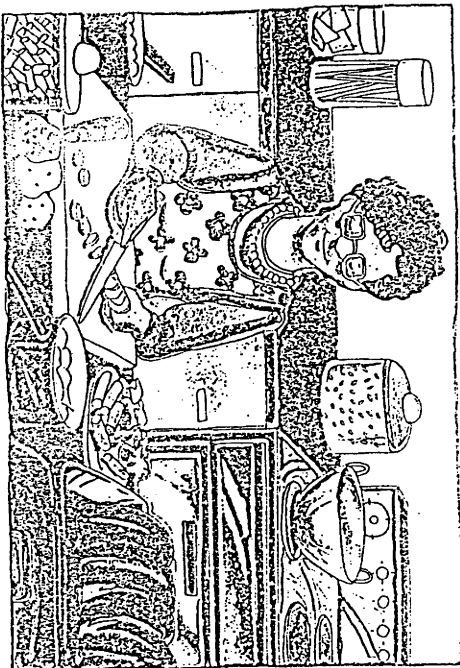
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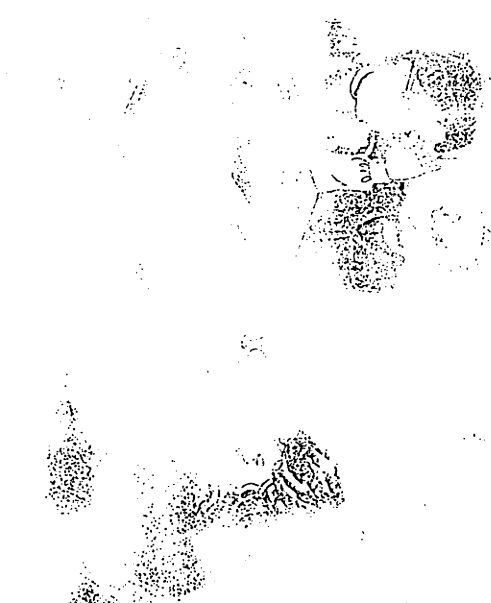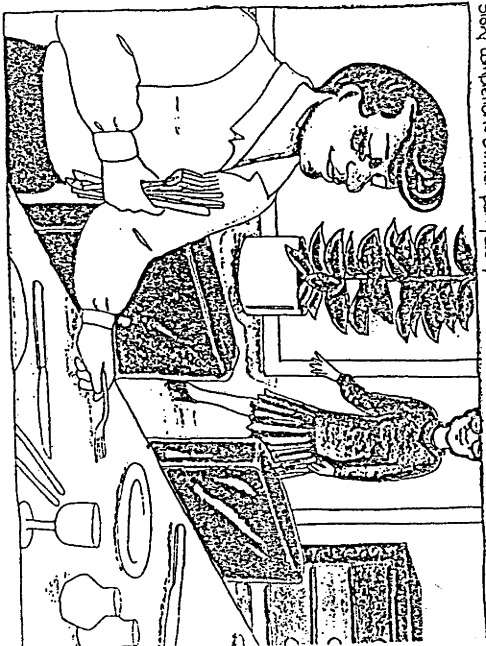
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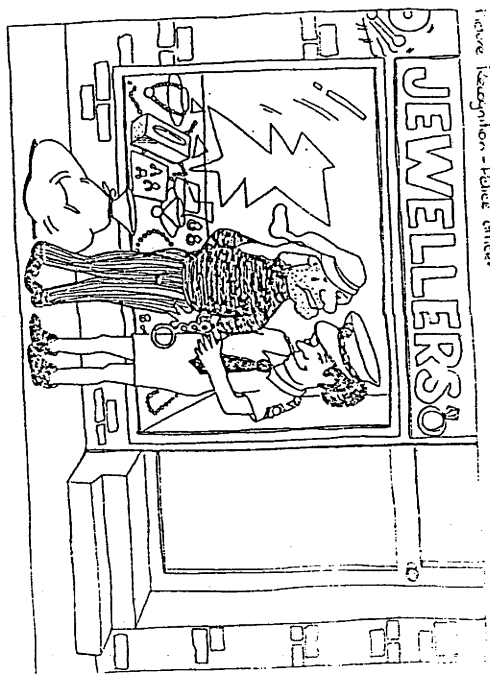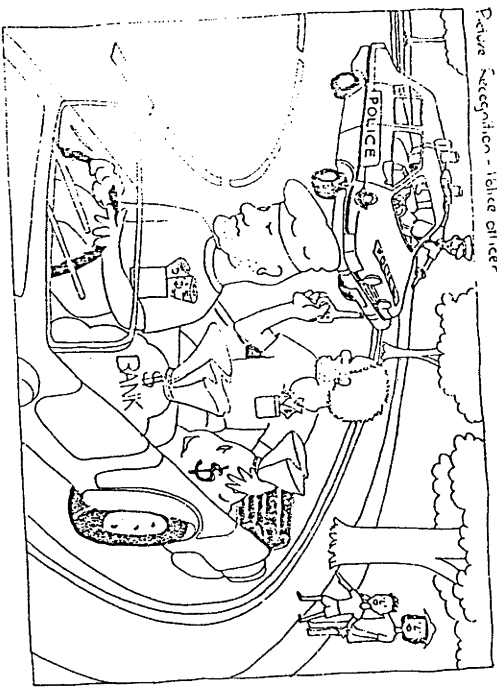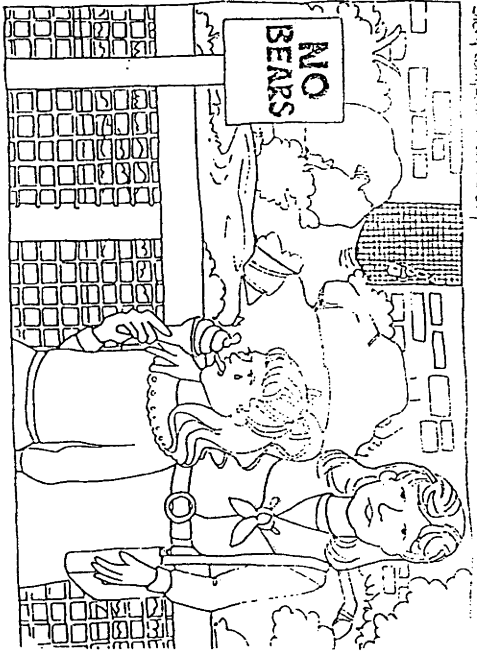
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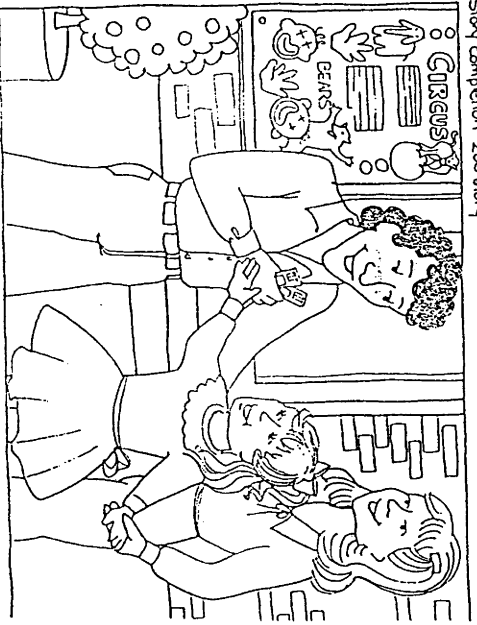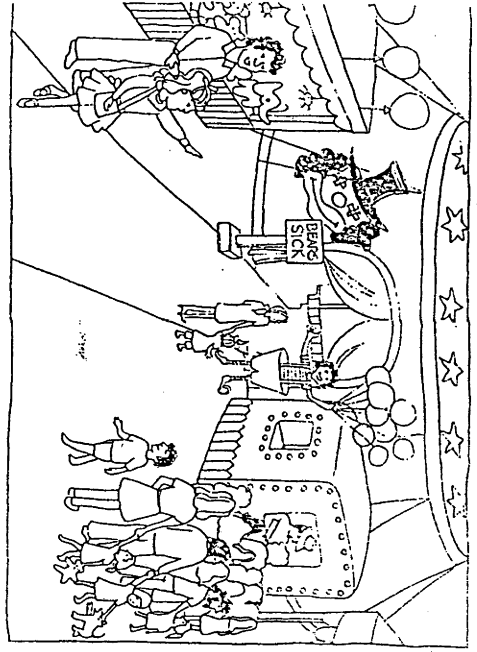
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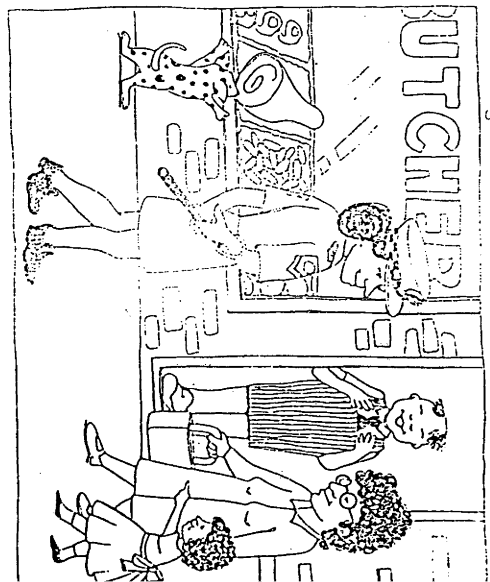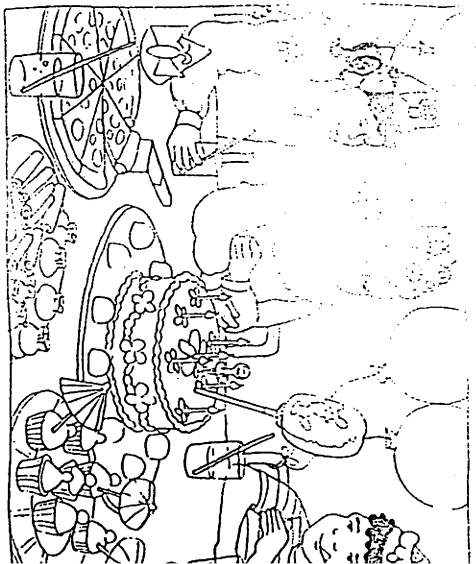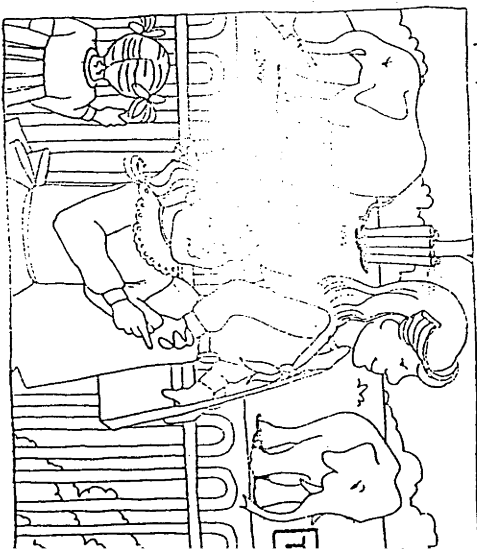
Picture Recognition - Police officer

Story completion - Zoo story

Story completion - Zoo story

Story completion - Zoo story

Story completion - Zoo story

Story completion - Zoo story

NO BEARS

CIRCUS

NO BEARS

BEARS SICK