PHONETICS LABORATORY
DEPARTMENT OF GENERAL LINGUISTICS
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# WORKING PAPERS

18 · 1978

KENNETH HYLTENSTAM

Variation in interlanguage syntax

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# VARIABILITY IN INTERLANGUAGE SYNTAX

Kenneth Hyltenstam

## 1. Introduction

In an earlier paper (Hyltenstam 1977), I presented some findings from an investigation into the syntactic variation in the interlanguage of learners with Swedish as the target language. The variation observed in the learners' placement of the negator in Swedish was found to be regular, and this regularity was interpreted as a reflection of the individuals' linguistic development in accordance with the uniformitarian doctrine for linguistics (Labov 1971:470).

The present article is a report on some further findings concerning second language development in three syntactic areas of Swedish: negative placement, interrogative structures, and subject-verb inversion in declaratives after sentence-initial non-subjects (see below p. 34).

As a preliminary to the presentation of the empirical material, the theoretical assumptions underlying this investigation will be discussed (sections 2-3). Three points are taken up in section 2:

a. The variability paradigm (which is the linguistic basis for the analysis and description of the data)
b. The implications of the variability paradigm for the notion of competence
c. General remarks on the status of data

In section 3, the interrelationship between cross-sectional studies and longitudinal studies in investigations of language development is discussed. The design of the investigation is described in section 4, and section 5 contains the presentation of the empirical material. Following this presentation is a discussion of the results (sections 6-8). In this discussion, three main points will be considered:

a. The similarities and differences between the syntactic areas studied, according to the learners' regular variation
b. The rate of acquisition in relation to a number of extralinguistic correlates

c. The relevance of variability for language teaching

The relevance of variability analyses for language acquisition, both first and second, has been discussed in an earlier article (Hyltenstam 1978a).

## 2. Variation in language

An easily and often observed fact about interlanguage is that learners alternate between equivalent structures such as the following:

Hon inte kommer i kväll.
she not comes tonight

Hon kommer inte i kväll.
she comes not tonight (i.e. She doesn't come tonight.)

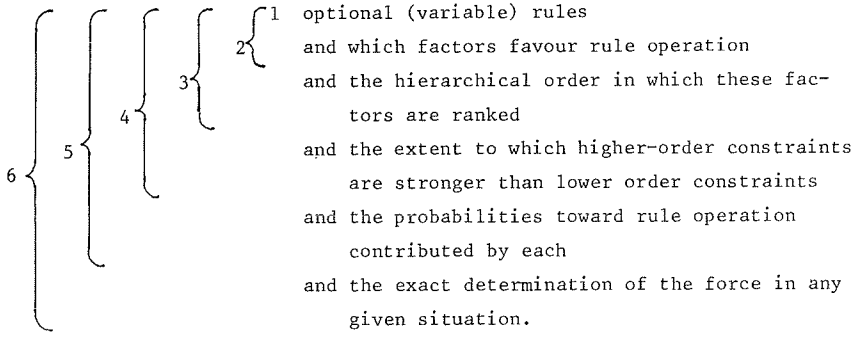
I call two structures equivalent, if there are both learners who vary between the two and learners who categorically use either the one or the other (cf. Bickerton 1971:458).

Variation is one of the most outstanding characteristics of the interlanguage of second language learners, and to ignore variation is to ignore data that may throw light on the mechanisms of language development.

The methodological basis for this investigation of learner variability is the research paradigm developed in later years for the description of variation in the speech of native speakers (Labov 1966, 1969; Wolfram and Fasold 1974; Dittmar 1976). This paradigm is still in a state of theoretical flux, and a number of problems concerning the relationship between variation and native speaker capabilities are central points of dispute among its proponents. An adequate psychological conception of variation is also of the utmost relevance for a discussion and evaluation of the results on second language learner variation presented in this investigation. However, this is not the only problem we encounter on the subject of second language learners' competence. There are different standpoints on what is meant by the concept of competence in this case. Whatever notion of competence we choose is going to have consequences for its research, e.g. in the choice and validity of data, and it is therefore important to decide - at least in a preliminary way - what evidence can be given to favour any one point of view. In the following discussion, I

will first touch on the relationship between variability analysis and native speaker capabilities, and secondly, develop some arguments for a variable competence.

The discussion on variation and speaker capabilities has mainly centered on the competence-performance dichotomy, i.e. whether variation is a competence or performance phenomenon. The traditional view sees variation as a performance phenomenon resulting from the application of optional rules and some performance variables - unless the variation is linguistically conditioned (cf. complementary distribution). Since the introduction of variable rules, which involve a quantification of the variants and the contexts in which the variants appear, a number of possibilities have been proposed as to how strongly the observed variability is controlled by competence. Wolfram and Fasold (1974:110) summarize these views in an account of what speaker capabilities are potentially possible within a variable approach. A speaker can identify[1)]




For our purposes, i.e. the study of interlanguage, it seems more reasonable to work with one of the weaker speaker capabilities such as 2 or 3 above. I think a case can be made for excluding quantification from the rules of interlanguage. Quantification presupposes that the frequency of application for a particular variant - which is taken to mirror the probability of the rule (Cedergren and Sankoff 1974) - is stable over time. The learner's language, however, is not stable over time, but in a continual process of development. In consequence, the frequency of the different variants can be taken to change rapidly in interlanguage, which suggests that quantification of contexts should be replaced by a statement of which contexts are

more or less favourable for the application of different variants.

As was noted above, there are a number of problems connected with the concept of second language learner competence and its interpretation. One important question is its relation to conscious and non-conscious knowledge of a language.

Krashen (1976) discusses the difference taken to exist between language acquisition and language learning. The paradigm case of language acquisition can be seen in the child's acquisition of its native language. Here, the process takes place without any explicit tutoring and follows predictable stages through the use of strategies common to all acquirers in any language. The acquisition process usually results in complete competence in the target language. Language learning is, on the other hand, a qualitatively different process involving rule isolation and explicit manipulation of target language knowledge. Contrary to language acquisition, this process occurs only in formal situations. It is Krashen's view that both of these processes are used by adult second language learners to different extents in different situations, i.e. some target language features are acquired and others are learnt. This results in two kinds of competence - acquired competence and monitored competence. (For a similar view, see Widdowson 1975.)

If Krashen's competence dichotomy is correct, it has some important implications for the choice of data on which to base hypotheses of second language learner competence. Data where the learner is allowed time to reflect on - and perhaps reconsider initially untarget-like behaviour - will not be representative of his actual competence, i.e. acquired competence, as it is assumed that he would have had time to monitor his speech against rule knowledge. To support this claim, Krashen refers to investigations that show differences in sequential orders of morpheme acquisition depending upon what elicitation techniques were used. The "natural" sequence of morpheme acquisition in second language development, established in many studies using the Bilingual Syntax Measure (BSM) and similar elicitation techniques, was not reproduced with techniques that allowed longer processing time. (The Bilingual Syntax Measure type of elicitation technique involves the use of a set of cartoons with accompanying questions posed

by the test administrator. The questions are so formulated so as to generate answers containing obligatory contexts for the morphemes under investigation.) When longer processing time was allowed, the learners produced sequential orders that showed less agreement between learners of different ages and linguistic backgrounds, and that had a low correlation with the "natural" sequence. (In the studies referred to, the "natural" sequence has been deduced from hierarchies of difficulty.) In Krashen's view, this difference can be explained by appealing to the notion of monitored competence. In other words, Krashen uses his dichotomy to explain differences in results obtained through different data.

I believe that Krashen's dichotomy prejudges the issue in a completely open question, i.e. whether or not processes underlying different manifestations of language development in individuals really are qualitatively different (cf. Faerch 1978). I think a case can be made for the existence of one type of competence - a variable competence - the manifestation of which, although constrained within certain definable limits, varies from data type to data type. As we saw above, Krashen argues for his dichotomy on the basis of differences in sequential orders of morphemes found in data elicited by time limited and nontimed techniques. However, Rosansky (1976) has investigated sequential order for the same morphemes in both spontaneous speech and in data obtained with the Bilingual Syntax Measures. The data were elicited from the same learners and on the same occasion. The ranking orders obtained from the two kinds of data were then compared, and the correlation was found not to be significant, i.e. also these two kinds of data produced different orders. Rosansky also compared the sequential order obtained in a longitudinal study of spontaneous speech and a cross-sectional ranking order - also of spontaneous speech - for one and the same individual.[2] Neither did these orders correlate. Thus, while Krashen compares data elicited with the BSM-type technique with data where longer processing time is allowed, i.e. a more formal type of data, Rosansky compares them with spontaneously produced data, which are a less formal type.

With regard to Rosansky's results and within a frame of reference that views competence as a variable phenomenon, it is not at all difficult to imagine that different patterns should appear for the application of the morphemes in different contexts. It is, for example, highly plausible that there is

a gradual difference between different kinds of data depending on the degree of formality in the situation in which they have been produced. In other words, if there are implicational regularities for the application of items between data, this should support an interpretation of competence as variable.[3)] It would thus be interesting to compare the different kinds of data discussed by Krashen and Rosansky on a more linguistic basis, not just counting correlations between orders of morphemes.

In summary, there seems to be a parallel between the variability paradigm's treatment of native speakers and a variable competence view of language learners. We can expect a new rule - adjustment to the target - to appear first in data with a high degree of formality where the learner has an opportunity to monitor his performance. In time, the adjustment can be expected to spread to less formal types of performance, and in the last instance, it will show up in informal oral production.

## 3. Cross-sectional and longitudinal studies

Another methodological question in choice of data for investigations into linguistic development has to do with the relationship between results obtained from longitudinal studies and those obtained from cross-sectional studies of different design. Although longitudinal studies are to be preferred in investigations of linguistic development, a number of practical difficulties often lead to the use of supposedly viable alternatives such as the cross-sectional.

The present study is a combination of a cross-sectional and longitudinal approach. Data from a group of 160 adult learners of Swedish has been collected on two occasions with an interval of five weeks. The second cross-sectional can be seen as a longitudinal control of the first and the results of both can be compared with each other.

As this study is an application of the variable paradigm to second language acquisition, it studies one linguistic phenomenon at a time - variation between equivalent structures that express this phenomenon, and the significant linguistic contexts that influence the choice of variant. The hypothesis that is tested is whether the individuals in the study can be said to be at different points in a plausible development towards the tar-

get norm. This means that we are not interested in group scores and means, which has been one of the problems with other cross-sectional studies. The design of this study should therefore not be confused with that of cross-sectional morpheme studies, or with cross-sectionals of the transversal type (Nemser and Slama-Cazacu 1970:124), where different groups of learners known to be at different stages in their linguistic development are compared to one another.

Cross-sectional morpheme studies in second language acquisition are a direct consequence of the well-known results from first language acquisition arrived at by de Villiers and de Villiers (1973). They compared the order of acquisition of a group of morphemes obtained through longitudinal research, reported in Brown (1973), with the results from a cross-sectional study of the same items conducted on 21 children at different levels of development (with mean length of utterance (MLU) ranging from 1.25 to 4.67). The correlations between the ranking order of morphemes in the cross-sectional and the order of acquisition in the longitudinal study was highly significant and was interpreted as support for the validity of cross-sectional studies.

When the cross-sectional methodology was carried over to second language research, not only were the theoretical assumptions behind these studies introduced, but also adopted were the linguistic phenomena studied in child language research, i.e. most research in second language acquisition centers around morphological features and their sequential order of acquisition.

As in the case of first language acquisition, it has been possible to establish an invariant order of morpheme acquisition in second language development, although the orders are not the same in the two cases. This difference has been taken to be a consequence of the greater cognitive maturity of second language learners (Dulay and Burt 1974). Data used in cross-sectional morpheme studies have mainly been elicited through tests such as the above mentioned Bilingual Syntax Measure. The invariant order thus arrived at has been assumed to be the natural sequence in second language acquisition and has turned out to be remarkably uninfluenced by background factors such as native language, age, and formal versus informal training

(Krashen et al. 1976; Fathman 1976).

A problem with cross-sectional morpheme studies relates to the correct interpretation of the results. Are they reflections of development or are they a mere hierarchy of difficulty? Recently, it appears as though those working within this field have in many cases weakened their claims that cross-sectionals actually mirror development, in favour of the weaker interpretation, i.e. the results from cross-sectionals are seen as performance or accuracy orders (Andersen 1977:49) - at least until stronger evidence to the contrary is available.

The necessity of a weaker interpretation is a consequence of several methodological drawbacks pertinent to cross-sectional morpheme studies that are not, however, relevant to the present study.

Firstly, it is assumed that all the compared morphemes follow the same growth-curve. This is to ensure that we will always be able to determine the same ranking order between these morphemes for any level of development. In other words, for one and the same individual the assumption is that the growth-curves do not cross one another. This assumption does not appear to hold. Rosansky (1976) presents longitudinal data that show the non-similarity of growth-curves for second language learners (see her tables 10 and 13, p. 421 and 424 respectively). Already in de Villiers and de Villiers (1973), it can be seen that the growth-curves for increasing values of MLU are not similar (see their table 1 p. 270).

Secondly, if we leave the group level and examine the ranking orders for specific individuals, we find that there is a significant difference between these individuals and their ranking orders. Neither is this point in accord with any assumptions underlying cross-sectionals, where the total ranking order should be the same for each specific individual. (see Rosansky's table 5 p. 416).

Thirdly, there is a problem in categorizing morphemes. For example, in most studies the category article is studied which, following Brown's lead, is taken to comprise both definite and indefinite articles in their different functions. Andersen (1977) however, has shown that definite and indefinite

articles involve quite different learning problems - at least for the Spanish speaking learners he studied and conceivably also for other learners. He has convincingly shown that the growth-curves for the two articles differ (see his fig. 3 p. 69).

Fourthly, a further important methodological prerequisite for cross-sectionals, i.e. that the individuals studied should be known on an independent basis to to be at different levels of development does not always seem to have been fulfilled. This problem has been avoided in the present study by incorporating a large number of learners. In the courses from which my learners were taken, it is possible to find pupils at very different levels of development. Already after three weeks, some pupils will be very close to the target norms for the structures studied here and are able to use them categorically in formal situations, while we can find others that do not seem to have made progress at all.

As I noted above, I do not believe the criticisms of cross-sectional morpheme studies affect the present investigation. As regards the first two criticisms, they seem to point to the conclusion that it is premature to study sequential development between different morphemes in a cross-sectional before we have researched the problem of what the developmental curves for the individual morphemes look like. In this study, the development of one phenomenon at a time has been studied.

Neither has the categorization of the phenomena studied been a problem here.

## 4. Background and design of this study

The grammatical phenomena studied in this investigation of second language learners' Swedish are the following:

a. Sentence negation
b. Inversion in interrogative sentences
c. Subject-verb inversion after sentence-initial non-subjects
d. Non-inversion in embedded clauses
e. The constituent order between object and adverbial

Only the results of the first three phenomena will be treated extensively in this paper.

In a preliminary investigation of approximately 80 written compositions with a length of about 250 words each, the above phenomena were found to be recurring problems, which confirmed their choice for deeper investigation. These structures remain problematic for a long period of time in many cases, despite intensive instruction. As a consequence, they are excellent topics for the study of variation, as the language learner interchangably uses the target structure and equivalent structures during the learning period.

As this investigation is primarily a study of variation, it was necessary to first isolate what the possible equivalent structures were and what contexts might be favourable for the use of the different variants. The preliminary examination of the 80 compositions showed that for each of the structures there were two main equivalent structures. For sentence negation, the equivalent structure that was used besides the target variant was a placement of the negator on the opposite side of the finite verb than would have been the case according to the norm. For structures b - d, all involving subject-verb order, the equivalent structures used were those that employed a non-inversion equivalent to inversion, and vice versa. Also in the case of structure e, the constituent order opposite to the Swedish norm was used.

On the other hand, determining the linguistic contexts favouring the different variants from the limited amount of data I had access to turned out to be a difficult task. Among all the - at this stage - equally plausible candidates (see below p. 50), the nature of the finite verb - whether it was an auxiliary or main verb - was decided on as a possibly interesting context. The main consideration behind this choice was that since the finite verb is one of the most central elements of the clause, it seemed highly plausible that the nature of this element would influence the syntactic variants of linearly and semantically related elements.

The other context chosen was the nature of the subject - in this case the difference between a nominal and pronominal subject. One reason behind this choice was that the inversion structures studied involve both the subject and the finite verb, and it is conceivable that inversion could be facilitated by the nature of the subject. Another, related, reason is that the obligatory choice of subject in Swedish (Hammarberg and Viberg 1977) may

be a problem in itself, since many languages do not need to supply a pronoun in subject position. For speakers of such languages, there are two problems: a) to supply the pronominal subject and b) to correctly position the pronominal subject in relation to the finite element. This might be predicted to result in fewer inversions when the sentence contained a pronominal subject, or more deletions of the subject in contexts where inversion should be the case (cf. Meisel 1976). Yet a third reason for interest in the pronominal/nominal distinction is the fact that many simple systems do not use pronominal subjects. For reasons of comparison, the influence of the pronominal/nominal distinction was also studied for negation.

With these considerations in mind, sentences with the following structural descriptions were constructed for use in elicitation materials.

a. Sentence negation

Negation in main clauses:

$$[\left\{\begin{matrix} NP^{Pron} \\ NP^{N} \end{matrix}\right\} - \left\{\begin{matrix} V^{Aux}_{fin} \\ V^{MV}_{fin} \end{matrix}\right\} - NEG - X]_{S}\,main$$

Negation in subordinate clauses:

$$\text{Det är } \left\{\begin{matrix} \text{bra} \\ \text{synd} \end{matrix}\right\} [\text{att } \left\{\begin{matrix} NP^{Pron} \\ NP^{N} \end{matrix}\right\} - NEG - \left\{\begin{matrix} V^{Aux}_{fin} \\ V^{MV}_{fin} \end{matrix}\right\} - X]_{S}\,\text{non-main}$$

(Det är bra / synd att ... means It is good / a pity that ...)

b. Inversion in interrogative sentences

Inversion in simple yes/no questions:

$$[\left\{\begin{matrix} V^{Aux}_{fin} \\ V^{MV}_{fin} \end{matrix}\right\} - \left\{\begin{matrix} NP^{Pron} \\ NP^{N} \end{matrix}\right\} - X]_{S_{Q}}\,main$$

c. Subject-verb inversion after sentence-initial non-subjects:

$$[X_{\text{non-subject}} - \left\{ \begin{matrix} V^{\text{Aux}}_{\text{fin}} \\ V^{\text{MV}}_{\text{fin}} \end{matrix} \right\} - \left\{ \begin{matrix} NP^{\text{Pron}} \\ NP^{\text{N}} \end{matrix} \right\} - Y]_{S\,\text{main}}$$

d. Non-inversion in embedded clauses

Embedded yes/no questions:

$$NP\ \text{frågar}\ [\text{om} \left\{ \begin{matrix} NP^{\text{Pron}} \\ NP^{\text{N}} \end{matrix} \right\} - \left\{ \begin{matrix} V^{\text{Aux}}_{\text{fin}} \\ V^{\text{MV}}_{\text{fin}} \end{matrix} \right\} - X]_{S_Q\,\text{non-main}}$$

(... frågar om ... means ... ask(s) if ...)

Embedded declaratives:

$$NP\ \text{säger}\ [\text{att} \left\{ \begin{matrix} NP^{\text{Pron}} \\ NP^{\text{N}} \end{matrix} \right\} - \left\{ \begin{matrix} V^{\text{Aux}}_{\text{fin}} \\ V^{\text{MV}}_{\text{fin}} \end{matrix} \right\} - X]_{S\,\text{non-main}}$$

(... säger att ... means ... say(s) that ...)

e. Constituent order between object and adverbial:

$$NP - V_{\text{fin}} - NP_{\text{obj}} - \text{Advl}$$

24 sentences with sentence negation were constructed, 12 with the negator in main clauses and 12 in subordinate clauses. For points b-e, 12 sentences were constructed for each area. The 12 sentences for point d were evenly distributed between interrogatives and declaratives, i.e. 6 sentences representing each. The actual sentences are displayed in Appendix II.

Lexical content and grammatical features other than the points studied were adapted to the first 10 chapters of the subjects' course bock.[4] This ensured that the elicitation sentences were comprehensible for the subjects.

The elicitation sentences were presented in the following form:

| | | | |
|---|---|---|---|
| HAN | I morgon _____ | kommer _____ | hem. |
| HE | Tomorrow | comes | home i.e. Tomorrow he is coming home. |

The subjects had to place the word on the left into one of the empty slots,[5] and it was assumed that this would reveal their judgements as to the "correct" variant of the sentence. 72 items of this form, representing all of the syntactis areas discussed above, were presented for elicitation.

In a pre-evaluation of the materials, a preliminary version was administered to a group of learners who were in all relevant respects similar to the group who were to be the actual informants. Although the pre-evaluation materials contained sentences constructed as above, one other method of presentation was also used, exemplified below:

( ) I morgon han kommer hem
( ) I morgon kommer han hem  i.e. Tomorrow he is coming home.

The task for the subject was to mark which of the alternatives given was the correct one in his opinion.

Both formats were administered in random order to the same preliminary experimental group of 13 persons and a high correlation of .95 was obtained for the variants elicited by each. They can therefore be said to elicit the same intuitional judgements. Some inadequacies found in the materials in the preliminary experiment, such as choice of lexical items, were remedied in the materials used in actual elicitation. Furthermore, before actual elicitation, the materials were administered to a group of native speakers of Swedish [6] in order to ensure that <u>their</u> judgement was categorical. The result of this procedure showed that there was a very high consensus among native speaker judgements, with deviations of less than 1%. This consensus showed that there is no variation in these structures among native speakers. The small deviation of 1% can presumably be explained as a result of "clerical mistakes and momentary lapses" (Lado 1961:323), which should be expected when second language elicitation materials are given to native speakers of the language in question.

The elicitation materials were administered to adult second language learners attending full-time courses (5-6 hrs/day) in Swedish as a second language. They were administered by the same person - myself - on all occasions. On each elicitation occasion, 5 to 20 learners were present. The instructions were given orally in Swedish and examples of the answering-

procedure were presented on the blackboard. These examples contained both declaratives and interrogatives, which was to direct the subjects attention to the fact that both sentence types were included in the materials. The subjects were encouraged to request clarification on any unclear points. The instructions were also given in written form in Swedish and 15 other languages.[7] All subjects were given the opportunity to complete the elicitation task at their own speed, and it was only in a couple of cases that the time required to complete the materials was longer than 45 minutes. The same elicitation materials were administered to the same subjects on two different occasions. The first occasion - Time I - occurred after three weeks of course study; the second occasion - Time II - occurred 5 weeks later, i.e. in the 8th week of course study. At Time II, a questionnaire (Appendix II) eliciting background factors was completed by each subject. At Time I, the subjects were told that I was interested in the effects of a particular instruction material and that they were to be tested both before and after use of the material for this reason.[8] They were also told that their performance on the elicitation materials would in no way affect their final grade in the course.

The subjects were pupils at Kursverksamheten vid Lunds Universitet in Lund and Malmö. Data from 352 subjects were elicited, but, for purposes of analysis, only the data from those who were present at both Time I and Time II were used, i.e. data from 160 subjects. These 160 represented diverse backgrounds. The information given here is taken from the questionnaire.

Native language: 35 different languages were represented. For some of these, there was a number of speakers, but many of them were the native languages of only one or two learners.

For the later analysis, the languages were divided into 9 groups. The number of speakers is given for each group.

1. Hamito-Semitic languages (9)
2. Romance languages (13)
3. Greek (18)
4. Bantu languages; Sudan languages; Thai; Estonian (10)
5. English (19)
6. Slavonic languages except Polish (19)

7. verb-final languages (37)
8. German (3)
9. Polish (32)

Knowledge of languages other than the native language: 36 of the learners knew no other language than their mother tongue, 124 knew at least one other language. (A subject was considered to know a foreign language after either two years' of study of the language or one year's residence in an area where the language was spoken.)

Education: This ranged from 4 years of formal schooling up to university education. The average length of education was 12 years. 18 subjects had less than 9 years of school, 22 had completed a university education.

Duration of stay in Sweden at Time II: 2 months to 2 years, with the average duration being 4 months.

Age: 16-54 years old. Average age being 25 years. 9 subjects were under 19 years of age, and 19 were over 31.

Sex: 64 women, 96 men.

The learners in this investigation were instructed by 24 teachers, and each teacher taught between 1 and 17 of the learners.

To obtain more data on interrogative structures, including both yes/no questions and interrogative word questions, data was elicited from another group of learners totalling 29 subjects with similar background characteristics. The procedures followed were exactly like those described above, only that for 8 of the 29 learners, data were also collected on a third occasion, Time III, another 5 weeks after Time II. The elicitation materials combined 84 sentences, among which 24 represented yes/no questions and 24 interrogative word questions. These latter sentences had the following structural characteristics:

Inversion in simple interrogative word question:

$$[X^{Q}_{\text{non-subject}} - \left\{ \begin{matrix} V^{Aux}_{fin} \\ V^{MV}_{fin} \end{matrix} \right\} - \left\{ \begin{matrix} NP^{Pron} \\ NP^{N} \end{matrix} \right\} - Y]_{S\,main}$$

Non-inversion in embedded interrogative word question:

$$\text{NP vet inte } [X^{Q}_{\text{non-subject}} - \begin{Bmatrix} NP^{Pron} \\ Np^{N} \end{Bmatrix} - \begin{Bmatrix} V^{Aux}_{fin} \\ V^{MV}_{fin} \end{Bmatrix} - Y]_{S}\text{non-main}$$

(... vet inte ... means ... know(s) not ..., i.e. do(es) not know)

## 5. Analysis and results

This section presents the results of the study. Before proceeding with the different syntactic areas, some general remarks will be made on the analytical techniques applied in obtaining the results. Also the data displaying devices used in the presentation will be introduced here.

To ascertain whether variation actually existed in the data elicited, the first step in the analysis was to examine each sentence and calculate to what degree it was treated according to the Swedish norm, i.e. for each sentence, how many subjects used the target language variant and how many did not. On the basis of this, the sentences within each syntactic area were ranked in order of "difficulty"[9] (see Appendix II for this ranking order). The rankings were based on the results of both Time I and Time II. Since some sentences within the same syntactic area were a great deal easier than others, the existence of variation was confirmed. In the next stage of analysis, this variation was focused upon in order to find out whether any patterning existed or not. Already in the ranking of sentences a pattern of variation within the negative and interrogative structures emerged. Sentences containing auxiliary verbs could be ranked as "easier" than those containing a simple main verb. To arrive at a detailed knowledge about the variation in this data, each learner's treatment of each sentence was examined. In this examination, implicational scales were used.[10] (See Hyltenstam 1977 for explanation of these.) Here, the first step was to use the individual sentences in their ranking order as contexts for the grammatical points they represented. For example, in negative structures this meant that all sentences containing auxiliary verbs occurred to the left of those containing main verbs. In the subordinate clause the exact opposite was the case: All sentences containing main verbs occurred to the left of those containing auxiliary verbs. For each subject, target variants were marked with a plus and non-target variants were marked

with a minus. The distribution of pluses and minuses made it possible to determine which subjects differentiated between main and subordinate clauses. For example, for negative placement again, a plus in the main clause scale means post-verbal placement of the negator, since this is the case in Swedish, and a minus in the subordinate clause scale also means post-verbal placement of negation, as this is not the target variant in subordinate clauses. In these clauses, Swedish has pre-verbal placement of negation as can be seen from the structural description on p. 11. Here a hypothetical pattern is given for two learners, 1 and 2:

Main clauses

| | Aux | Aux | Aux | Aux | Aux | Aux | MV | MV | MV | MV | MV | MV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | + | + | + | + | + | + | + | + | + | + | + | + |
| 2 | + | + | + | + | - | - | + | - | - | - | - | - |

Subordinate clauses

| | MV | MV | MV | MV | MV | MV | Aux | Aux | Aux | Aux | Aux | Aux |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | + | + | + | - | - | - | + | - | - | + | - | - |

Neither (1) nor (2) differentiate; (1) is a stable post-verbal placer and (2) varies.

These binary scales, containing individual sentences as contexts, were converted to multivalued implicational scales. In the multivalued scales, all auxiliary verb sentences were put together representing one context and the main verb sentences represented another context. For learners who did not differentiate between clause types, these two contexts were the only two needed and their post-verbal/pre-verbal placement of negation could be displayed in a percentage for these contexts: a learner who had post-verbal placement in 12 of the 24 sentences was given a figure of 50%. For learners who did differentiate between clause types, the frequency of their target variants was computed for main and subordinate clauses respectively, i.e. four contexts were needed. For a more detailed description of how the scales have been used as analytical and data displaying devices, see Hyltenstam 1977. The implicational scales thus make it possible to observe the regularities to be found in variation. In the present article, only a few scales will be presented. Owing to the amount of space they take up, it is necessary to construct an alternative displaying device to which the results of the scales can be converted. This device should also clearly show whether

implicational patterns exist or not. The alternative used here is to construct coordinate diagrams with the two axes representing the different contexts for the variable element in the following way. Say we have two contexts, A and B, in an implicational scale and that these two contexts are differentialy favourable for target application of a particular unit. In context A the unit occurs more frequently than in context B for all subjects. The hypothetical implicational scale and its parallel coordinate diagram will be as follows:

| | A | B |
|---|---|---|
| 1 | 70 | 20 |
| 2 | 80 | 25 |
| 3 | 100 | 40 |
| 4 | 100 | 60 |
| 5 | 100 | 90 |

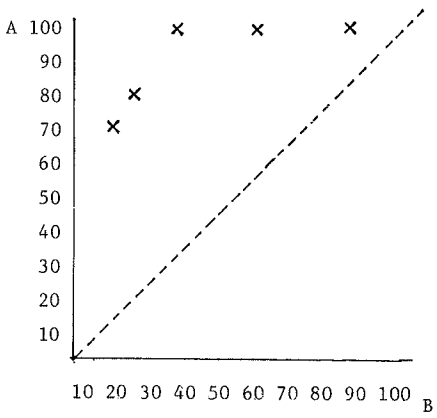



Figure 1. Hypothetical implicational scale and its parallel coordinate diagram.

The coordinate diagram in fig. 1 thus shows a typical implicational pattern, since the plotting of all subjects falls on one side of the diagonal. An irregular variation would have given plots anywhere in the area.

A further displaying device will be used later in this article. However, since its representation of data incorporates some assumptions as to the interpretation of the results, it will not be presented until the section discussing interpretations.

## 5.1 Negative structures

As was mentioned above, the placement of negation in Swedish can be broadly expressed as in the following rule:

Negative Placement

$$[X - NEG - V^{fin} - Y]_{S_{main}}$$

SD: 1 2 3 4 ===>

SC: 1 3 2 4

The input structure to this rule is generated by the Phrase Structure rules of the grammar and shows up in the surface when Negative Placement is not applicable, i.e. in subordinate clauses.[11)]

The Negative Placement rule is thus the endpoint of acquisition. What has to be learnt by second language learners of Swedish is placement of negation after the finite verb in main clauses and before the finite verb in subordinate clauses.

In Hyltenstam 1977, it was argued that the starting point of acquisition for all learners could be hypothesized to be identical to the input structure of the Swedish Negative Placement rule.[12)] Among the facts offered as support for this conjecture was the observation that negation is placed in front of the "finite"[13)] verb in diverse types of simple systems,[14)] thus suggesting that this placement is the more basic. Further support for this view can be found in Dahl 1977 where it is shown that placement of negation in front of the finite verb is the most common in a world-wide range of languages.

In Hyltenstam 1978a, this question has been further developed, and the hypothesis has been related to a theoretical framework of markedness in linguistics.

The results within the area of negative structures, partly reported in Hyltenstam 1977, are that the variation found is highly regular across the 160 learners studied. In main clauses, the auxiliary verb context was found to be more favourable for the application of the Swedish norm variant of negative placement, i.e. placement after the finite verb. This was also found to be the case when learners did not differentiate between clause types. In subordinate clauses, however, the main verb context was shown to be the more favourable for the target variant. This last observation, of course, only obtains for learners who did differentiate between clause

types. Due to lack of space, the results of only 45 learners, representative of all 160 learners, were presented in the form of multivalued implicational scales.

In this paper, the remaining results will be presented with the help of the coordinate diagrams introduced above on p. 18. The first two diagrams present the results obtained at Time I.

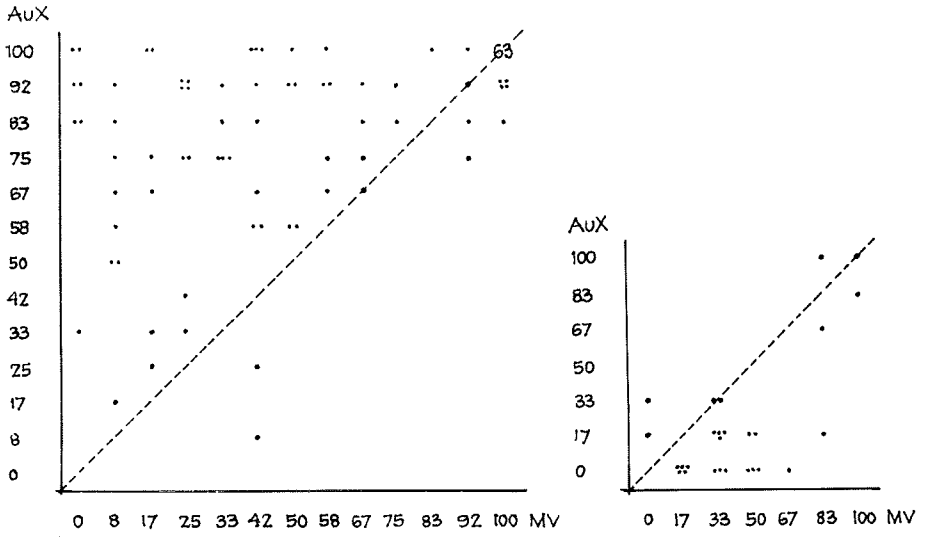



Figure 2. Placement of negation according to auxiliary verb and main verb contexts at Time I.

The diagram to the left in fig. 2 shows the behaviour of the 133 learners who did not differentiate between clause types at Time I. Of these, 70 varied in their placement of negation, while 63 placed it categorically after the finite verb. The diagram to the right shows the variation in subordinate clauses by learners who did differentiate between clause types. They totalled 27 at Time I. Of these, 26 varied their placement of negation in subordinate clauses - in main clauses they consistently placed the negation after the finite verb. Only one subject always placed the negation in accord with the target, thus applying the Swedish norm variants in both main and subordinate clauses.

It can be seen from the diagrams in fig. 2 that the implicational pattern is quite strong. There are a few individuals that deviate from the implicational pattern, but these constitute only a small percentage of the total number of individuals with variable behaviour. It should be noted that the subjects that deviate are mostly found among those having high percentages of application of the norm variants in all contexts, which means that the context difference is less important for learners close to the Swedish norm.

In fig. 3, the parallel result at Time II is displayed.

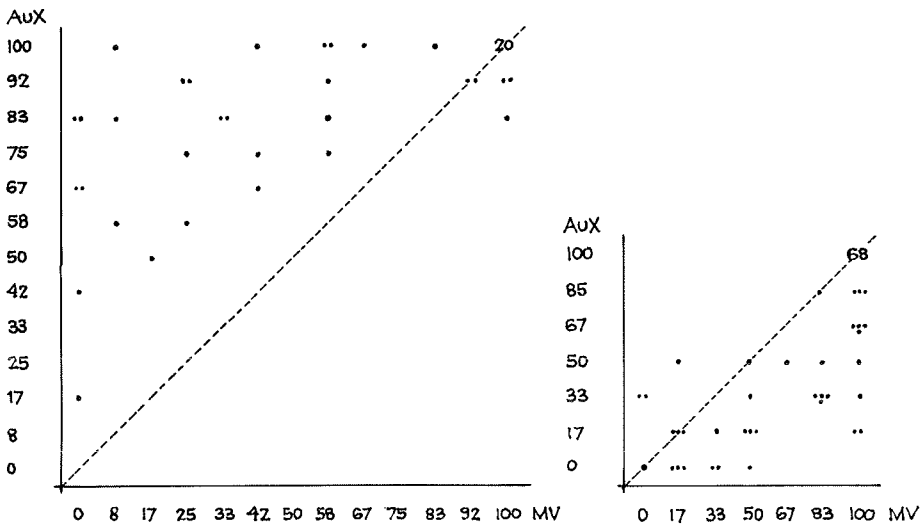



Figure 3. Placement of negation according to auxiliary verb and main verb contexts at Time II.

Among the 51 individuals who did not differentiate between clause types at Time II, displayed in the leftmost diagram of fig. 3, 31 varied their placement of negation and 20 showed categorical placement of negation after the finite verb. 109 subjects differentiated between clause types. Among these, 41 showed variable behaviour and 68 applied the Swedish norm variants, i.e. these 68 had acquired the Negative Placement rule to such an extent so as to allow them to apply it categorically in this

type of performance.

Differences in behaviour between Time I and Time II are a matter of quantity. At Time II more learners differentiate between clause types, which should be seen as progress towards the target. Qualitatively, behaviour is the same for both Time I and Time II, and the same contexts are the favourable ones for application of the norm variants.

It might not be immediately obvious from the above way of displaying the results that the individual learners seem to be caught at different points along a continuum stretching from the hypothesized starting point of acquisition to the endpoint. This can better be seen in an examination of the implicational scales that are the basis for these coordinate diagrams. In Hyltenstam 1977, scales displaying the behaviour of native speakers of English, Hamito-Semitic languages, Serbo-Croatian, and Turkish were given. Here, two more groups are displayed - native speakers of Polish and a mixed group of speakers of verb-final languages. It can be seen from these scales that the individual learners' behaviour approximates to the target in varying degrees.

Scales 1 and 2. Native speakers of Polish. (Deviations from the implicational pattern are marked with stars.)

Time I

| S \ C | Aux+NEG | MV+NEG |
|---|---|---|
| 132 | 33 | 0 |
| 159 | 67 | 42 |
| 135 | 92 | 50 |
| 130 | 100 | 58 |
| 150 | 75* | 92 |
| 191 | 92 | 75 |
| 309 | 83* | 100 |
| 87 | 100 | 100 |
| 137 | 100 | 100 |
| 49 | 100 | 100 |
| 145 | 100 | 100 |
| 153 | 100 | 100 |
| 182 | 100 | 100 |
| 188 | 100 | 100 |
| 300 | 100 | 100 |
| 304 | 100 | 100 |
| 209 | 100 | 100 |
| 211 | 100 | 100 |
| 212 | 100 | 100 |
| 251 | 100 | 100 |
| 256 | 100 | 100 |
| 261 | 100 | 100 |
| 277 | 100 | 100 |

| | Main clause | | Sub. clause | |
|---|---|---|---|---|
| | Aux+NEG | MV+NEG | NEG+MV | NEG+Aux |
| 123 | 100 | 83 | 33 | 0 |
| 16 | 83* | 100 | 0* | 33 |
| 260 | 100 | 100 | 17 | 0 |
| 198 | 100 | 100 | 0* | 17 |
| 285 | 100 | 100 | 33 | 17 |
| 157 | 100 | 83 | 50 | 17 |
| 201 | 100 | 83 | 50 | 17 |
| 282 | 100 | 100 | 67 | 0 |
| 238 | 100 | 100 | 83 | 67 |

Time II

| S \ C | Aux+NEG | MV+NEG |
|---|---|---|
| 159 | 58 | 25 |
| 130 | 83 | 8 |
| 135 | 100 | 58 |
| 150 | 100 | 67 |
| 87 | 100 | 100 |
| 137 | 100 | 100 |

| | Main clause | | Sub. clause | |
|---|---|---|---|---|
| | Aux+NEG | MV+NEG | NEG+MV | NEG+Aux |
| 132 | 100 | 100 | 33 | 0 |
| 191 | 100 | 100 | 50 | 17 |
| 209 | 100 | 100 | 17* | 50 |
| 153 | 100 | 100 | 83 | 33 |
| 188 | 100 | 100 | 83 | 33 |
| 285 | 100 | 100 | 83 | 50 |
| 157 | 100 | 100 | 83 | 83 |
| 251 | 100 | 100 | 100 | 67 |
| 282 | 100 | 100 | 100 | 67 |
| 256 | 100 | 100 | 83* | 100 |
| 145 | 100 | 100 | 100 | 100 |
| 182 | 100 | 100 | 100 | 100 |
| 198 | 100 | 100 | 100 | 100 |
| 201 | 100 | 100 | 100 | 100 |
| 260 | 100 | 100 | 100 | 100 |
| 238 | 100 | 100 | 100 | 100 |
| 49 | 100 | 100 | 100 | 100 |
| 300 | 100 | 100 | 100 | 100 |
| 304 | 100 | 100 | 100 | 100 |
| 309 | 100 | 100 | 100 | 100 |
| 211 | 100 | 100 | 100 | 100 |
| 212 | 100 | 100 | 100 | 100 |
| 261 | 100 | 100 | 100 | 100 |
| 277 | 100 | 100 | 100 | 100 |
| 123 | 100 | 100 | 100 | 100 |
| 16 | 100 | 100 | 100 | 100 |

S = subject, C = context

As can be seen from these scales, those learners that vary in their placement of negation, more often place the negation after the finite verb in auxiliary verb contexts than main verb contexts at the stage when they do not differentiate between clause types, i.e. then only these two contexts are of any importance. Those who differentiate between clauses - displayed with four

contexts, two for each clause type - seem to favour the main verb context for their placement of negation before the finite verb.

Scales 3 and 4. Native speakers of verb-final languages.

Time I

| S \ C | Aux+NEG | MV+NEG |
|---|---|---|
| 334 | 33 | 25 |
| 265 | 25* | 42 |
| 25 | 83 | 8 |
| 286 | 58 | 42 |
| 315 | 75 | 25 |
| 316 | 92 | 25 |
| 319 | 92 | 25 |
| 318 | 100 | 17 |
| 290 | 67 | 58 |
| 345 | 67 | 67 |
| 288 | 75 | 58 |
| 326 | 92 | 50 |
| 280 | 100 | 42 |
| 146 | 100 | 83 |
| 136 | 100 | 100 |
| 171 | 100 | 100 |
| 321 | 100 | 100 |
| 103 | 100 | 100 |
| 281 | 100 | 100 |

| | Main clause | | Sub. clause | |
|---|---|---|---|---|
| | Aux+NEG | MV+NEG | NEG+MV | NEG+Aux |
| 292 | 100 | 100 | 17 | 0 |
| 104 | 83* | 100 | 50 | 0 |

Time II

| S \ C | Aux+NEG | MV+NEG |
|---|---|---|
| 318 | 67 | 0 |
| 288 | 58 | 42 |
| 321 | 83 | 33 |
| 280 | 83 | 58 |
| 286 | 100 | 58 |
| 281 | 92* | 100 |
| 25 | 100 | 100 |
| 136 | 100 | 100 |
| 103 | 100 | 100 |

| | Main clause | | Sub. clause | |
|---|---|---|---|---|
| | Aux+NEG | MV+NEG | NEG+MV | NEG+Aux |
| 146 | 17 | 0 | 0 | 0 |
| 316 | 100 | 100 | 17 | 0 |
| 104 | 100 | 100 | 17 | 17 |
| 345 | 100 | 100 | 17 | 17 |
| 292 | 17** | 33** | 100 | 100 |
| 319 | 100 | 83 | 50 | 33 |
| 315 | 100 | 100 | 83 | 33 |
| 334 | 100 | 100 | 67 | 50 |
| 171 | 100 | 100 | 100 | 50 |
| 290 | 100 | 100 | 100 | 100 |
| 326 | 100 | 100 | 100 | 100 |
| 265 | 100 | 100 | 100 | 100 |

The language represented here are Bengali (290), Gujarati (316), Hindi (334, 288, 280, 321), Hungarian[15] (345, 146, 136, 171, 103, 104), Japanese (265), Kashmiri (292), Punjabi (334, 280), and Urdu (25, 286, 315, 319, 318, 326, 281). Learners 280 and 334 are bilingual speakers of Hindi and Punjabi.

It can be seen from these scales that the implicational pattern is a general characteristic of second language progress irrespective of background language. It is also possible to observe that individual learners use the target variants to different degrees.

Displaying this scale for the last group gives me the opportunity to comment

on the two subjects who really deviate in the material. They are learner 146 and 292 at Time II. 146 actually differentiates between clause types, but he places the negator in exactly the opposite way to the target norm, i.e. in front of the finite verb in main clauses and after it in subordinate clauses. 292, however, is not a clear cut case of a learner that differentiates between clause types. In fact, he nearly always places the negator in front of the auxiliary verb, and this is always the case in subordinate clauses. His behaviour could also have been interpreted as non-differentiating with behaviour remote from the target. However, since he has categorical placement in subordinates and still varies in main clauses - and he is the only one who does this - it seems plausible to conclude that he can differentiate between clause types. Another fact is that he was advanced in post-verbal placement at Time I, and was already at that time in a differentiating phase.

This completes the presentation of the results of negative structures in the contexts of auxiliary and main verb contexts. (For discussion and interpretation of these results, see the next section p. 36.)

As was mentioned above, also the nature of the subject of the sentences was varied in the elicitation material. In half of the sentences, the subject was a pronoun, in the other half, a noun. As can be seen from the following coordinate diagram, this contextual difference seems to have no influence on the placement of negation.

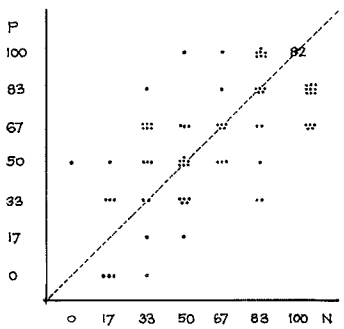



Figure 4. Placement of negation according to pronoun and noun subject contexts at Time I.

The placement of negation in main clauses is chosen for display here. If no regularities are found in these contexts, it turns out that there is no regularities in subordinate clauses either. Neither can any regularities be found if the two clause types are displayed together for those who do not differentiate between them.

## 5.2. Interrogative structures

The endpoint of acquisition for yes/no questions, i.e. the Swedish standard, can be expressed as in the following rule:

Yes/no Question Inversion

$[NP - V^{fin} - X]_{S_Q}$ main

SD: 1 2 3 ===>

SC: 2 1 3

The input structure of this rule is generated by the Phrase Structure rules of the grammar, and shows up in the surface when the structural description is not met, i.e. in embedded yes/no question.[16)]

As with negation, the problem is now one of determining what a plausible starting point for the acquisition of this rule would be. The same arguments that were used to hypothesize a starting point for the acquisition of negation may also be used here. The procedure, then, is firstly, to examine different kinds of simple system in order to find structural similarities between them, this time in the means for expressing yes/no questions, and, secondly, examine typological comparisons for data on which to base decisions of markedness.

It seems that there are some means of expressing interrogation that are more "basic" than others. For example, children, once they have grasped the semantics of yes/no question, prefer to express this by means of intonation, rather than through rearrangement of word order or affixation. These latter means tend to develop later in the child's speech for those languages that employ them (Brown 1973:216; Wode 1976:268). The basicness of intonation is also true for pidgins (Kay and Sankoff 1974:64). The use of non-inversion and intonation as a question marker has also been noted for English foreigner

talk by Ferguson (1971, 1975), and for German and French foreigner talk by Meisel (1976). In his article, Meisel also points to similarities between foreigner talk and the language of second language learners. Many structural features are found to be the same as in foreigner talk, among them non-inversion in yes/no questions. (These data, however, could be explained by interference, since the second language learners studied were speakers of languages where yes/no questions are expressed by intonation alone.) A clearer case is found in Felix 1976 (p. 16). He studied the acquisition of German by a group of children between 4 and 8 years of age. These children were native speakers of English, so if interference had taken place, we could at least expect inversion in questions with auxiliary verbs. However, this was not the case.[17)]

On the other hand, Ravem (1968), who studied his Norwegian speaking children's acquisition of English, did not find any initial stage where only intonation was used. The Norwegian inversion structure was transferred directly, resulting in sentences such as Like you food? and Climb you?

In the light of these somewhat conflicting data, it is difficult to arrive at any convincing suggestion as to the general starting point in the acquisition of yes/no questions. Another difficulty in pin-pointing a starting point arises from speakers of verb-initial and verb-final languages. As can be seen from the scales on p. 30, the behaviour of speakers of verb-final languages - there is only a couple of representatives of VSO languages - is no different to that of speakers of SVO languages as far as inversion in yes/no questions is concerned. I can only speculate as to the reason for this - there are no arguments in favour of any of the basic word orders as being less marked than any other. However, one possible hypothesis is that speakers of these languages discover that Swedish is an SVO language at an early stage, and then use this pattern invariably, independent of sentence type. At this stage, the difference between interrogative and declarative sentences is presumably expressed through intonation alone. If this assumption has any substance, the order between constituents in declaratives, i.e. the non-inverted order, would actually be the starting point for the acquisition of the inversion rule.

Furthermore, many typological studies indicate that inversion is a less com-

mon characteristic of yes/no questions than intonation (e.g. Hammarberg and Viberg 1977).

Similar arguments can be adduced for the acquisition of inversion in interrogative word questions in Swedish. These questions have inversion provided the interrogative word does not function as the grammatical subject of the clause. In embedded interrogative word questions there is no inversion. We can summarize the target of acquisition in the following rule:

Interrogative Word Question Inversion

$$[X^{Q} - NP^{subj} - V^{fin} - X]_{S}^{non\text{-}main}$$

SD: 1 2 3 4 ⟹
SC: 1 3 2 4

As for the starting point, it is a fact that we can find a stage in child language when the interrogative word questions are expressed without inversion, for example in English, where inversion is the pattern found in adult speech (Brown 1973). An interesting fact from second language acquisition was reported in Ravem (1974). At an early stage in their acquisition of English, his Norwegian speaking children consistently produced wh-questions without inversion, even though inversion was the case in their native language.

From language typology data, we can conclude that inversion in interrogative word questions seems to be the most "advanced" or marked case in languages, i.e. we can find languages with fronting of the interrogative word and no inversion, and languages without fronting and without inversion. Inversion in interrogative word questions is only found together with fronting (Greenberg 1963).

In the light of these facts, it seems plausible to take the non-inversion case as the starting point of acquisition of interrogative word questions.

After this initial discussion of the structures, the results for simple yes/no questions will now be presented. As was mentioned above, the initial

ranking of sentences within the specific areas revealed regularities for negation and yes/no questions. In yes/no questions four of the six sentences containing an auxiliary as the finite element were ranked as the first four. The remaining two auxiliary verb sentences occupied the 7th and 12th position (see appendix II). A closer look at these sentences revealed that sentence number 12 had been treated according to the Swedish norm, i.e. with inversion, to a much lower degree than the other sentences. While the intervals between most sentences were rather small - about 2-6 more learners having treated the next sentence up in the ranking list according to the Swedish norm - the interval between the 11th and 12th sentence was as large as 27 learners. The reason for this strong deviation was assumed to lie in the fact that the sentence ranked as number 12 was the first question item in the elicitation material. It might have been the case that the test subjects did not notice that it was a question, despite mention on behalf of the test administrator that questions were included in the material and that the question marks should be observed (see above p. 14). For this reason the sentence ranked as number 12 was excluded from further analysis. Also excluded was sentence number 11. This was to make it easier to compute the influence of the auxiliary versus main verb context. Sentence number 12 contained a finite auxiliary verb, and sentence number 11 a finite main verb.

In order to show that the same conditions hold for yes/no questions as for negation, implicational scales, showing the behaviour of two groups of learners, are displayed. The contexts are made up of the auxiliary verb and main verb, and the figures in the scales indicate how often inversion is applied in each context. In Hyltenstam 1978b, scales for inversion in yes/no questions for native speakers of English and Serbo-Croatian have been displayed. Here, I will present the scales for native speakers of Greek and the same group of speakers of verb-final languages as above.

Scales 5 and 6. Native speakers of Greek

Time I

| S \ C | Aux+NP | MV+NP |
|---|---|---|
| 19 | 0 | 0 |
| 111 | 20 | 20 |
| 166 | 60 | 0 |
| 233 | 60 | 0 |
| 55 | 40 | 20 |
| 144 | 100 | 0 |
| 232 | 100 | 40 |
| 105 | 100 | 80 |
| 29 | 100 | 80 |
| 235 | 100 | 100 |
| 102 | 100 | 100 |
| 106 | 100 | 100 |
| 207 | 100 | 100 |
| 208 | 100 | 100 |
| 214 | 100 | 100 |
| 217 | 100 | 100 |
| 229 | 100 | 100 |
| 230 | 100 | 100 |

Time II

| S \ C | Aux+NP | MV+NP |
|---|---|---|
| 166 | 40 | 0 |
| 111 | 80 | 80 |
| 19 | 80 | 100 |
| 233 | 100 | 80 |
| 55 | 100 | 100 |
| 144 | 100 | 100 |
| 232 | 100 | 100 |
| 105 | 100 | 100 |
| 29 | 100 | 100 |
| 235 | 100 | 100 |
| 102 | 100 | 100 |
| 106 | 100 | 100 |
| 207 | 100 | 100 |
| 208 | 100 | 100 |
| 214 | 100 | 100 |
| 217 | 100 | 100 |
| 229 | 100 | 100 |
| 230 | 100 | 100 |

Scales 7 and 8. Native speakers of verb-final languages

Time I

| S \ C | Aux+NP | MV+NP |
|---|---|---|
| 136 | 0 | 0 |
| 345 | 20 | 0 |
| 286 | 20 | 20 |
| 334 | 40 | 40 |
| 25 | 60 | 20 |
| 321 | 60 | 60 |
| 103 | 60 | 60 |
| 318 | 80 | 60 |
| 281 | 100 | 40 |
| 292 | 100 | 80 |
| 316 | 100 | 80 |
| 290 | 100 | 100 |
| 326 | 100 | 100 |
| 280 | 100 | 100 |
| 146 | 100 | 100 |
| 171 | 100 | 100 |
| 315 | 100 | 100 |
| 319 | 100 | 100 |
| 104 | 100 | 100 |
| 265 | 100 | 100 |
| 288 | 100 | 100 |

Time II

| S \ C | Aux+NP | MV+NP |
|---|---|---|
| 334 | 20 | 0 |
| 321 | 40 | 40 |
| 25 | 100 | 0 |
| 103 | 60 | 60 |
| 286 | 100 | 60 |
| 136 | 100 | 100 |
| 345 | 100 | 100 |
| 318 | 100 | 100 |
| 281 | 100 | 100 |
| 292 | 100 | 100 |
| 316 | 100 | 100 |
| 290 | 100 | 100 |
| 326 | 100 | 100 |
| 280 | 100 | 100 |
| 146 | 100 | 100 |
| 171 | 100 | 100 |
| 315 | 100 | 100 |
| 319 | 100 | 100 |
| 104 | 100 | 100 |
| 265 | 100 | 100 |
| 288 | 100 | 100 |

The implicational scales were converted to coordinate diagrams. The implicational pattern that exists in the data for auxiliary and main verb contexts for yes/no question inversion can be seen in figure 5.

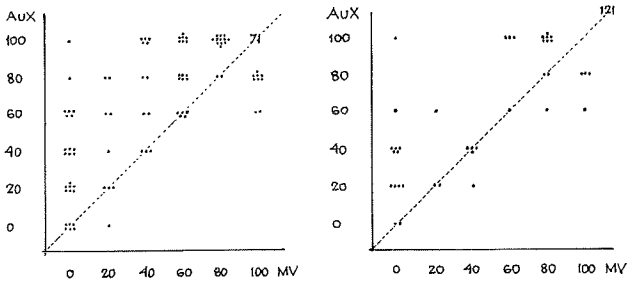



Figure 5. Yes/no question inversion according to auxiliary and main verb contexts at Time I (left) and Time II (right).

The auxiliary verb context is much more favourable for inversion in yes/no questions than is the main verb context, as can be seen from these diagrams.

The data displayed so far show only the learners' behaviour in simple yes/no questions. The data for embedded yes/no questions will be presented more briefly, since the patterning here was not as clear.

On the basis of the distribution of pluses and minuses in the binary implicational scales, it was concluded that at Time I, 42 learners did not differentiate between simple and embedded yes/no questions, thus generating around the same percentage of inverted sentences in both clause types. These individuals with variable inversion were found in a continuum from having almost no inversion in either clause type to having categorical inversion in both clause types. At Time II, 27 learners did not differentiate, and they were spread along the continuum in the same fashion. It is important to note that non-differentiating learners were found in <u>all</u> language groups.

Among those who did differentiate between clause types, there was a number of learners who always had inversion in simple clauses, but who showed variation in embedded yes/no questions - exactly as was the case with negative placement. In that area, practically no learners varied in main clauses while

showing a stable pattern in subordinate clauses. However, such a pattern was found here, i.e. a number of learners had non-inversion in embedded yes/no questions while showing variation between inversion and non-inversion in simple yes/no questions.

When those learners differentiating between clause types were studied for their behaviour in subordinate clauses, neither the auxiliary verb context nor the main verb context was found to be more favourable for any variant. It is possible that the reason why no pattern emerged for embedded yes/no questions might depend on the fact that the number of sentences studied were too few to reveal any pattern that might exist. Therefore, this point was studied in the extra material for the group of 29 learners. In these materials, there were 12 simple yes/no questions and 12 embedded yes/no questions. Of the 29 learners that participated in this series of data collection, very few varied in their inversion/non-inversion behaviour in simple yes/no questions. However, as can be seen from the following coordinate diagram, those who did very behaved exactly like the first group, i.e. the auxiliary verb context turned out to be more favourable for inversion. In fig. 6, the results from Time I and Time II for all 29 learners, and the result from Time III for the 8 learners that participated on this occasion, are displayed together. Different marks are used for the different times.

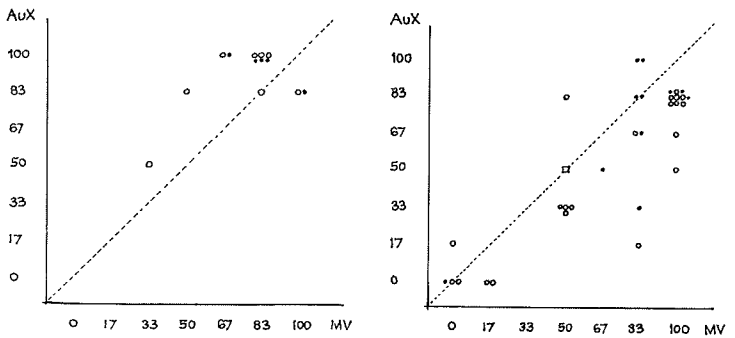



Figure 6. Yes/no question inversion according to auxiliary and main verb contexts at Time I (marked o), Time II (marked x), and Time III (marked □ ) in main clauses (left) and subordinate clauses (right).

Here, it is interesting to note that this group of learners showed regular variation in subordinate yes/no questions. As in the case of pre-verbal negative placement in subordinate clauses, the main verb context is more favourable for non-inversion, i.e. the variant that is in accordance with the Swedish norm in this structure.

As for the influence of pronominal and nominal subject on inversion in yes/no questions, exactly as in the case of negative placement (see p. 25), no regular pattern emerged. Whether this is due to the fact that there is no such pattern, or whether it is because of insufficiencies in the data is not clear.

If we turn to the data elicited from the 29 learners on interrogative word questions, a small number, to be accurate 5 learners at Time I and 1 at Time II, appear not to differentiate between clause types as far as inversion is concerned. In the following two diagrams (fig. 7), the variation in main clauses and subordinate clauses at all times is displayed:

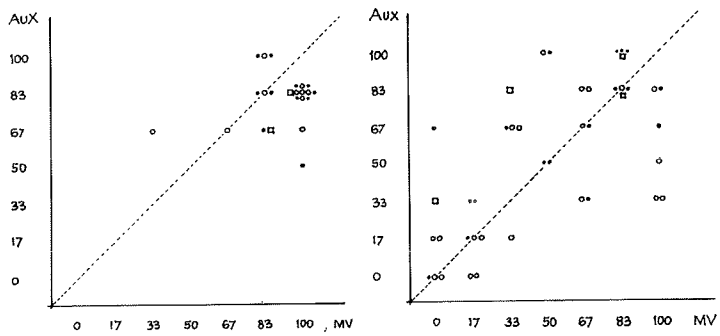



Figure 7. Interrogative word question inversion according to auxiliary verb contexts and main verb contexts at Time I (marked o), Time II (marked x) and Time III (marked □) in main clauses (left) and subordinate clauses (right).

It appears as though there is some patterning in simple clauses. However, as the group of learners is so small, no adequate conclusions can be based on this pattern, but, as can be seen, if there is any pattern at all, it is not the same kind of pattern as was found in yes/no questions. If anything, the main verb context seems to be the more favourable for inversion. In sub-

ordinate clauses no pattern can be discerned.

The pronominal/nominal context has not been studied in these sentences due to the fact that the group of learners with variable behaviour was so small and also due to the lack of possibilities for comparing their behaviour with the larger group.

## 5.3 Inversion after sentence-initial non-subject

Swedish is a language with a verb second constraint on declarative sentences, i.e. the finite verb occupies the second position in the sentence, independently of the nature of the first element of the sentence. When this element is not the subject, the subject is moved to the position immediately after the verb to speak in transformational terms. These facts can be expressed in the following rule:

Subject-Verb Inversion in Declaratives

$$[X - NP^{subj} - V^{fin} - Y]_{S}main$$

SD: 1 2 3 4 ⟹

SD: 1 3 2 4

Condition: $1 \neq \emptyset$

In Swedish, practically any constinent of the sentence can occur in initial position.

In a sense, it is more difficult to say what constitutes the starting point of acquisition in this case. The difficulty is due to the fact that there is no way of specifying the unmarked case as regards subject-verb order. Both verb-subject order (in verb-initial languages) and subject-verb order (in verb-final languages and SVO) are basic, although Venneman (1973:41) claims that subject-verb order is the unmarked one. The resoning behind this claim is that the subject is often the theme of the sentence. The theme often expresses old information and since old information is often found early in the sentence, it follows that the subject ought to come early and before the verb. (cf. also Linell 1975).

A similar hypothesis as in the case of inversion for interrogatives discussed

above on p. 27 might also be put forward here. The occurance of non-inverted order after initial non-subjects as a regular variant independently of the nature of the learner's mother-tongue (Hammerberg and Viberg 1975; Table 3). can be explained by early acquisition of SVO insight into Swedish by the learner.

In any case, it appears plausible to regard the learners with the least percentages of inversions as being furthest from the target.

The results in the area of subject-verb inversion in declaratives will be presented very briefly. The reason for this is that even though the largest amount of variation can be found in this area, none of the contexts specified in my material can be taken to be more favourable for the application of the Subject-Verb Inversion rule, i.e. they do not adequately characterize this variation (for a discussion of this insight for further investigation see p. 49). This can be seen from the following diagram where auxiliary verb contexts and main verb contexts have been differentiated.

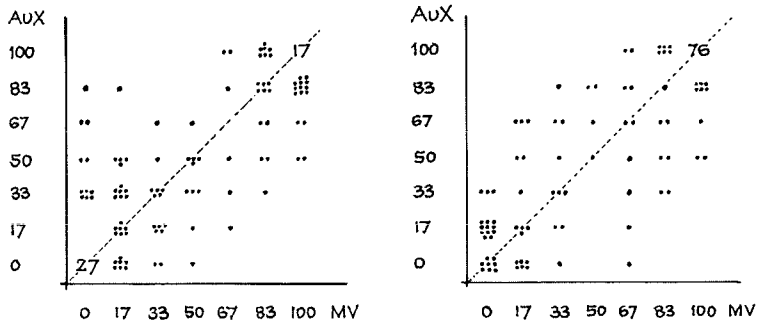



Figure 8. Subject-verb inversion in declaratives according to auxiliary and main verb contexts at Time I (left) and Time II (right).

The diagrams in figure 8 have another interesting feature which should be noted. They show that learners cluster around low and high values respectively. This pattern is most clear in the Time I diagram. As I mentioned above, the largest amount of variation is found in this syntactic area and this ought to be the case if the type of inversion is the slowest to be learnt of the syntactic areas studied in this paper (further support for

this statement will be given below, p. 46). In any case, this slow development allows us to find learners more distributed along the continuum in this case, than in other syntactic areas. In these other areas, only a few learners are still found at the early stages of development. I would suggest that the clustering we can observe in fig. 8 can be interpreted as though there were many learners in the initial stages of learning, in other words, that the rule is difficult to get going. However, once the initial inertia for this structure is overcome, learning rapidly gains momentum and development to target behaviour is rapid. This quick development from a low degree of probability for the application of a rule to a high degree of probability is, of course, the reason why we find so few learners in the middle values at any given time. If this interpretation is correct, we have observed a parallel to the ∫-curve model discussed by Bailey (1973) for general linguistic change. He gives data that "show that incipient changes begin slowly, that after they get going they quickly pick up momentum, and that they begin to slow down as they near 100% categoricality" (p. 77). That we do not find the same clustering of learners for the other structures studied here, can be interpreted as though we only find the upper half of the curve in these cases, and that most learners have left the initial stages behind.

As regards the pronominal/nominal context difference, it can not be seen to have any effect on the degree to which inversion is applied. Non-inversion in subordinate declaratives was studied in relation to inversion in main clauses to see if the main clause rule might be overgeneralized to subordinate clauses. The result of this examination did not show any consistent patterning.

## 6. Interpretation of results

In regard to the area of negative placement, it was argued in Hyltenstam 1977 that the resultant continuum could be seen as mirroring the path of acquisition. Various arguments can be presented to support this contention, such as the regular behaviour of each individual on the two data-elicitation occasions, where it can be seen that one and the same individual moves within the continuum, keeping to the same implicational pattern at both times. Also, we can find a learner at nearly every point in a continuum, replacing the pre-verbal negation by a post-verbal one, and furthermore, from a stage where there is no differentiation between clause types to a stage where

there is. Similarly, learners can be found at different degrees of remoteness from the target in the case of interrogative structures and for inversion after initial non-subject.

The assumption that our cross-sectional study should reveal something about the longitudinal development for the structures in question underlies the following way of representing the data. Scattergrams were plotted with a computor, which worked out a position on the X-axis for each individual on the basis of their percentual application of target variants within one or several syntactic areas. The degree to which the target variant was used in a specified context by each subject was marked on the Y-axis. The machine thus produced scattergrams of the following form.

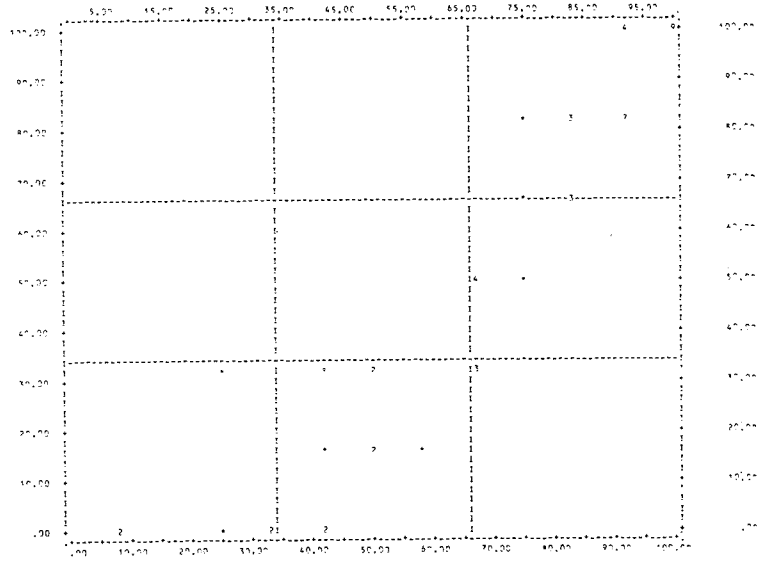


Figure 9. Scattergram displaying post-verbal negation in main clauses with main verbs at Time II. Stars mean ⩾ 10 learners.

Since the points - as can be seen from the scattergram - were so well clustered, it was possible to draw a curve through these points on an approximative basis. This was also carried out by the computor. The machine worked

out the best fit for the curve and gave a third degree polynomial approximation. When the curves thus obtained are compared, by for example being displayed in the same diagram, they show the differences between the contexts in influencing the target variants. For example, if we look at figure 10, we can see that the auxiliary verb context, represented by the upper curve, is more favourable for post-verbal placement of the negator in main clauses than the main verb context, which is represented by the lower curve.

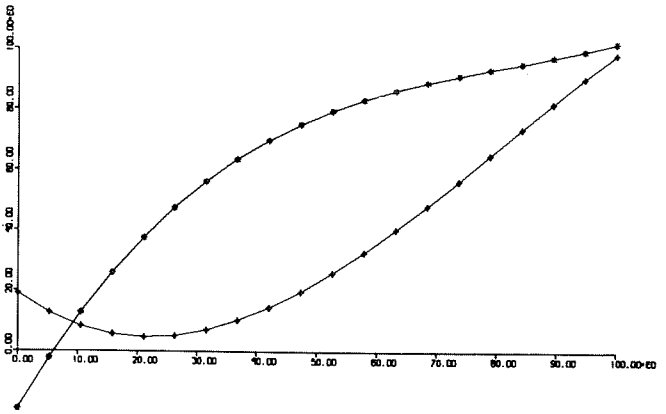



Figure 10. Polynomial approximation curves describing the influence of auxiliary verb contexts (upper curve) and main verb contexts (lower curve) on post-verbal placement of negation in main clauses.

In the following exposition a few polynomial approximation curves will be presented that further illustrate some of the results that have been given above. Below each diagram, a mention is always made as to what has been the determinant for the learners' placement on the X-axis (e.g. X = post-verbal neg. in main clauses.) and what the curves represent, i.e. what is marked on the Y-axis. (e.g. Curve marked a = post-verbal neg. in main clauses with Aux.) For each curve a value is given for how well it has been possible to account for the common variance, i.e. the correlation between the observed values and the values predicted by the curve. This is given in the form of a multiple correlation (r). Such multiple correlations are computed together with the construction of the polynomial approximations.

The assumption behind the use of these diagrams, then, is that the X-axis reflects time. The first diagram shows negative placement according to the target norm in main clauses and subordinate clauses.

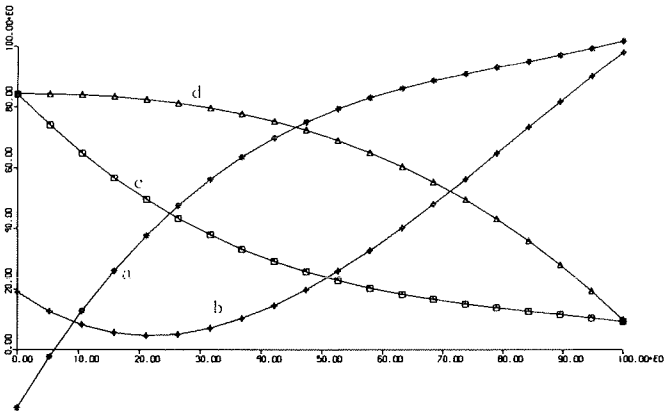



Figure 11. Placement of negation in main and subordinate clauses at Time I
X = post-verbal neg. in main clauses
Curve marked a = post-verbal neg. in main clauses with Aux. r = .88
" " b = - " - MV. r = .97
" " c = pre-verbal neg. in sub. clauses with Aux. r = .53
" " d = - " - MV. r = .78

As we have noted above, it is quite obvious that the "better" the values in main clauses are, the "worse" they become in subordinate clauses. The curve thus can be seen as a reflection of the fact that the post-verbal placement rule is first acquired disregarding clause type. The differences between contexts also become obvious in the diagram. The curve marked c has a relatively low value for multiple correlation which is an indicator of a higher degree of individual variation. The curves for Time II look principally the same.

In figure 11, no mention was made of which individuals differentiate between clause types and which do not. The question of differentiation was not taken into account in the construction of these curves. To get this differentiation into the curves, it was first necessary to pick out those learners that did not differentiate between clause types and generate a separate diagram for them. In this diagram (fig. 12), the learners are placed on the X-axis according to their percentage of post-verbal placement of negation independently of clause type, since this appeared to be

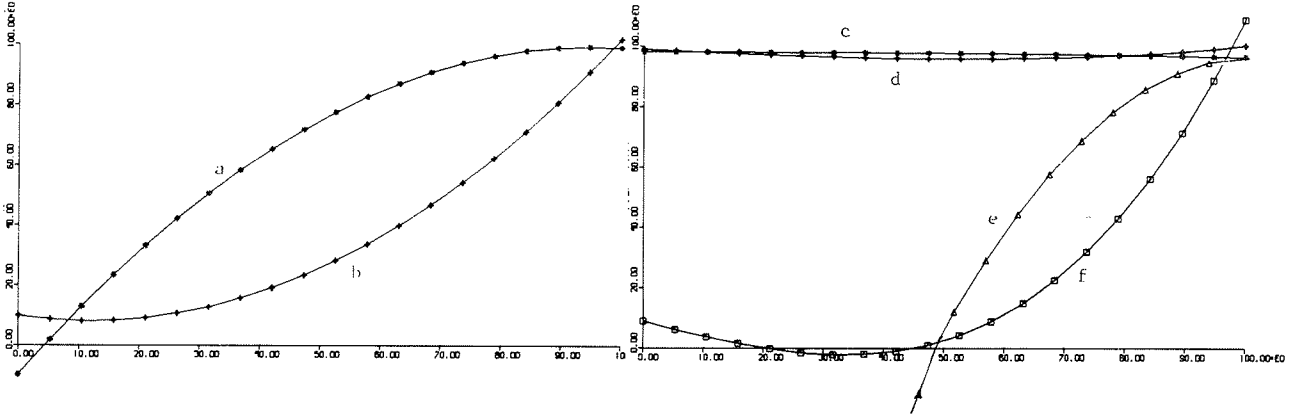



Figure 12. Placement of negation by those not differentiating between clauses types (left) and those differentiating (right) at Time I
X (left) = post-verbal neg. in any clause type
X (right) = target variant of placement
Curve marked a = post-verbal negation in clauses with Aux. r = .88
" " b = " " " MV. r = .96
" " c = " " " main clauses with Aux. r = .70
" " d = " " " " " MV. r = .78
" " e = pre-verbal neg. in sub. clauses with MV. r = .94
" " f = " " " Aux. r = .94

the target they were moving towards at this stage of acquisition. The auxiliary and main verb contexts were represented by one curve each. For the learners who did differentiate, on the other hand, another separate diagram was constructed. In this diagram, the learners were placed on the X-axis according to how often they applied the target norm variants in both main and subordinate clauses. The auxiliary and main verb contexts for main and subordinate clauses respectively were represented by curves, thus yielding four different curves for these learners. In the display of the results given here, the diagram for those differentiating between clause types is placed after the diagram for those not differentiating, thus being a reflection of the development we have hypothesized on the basis of our analysis. According to that hypothesis, differentiation occurs after the period of non-differentiation. See fig. 12 here. Apart from what we have seen before, these curves also show the less favourable nature of auxiliary verb contexts for target-variants in subordinate clauses.

In figure 13, the curves for pronominal versus nominal contexts are displayed. As can be seen, there does not appear to be any interesting difference between the trajectory of the two curves.

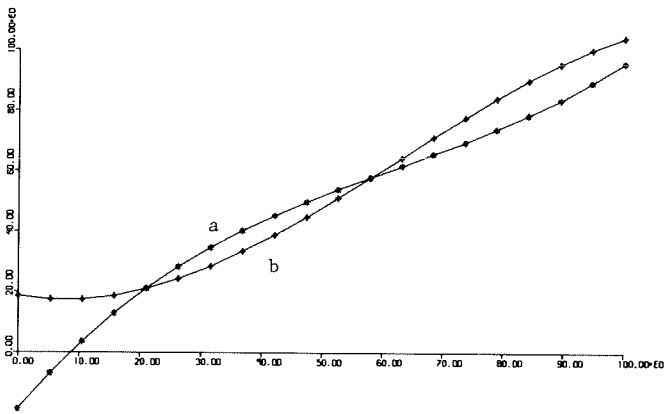



Figure 13. Placement of negation in main clauses at Time I
X = post-verbal neg. in main clauses
Curve marked a = post-verbal negation in clauses with pronoun subject. r = .96
Curve marked b = post-verbal negation in clauses with noun subject. r = .96

If we now turn to the polynomial approximations that have been constructed for simple yes/no questions, we find a pattern very similar to that for negative placement in main clauses, as we have seen above. This pattern is shown in figure 14. There, we can also see the curve for non-inversion in subordinate yes/no questions.

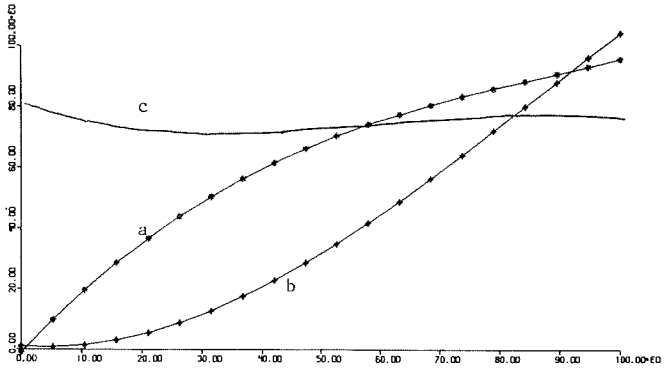



Figure 14. Inversion in simple yes/no questions and non-inversion in embedded yes/no questions at Time I
X = inversion in simple yes/no questions
Curve marked a: inversion in simple yes/no questions with Aux. r = .95
Curve marked b: inversion in simple yes/no questions with MV. r = .97
Curve marked c: non-inversion in embedded yes/no questions r = .14

What is interesting to see here, is that for embedded yes/no questions, the multiple correlation value is very low. This means that there were plots nearly all over the scattergram and that the individual variation was great. As we mentioned above when presenting the results for yes/no questions, there are no regular patterns in the way the learners invert or do not invert in embedded clauses when acquiring the inversion rule for the simple clauses. Certainly, there was a minority of learners who seemed not to differentiate between clause types. However, as regards yes/no questions, the same result could be obtained in different situations. In some cases, for example for Greek-speaking learners, inversion in embedded questions could be a case of interference; Greek has a tendency to place the verb immediately after subordinating conjunctions. It could also be a case of overgeneralizing the subject-verb inversion rule that operates

after sentence-initial non-subjects. Whatever the reason, there is no uniform way of treating embedded yes/no questions such that at a given stage, one pattern of behaviour can be observed for the majority of learners. The curve for embedded yes/no questions in fig. 14 indicates that there is a majority of speakers that treat them according to the norm variant at every stage of their development in main clauses.

The polynomial approximations for subject-verb inversion after initial non-subjects will now be displayed. The curves for the auxiliary and main verb contexts are shown in fig. 15.

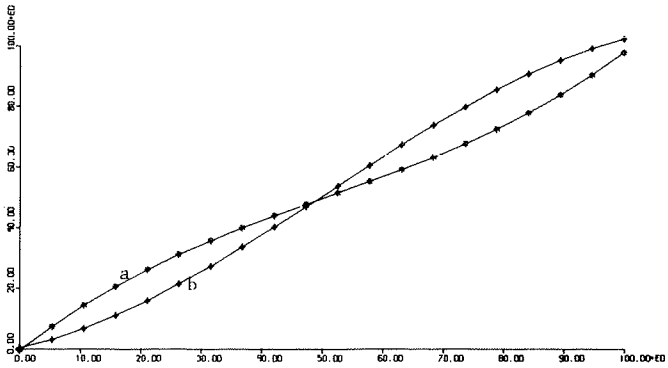



Figure 15. Inversion after sentence-initial non-subject at Time I
X = inversion after sentence-initial non-subject
Curve marked a = inversion in clauses with Aux. r = .95
" " b = - " - MV. r = .96

As can be seen, the non-influence or the two contexts results in curves that have almost the same trajectory.

Finally, the pronominal/nominal influence on inversion can be studied in fig. 16.

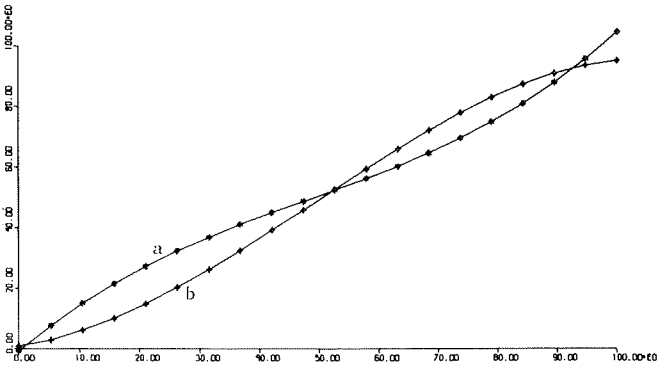



Figure 16. Inversion after sentence-initial non-subject at Time I
X = inversion after sentence-initial non-subject
Curve marked a = inversion in clauses with pronominal subject.
r = .92
" " b = - " - nominal subject.
r = .94

The extremely high correlation figures for the curves both in this case and in the curves of fig. 15 - there is a similar crossing of the curves for Time II - might lead one to speculations about whether there in fact is a difference between contexts, that did not emerge in the other ways of displaying data. It might be possible that one context is more favourable in the initial stages of development in this syntactic area, while another context might be favourable for development at a later stage. This possibility should be further investigated. As regards the pronominal/nominal contexts, for my part, I would have thought a plausible assumption would have been that the pronominal context is less favourable initially, where there is difficulty in expressing pronouns in general. Later, when this difficulty is overcome, it might well be a more favourable context for inversion to have a pronoun in the sentence, if for no other reason, at least on considerations of frequencey. In these curves, however, it is the pronominal context that seems to be more favourable at earlier stages, and the nominal context at later stages. I can not speculate about the possible reasons for this at this point. I would like to stress, however, that it may well be the case that some contexts may differ in influence at different stages of development, just as interference can be seen to differ, qualitatively and quantatively for different developmental stages.

It would now be interesting to try to relate the development of various syntactic variables to each other - and the polynomial approximation curves seem to be well fitted for an illustration of this. Thus, polynomial approximation curves were constructed where more than one syntactic area was allowed to be the determinant for the learners' placement on the X-axis. Both post-verbal placement of negation in main clauses and subject-verb inversion in simple yes/no questions can be considered reliable indicators of development - which is not the case with for example pre-verbal placement of negation in subordinate clauses where a high number of target variants can be found in both a very initial stage of learning and a very advanced stage of learning. In the following diagram, the learners have thus been placed on the X-axis according to their percentage of target variants in all 24 sentences covering post-verbal placement of negation and yes/no inversion in main clauses.

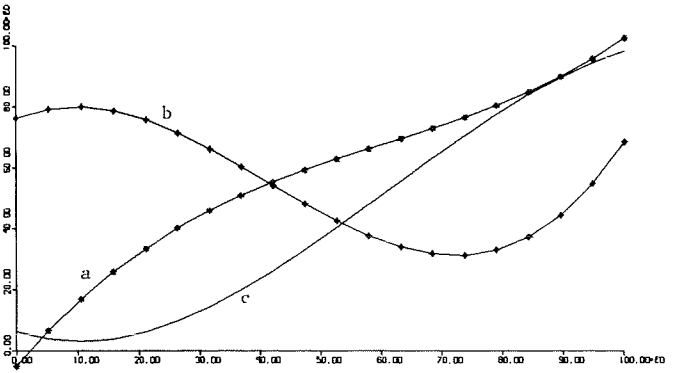



Figure 17. Post-verbal placement of negation (curve marked a. r = .84), pre-verbal placement of negation in subordinate clauses (curve marked b. r = .67), and inversion in simple yes/no questions (curve marked c. r = .86) at Time II.
X = post-verbal neg. in main clauses + inversion in simple yes/no questions.

From these curves, it can be seen that learners at one particular point in their development more often treat negation according to the norm than they treat yes/no inversion according to the norm. It is also interesting to note that the curve for negation in subordinate clauses takes exactly the expected route. Seen as development, the curve typically reflects the development from pre-verbal placement of negation over post-verbal placement overgeneralized

to subordinate clauses and back to pre-verbal placement according to the target. The rather low figure for multiple correlation, however, indicates a good deal of individual variation. The equivalent curve for Time I does not show the last bend which is found at Time II. This is a reflection of the fact that at that time, there were very few learners that differentiated between clause types and who had a large number of target variants in subordinate clauses.

In the following diagram (fig. 18), all the areas which appear to be reliable indicators of development, i.e. post-verbal placement of negation in main clauses, inversion in yes/no questions, and inversion after sentence-initial non-subject, have been made the determinant factors for the learners' placement on the X-axis.

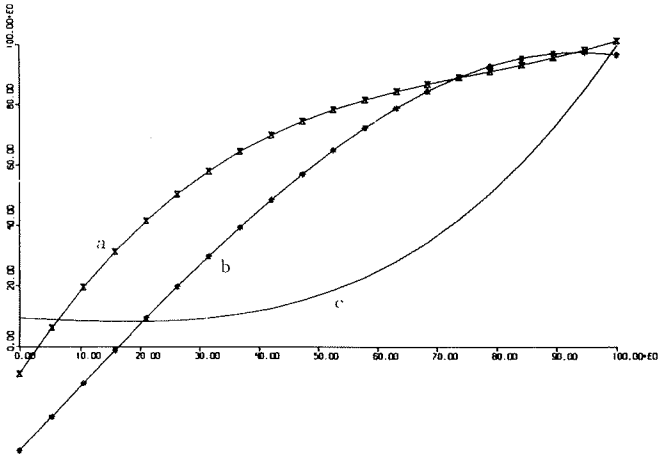



Figure 18. Post-verbal placement of negation (curve marked a. r = .70), inversion in yes/no questions (curve marked b. r = .81), and inversion after sentence-initial non-subject (curve marked c. r = .93) at Time II.
X = post-verbal neg. in main clauses + inversion in simple yes/no questions + inversion after sentence-initial non-subjects.

Here again, it can be seen that the same relative order obtains between negative placement and yes/no questions. It can also be seen that inversion after initial non-subject shows by far the slowest development of the three.

In summary, the development hypothesized for all three areas studied, is a continual development. This assumption is based on the observation that the learners can be found at different stages of development as expressed by their variation between equivalent structures - one structure being the variant that is also used in the target towards which they are moving, the other being the variant(s) used by learners from different language backgrounds. This variant is sometimes unmarked in relation to the norm variant. In other cases, it can be seen as a structure necessarily used in one stage of development for reasons of simplification. Instead of using different rules for different sentence-types (i.e. questions and declaratives), it appears as though one rule is used for the linearization of the sentence constituents. At this stage, then, SVO order seems to be used irrespective of clause type.

Not only is this development a gradual change towards the target, but it has also been found that the change can be favoured by certain features of the linguistic context. In this study, such features have been found for the placement of negation and for inversion in yes/no questions. As regards interrogative word questions, and inversion in declaratives after sentence initial non-subject, the contexts studied here do not seem to have any influence on the gradual development.

The above hypothesis was arrived at with the help of a cross-sectional investigation, and even if it has been argued that investigations of this type yield results that could reasonably be interpreted as reflecting the path of acquisition, we ought to seek confirmation for this interpretation in longitudinal data. In other words we should compare our results with those obtained for similar phenomena in longitudinal studies.

Fortunately, there is data to compare with. The investigations available for this purpose have studied second language development in English, and although they are not directly comparable with Swedish data, the results appear to be of sufficient generality to warrant a principle comparison of these phenomena.

Cazden et al. (1975) studied the untutored second language development in English by six native speakers of Spanish. As regards their development of inversion in wh-questions, where the conditions for inversion are different

in simple and embedded clauses, they were found to go through a development in which there was an initial period of non-differentiation between clauses. During this period the wh-questions first appeared with non-inversion, to be followed by a variable application of inversion which gradually increased over time until it became the dominant pattern. At a later period of development, subordinate and main clauses were differentiated, and inversion was restricted to simple clauses, while the dominant pattern in embedded wh-questions was non-inversion. This is obviously exactly the same kind of development we have observed as the general pattern in the area of negative placement. There are also learners who do this in the areas of yes/no questions and interrogative word questions, but this does not seem to be a development that most learners go through in these areas.

Hatch (1974) gives an overview of approximately 15 studies on second language learning, most of which are unpublished. These studies mainly address themselves to second language acquisition in children. The development of negation and inversion in questions were studied. At the stage following nucleus external placement of negation, i.e. when the negator had been moved into the sentence, it could first be found positioned in front of any verb, thus giving sentences such as you no can go, I not cheat, I no feel better. However, there were a couple of exceptions to this otherwise valid generalization, namely in those sentences containing the modal can. For a few subjects it was not possible to find any stage at which they placed the negator in front of can; My interpretation of these results is that can is one of the first verbs to take post-verbal negation and that for these subjects, the stage with preverbal placement here might have eluded the researches. Hatch also studied the development of inversion in questions and found that "modal inversion seems to be the first inversion to take place after a period when questions are expressed through the means of rising intonation and then tag questions" (p. 7): George come school no? In Hatch and Wagner-Gough 1976, the modal can is claimed to be the first inverted modal verb. Interestingly enough, the Swedish equivalent to can, kan, is the most favourable context for post-verbal negation, and is also ranked high for inversion.

Although Hatch's data allow interesting developmental comparisons between Swedish and English as regards the relatively higher favourability of can

and kan within the group of auxiliaries, it cannot be taken as support for my further claim that auxiliary verb contexts are more favourable for negative placement and question inversion than main verb contexts since these phenomena cannot be disconnected from auxiliary contexts in English. To support our claim, we need to look at languages that place negation post-verbally as a general pattern and that inverts in questions containing main verbs. German is such a language. In the study by Felix (1976) mentioned above it can be seen that the auxiliary verbs are the more favourable contexts for inversion. In the case of negative placement, there is evidence that negation is first placed after auxiliary verbs: Meisel et al. (1978) presents data from untutored learners of German with Spanish as their native language. One of these learners consistently placed the negation in front of the main verb which resulted in standard order in all complex verb groups, i.e. with negation after auxiliary verbs, but with non-standard orders in sentences with simple verbs.[8)] This placement cannot be explained as a case of interference as Spanish places the negation pre-verbally categorically.

All of the above mentioned studies thus seem to support, quite conclusively, the results presented in this investigation, and could presumably without any great difficulty, be fitted into this framework of linguistic development.

The fact that we have been able to isolate contexts that are important for the development of target language variants is one of the most interesting results in this study. It is of particular interest to find that the same contexts operate in a similar way in diverse languages (as was mentioned above) and for different structural phenomena within a language. It is not implausible to hypothesize that this fact can be used in the description of such syntactic phenomena as negation and interrogation within a cognitively based linguistic theory. Such a theory would take into account facts like these and also facts about first language development, historical changes etc. and would use these facts as a basis upon which to construct a universal hierarchy of markedness for syntax.

The present study is far from comprehensive in its attempts to specify what contexts may influence the development in the syntactic areas studied. Among other things, the data used in this study did not allow for the in-

vestigation of more than a couple of contexts. Besides the limitation on data, it was not immediately apparent at the outset of this study what contexts would be of interest to look at for the different syntactic areas. This was partly because of the fact that no previous studies within the variable paradigm had been conducted in the area of second language acquisition. However, for the purpose of further investigations it would be interesting to find other relevant contexts for, at least, inversion in wh-questions and after sentence initial non-subject. A number of candidates suggest themselves. In both areas it would be interesting to study the function and nature of the preceding element. In other words, for interrogatives it would be illuminating to study the function of the interrogative element and differentiate between phrases introduced by objects like vem (who) and vad (what) and adverbials like var (where), när (when), and varför (why). Among other differences, these develop at different periods in child language. As regards the sentence-initial non-subject element it might be profitable to differentiate between initial adverbials and initial objects. In both cases there seems to be a difference between elements of different complexity, e.g. between elements that are sentences and elements that are not. Another way of differentiating these sentence initial elements is according to differences in their semantic specification, for example, whether their function is that of being what we can call setting adverbials or not. (Cf. e.g. Horová 1976:118.)

Also the relationship between yes/no-questions and interrogative word questions as to whether the inversion in the one is implied by inversion in the other would be interesting to investigate, although Cazden et al. (1975) claim that no such developmental order can be found, in second language acquisition of English. Wode (1976:28), on the other hand has the impression that inversion occurs earlier in yes/no questions than in interrogative word questions in monolingual children's acquisition of German.

We can expand this study by also taking the relationship between main and subordinate clauses into account. However, in Swedish this would be rather difficult, since the syntactic phenomena behave differently in the two clause types. It would thus be hard to claim that a particular phenomenon is earlier acquired in main clauses, although it might be possible to make a general claim that main clauses are treated according to the target norm earlier

than the subordinate clauses, at least in non-asserted sub-clauses (for terminology, see Hooper and Thompson 1973).

## 7. Rate of acquisition

As two cross-sectionals were made of the same subjects with an interval of five weeks, it was possible to compare and quantify the difference between Time I and Time II as regards each individual's progress towards the target.

It might be thought that the most straightforward procedure for computing these progress values would be to compare the number of target variants produced in all 72 elicitation sentences on each occasion. However, this procedure was found not to be feasible, due to the fact that progress in some instances results in fewer target variants, e.g. when progress is made in the area of negative placement, the better values in main clauses are leveled out by the lower values in subordinate clauses, which means that this way of quantifying does not capture the actual progress that has taken place.

The best procedure for computing progress values would have been to base the quantification on the 'real' progress, i.e. the path of development we have arrived at in this study. In other words, if, for example, we want to calculate the amount of progress made by a particular learner found at a stage of negative placement acquisition when he does not differentiate between clauses types, neither at Time I nor Time II, we would compare the total number of post-verbal placements of negation at each time irrespective of clause type, as this is the target he is moving towards. Unfortunately, although this procedure would be possible for negative placement, it can not be used for progress measurements in interrogatives. Here, it is not possible to arrive at any exact decision as to what the reason is for e.g. inversion/non-inversion in embedded questions, i.e. if inversion means progress or not.

In this situation, I chose to base my calculations on amount of progress on the three syntactic areas for which we can find a simple linear development[19] in the substitution of a non-target variant for a target variant,

i.e. for negative placement in main clauses, yes/no question inversion in main clauses and inversion in declaratives with initial non-subject. In this calculation those learners that had target variants in all sentences were excluded. The differences were thus calculated on 151 individuals.

The progress made in the whole group was computed, and the results showed that the group in general made progress, even though 11 learners had the same values on both occasions and 18 learners had regressed marginally (on average 2 sentences less were treated according to the norm). On average the figures showed a progress of 46% of potential progress. The level of significance between Time I and Time II was .001.

What is of interest here is to examine the material and check which background variables - if any - correlated best with this progress. To check for this, the group was first subdivided on the basis of differences in background factors and the groups obtained were compared for amount of progress.

The results of the comparisons are summarized in the following tables.

Table 1

| | n | M | SD | p |
|---|---|---|---|---|
| Education | | | | |
| 4-9 yrs | 16 | 36.9 | 29.7 | .007 |
| ⩾ 10 yrs | 135 | 61.9 | 46.6 | |
| Knowledge of other language | | | | |
| yes | 116 | 61.4 | 46.4 | .273 |
| no | 35 | 52.0 | 43.3 | |
| Duration of stay | | | | |
| 2-4 months | 122 | 63.6 | 40.9 | .06 |
| ⩾ 5 " | 29 | 40.9 | 59.5 | |
| Sex | | | | |
| male | 92 | 55.6 | 48 | .214 |
| female | 59 | 64.8 | 41.8 | |

As can be seen from table 1, only the difference in level of education co-varied significantly with progress. Also the difference in duration of stay approximates significance on the .05 level. Observe the direction of the difference. Those having a longer duration of stay progressed less than those newly arrived. This seems to point to a conclusion that the greatest progress is made in the initial stages of learning in the syntactic areas studied.

Learners were also subdivided into groups on the basis of their behaviour on all 72 sentences at Time I. The criterion for grouping was the number of target variants used in the elicitation materials. Different groupings were made as can be seen from the following table.

Table 2

| | n | M | SD | p |
|---|---|---|---|---|
| Total target-variants in the 72 item material at Time I | | | | |
| ≤40 | 44 | 30.2 | 34.7 | .000 |
| >40 | 107 | 71.1 | 44.4 | |
| 40-50 | 57 | 68.6 | 36.1 | .033 |
| <40&>50 | 94 | 53.5 | 50 | |
| 50-60 | 48 | 73.6 | 53.6 | .018 |
| <50&>60 | 103 | 52.5 | 40.1 | |

These figures show that the level of development that is reached after three weeks of study in the structures studied here however seems to be a rather good indicator of future progress, since those with a low number of target variants make significantly less progress than those with a higher number. It can also be seen that those with a medium number of target variants will make greater progress than those with low and extremely high taken together. This might be a confirmation of the reasoning I put forward before, referring to the wave theory of Bailey, that when development has taken speed, it is faster until it comes to a near categorical use of the rules.

It was also assumed that background language would be one of the determinants of progress. Therefore, each of the 9 groups were compared one at a time with all other learners. The result of this comparison is displayed in Table 3.

Table 3

| | n | mean | SD | p |
|---|---|---|---|---|
| Group 1: | 9 | 68.4 | 21.7 | .256 |
| Others: | 142 | 58.6 | 46.8 | |
| Group 2: | 11 | 58.4 | 43.5 | .952 |
| Others: | 140 | 59.2 | 46.0 | |
| Group 3: | 18 | 78.3 | 42.9 | .058 |
| Others: | 133 | 56.6 | 45.6 | |
| Group 4: | 8 | 65.6 | 23.5 | .48 |
| Others: | 143 | 58.9 | 46.7 | |
| Group 5: | 18 | 79.2 | 39.6 | .035 |
| Others: | 133 | 56.5 | 46.0 | |
| Group 6: | 18 | 40.6 | 45.1 | .076 |
| Others: | 133 | 61.7 | 45.4 | |
| Group 7: | 37 | 47.7 | 56.4 | .135 |
| Others: | 114 | 63.0 | 41.3 | |
| Group 8: | 3 | 31.7 | 33.4 | .29 |
| Others: | 148 | 59.8 | 45.9 | |
| Group 9: | 29 | 59.8 | 42.1 | .941 |
| Others: | 122 | 59.1 | 46.7 | |

The composition of the language groups is given above, but is repeated here for convenience.

1. Hamito-Semitic languages
2. Romance languages
3. Greek
4. Bantu languages; Sudan languages; Thai; Estonian
5. English
6. Slavonic languages except Polish

7. verb-final languages
8. German
9. Polish

As can be seen from these figures, most differences were not significant. Even in those groups where significant differences are obtained, there might be other factors that would better explain the difference, e.g. level of education. To take just two groups, groups 6 and 5, where the significance level of .05 is approximated, the English speaking group consists mainly of learners with long educational background, while the learners in group 6, especially the Serbo-Croatian and Macedonian speakers, had short educational background. This, in fact mirrors the immigration situation in Sweden. With this material, we can conclude that nothing can be said about the different influences the native language may have on the rate of acquisition of Swedish.

In summary, the different background factors we have studied, with the exception of educational background, can not be said to have any great covariance with the amount of progress that is made during the period of five weeks in the syntactic areas that we deal with here. This means that the rate of acquisition can not adequately be described in relation to these background factors. Of course, there are many influencing factors that might be candidates for a determination of the the rate of acquisition, many of which are more important than the ones I have studied. (For a discussion of social and psychological determinants of second language progress, see Schumann 1978).

## 8. Pedagogical implications

To conclude this essay, I would like to speculate on possible implications variable studies within second language learning might have for second language pedagogy. Considerations of this sort involve taking a stand on both the insights of variable analyses and the prevailing restrictions in scope or coverage which is an unavoidable concomitant of studies of the present type. We can introduce this question by considering what effects variation analyses can have on the field of mother tongue instruction. It is common knowledge that educational politics takes various stands on the relationship between the 'code' of the dialect speaking child and the mainstream

variety or standard. The goal of mother tongue instruction may be formulated accordingly - either eradicate the child's dialect in favour of the standard, or allow the child to retain the dialect and not acquire the standard, or a third alternative, support the dialect and teach the standard. Whatever strategy is chosen is obviously going to influence the teaching procedure. If the third alternative is chosen - the biloquial alternative - it is conceivable that knowledge of the implicational relationships between dialect and standard would facilitate the teaching process by, for example, providing information on what features of the standard ought to be acquired first through being more compatible with the dialect speakers' own system. The assumption underlying this point of view is, of course, that societal and geographical varieties arrange themselves on a continuum, from basilectal to acrolectal varieties - to use terms from creole research -, and that knowledge of this continual relation should be built into teaching materials.

The parallel to second language teaching is not difficult to see. I have earlier argued (Hyltenstam 1978a) that one goal of second language research is to constrain the notion of possible developmental sequence. Knowledge of possible developmental sequences seems indispensable for an effective second language pedagogy. Platt (1976) expresses this in the following way:

> Data based on implicational scaling...would prove to be a considerable aid in providing short cuts in the whole learning process. It is quite obvious that often time is wasted because TESL [Teaching English as a Second Language] and TESD (Teaching English as a Second Dialect) programmes contain linguistic features which are either conceptually premature or have already been acquired by the learners at an earlier stage. Grading of materials with the help of simple or frequency scaling could be invaluable in programme structuring as it closely follows a societally defined gradation. (p. 55).

Before we go into any implications the present study may have, we can take an example from the area of phonology. Dickerson and Dickerson (e.g. 1976) have been able to show implicational patterns between contexts that are differentially favourable for the development of specific target variants of English phonology. It is easier, for example, for a native speaker of

Japanese learning English to pronounce /l/ target-like in a word like lab than in a word like loop - /l/ was found easier to pronounce before low vowels than before high vowels - and it was easier to pronounce /l/ in any of these two words than in e.g. flap and clean - since the initial position of the segment was more favourable than the position after a consonant (Dickerson 1976). The implications for second language teaching are obvious and seemingly rather superficial: The build up of competence in the second language should follow the "natural" process. In this case, training of or introduction to a particular segment should not be presented in just any environment but in words and positions that constitute the 'least advanced' contexts, i.e. where they are easiest to pronounce.

Similarly in the area of grammatical development, it is not implausible that teaching could profit enormously from being based on natural developments. If we take it to be the task of formal instruction to follow and support the development assumed to take place in informal - "natural" - learning situations, we may have to alter many of the procedures and progressions that we now use. To mention just one case, many morphological features that are extensively dealt with in initial stages of teaching languages such as German and Swedish, actually appear to develop rather late in untutored learning situations. The best teaching procedure would be to introduce them rather late and, for example, first deal with syntax. On the other hand, results from studies of untutored acquisition should perhaps not be interpreted and applied too straightforwardly to the teaching situation. It might conceivably be the case, that what is needed in second language teaching is to 'deactivate' the natural development by, in point of fact, introducing items at an early stage that would otherwise not have been acquired until much later. In other words, it could be taken as the teaching task to make learning more efficient by ignoring the natural development. But, of course, this last suggestion seems much more implausible. If second language learning does follow a natural syllabus (Corder 1967, 1968), it would be as useless to introduce items prematurely as it is to try and teach children features they are not ready for - although of course, in the case of children the natural syllabus seems to be dictated by both conceptual and structural considerations, which seems not to be the case for adult learners.

The present study has not looked at a sequence between different grammati-

cal phenomena but at a sequence of development within one and the same grammatical area. It suggests that the development of a specific feature such as post-verbal negation is favoured by certain contexts, exactly like pronunciation of a certain segment is favoured by a certain phonological environment. If we are to first introduce a feature in the most favourable contexts, then this study would suggest that the auxiliary verb context is the most favourable for post-verbal placement. However, this suggestion is not exhaustive as the study itself is not at all exhaustive in providing possible contexts for the structures studied, and is principally a confirmation that it is possible to specify these contexts in the area of syntax.

Knowledge of the continual nature of language development is of course of interest in itself for teaching practice even without specification of the environments. Neither the teacher nor the student need be disheartened by the lack of any sudden change in the learners language behaviour after the introduction of new items. The process of getting a particular target rule in operation can be a quite long lasting affair - as it is in child language. To quote Brown on the development of certain morphemes in child language,

> Since the first copulas and auxiliaries appeared at Stage II, it looked as if the form must oscillate between presence and absence in obligatory contexts for something like two years.... (Brown 1973:307)

This points to the fact that the teacher and learner should be prepared to notice much smaller amounts of progress than would result from the substitution of one variant for another. Progress measured by differences in frequency of application for a variant in contexts should also reveal to the teacher which areas of the learner's grammar are still in change and which are not, i.e. can be considered fossilized.

Despite these results' principle value for language teaching, there are of course limitations on their direct practical use, as was mentioned above. These restrictions on applications of the results obviously concern such factors as the impossibility in an investigation of this type to say anything on the relation between the structural development observed in this area and any external processes that may be related to it like motivation

etc. Also, as should be apparent from our previous discussion, the results of these structural areas should not be generalized to other areas, where for example other contexts may play a different role for speakers of different background languages at different stages.

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Notes

1. This chart orders the 6 speaker capabilities assumed after degree of strength, and in such a way that successive statements include all previous statements.

2. However, it seems to me that to apply the term 'cross-sectional' to investigations of one individual is to use the term in a different sense than those critisized by Rosansky.

3. I am presently investigating different kinds of data - spontaneously produced data, imitation data, and intuitive data - from the same learners of Swedish. The hypothesis is that the same patterned variation will show up in all these data types, and that only the degree to which the target variant is used in the different types will differ, thus reflecting the degree of formality of the data. Some support for this hypothesis has been found, although the results are not yet ready for publication.

4. The same course book was used in all groups:
   Higelin, S. et al. (1968) Svenska för er: Lärobok för utlänningar 1. Stockholm: Sveriges Radios förlag.

5. The two alternatives given in the items were based on observations about equivalent structures that were made in the written compositions mentioned above. The items should allow for any one of these variants. To makes sure that the correct equivalent structures were included in the material, written free production was collected from 36 of the learners actually participating in the investigation. These essays were written at approximately Time II. The examination of these essays confirmed that the equivalent structures used in the elicitation items were in fact those used by these learners. The examples of each area were as follows:

   a) 55 examples of sentence negation were found. In 40 of these, the target variant was used and in 15 sentences, the equivalent structure allowed for in the test items was used.

   b) No examples were found. (The essays did not contain dialogues.)

   c) 296 examples were found. 225 of these used the target variant and 71 the equivalent structure that was allowed for in the test items.

   d) 145 examples were found. In 126, the target variant was used and in 19 a non-target variant was found. The only problem encountered was found here: 2 of the non-target variants did not fit into the elicitation items. They were:

   > Stevardes frågar honom, vad ska drac han
   > Stewardess asks him what shall drank he
   >
   > men jag vit inte hur mycket ska kostar en resa till England
   > but I know not how much shall costs a journey to England

   i.e. there is inversion in the embedded clause, but the subject is not placed after the finite verb but after the whole verb group. It seems to be a fact that this is one possibility - which could be explained in different ways - but it is certainly a possibility that is rarer than the structures with inversion between finite verb and subject.

   e) 101 examples were found. 91 of these showed the target variant and 10 showed the equivalent structure allowed for in the test items. This means that we have some indication that the equivalent structures allowed for in the test items actually were those that were used in other types of data too.

6. These were students at Markaryds Folkhögskola. I am indebted to Berit

and Samuel Hansen for helpfully arranging for me to meet the students, and to the students for offering their time on my experiment.

7. These languages were Arabic, Czech, English, Finnish, French, German, Greek, Hungarian, Macedonian, Persian, Polish, Portugese, Serbo-Croatian, Spanish, and Turkish. Speakers of most other languages had knowledge of English.

8. This was a material containing visual aids for the teaching of syntax and supplementary exercises. Half of the groups used only the exercises and the other half, both the exercises and the actual material. Since all groups used a special material, the Hawthorne effect can be assumed to have worked in the same way in all groups. The materials mentioned here are now published:
Fasth, C., K. Hyltenstam, and M. Lyding (1975) Förenade ord. Lund: Kursverksamhetens Förlag.

9. The terms "easy" and "difficult" should not be taken literally. A sentence is easy if many subjects treat it according to the norm, and difficult if few subjects treat it thus.

10. Implicational scales were developed for use in social and behavourial sciences by Guttman (1944). They were introduced into linguistics by DeCamp, in a paper published 1971 (DeCamp 1971), but had by then already been spread and used in various fields, e.g. to study the patterning of native speakers' acceptability judgements (Elliott et al. 1969).

11. There are subordinate clauses in Swedish that allow post-verbal placement of negation (Teleman 1967, Andersson 1975). In the elicitation materials used here, such sentences have not been chosen. This point has been explicated further in Hyltenstam 1977.

12. It is clear that most learners in a formal setting will not stay at this point for very long. Already after three weeks of study, most learners will have progressed beyond this point.

13. It is not quite adequate to speak of finite verbs in this case, since the characteristics of finiteness are often absent in simple systems. What is meant is the verb that would carry the finite element in an utterance expanded to the target language version.

14. See Hyltenstam 1977 and 1978a for further treatment of the notion of simple system.

15. In Hungarian both SVO and SOV are considered to be basic word orders (Kiefer 1967).

16. Questions without inversion can also be found in Swedish. These are, however, not plain yes/no questions, but appear to carry presuppositions as to their answers.

17. An interesting point in Felix' study, is that, at a later stage of acquisition, the children produced sentences like Bist du weiss was das ist? This sentence appears to be a 'word for word translation' of the equivalent English question with do (at least as far as inversion is concerned) and can be taken as further support for the assumption presented in Hyltenstam 1978a that interference is greater the greater the structural compatibility between languages (where structural compatibility between the second language learners' native language and his version of the target is taken to increase as the learner approximates closer to the target).

18. However, it is not quite obvious that this placement is made in relation to the main verb. Since there is such a strong connection between negation and the finite element of a clause (Dahl 1977), it is quite conceivable that the negator is placed in relation to the finite verb, but that this is done post-verbally mainly in auxiliary contexts.

19. By simple linear development I understand a successive increase in the amount of target variants.

Appendix I: Elicitation instrument (5 pages)

N A M N: .....
(NAME)

Vilket är ditt språk? .....
(What is your language?)

Titta på exempelmeningarna längst ner på denna sida! Till väsnter om varje mening står det ett ord, som passar på en av de markerade platserna i meningen. I exempelmeningarna har vi redan skrivit in ordet på rätt plats. Fyll i de följande sidorna på samma sätt så att meningarna blir korrekta!

Consider the examples at the bottom of this page. On the left of each sentence there is a word which is to be placed in the correct space in the sentence. This has been done in the examples. Complete the following pages so that the resulting sentences are correct.

ALDRIG Eva _____ går aldrig på bio.

LÄSER _____ Lars läser tidningen nu.

VEM Vem talar ____ finska?

| | |
|---|---|
| INTE | Det är synd, att Anita _____ börjar _____ klockan sju. |
| DRICKER | Erik säger, att _____ hon _____ kaffet på restaurangen. |
| KLOCKAN TOLV | Bo äter _____ smörgåsarna _____. |
| PÅ BIBLIOTEKET | Anna lånar _____ tidningarna _____. |
| BO | På söndag _____ läser _____ en bok. |
| DE | Bo frågar, om _____ vill _____ äta klockan tolv. |
| VI | _____ börjar _____ arbeta klockan sju? |
| ANNA | På banken _____ lånar _____ 3.000 kronor. |
| INTE | Ulf _____ vill _____ stanna. |
| ÄTER | _____ Ulla _____ chokladkakan nu? |
| INTE | Det är bra, att han _____ får _____ röka. |
| INTE | Vi _____ stannar _____ i Köpenhamn. |
| INTE | Ulla _____ kommer _____ i kväll. |
| KARIN | Idag _____ vill _____ läsa. |
| MÖTER | Vid apoteket _____ Erik _____ en bil. |
| HOTELLET | De bygger _____ vid kyrkan _____. |
| INTE | Det är bra, att Åke _____ vill _____ ringa. |
| VILL | _____ de _____ äta klockan tolv? |

| | |
|---|---|
| INTE | Det är synd, att han _____ kan _____ sluta. |
| FÅR | _____ jag _____ stanna på sjukhuset? |
| PÅ KVÄLLEN | Hon läser _____ tidningen _____. |
| FÅR | I skolan _____ han _____ läsa. |
| INTE | Det är synd, att Ulf _____ vill _____ stanna. |
| BÖRJAR | På onsdag _____ John _____ spela. |
| VYKORTEN | Vi skriver _____ i kväll _____. |
| INTE | Det är bra, att Maria _____ bor _____ i Malmö. |
| ULLA | Lisa frågar, om _____ äter _____ chokladkakan nu. |
| INTE | Det är synd, att hon _____ arbetar _____ på restaurang. |
| SKA | I kväll _____ vi _____ sova. |
| TAR | Ulla säger, att _____ Eva _____ bussen till jobbet. |
| INTE | Hon _____ kan _____ sluta. |
| ÅKE | Lars frågar, om _____ slutar _____ skolan klockan tre. |
| SER | Vid parken _____ du _____ en kyrka. |
| INTE | Anita _____ börjar _____ klockan sju. |
| HON | _____ dricker _____ kaffet på restaurangen? |

| | |
|---|---|
| HAN | På torget _____ ska _____ köpa frukt. |
| SKA | Lasse säger, att _____ han _____ gå till stationen. |
| INTE | Han _____ får _____ röka. |
| RADION | Han har _____ i köket _____. |
| HON | I morgon _____ kan _____ komma. |
| STÄNGER | Klockan elva _____ de _____ restaurangen. |
| EVA | _____ tar _____ bussen till jobbet? |
| INTE | Det är bra, att hon _____ sover _____ på morgonen. |
| DU | _____ vill _____ spela på restaurangen? |
| VID BIOGRAFEN | Eva träffar _____ polisen _____. |
| VILL | Bengt säger, att _____ han _____ spela på restaurangen. |
| BÖRJAR | Eva säger, att _____ vi _____ arbeta klockan sju. |
| INTE | Lisa _____ hinner _____ äta. |
| INTE | Maria _____ bor _____ i Malmö. |
| KÖPER | Maria säger, att _____ Ulf _____ båten i morgon. |
| DOKTOR OLSSON | Erik möter _____ vid apoteket _____. |
| INTE | Det är synd, att Ulla _____ kommer _____ i kväll. |
| INTE | Åke _____ vill _____ ringa. |

| | |
|---|---|
| INTE | Det är bra, att vi _____ stannar _____ i Köpenhamn. |
| HAN | _____ ska _____ gå till stationen? |
| HAN | Anna frågar, om _____ köper _____ biljetter i kväll. |
| SLUTAR | _____ Åke _____ skolan klockan tre? |
| PIANOT | De köper _____ i morgon _____. |
| ULF | _____ köper _____ båten i morgon? |
| INTE | Det är synd, att Lisa _____ hinner _____ äta. |
| HON | Karin frågar, om _____ får _____ stanna på sjukhuset. |
| INTE | Det är bra, att de _____ ska _____ gå. |
| EVA | Vid biografen _____ träffar _____ en polis. |
| KÖPER | _____ han _____ biljetter i kväll? |
| INTE | Hon _____ sover _____ på morgonen. |
| MJÖLKEN | Jag dricker _____ i morgon _____. |
| KAN | _____ Anita _____ sova på tåget? |
| ANITA | John frågar, om _____ kan _____ sova på tåget. |
| INTE | De _____ ska _____ gå. |
| INTE | Hon _____ arbetar _____ på restaurang. |
| KLOCKAN FYRA | Lasse träffar _____ flickan _____. |
| I STOCKHOLM | Erik har _____ bilverkstaden _____. |

Appendix II. The sentences used in the elicitation material within different syntactic areas with literal English translations. The sentences are arranged in their ranking order within each syntactic area. The word that has been extracted from the sentences in the elicitation material is underlined here. (6 pages)

a:1 Negation in main clauses

1. Han kan inte sluta.
   'He cannot stop.'

2. Ulf vill inte stanna.
   'Ulf does not want to stay.'

3. Åke vill inte ringa.
   'Åke does not want to phone.'

4. Han får inte röka.
   'He is not allowed to smoke.'

5. De ska inte gå.
   'They are not going.'

6. Lisa hinner inte äta.
   'Lisa has not time to eat.'

7. Vi stannar inte i Köpenhamn.
   'We are not staying in Copenhagen.'

8. Hon arbetar inte på restaurang.
   'She does not work at a restaurant.'

9. Ulla kommer inte i kväll.
   'Ulla is not coming tonight.'

10. Anita börjar inte klockan sju.
    'Anita does not start at seven o'clock.'

11. Maria bor inte i Malmö.
    'Maria does not live in Malmö.'

12. Hon sover inte på morgonen.
'She does not sleep in the mornings.'

a:2 Negation in subordinate clauses

1. Det är bra, att hon inte sover på morgonen.
'It's good, that she does not sleep in the mornings.'

2. Det är synd, att hon inte arbetar på restaurang.
'It's a pity that she does not work in a restaurant.'

3. Det är bra, att vi inte stannar i Köpenhamn.
'It's good that we are not staying in Copenhagen.'

4. Det är synd, att Ulla inte kommer i kväll.
'It's a pity that Ulla isn't coming this evening.'

5. Det är bra, att Maria inte bor i Malmö.
'It's good that Maria does not live in Malmö.'

6. Det är synd, att Anita inte börjar klockan sju.
'It's a pity that Anita does not start at seven o'clock.'

7. Det är synd, att Lisa inte hinner äta.
'It's a pity that Anita hasn't time to eat.'

8. Det är bra, att de inte ska gå.
'It's good that they are not going.'

9. Det är bra, att han inte får röka.
'It's good that he isn't allowed to smoke.'

10. Det är bra, att Åke inte vill ringa.
'It's good that Åke does not want to phone.'

11. Det är synd, att Ulf inte vill stanna.
'It's a pity that Ulf does not want to stay.'

12. Det är synd, att han inte kan sluta.
'It's a pity that he cannot stop.'

b:1 Inversion in yes/no questions

1. Vill du spela på restaurang?
   'Do you want to play at the restaurant?'

2. Kan Anita sova på tåget?
   'Can Anita sleep on trains?'

3. Vill du äta klockan tolv?
   'Do you want to eat at twelve o'clock?'

4. Får jag stanna på sjukhuset?
   'May I stay at the hospital?'

5. Köper Ulf båten i morgon?
   'Is Ulf buying the boat tomorrow?'

6. Köper han biljetter i kväll?
   'Is he buying tickets this evening?'

7. Ska han gå till stationen?
   'Is he going to the station?'

8. Slutar Åke skolan klockan tre?
   'Does Åke finish school at three o'clock?'

9. Tar Eva bussen till jobbet?
   'Does Eva take the bus to work?'

10. Äter Ulla chokladkakan nu?
    'Is Ulla eating the chocolate bar now?'

11. Dricker hon kaffet på restaurangen?
    'Does she drink the coffee at the restaurant?'

12. Börjar vi arbeta klockan sju?
    'Do we start work at seven o'clock?'

c. Subject-verb inversion after sentence-initial non-subjects

1. I kväll ska vi sova.
   'This evening, we are going to sleep.'

2. På onsdag börjar John spela.
'On Wednesday, John starts playing.'

3. Vid parken ser du en kyrka.
'By the park, you can see a church.'

4. I morgon kan hon komma.
'Tomorrow, she can come.'

5. På banken lånar Anna 3.000 kr.
'At the bank, Anna borrows 3.000 crowns.'

6. Vid apoteket möter Erik en bil.
'At the chemist's, Erik meets a car.'

7. Klockan 11 stänger de restaurangen.
'At 11 o'clock, they close the restaurant.'

8. I skolan får han läsa.
'At school, he is allowed to read.'

9. Vid biografen träffar Eva en polis.
'At the cinema, Eva meets a policeman.'

10. På söndag läser Bo en bok.
'On Sunday, Bo reads a book.'

11. På torget ska han köpa frukt.
'At the square, he is going to buy fruit.'

12. Idag vill Karin läsa.
'Today, Karin wants to read.'

d:1. Non-inversion in embedded yes/no questions

1. Lisa frågar, om Ulla äter chokladkakan nu.
'Lisa asks if Ulla is eating the chocolate bar now.'

2. Anna frågar, om han köper biljetter i kväll.
'Anna asks if he is buying tickets this evening.'

3. Karin frågar, om hon får stanna på sjukhuset.
   'Karin asks if she may stay at the hospital.'

4. John frågar, om Anita kan sova på tåget.
   'John asks if Anita can sleep on trains.'

5. Lars frågar, om Åke slutar klockan tre.
   'Lars asks if Åke finishes at three o'clock.'

6. Bo frågar, om de vill äta klockan tolv.
   'Bo asks if they want to eat at twelve o'clock.'

d:2. Non-inversion in embedded declaratives

1. Bengt säger, att han vill spela på restaurangen.
   'Bengt says that he wants to play at the restaurant.'

2. Maria säger, att Ulf köper båten i morgon.
   'Maria says that Ulf is buying the boat tomorrow.'

3. Eva säger, att vi börjar arbeta klockan sju.
   'Eva says that we start work at seven o'clock.'

4. Erik säger, att han dricker kaffet på restaurangen.
   'Erik says that he is drinking the coffee at the restaurant.'

5. Lasse säger, att han ska gå till stationen.
   'Lasse says that he is going to the station.'

6. Ulla säger, att Eva tar bussen till jobbet.
   'Ulla says that Eva takes the bus to work.'

e. Constituent order between object and adverbial

1. Jag dricker mjölken i morgon.
   'I'll drink the milk tomorrow.'

2. Vi skriver vykorten i kväll.
   'We'll write the postcards this evening.'

3. De köper pianot i morgon.
   'They are going to buy the piano tomorrow.'

4. De äter smörgåsarna klockan tolv.
   'They are eating the sandwiches at twelve o'clock.'

5. Erik har bilverkstaden i Stockholm.
   'Erik has the garage in Stockholm.'

6. Anna lånar tidningarna på biblioteket.
   'Anna borrows the newspapers from the library.'

7. Han har radion i köket.
   'He has the radio in the kitchen.'

8. Han läser tidningarna på kvällen.
   'He reads the papers in the evening.'

9. Lasse träffar flickan klockan fyra.
   'Lasse is meeting the girl at four o'clock.'

10. De bygger hotellet vid kyrkan.
    'They're building the hotel by the church.'

11. Eva träffar polisen vid biografen.
    'Eva meets the policeman at the cinema.'

12. Erik möter doktor Olsson vid apoteket.
    'Erik meets doctor Olsson at the chemist's.'

Appendix III: Questionnaire (with translations)

1. Namn: .....
   (NAME)
2. Hur gammal är du? .....
   (HOW OLD ARE YOU?)
3. Varifrån kommer du? Land: .....
   (WHERE DO YOU COME FROM? COUNTRY)

   Stad: .....
   (CITY)
4. Hur länge har du varit i Sverige? .....
   (HOW LONG HAVE YOU BEEN IN SWEDEN?)
5. Vilket/Vilka språk talade du när du var barn? (1-12 år)
   (WHAT LANGUAGE(S) DID YOU SPEAK WHEN YOU WERE A CHILD? (1-12 YEARS))

   .....
6. Var bodde du när du var barn? Land: .....

   (WHERE DID YOU LIVE AS A CHILD? COUNTRY)

   Stad: .....
   (CITY)
7. Hur många år har du gått i skola? .....
   (HOW MANY YEARS SCHOOLING DO YOU HAVE?)
8. Har du bott längre än ett år i något annat land (utom Sverige och ditt
   (HAVE YOU LIVED MORE THAN ONE YEAR IN ANOTHER COUNTRY (OTHER THAN

   hemland)? Vilket land? .....
   SWEDEN AND YOUR NATIVE COUNTRY)? WHAT COUNTRY?)

   Hur länge bodde du där? .....
   (HOW LONG DID YOU LIVE THERE?)

   Vilket/Vilka språk talade du där? .....
   (WHAT LANGUAGE(S) DID YOU SPEAK THERE?)
9. Vilket/Vilka andra språk kan du nu? .....
   (WHAT OTHER LANGUAGE(S) DO YOU KNOW NOW?)

   Har du studerat detta/dessa språk? (Ja eller nej) .....
   (HAVE YOU STUDIED THAT/THOSE LANGUAGE(S)? (YES OR NO?)

   Hur många år har du studerat det? .....
   (HOW MANY YEARS HAVE YOU STUDIED IT?)
10. Vilket/Vilka språk talar du här i Sverige med din familj eller dina
    (WHAT LANGUAGE(S) DO YOU NOW SPEAK WITH YOUR FAMILY OR YOUR FRIENDS

    vänner? .....
    HERE IN SWEDEN?)

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