

# Unlearning V2

## Transfer, markedness, and the importance of input cues in the acquisition of word order in English by Norwegian children \*

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This study investigates how child speakers of a verb second (V2) language acquire the supposedly more basic SVO word order of English. Data comes from approximately 100 Norwegian school children aged 7 to 12 in their acquisition of three related syntactic constructions. The focus of the investigation is the extent of language transfer from the L1, related to questions of markedness. It is shown that there is considerable transfer of Norwegian word order, and the children need to ‘unlearn’ the V2 rule acquired for their first language in the process of learning English. In a cue-based approach to second language acquisition, the input cues that are necessary to reorganize the children’s internalized grammar are identified, and the frequency of these cues is argued to be responsible for the order of acquisition of the various constructions.

### Introduction

Norwegian learners of English must pay attention to certain differences between the two languages with respect to word order. English is an SVO language, while Norwegian is a Germanic verb second (V2) language with the verb in second position in all main clauses. SVO is often assumed to be a basic word order, and it is argued to be the only underlying order allowed by Universal Grammar (UG) by e.g. Kayne (1995). V2 word order, on the other hand, is a derived order, which is standardly assumed to result from verb movement to the C(omplementizer) position (see e.g. Vikner 1995). Thus, the two languages under investigation differ in significant ways with respect to the parameter of

verb movement: Norwegian is assumed to have verb movement to C in all types of main clauses (even subject-initial ones, which are superficially SVO), and this results in V2 order in topicalised structures (1a), questions (2a), as well as sentences with adverbials (3a). English, on the other hand, only allows auxiliary movement (V-to-I movement) as seen in (3c), where the auxiliary has moved across the adverbial in a declarative main clause, as well as subsequent movement to C in questions (S-Aux Inversion), as illustrated in (2b):

- (1) a. *I går spilte Peter piano hele dagen.*  
yesterday played Peter piano all day  
b. 'Yesterday Peter played the piano all day.'
- (2) a. *Hva spilte Peter i går?*  
what played Peter yesterday  
b. 'What did Peter play yesterday?'
- (3) a. *Peter spiller alltid piano.*  
Peter plays always piano  
b. 'Peter always plays the piano.'  
c. *Peter has always played the piano.*

The syntactic parameters responsible for these word order differences can be formalized as the rules in (4), where the V-to-I-to-C movement rule of Norwegian is responsible for the V2 pattern. The challenge facing Norwegian learners of English is to realize that in the target language, this verb movement rule is unnecessary.

- (4) English: V-to-I (aux), I-to-C (in Questions)  
Norwegian: V-to-I-to-C

A somewhat complicating factor for this study is that the Northern dialect of Norwegian spoken by the children in the present study also allows certain WH-questions without verb movement, as discussed in Westergaard (forthcoming). These are questions starting with the monosyllabic WH-words *ka*, *kem* and *kor* ('what', 'who' and 'where'), which thus may occur with an optional V3 order as seen in (5). In questions starting with the two-syllable WH-words *korsen*, *katti* and *korfor* ('how', 'when' and 'why'), on the other hand, V2 order is obligatory, as illustrated in (6).

- (5) *Ka sir du? / Ka du sir?*  
what say you/what you say  
'What are you saying?'

- (6) *Korfor går du? /\*Korfor du går?*  
 why go you/ why you go  
 ‘Why are you leaving?’

## The study

In Norwegian schools children start learning English in first grade, at the age of six, when they would normally be considered to be well within the limits of the critical period for language acquisition (see e.g. Birdsong 1999). However, the amount of exposure to English at this stage is minimal: only approximately a half hour per week during the first three years (mainly filled with songs and games), increasing to a full 45 minutes per week in 4th grade. In Westergaard (2002) I have argued that this minimal exposure over an extended period of time is of little use with regard to the acquisition of structural properties of the language, such as word order.

Given this situation, these children are interesting from a language acquisition perspective for a number of reasons. They provide an opportunity to compare L1 and L2 acquisition without consideration of the age factor and the critical period. Furthermore, since they are so young, they do not receive any real instruction in English, and certainly no explicit grammar lessons. Finally, given that the input these children get is so minimal compared to a true naturalistic situation, the various stages they go through in the learning process and the linguistic hypotheses they make at these stages should be more easily detectable.

The data collection for this study took place at Bjerkaker elementary school in Tromsø in November/December 2000, with a follow-up test on some of the children in January 2002. One class at each level (1st-7th grade) participated, but many of the younger children (in fact, all the 1st graders) were excluded from the study because they simply had no knowledge of English whatsoever. The 2nd to 4th graders were given an oral test, where they were supposed to either assess linguistic material presented on tape (purporting to come from a stuffed animal present during the investigation) or assist a hand puppet who had to say something in English. All test sentences consisted of every-day vocabulary (mostly cognates in English and Norwegian, e.g. ‘ball’ or ‘bath’ (Norwegian: *ball* and *bad*)), and were supported by picture cards. The test comprised three different tasks: Assessment of sentence pairs (e.g. ‘Every day John plays football’/‘Every day plays John football’), grammaticality judgments of individual sentences, as well as some elicited production for the older

children (4 th grade). The 5th to 7th graders were given a written test, where the tasks mirrored those given to the younger children, and this same test was given to a group of fourth-graders about a year later, simply to have some directly comparable data between the fourth-graders and the older children. In Table 1 there is an overview of the number of children from each age group who were included in the study.

**Table 1.** Numbers of children in each data sampling

	2nd grade	3rd grade	4th grade	5th grade	6th grade	7th grade
Oral tests	10	15	14			
Written tests			18 <sup>a</sup>	20	24	20

<sup>a</sup> The fourth grade children are two distinct groups in the oral and written tests.

The written tests as well as the oral sessions with individual children lasted about 20–30 minutes, and it is obvious that only a limited number of sentences for each syntactic construction could be tested in this short time. Thus, this study cannot be said to have statistical validity, and the data obtained must be considered tentative until a more comprehensive investigation can be carried out.

In addition, some methodological problems may have affected the results. It is not easy to test the language competence of children who are at an extremely early stage of language acquisition and need help with even the simplest vocabulary items. Since the youngest children participating in the study hardly ever spontaneously produce anything that corresponds to a full sentence in English, it is very difficult to tap what their initial hypothesis would be, for example of word order. Some of the tests used in this study, grammaticality judgments as well as translation tasks, admittedly have serious weaknesses. For example, it is difficult to know whether the child's judgment of a sentence is based on the construction under investigation or some other linguistic (or even non-linguistic) phenomenon. However, with mostly sentence pairs for the youngest children, rather than individual sentences for judgment, an attempt was made to ensure that the children focused on the relevant aspect of the sentences at hand. Translation may also be somewhat dubious as a test method, as it is extremely error-inducing and almost forces the learners into producing constructions — and making mistakes — that they would otherwise have avoided. This method was nevertheless used with the older children, partly because of its simplicity, but also because once an error is attested in a learner's production, it is not the actual number of mistakes which is most interesting in

this study, but the way these mistakes pattern across the different syntactic constructions and age groups.

### Transfer from the L1/markedness

There is a range of predictions that could be made with respect to transfer in the case of V2 word order, from no transfer at all, i.e. that the second language acquisition of English should equal the first language acquisition of English, to full transfer, which for the present study would predict that the early stages of L2 English by Norwegian learners would look exactly like Norwegian.

The Full Transfer/Full Access theory of Schwartz and Sprouse (1996: 40–41) for example, argues that ‘the initial state of L2 acquisition equals the final state of L1 acquisition’. This means that all aspects of the L1 grammar may be transferred into the L2 and that a learner’s interlanguage will only be restructured when the input contains data that is incompatible with the present grammar. This restructuring may be a rapid process in some cases, while for other aspects of the grammar more input may be needed before restructuring can take place. With respect to the acquisition of word order by Norwegian learners of English, this theory predicts that learners will initially assume that English has V2 order, just like Norwegian, and transfer should occur in all the clause types discussed above.

A theory of no transfer, on the other hand, would assume that Norwegian children should behave exactly like English-speaking children in their acquisition of English word order. Since SVO word order has been found to be in place already from the first multi-word utterances in L1 English and other orders are virtually non-attested (see e.g., O’Grady 1997 or Pinker 1994), Norwegian children should also make correct hypotheses about English word order from the very beginning. This would correspond to Platzack’s (1996) idea of an Initial Hypothesis of Syntax (IHS), which was developed mainly to explain L1 acquisition. Platzack argues, within the minimalist framework of Chomsky (1993, 1995), that the initial hypothesis children make about language is that all syntactic features are weak, as expressed in (7):

- (7) Initial Hypothesis of Syntax (IHS):  
 All instances of feature checking take place after spell-out.  
 (Platzack 1996: 376)

Since all movement operations (including verb movement) in this framework are considered to be triggered by strong features, this means that children will first expect to find all elements in their base positions. The initial hypothesis will thus be that there is no overt movement of categories necessary. What children have to learn about their particular languages is which features are strong and therefore require movement of a category to be checked before spell-out. Given that Platzack also assumes (with Kayne 1995) that there is only one underlying word order in UG, namely SVO, and English happens to have this order, English-speaking children will have no extra work to do with respect to word order: UG assumes an underlying SVO, the IHS specifies that all features are weak — thus word order is in place immediately and there is nothing to be learned. For the V2 languages such as Swedish and Norwegian, on the other hand, what children have to learn is that the feature in C is strong and therefore requires verb movement, and once that has been acquired, V2 word order should fall into place simultaneously in all clause types that require it.

Platzack extends this IHS idea also to other cases, e.g. language attrition and second language learning. For second language acquisition he claims that learners ‘initially go back to the IHS’ (Platzack 1996:380), i.e. L2 acquisition should not be significantly different from L1 acquisition. Learners should thus initially assume that all features in the L2 are weak and not transfer any strong features learned for the first language. To some extent, this is a relatively plausible hypothesis for L2 acquisition of word order in SVO vs. V2 languages: An informal impression of advanced Scandinavian learners of English is that they hardly ever make word order mistakes, while this unfortunately does not seem to hold in the opposite learning situation. Advanced English learners of Scandinavian languages seem to struggle with V2 throughout the learning process. It is thus possible that at some level, then, V2 word order is somehow harder to learn than SVO.

A third hypothesis is one of partial transfer, i.e. that only some features will be transferred from the L1 into the L2, while other features will never be transferred. One example of this is the Minimal Trees hypothesis of Vainikka and Young-Scholten (1996), which argues that only lexical projections transfer from an L1 to an L2, and no functional projections. That is, L2 learners start out with bare VPs from their native languages, and then build functional structure gradually. Since V2 word order involves verb movement to a functional head (C), this hypothesis would predict no transfer of word order from Norwegian into English. For French learners of English, who seem to transfer SVAO word order and thus verb movement to a functional head (V-to-I), Vainikka and

Young-Scholten adopt an analysis where this word order is seen as an overgeneralization of the verb movement found in English (auxiliary movement). Thus, if V2 word order could be attested in these Norwegian learners, it is possible that Vainikka and Young-Scholten would explain this also as an overgeneralization, based solely on the English input. However, this would mean that all L2 learners of English should be expected to make V2 mistakes, and according to Schwartz and Sprouse (1996), such mistakes are not attested in e.g. the French learners investigated by White (1990/91).

Partial transfer is often linked to the idea of markedness, and it is claimed that unmarked features may be transferred from one language to another, while marked features will not, as speakers will not expect to find these marked, or unusual, features in the foreign language. What will be predicted to be transferred in a particular case then, will depend on the definition of markedness, since different definitions will make opposing predictions about verb movement transfer.

On most accounts, V2 is considered to be the result of a marked feature. See, for example, Platzack (1996), mentioned above, and Roberts (1999), who claims that

[t]he ‘weak’ value in terms of Chomsky’s (1993) proposals...of a parameter is always the unmarked value. (Roberts 1999:287)

Within the minimalist framework, weak features are always considered to be unmarked, while strong features, which trigger movement, are marked. Thus, the SVO word order of English is unmarked, while V2 is marked, because it is the result of verb movement to check a strong feature.

This definition of markedness would predict that V2 word order should not be transferred in any of the constructions which require it in Norwegian. The special V3 word order of these children’s Northern dialect in certain WH-questions will on this account be unmarked (i.e., no movement), and this word order should actually then be predicted to be transferred. One would then expect the children in this study never to produce sentences like (8) and (9) in their acquisition process, but one would expect them to produce sentences like (10):

- |                                   |                 |
|-----------------------------------|-----------------|
| (8) *Every day plays John soccer. | (not predicted) |
| (9) *John plays always soccer.    | (not predicted) |
| (10) *What you will play?         | (predicted)     |

It should be noted that these predictions are in practice no different from the Platzack (1996) theory of no transfer referred to above. The only difference is

that if sentences like (10), in which there is no verb movement, occur in second language learners' production, they would be explained as the result of the IHS. On an account which assumes partial transfer of unmarked features, on the other hand, they would be considered the result of transfer from the learners' L1.

Another possible definition of markedness can be found in Henry and Tangney (1999). According to their definition, a language which has consistent movement in all sentence types is simpler, or less marked, than a language which only has movement in some sentence types. That is, it is not sufficient to look at one particular feature in isolation (e.g. verb movement); it must be considered within the language system that it occurs in. Norwegian, which is assumed to have verb movement to C in all main clauses, can thus be argued to be less complex than English, which only has auxiliary movement to C in questions. Thus, Henry and Tangney claim that

simplicity in UG terms... [is] defined in terms of the number of settings (strong vs. weak) in the grammar. Adopting the Minimalist view (Chomsky 1995) that parametric variation is largely restricted to the specification of the strength or weakness of the V- and N-features of each functional element, we regard the simplest grammar as one that contains a unique specification of each functional head, whereas a more complex grammar may have a different specification for certain functional elements. (Henry and Tangney 1999:239)

Furthermore, Henry and Tangney argue that a complex (or marked) grammar will only be acquired if the crucial constructions have a certain frequency in the input. This, they argue, is the case in first as well as in second language acquisition:

Learners will only adopt a more complex grammar...where there is overwhelming evidence in the input in its favor.  
(Henry and Tangney 1999:240).

This account of markedness makes completely different predictions from the minimalist approach of Roberts (1999). Since on this account Norwegian V2 would be less marked than English, it is expected that this word order will be transferred, in topicalisations as well as in clauses with adverbs, i.e. sentences like (8) and (9) above. Furthermore, the fact that all verbs move to C in WH-questions in Norwegian and not only auxiliaries, as in English, should make verb movement in Norwegian less marked than in English. It is thus expected that verb movement of lexical verbs to C should also be transferred in the process of L2 acquisition of English by Norwegian learners. These learners should therefore initially accept and produce sentences like (11). The special V3 word order of the Tromsø dialect, which occurs in only some types

of WH-questions, could be argued to add complexity to the grammar, and these should thus not be transferred; i.e. we would not expect learners to produce sentences like (12).

- (11) \*What drinks he?      (predicted)  
 (12) \*What he drinks?      (not predicted)

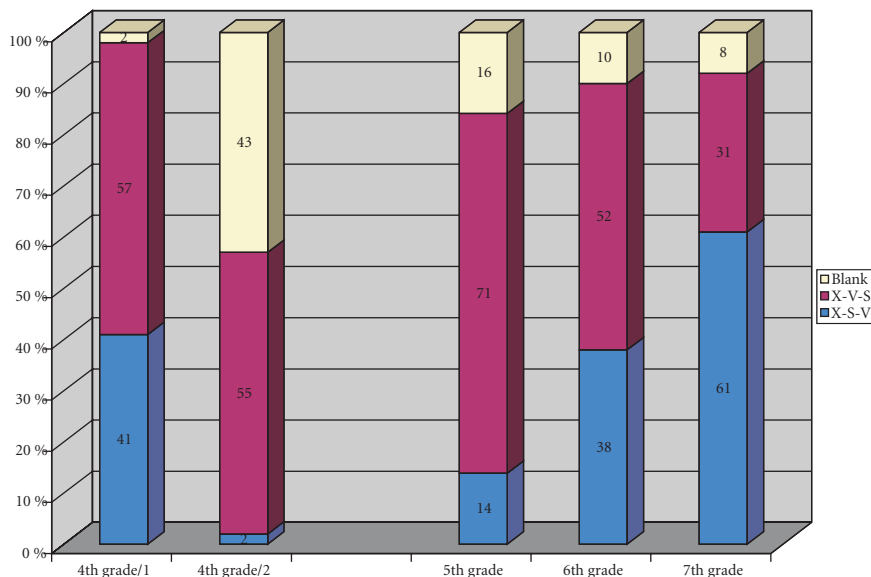
There is no abundance of previous studies of Norwegian children learning English, but Ravem (1968), which describes a Norwegian six-year-old learning English in a naturalistic setting, provides data that suggests that transfer of V2 order occurs in both yes/no and WH-questions. In Ravem (1974), it is argued that uninverted WH-questions like (12) above also occur in the data — in fact, these are considerably more frequent than WH-questions with a lexical verb in C, i.e. questions like (11) above. It should be noted that since this child is not a speaker of a North Norwegian dialect, these uninverted WH-questions cannot be considered to be the result of transfer. In Wode (1978), which investigates question word order in German child learners of English, both uninverted and inverted questions are again attested, and it is argued that the former type constitutes a stage of development that precedes the latter.

In the next section some of the results of the present study will be discussed in relation to the different theories presented here.

## Results

When considering some of the results of this study in the light of the different predictions discussed above, one is immediately struck by the massive transfer of V2 word order into the children's English, not only at the early stages. In fact, this feature seems to persist in some children even after many years of English instruction. In fifth grade, for example, approximately 70% of the children chose the V2 word order in translation tasks (\*'Every day plays John soccer' or \*'Walter jumps always on the bed'), and even when presented with sentence pairs, half of the children still preferred the ungrammatical sentence in the pair.

In Figure 1, simple percentages have been used to illustrate the performance of the 4th to 7th grade learners on topicalisations in the elicited production/translation tasks. The figures are based on only 7 different sentences, a relatively small number. Nevertheless, the tendency is surprisingly consistent across all sentences, with no sentence standing out as very different from the others. The transfer of Norwegian word order (XVS) is overwhelming, and there is a



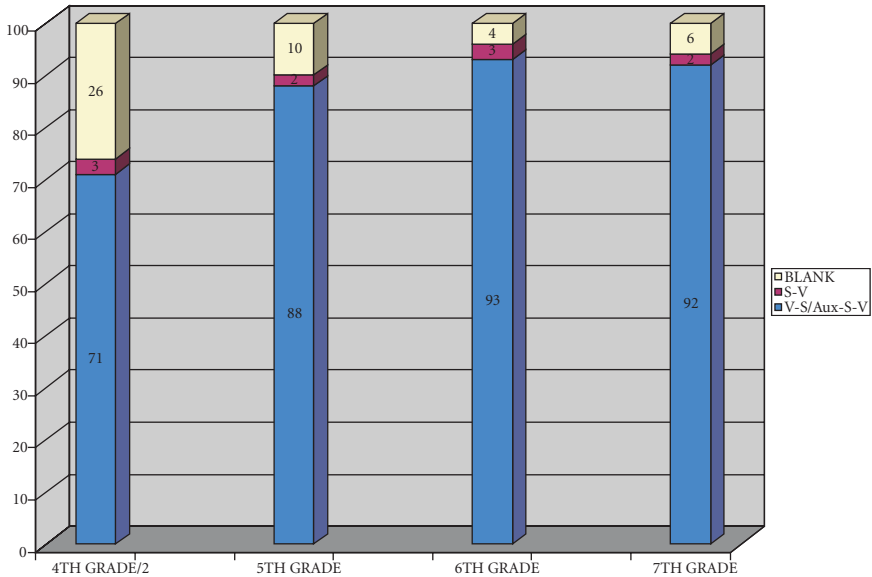
**Figure 1.** The performance of the 4th-7th grade learners on topicalisations (elicited production/translation tasks).

gradual increase in correct performance from 14% in 5th grade to 38% in 6th grade and 61% in 7th grade.

One surprising finding is the performance of the 4th graders, who in the first test (4th grade/1) apparently do better than both the 5th and the 6th grade learners. However, it must be said that the oral test given to the 4th graders is not directly comparable to the test given to the older children. When the 4th graders were given the same test as the older children (which was probably too difficult for them, in various ways), they performed much worse — in fact, they hardly seemed to get anything right (see results under 4th grade/2 in Figure 1). Thus, the better performance of the 4th graders in the first round is only due to the test situation. This also shows that the written test of the older children really does force them into making more mistakes than they would otherwise make in spontaneous speech. However, transfer from the L1 cannot only be due to the test itself, as it is also attested in the results of the oral test done on the younger children. We also know from other studies (e.g. Lehmann 1999) that Norwegian learners do make these kinds of word order mistakes also in their spontaneous production. Therefore, as mentioned above, this should not be a major problem for this investigation, since it is not the actual number of

mistakes that is the focus of the study, but rather the developmental patterns.

The children's performance on the word order in WH-questions is expected to be different, since English has verb movement to C (auxiliaries only) in these constructions, while the dialect spoken by the children in the study also allows questions with a V3 order. Figure 2 illustrates that in translations of WH-questions with auxiliaries or main verb 'be' ('What will Emma eat?' or 'Where is the ball?'), where English and (standard) Norwegian have the same word order, the children in 5th to 7th grade produce the correct V2 word order most of the time (88% to 93%). Even the 4th graders master this construction very well, and their somewhat lower percentage of correct responses and correspondingly high number of blank responses is simply due to many of them not completing the last page of the test. Thus, there does not seem to be any developmental pattern here.



**Figure 2.** The performance of the 4th-7th graders on WH-questions with AUX/'be' (translation tasks).

There does not seem to be any transfer of the V3 word order (S-V) which is also possible in the Tromsø dialect — other than the occasional slip (2–3%). Furthermore, there is no difference between the different WH-words here — i.e. the children do not produce more errors with 'what', 'where' and 'who', which allow V3 order in North Norwegian, than with 'why' and 'how', which require V2. One reason why this V3 word order is not seen in these test results

could be the fact that the children were given a written test, and thus, the Norwegian version of the sentence had to be given in the standard V2 word order, which of course is identical to the word order in English.

In this case then, the grammaticality judgments will be of particular interest: Even though the children do not produce these V3 structures, do they really know that they are ungrammatical in English? The results of the grammaticality judgments show that many of the children do in fact accept these sentences, but given that the children have a tendency to accept most sentences in grammaticality judgments in general, a comparison needs to be made between questions which do allow V3 in the L1 and questions which do not. The results show that there is no significant difference between the 5th-7th graders' judgments on word order in questions with monosyllabic WH-words and questions with other question words (which do not allow V3).

In the oral test done on the 2nd-4th graders, there were four sentence pairs which tested word order in WH-questions, two with WH-words which allow V3 order and two which do not. The results of the children's performance are given in Figure 3, with the WH-words which allow V3 word order as the second column in each pair.

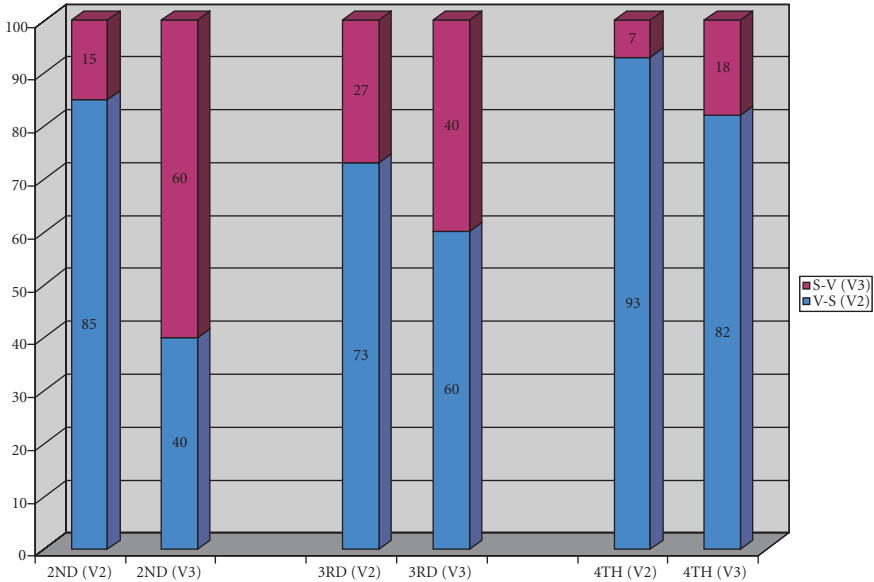
Figure 3 suggests possible transfer of the optional North Norwegian (NN) word order here. The children tend to choose the V3 word order more often in those sentences that actually allow it in their dialect, such as (13) below, than in sentences that would not allow this word order, such as (14); 60% vs. 15% in 2nd grade, which is reduced to 18% vs. 7% in 4th grade.

(13) \*Where the ball is? (grammatical in NN)

(14) \*What color the ball is? (ungrammatical in NN)

These results are based on a very small number of sentences, so there is reason to be cautious about drawing too firm conclusions here. Nevertheless, this tendency is consistent across the three age groups, and there is also a clear development, indicating that transfer could be involved. Furthermore, the grammaticality judgments also show a slight difference at this level: While there is a 30% acceptance rate of the V3 word order in sentences which do not allow it in the children's dialect (sentences like 14), there is a 64% acceptance rate of sentences like (13), which do allow the V3 order.

If in fact this performance is the result of transfer, then one needs to explain why this is apparently so short-lived compared to the transfer of word order in other structures such as topicalisation. The most obvious explanation seems to be that the status of this construction is very different from that of topicalisations



**Figure 3.** 2nd-4th graders' assessment of sentence pairs. The first column for each age group illustrates the choice of word order in WH-questions which require V2 (i.e. V-S order), and the second column illustrates the choice in WH-questions which allow V3 (i.e. S-V order).

in that it is optional and also informationally marked (see Westergaard, forthcoming). The children thus always have another structure at their disposal, where transfer of Norwegian word order actually does give a grammatical result in English.

To sum up this section, it seems clear that there is considerable transfer of Norwegian word order in these children's English. Thus, it does not look like learners in this situation have an Initial Hypothesis of Syntax that they can fall back on. There is ample evidence for partial transfer of V2 word order, as it occurs so frequently in topicalisation constructions. This also indicates that if syntactic complexity or markedness is a key issue for partial transfer, then the Henry and Tangney definition of markedness seems to be more appropriate than a strictly minimalist one where movement is always marked.

There may even be a slight indication of full transfer in this study, as the V3 order found in the dialect of these learners may possibly also be transferred at an early stage. Thus, the results of this study provide weak support of the Full Transfer/Full Access hypothesis of Schwartz and Sprouse (1996). This transfer

of V3 word order in WH-questions was strictly speaking not predicted by the Henry and Tangney approach. However, since this word order could be argued to be marked, then it can be suggested that markedness could be used in a full transfer approach to explain why this transfer does not last very long. Thus, if in fact anything can in principle be transferred from an L1 into an L2, the persistence of a transferred feature in learners' interlanguage should depend on markedness (less marked features lasting longer). Restructuring of the V3 word order should take place early in an L2 acquisition process, as this word order is marked, while restructuring of V2 word order in topicalisations, for example, will take longer. In the latter case, another important issue is the frequency of the input cues, which will be discussed in the next section.

### Cue-based learning

Lightfoot (1999) is a theory of cue-based learning for first language acquisition. It claims that there must be strong enough cues for a particular construction in the linguistic input for acquisition to be triggered. This means that a child does not necessarily develop the same grammar as the previous generation if cues for a certain construction are somehow less frequent in the language the child is exposed to. The cue for V2, Lightfoot claims, is a topicalised structure, like sentence (1) above, which he formulates in the following way:  ${}_{\text{Spec CP}} [\text{XP}]$  (Lightfoot, 1999: 153). That means that learners of V2 languages must notice that the initial phrasal element of a clause, regardless of whether it is the subject or some other XP, is in the specifier of CP, as it is invariably followed by a finite verb.

Lightfoot uses the cue-based acquisition theory to account for diachronic changes, and explains the historical loss of V2 word order in Middle English by a decreased frequency of topicalisation structures, initially brought about by dialect contact. In present-day V2 languages, e.g. the Scandinavian languages and German, topicalised structures are relatively frequent. Using corpus studies, Lightfoot argues that the figure is approximately 30%, which is much higher than the figure for English, where especially fronting of objects is rare (see e.g. Hasselgård, Johansson and Lysvåg 1998). This 30% figure seems to ensure that the cue for V2 is frequent enough in the input for Norwegian or German children to acquire this word order, while it has been lost in English because of a lower frequency of the cue.

In Bentzen (2000), a study of an English-Norwegian bilingual child, it is argued that the V2 order of Norwegian was in fact transferred more often into

English than the English SVO into Norwegian. This is explained in terms of cue-based learning in the following way: For the bilingual child, Norwegian should be relatively clear with respect to word order (V2), since topicalisations are frequent in the input, while the English input is ambiguous with respect to word order (SVO or V2), as the input cue is infrequent. Therefore, the Norwegian word order will be in place at an earlier stage, and transfer from the language where the word order is clear is thus not unlikely. And since the cue is so infrequent in English, it will take relatively long for the child to discover that English is not V2. Even though the input to the child was not investigated in this study, the child's own production of topicalisations was clearly in conformity with what is claimed by Lightfoot (1999): Altogether 76 topicalisations were produced in the child's English corpus, whereas 208 were produced in the Norwegian corpus of the same size.

Roeper (1999) considers English input ambiguous with respect to word order also for English monolingual children: V2 with the lexical verbs 'be' and 'have' (in some varieties of British English), and non-V2 otherwise. However, English monolingual children do not overgeneralize V2 order, except for the occasional mistake (see also Radford 1992). The fact that a Norwegian-English bilingual child does overgeneralize V2 word order should therefore be considered to be the result of transfer from the V2 to the non-V2 language. And this seems to be similar to the process of transfer in the Norwegian children learning English in this study.

As I am adopting a framework here which allows for full (or at least partial) transfer, I would like to extend Lightfoot's cue-based theory of L1 acquisition to L2 acquisition. If learners start out assuming that all (or some) aspects of the L2 are identical to their L1, then they will need cues in the input as positive evidence that the two languages are different. Norwegian learners acquiring English will have to undergo a development from a V2 grammar to an SVO grammar. In this process two important cues are required: topicalised structures, which are necessary to show learners that English is not V2, and sentences with do-support, which are necessary for learners to realize that only auxiliaries move in English questions (i.e. that sentences like (11) above are ungrammatical). The input cues can be summarized as:

Input cues for V2  $\Rightarrow$  SVO:

1. TOP (relatively infrequent in English)
2. Do-support (avoided in teaching material)

However, as mentioned above, topicalised structures are infrequent in English,

and all the simple SVO structures that are so common in learners' input are ambiguous with respect to V2. Assuming transfer, it would therefore be expected that it will take a relatively long time for these learners to realize that English is not V2. Questions with do-support, on the other hand, abound in every-day conversation, but unfortunately for these learners, not in the textbook material Norwegian children are normally exposed to. (The textbook used at the school where this investigation took place is Esvall and Rydstrøm 1998.) This construction is completely avoided in the controlled input to young learners, probably because of its syntactic complexity. In fact, there is not a single example of do-support in the textbook material from 2nd to 4th grade, there is only the occasional sentence in the 5th and 6th grade material, and a real focus on this construction does not occur until the beginning of the textbook for 7th grade. Thus, the controlled input these children get is extremely limited with respect to cues about word order.

Questions with other moved auxiliaries, on the other hand (e.g. 'When will Anna eat?'), are extremely frequent in the input. These correspond to Norwegian word order, and children are obviously not expected to find them difficult. However, their existence does not logically exclude the existence of questions with moved main verbs (e.g. \*'When eats Anna?'). In order to realize that these latter types are ungrammatical, learners need to be exposed to sentences with do-support ('When does Anna eat?'). Thus, these children are not only in a learning situation with insufficient input, but given that questions with moved auxiliaries are so frequent, one could even argue that the input is misleading, since children from these examples are led to assume that there is verb movement also in English:

Ambiguous (or misleading) input:

1. SVO (frequent)
2. WH-questions with AUX/be (frequent)

Consequently, assuming transfer, Norwegian learners are in a difficult position with regard to the acquisition of word order: The cues that are necessary for acquisition are either naturally infrequent in the language or absent from the teaching material for 'pedagogical reasons'.

Henry and Tangney, in the article referred to above, have described a situation which can be analyzed in terms of a cue-based approach (even though they do not discuss it in those terms). They describe a situation of bilingual education (English-Irish) in Northern Ireland. The input that these English-speaking children get is obviously limited compared to that of monolingual

Irish children, and Henry and Tangney show that a marked feature (according to their definition), is simply not acquired by these bilingual children, apparently because the cue is not frequent enough in the input. So while monolingual Irish children obviously acquire the feature, and adult L2 learners of Irish are known to struggle with it throughout the learning period, these child L2 learners simply ignore it and replace it by a construction which is less marked (and more frequent) in the language.

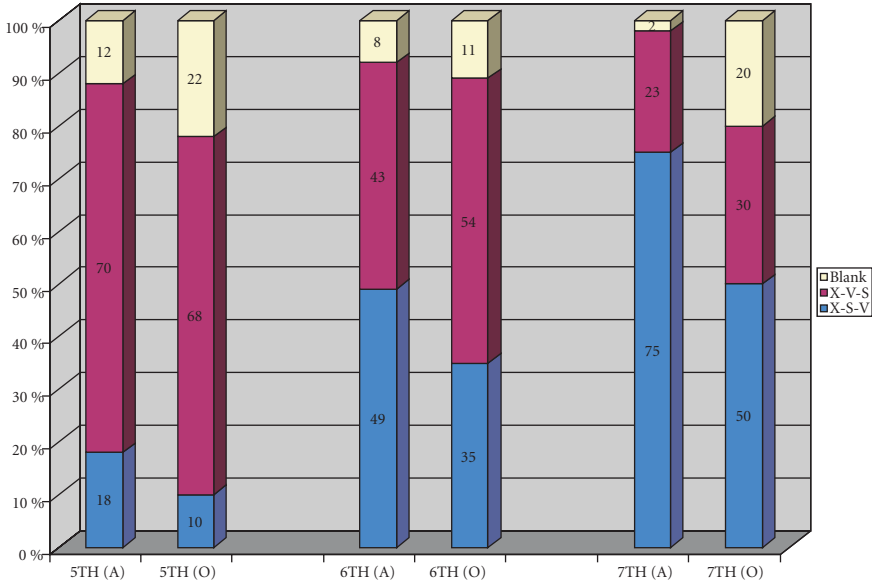
## Other findings

### *Frequency effects*

If the cue-based approach to L2 acquisition is on the right track, we would expect to find some frequency effects. As mentioned above, the topicalisation construction is infrequent in English compared with Norwegian, and this is especially the case for object topicalisations. The cue-based approach therefore not only predicts that it should take relatively long for the children to realize that English is not V2. It also predicts that it should take even longer for word order to fall into place in object topicalisations (examples like 16), which are even more infrequent in English than topicalisations involving adverbials (example 15).

- (15) *Hver uke vasker Anna rommet sitt.*  
 every week cleans Anna room her  
 ‘Every week Anna cleans her room.’
- (16) *Hunder liker Anna, ikke katter.*  
 dogs likes Anna not cats  
 ‘Dogs Anna likes, not cats.’

The children’s performance on topicalisation constructions in fact indicates that there is a difference between topicalisations of adverbials and topicalisations of objects. As shown in Figure 4, word order in object topicalisations is apparently somewhat more difficult for the children in this study. Although this difference is slight and based on only a small number of sentences, it is consistent across the three age groups, and it is also reflected in the results on the other tasks in the test (not shown here).



**Figure 4.** The performance of the 5th-7th graders on adverbial topicalisations (first column in each pair) and object topicalisations (second column), translation tasks.

### *Auxiliaries vs. lexical verbs*

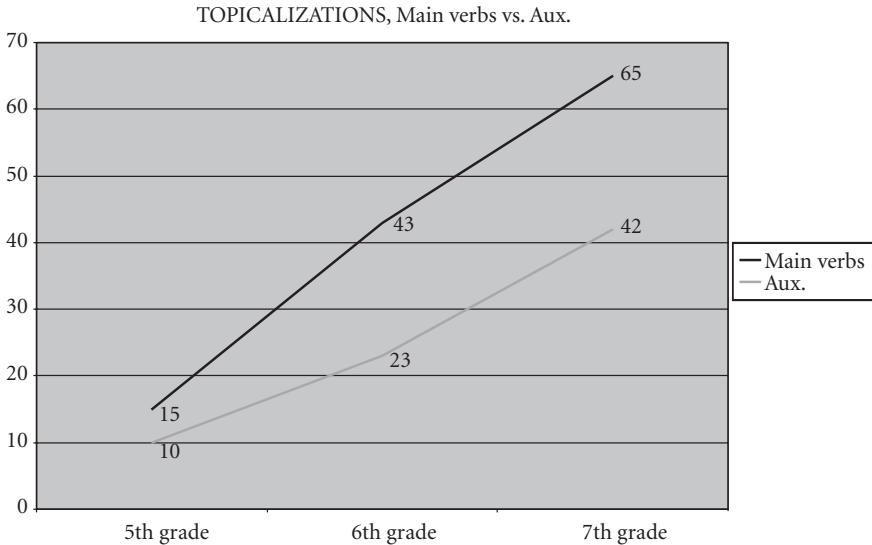
Another result of this translation task is that in the topicalisation constructions the children do even worse on sentences with auxiliaries than sentences with only main verbs. That is, there is a higher tendency for them to move an auxiliary across the subject than a lexical verb. Thus, the following sentences in the test were more often wrong than topicalisations involving a lexical verb:

(17) \*There will we eat a Big Mac and lots of French fries.

(18) \*The spaghetti is Susan eating, not the bread.

Figure 5 shows that only 10% of the 5th graders are right on this construction, and even in 7th grade, less than half of the children produced the correct X-S-Aux order. Compared with the children's performance on topicalisations with lexical verbs, there is a considerable lag in their 'unlearning' of verb movement when there is an auxiliary involved. Again, this pattern is consistent across the age groups, and perhaps just as importantly, it is also reflected in the children's performance on the other tasks in the test.

One reason why these children make more mistakes in sentences with auxiliaries could be that there is a universal tendency for auxiliaries or semantically



**Figure 5.** The performance of the children on topicalisations with lexical verbs and auxiliaries.

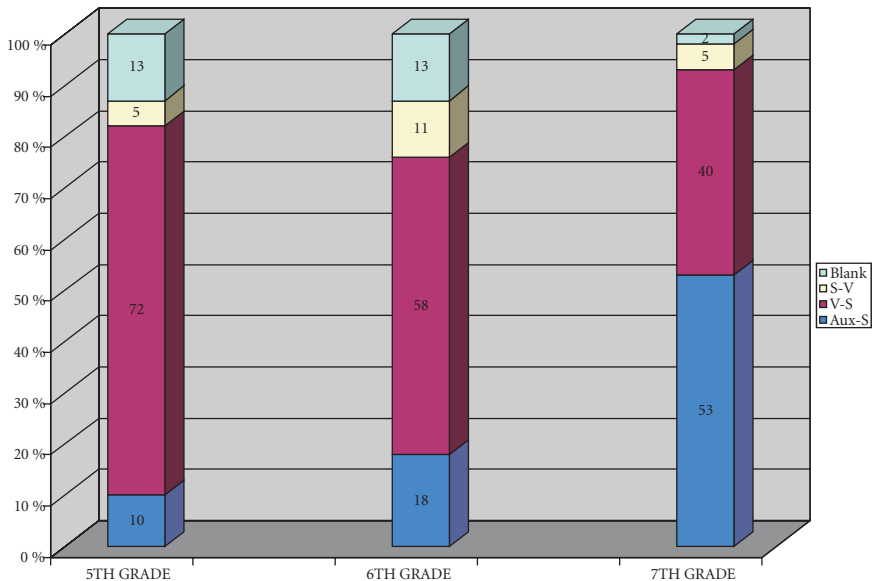
light verbs to move more often than lexical verbs. Another likely explanation is that the children have realized that auxiliaries behave differently from main verbs in English, for example in questions. This explanation could be supported by the fact that the difference between auxiliaries and main verbs is only very slight in 5th grade (15% vs. 10% correct performance), while it becomes more substantial in 6th (43% vs. 23%) and 7th grade (65% vs. 42%), which is when these children have become more aware of the movement options in WH-questions, as we will see in the next section.

### *WH-questions*

What do the children do when they have to produce WH-questions with lexical verbs in English? These are constructions where the verb would move to C in Norwegian, but where do-support is required in English. Do-support is a notoriously difficult construction for L2 learners, and even for English-speaking children it is a relatively late acquisition. As shown in Figure 6, there is again massive transfer from Norwegian, i.e. the children often produced sentences like (19) and (20).

(19) \*Where sits the cat?

(20) \*What gives Emma to Thomas?



**Figure 6.** The performance of the 5th-7th graders on WH-questions requiring do-support (translation tasks).

As many as 72% of the children produce sentences with verb movement to C in 5th grade, while 10% have produced a structure with a moved auxiliary, either do-support or a progressive, as in (21) and (22) respectively.

(21) Where does the cat sit?

(22) Where is the cat sitting?

In 6th grade, the corresponding figures are 58% vs. 18%, while there is a major leap in the acquisition of this structure between 6th and 7th grade. In 7th grade more than half of the children have produced the correct structure (53%), while 40% still assume that English is like Norwegian.

As mentioned above, sentences with do-support are avoided in the teaching material until 7th grade, presumably because of the complexity of this construction. Questions with the progressive aspect, however, are relatively frequent in the controlled input to these children, as well as questions with other moved auxiliaries. Thus, children realize very early that English in fact is like Norwegian in questions, in that there is inversion of verb and subject. But there is no

way that they can figure out that only some verbs move in English, if they are not exposed to sentences with do-support. Therefore, one could argue that by being exposed to such limited input, the children are actually led to believe that English is like Norwegian. One indication of that is that by 5th grade, the children should have been exposed to a considerable number of sentences with the progressive aspect and should thus master this construction relatively well. However, they do not use this construction to salvage questions with lexical verbs, since they have (so far) no reason to assume that these verbs do not move to C in English.

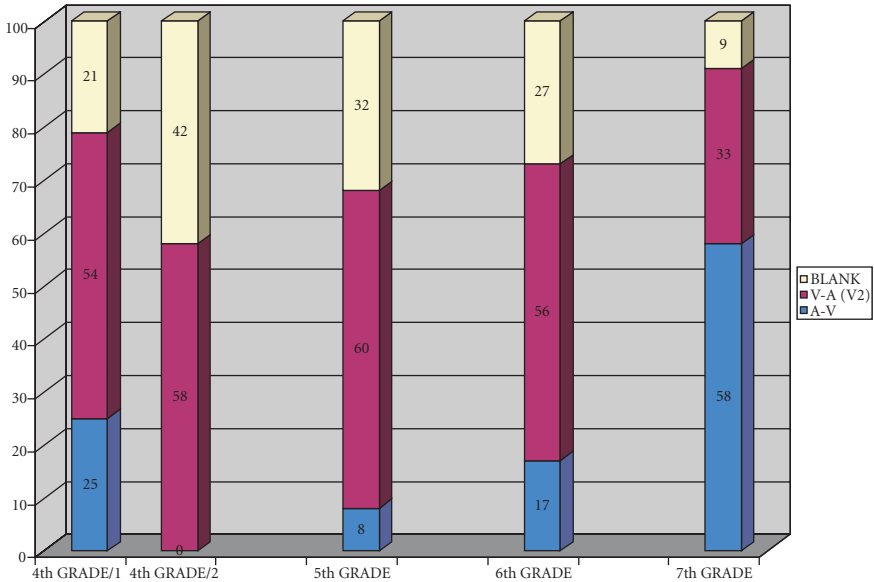
### *Verb movement across adverbials*

Finally, we will look at the third construction where English and Norwegian again differ because of verb movement, as illustrated in sentence (3) above: In Norwegian the verb appears to the left of an adverbial, while in English the verb is in its original position inside the VP. Transfer of V2 word order in these constructions would thus result in productions like the following sentence:

(23) \*Walter jumps always on the bed.

Again, the results of the test show that there is massive transfer of V2 word order also in this construction, actually even more than in topicalisations. In Figure 7, the performance of the 4th to 7th graders is displayed, and the figures in the table represent their translations of only two sentences with adverbials, both for the 5th to 7th graders as well as the 4th graders. This is of course a very small number, but again, these results are also reflected in the other tasks on the test. Note also that the 4th graders again received a slightly higher score than the older children on the first test, but actually had no correct answers on the second test.

Compared to the figures for topicalisation, there are some slight differences. In 4th, 5th and especially in 6th grade, there seems to be more transfer in this construction than in topicalisations. Thus, acquisition of this word order pattern seems to lag somewhat behind the acquisition of SV order in topicalisations. While in topicalisations there is a more gradual increase in correct performance from 5th to 7th grade, there is a major leap in the acquisition of the adverbial constructions between 6th and 7th grade (from 17% correct performance to 58%). It thus seems as if the children go through a stage in their development of word order where they have realized that there is no verb movement to C in English, but where they still assume that there is verb movement to I.

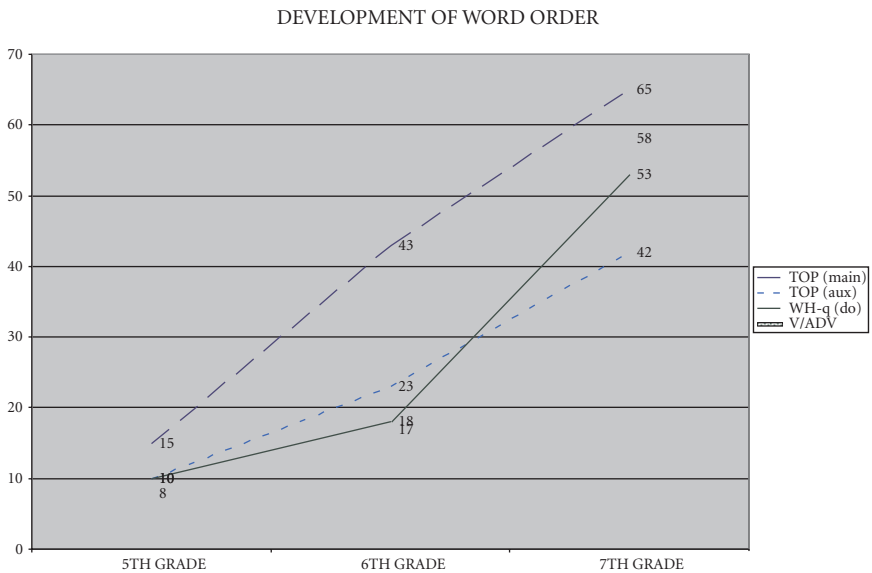


**Figure 7.** The performance of the 4th-7th graders on sentences with verb movement across adverbials (translation tasks).

A possible explanation for the later acquisition of word order in this construction as compared to topicalisations could be related to cues in the input. Lightfoot's (1999) cue for the acquisition of V2 (topicalisations) can be argued to be insufficient for the 'unlearning' of V2, as learners seem to need another, stronger, cue for word order in sentences with adverbials. That is, realizing that verbs do not move to C in English does not exclude movement to I. The cue to exclude movement to I would probably not be the sentences with adverbials themselves, however, since adverbials can occur in so many different positions. Noticing that they occur in one position is presumably not salient enough to function as a cue for a second language learner to exclude the possibility of putting them in another one (as has been shown for French learners of English by White 1991). Therefore, the cue for non-movement of lexical verbs in declarative clauses must be sentences with *do*-support (both questions and negative sentences). Comparing the acquisition pattern of these adverbial constructions to the acquisition pattern of questions with *do*-support discussed in the previous section, we see that there is in fact an exact match between the two patterns, indicating that mastery of word order in one construction could in fact be dependent on mastery of the other.

## Summary and Conclusion

This study has suggested that there is considerable transfer of V2 word order in all the relevant constructions listed in (1)–(3). There also seem to be certain frequency effects, in that word order is in place earlier in sentences with topicalised adverbials, which are relatively frequent in the input, than in sentences with initial objects, which are rare in English. There is a gradual acquisition of word order in topicalisations (from 5th to 7th grade), while there is a major leap between 6th and 7th grade as regards sentences with adverbials and questions requiring do-support.



**Figure 8.** Percentage of correct performance of the 5th-7th graders on topicalisations (lexical verbs and aux.), questions with do-support, and sentences with adverbials (in translation tasks).

Figure 8 shows the percentage of correct performance of the different constructions by the 5th to 7th graders. The lines for questions with do-support and sentences with adverbials follow an amazingly similar pattern, with a developmental leap from 6th to 7th grade. This indicates that the cue for correct word order in sentences with adverbials is in fact sentences with do-support, which is not that unlikely given a cue-based theory of full (or partial) transfer:

In order to realize that lexical verbs do not move to I in English, it is not sufficient to be given cues that verbs do not move to C.

Thus, from these figures it seems that Norwegian learners of English have to reset two different parameters in the acquisition of word order, verb movement to C and (lexical) verb movement to I. Topicalised structures will be responsible for the former development (which occurs first in these learners, probably because of a slightly higher, and more gradual, frequency of the cue in the input), while sentences with do-support will be responsible for the latter, i.e. the word order in questions as well as sentences with adverbials, where learners have to realize that there is a difference between auxiliaries and lexical verbs in English with respect to movement. Not surprisingly, the major leap in development in these two constructions coincides with the introduction of do-support in the teaching material of these children at the beginning of 7th grade. And finally, it is this realization of the difference between lexical verbs and auxiliaries in English which in turn must be responsible for the lag in the development of word order in topicalised structures with auxiliaries.

## Note

\* I would like to thank Waldemar Marton and an anonymous reviewer for helpful comments and suggestions. All mistakes and inaccuracies are of course my own responsibility.

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