Frequency and economy in the acquisition of variable word order

Abstract

This paper discusses how children deal with word order variation in the input, focusing on the effects of frequency and economy in the acquisition process. We consider two contexts where Norwegian displays variable word order, viz. subject placement in main and embedded clauses, and the variable word order found inside the DP in possessive constructions. We identify the conditions under which each word order is chosen in the target language, both with respect to syntax and information structure, and investigate the frequency of the different orders in child-directed speech. In both cases it is shown that the children have both word orders in place from the onset of production of relevant utterances and that they are sensitive to the distinctions between the two from early on. Nevertheless, in their earliest production, the children seem to have a preference for the word order that is the least frequent one in the input. These findings indicate that frequency by itself is not sufficient to explain children’s preferences in early production. Instead, the findings in the child data are accounted for in terms of an economy principle of movement that is argued to be operative in early child language.

Keywords: subject positions; possessives; Norwegian; word order; input frequency; economy

1. Introduction

Recent years have seen an increasing interest in the study of the effect of input frequency on language acquisition. To a large extent this is the result of the development of constructivist theories, according to which the acquisition process is heavily influenced by input frequencies (see e.g. Tomasello 1992, 2000, 2003, Lieven et al. 2003, or Theakston et al. 2004). Based on experimental work or meticulous studies of child and adult corpora, it has been argued that input frequency has a major impact on the order of acquisition as well as children’s non-target-consistent production. This work has also had an effect on acquisition work within the generative tradition, in the sense that generative studies of child language have also started considering the potential impact of frequency on language acquisition. Despite this, the two traditions remain relatively far apart, as the results of generative investigations into frequency effects so far suggest that, even though input frequency appears to have an effect, this is indirect. Frequency does not seem to straightforwardly predict the order of acquisition, nor does it appear to provide a direct explanation for non-target-consistent structures found in child language. The present paper represents a case in point: We investigate two contexts in which two word orders are possible, but where one is considerably more frequent in the input than the other. In both constructions, the child data indicate that, at a very early stage, children prefer the word order which is the least frequent one in the input. The two contexts are subject placement and possessive structures in Norwegian. Both subjects
and possessive determiners may appear in two different positions in the adult language, illustrated in (1) and (2).

(1) 

Hvorfor lest Peter ikke/ ikke Peter boka?

‘Why didn’t Peter read the book?’

(2) 

min bil/ min bilen

my car car.DEF my

‘my car.’

The child language data studied in the present paper are collected in Tromsø. The corpus consists of almost 47,000 child utterances from three children and also includes a considerable amount of adult data which is used to study input frequencies. The choice of the Tromsø dialect is arbitrary; most Norwegian dialects exhibit the same kind of variation in the contexts illustrated in (1) and (2), and it is unlikely that frequencies are any different in other dialects. The corpus is summarized in Tables 1 and 2, providing overviews of the child and adult data respectively (for more information about the corpus, see Anderssen 2006 or Westergaard 2009a).

Table 1: Norwegian corpus of child language (Tromsø dialect), child speakers.

<table>
<thead>
<tr>
<th>Name of Child</th>
<th>Age</th>
<th>Files</th>
<th>No. of Child Utterances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ina</td>
<td>1;8.20-3;3.18</td>
<td>Ina.01-27</td>
<td>20,071</td>
</tr>
<tr>
<td>Ann</td>
<td>1;8.20-3;0.1</td>
<td>Ann.01-21</td>
<td>13,129</td>
</tr>
<tr>
<td>Ole</td>
<td>1;9.10-2;11.23</td>
<td>Ole.01-22</td>
<td>13,485</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>46,685</td>
</tr>
</tbody>
</table>

Table 2: Norwegian corpus of child language (Tromsø dialect), adult speakers.

<table>
<thead>
<tr>
<th>Adult speaker</th>
<th>No. of Utterances</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOT Ina.01-27</td>
<td>6,271</td>
</tr>
<tr>
<td>FAT Ina.01-02, 05-07, 10, 12-13, 17-21, 24-26</td>
<td>2,163</td>
</tr>
<tr>
<td>MOT Ann.01-18, 20-21</td>
<td>9,387</td>
</tr>
<tr>
<td>FAT Ann.01-6, 08-15, 17, 19-21</td>
<td>1,434</td>
</tr>
<tr>
<td>MOT Ole.02-14, 16-22</td>
<td>2,458</td>
</tr>
<tr>
<td>FAT Ole.01-06, 08-18, 22</td>
<td>2,006</td>
</tr>
<tr>
<td>INV Ina.01-12, 14, 17-27</td>
<td>18,810</td>
</tr>
<tr>
<td>INV Ann.01-03, 05-11, 13-22</td>
<td>14,851</td>
</tr>
<tr>
<td>INV Ole.01-11, 13</td>
<td>8,188</td>
</tr>
<tr>
<td>INV Ole.13-22</td>
<td>7,365</td>
</tr>
<tr>
<td>Total</td>
<td>72,933</td>
</tr>
</tbody>
</table>

In some previous work on Norwegian child language, mainly based on the data from the Tromsø corpus, we have investigated three different cases where frequency

1 Table 2 specifies the presence of the adults in the various recordings. The investigator in all the Ina and Ann files as well Ole.01-11 is the first author of this paper, while the investigator in Ole.13-22 is the second author. Both investigators were present in file Ole.13.
has been taken into account. In the first one, discussed in Westergaard (2008a), the
input frequencies of two word orders are very different (V2 vs. non-V2 across clause
types), but target-consistent production is nevertheless in place in both of them as
soon as the relevant constructions appear in the child data. The second case,
investigated in Westergaard and Bentzen (2007), is one where two construction types
are attested with equally low frequencies in the input (two types of embedded
clauses), but non-target-consistent word order appears in only one of them in the
children’s production. The third case, discussed in Anderssen et al. (forthcoming), is
similar to the first one in that two constructions are again attested with very different
input frequencies (subject and object shift). But in this case, non-target-consistent
word order is attested in both. Thus, in all three cases frequency is argued not to play
a major role in the acquisition process and does not seem to have much predictive
power with respect to the areas where target-deviant production will appear in child
language. That is, a lack of frequency does not in itself seem to be able to cause non-
target-consistent production. Nevertheless, in the last two cases, frequency has been
argued to have an effect on acquisition together with other factors such as economy
and complexity, in that lack of input frequency may make errors persist longer in the
child grammar.

In this paper we investigate two cases where input frequencies seem to play even
less of a role. We show that in the acquisition of word order in the contexts illustrated
in (1) and (2), children seem to have an early preference for the word order that is in
fact the least frequent one in the adult language. In the next section we discuss the two
different subject positions, while section 3 focuses on the two word orders found in
possessive constructions. Both sections include an overview of how the two word
orders are analysed in the adult language, followed by a subsection on input frequency
and another subsection describing the child language data. Section 4 discusses these
results in terms of frequency and economy in acquisition, and section 5 is a brief
summary.

2. Subject positions

2.1 Word order in the target language

This section considers in more detail the two subject positions that may be
identified in Norwegian. These subject positions are visible in non-subject-initial
declaratives and questions with verb second word order (V2), i.e. in contexts where
the verb has moved across the subject to second position. In these cases, the subject
may precede or follow negation or sentence adverbs. This was illustrated in a wh-
question which included the negation ikke ‘not’ in (1) above, while (3) provides a
similar example of a non-subject-initial declarative with the adverb aldri ‘never’. In
main clauses, there does not seem to be any difference between negation and sentence
adverbs with respect to the word order of this element in relation to the subject.

(3)  Denne boka har aldri Peter / Peter aldri lest.
this book.DEF has never Peter / Peter never read
‘This book Peter has never read.’

It is often claimed that the same two subject positions are also found in embedded
clauses (e.g. Nilsen 1997, Svenonius 2002, Bentzen 2009). In this context there is no
verb movement, and either the subject or the negation/sentence adverb may immediately follow the complementizer, as shown in (4). However, it has also been noted that there is a distinction between negation and other adverbs in embedded clauses, see e.g. Holmberg (1993): While negation may freely appear in the position preceding the subject, other adverbs are at best marginal in this position, shown in (5):

(4) Jeg visste at ikke Peter / Peter ikke hadde lest boka.
    ‘I knew that not Peter / Peter not had read book.DEF
    ‘I knew that Peter hadn’t read the book.’

(5) *?Jeg visste at aldri Peter / Peter aldri hadde lest boka.
    ‘I knew that never Peter / Peter never had read book.DEF
    ‘I knew that Peter had never read the book.’

There are various accounts for what the two subject positions correspond to in terms of syntactic structure. While Wiklund, Hrafnbjargarson, Bentzen and Hróarsdóttir (2007) and Bentzen (2009) maintain that both subject positions are in the CP domain, others claim that the high position is between the CP and IP, see e.g. Kiss (1996) and Mohr (2005). Others argue that both subject positions are in the IP domain, e.g. Cardinaletti (2004) and Westergaard and Vangsnes (2005). We adopt the latter view and argue that the high position in this split IP is the Spec of what we refer to as the In(ner)Top(ic)P, while the low position corresponds to SpecTP. Following Nilsen (1997) and Westergaard and Vangsnes (2005), we also argue that the two positions are distinguished by information structure, in that SpecInTopP is reserved for informationally given subjects while SpecTP is used for informationally new or focused subjects, marked as [+/-FOC] in (6). For the purposes of the present paper, the precise location of the various subjects is not crucial, however, and the two positions are simply referred to as high and low.

(6) InTopP[ SU[FOC] TP[Neg/Adv TP[ SU[+FOC]]

What is important, on the other hand, is that we are assuming that there is syntactic movement from the low to the high position for subjects that are informationally and prosodically light. Thus, this construction is sometimes referred to as ‘subject shift’ (Westergaard 2008b, Anderssen et al. forthcoming). In this way, sentences with subjects in the high position are slightly more complex syntactically than the corresponding sentences with low subjects.

2.2 Input frequencies

The distribution of subject types in Norwegian is typically argued to be as follows (see e.g. Nilsen 1997, Svenonius 2002, Bentzen 2009): Pronouns generally appear in the high position and full DPs both high and low. This is due to the pattern of information structure just referred to; pronouns are typically given information and DPs may be either given or new. According to Westergaard and Vangsnes (2005), pronouns will only appear in the low position if they are stressed, as illustrated in (7).

(7) Denne boka hadde han ikke / ikke HAN lest.
    ‘This book he/HE hadn’t read.’
However, investigating the adult speech in the Tromsø corpus (cf. Table 2), we find a somewhat different picture. A search was carried out for all clauses containing the negation *ikke/ikkje* ‘not’ and the relevant examples were identified and classified according to word order, S-Neg or Neg-S. There are two reasons why only negation was singled out: First, as mentioned above, negation does not seem to be any different from other adverbs with respect to word order in relation to the subject, see examples (1) and (3). And second, the negative adverb is very frequent in the corpus, while other relevant adverbs are extremely infrequent. The results of the corpus search are shown in Table 3: Somewhat surprisingly, pronominal subjects appear both high and low, but, as expected, they are clearly preferred in the high position (86.1%, 1349/1566). Full DP subjects, on the other hand, are found almost exclusively in the low position (98%, 99/101), contrary to our expectation. There is a considerably higher proportion of pronominal than full DP subjects overall, 93.9% (1566/1667). This means that the children are mainly exposed to the high subject position, as much as 81% (1351/1667).

**Table 3: Pronominal and full DP subjects with S-Neg and Neg-S word order in main clauses in the Tromsø acquisition corpus, adult speakers.**

<table>
<thead>
<tr>
<th>DA</th>
<th>S-Neg Position</th>
<th>Neg-S Position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pronoun</td>
<td>Full DP</td>
</tr>
<tr>
<td>MOT Ina.01-27</td>
<td>114</td>
<td>1</td>
</tr>
<tr>
<td>FAT Ina.01-27</td>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>MOT Ann.01-21</td>
<td>155</td>
<td>0</td>
</tr>
<tr>
<td>FAT Ann.01-21</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>MOT Ole.01-22</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>FAT Ole.01-22</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>INV Ina.01-12, 14, 17-27</td>
<td>363</td>
<td>0</td>
</tr>
<tr>
<td>INV Ann.01-21</td>
<td>271</td>
<td>1</td>
</tr>
<tr>
<td>INV Ole.01-11, 13</td>
<td>145</td>
<td>0</td>
</tr>
<tr>
<td>INV Ole.13-22</td>
<td>177</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1349</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1351 (81%)</td>
<td></td>
</tr>
</tbody>
</table>

Some examples from the corpus are provided in (8) and (9). These are taken from a conversation between a mother and a child, and both interlocutors should therefore be given in the context. In this case, the category of the subject (pronom vs. full DP) seems to be decisive for its position, i.e. the pronoun appears high and the full DP low. This indicates that, contrary to what has been argued in previous literature, full DPs may be given information and still appear in the low position. Thus, factors such as length and prosody may be more important than information structure with respect to the word order chosen.

(8) *skal du ikkje pusle ferdig først?* (MOT, Ina.02)
    ‘Don’t you want to finish the puzzle first?’
(9)  ja  skulle  **ikkje ho mamma hjelpe deg**? (MOT, Ina.02)
yes should not  DET mommie help  you
‘Wasn’t mommie supposed to help you?’

The question from the adult in (10) provides an example of a pronoun in the low position. In this case, the referent of the pronoun *du* ‘you’ is also given information (again the child). But the context is that, despite an agreement that the child would clean up, she is instead emptying a box of toys on the floor. The mother’s reaction is to ask a question about the promise of an alternative action, thereby putting some focus on the subject. This seems to be the reason why a given subject, in this case a pronoun, may be placed in the low position. This again goes against claims in previous literature (cf. example (7) above), in that pronouns do not seem to have to be contrastive or heavily stressed in order to appear low.

(10)  Ina:  **Ina tømme.**
Ina empty. INF/PRES
‘Ina is emptying (the box).’

Mot:  **skulle  ikkje du  rydde opp du frøken?** (MOT, Ina.05)
should not  you clean up  you miss
‘Weren’t you supposed to clean up, miss?’

There is an extremely low percentage of DP subjects in the high position (2%), corresponding to only two examples. In both cases, the subject is not only given information in the sense that it is present in the immediately preceding context; it is also the continued topic of the conversation. This is illustrated in (11).²

(11)  Context:  Adult and child are looking at pictures in a photo album.

Inv:  **ka ho mamma gjorde for nåkka?**
what DET mommie did  for something
‘What did mommie do?’

Ann:  **mamma er der.**
mommie is there

Inv:  **er ho der?**
is she there

Ann:  **nei dem er helt aleina.**
no they are all  alone

Ann:  **mamma er ikke med.**
mommie is not  with
‘Mommie didn’t come with (them).’

Inv:  **er ho mamma ikkje med?** (INV, Ann.18)
is DET mommie not  with
‘Didn’t mommie come with (them)?’

The examples provided here show that the two subject positions in main clauses are distinguished by information structure and corresponding factors such as length and prosody. That is, pronouns predominantly appear in the high position, as they are

² In this and some of the following examples that are provided with context, a full translation of each utterance is not given if it is clear from the gloss what the sentence means.
both informationally and prosodically light, but may also be placed low if they receive some focus. Full DPs, on the other hand, appear almost exclusively in the low position, regardless of their information value.

We now turn to the two subject positions in embedded clauses. Table 4 provides an overview of the production of the same adults, and we again see that the high subject position is preferred, 81.3% (279/343). Pronominal subjects appear in the high position 85.3% (273/320), which is similar to what was found in main clauses. In comparison, the number of DP subjects is so low that it is hard to draw any conclusions from this, but it seems considerably more common for DP subjects to appear high than in main clauses, 26.1% (6/23) vs. 2% (2/101), cf. Table 3.

Table 4: Pronominal and full DP subjects with S-Neg and Neg-S word order in embedded clauses in the Tromsø acquisition corpus, adult speakers.

<table>
<thead>
<tr>
<th>Subject</th>
<th>High position (S-Neg)</th>
<th>Low position (Neg-S)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pronoun</td>
<td>Full DP</td>
</tr>
<tr>
<td>MOT Ina.01-27</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>FAT Ina.01-27</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>MOT Ann.01-21</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td>FAT Ann.01-21</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MOT Ole.01-22</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>FAT Ole.01-22</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>INV Ina.01-12, 14, 17-27</td>
<td>54</td>
<td>2</td>
</tr>
<tr>
<td>INV Ann.01-21</td>
<td>82</td>
<td>1</td>
</tr>
<tr>
<td>INV Ole.01-11, 13</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>INV Ole.13-22</td>
<td>29</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>273</td>
<td>6</td>
</tr>
</tbody>
</table>

The fact that DP subjects are more commonly found in the high position in embedded clauses than in main clauses is possibly not a coincidence. It could be mentioned that an investigation of a much larger spoken corpus of adult speech (NoTa corpus, Oslo dialect), reported in Westergaard (forthcoming), shows a clear difference between main and embedded clauses in this respect, DP subjects preferred low 96.6% (28/29) in main clauses but appearing only 26.3% (10/38) in this position in embedded clauses. That is, embedded clauses seem to have a default subject position that is preferred for all kinds of subjects, pronouns as well as full DPs (which appear 88.2% and 73.7% in this position respectively). The reason for the difference between the two corpora is presumably that in the present corpus, only negative contexts have been investigated, while the study of the NoTa corpus has included a search of all adverbs. And as mentioned above, it is well known that the negative adverb *ikke* is more acceptable in the position immediately following the complementizer than other adverbs, cf. examples (4) and (5).

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3 More information on the input data, including some individual differences, may be found in Westergaard (forthcoming.)

4 A search for adverbs is possible in the NoTa corpus, as it is coded for syntactic category, while such a search would have to be done by hand in the Tromsø acquisition corpus.
This investigation of the input data has revealed that the children are faced with a relatively complex task when acquiring the two subject positions in Norwegian. In order to produce target-consistent word order, they need to discover both positions and make distinctions between two syntactic categories, pronouns and full DPs, as well as two different contexts, main vs. embedded clauses. Furthermore, children also need to discover the relatively subtle distinction between the two subject positions with respect to information structure and length/prosodic weight. Given this complexity, it might be expected that children at an early stage simply pay attention to the most frequent position. This would entail that children should have an early preference for the high position – for all subject types and all contexts. In the investigation of the child data in the next section we show that this is not the case.

2.3 Child data

The child language data from the Tromsø corpus have already been studied with respect to the two subject positions in main clauses in Westergaard (2008b). Given that the relevant construction requires utterances consisting of at least four words (XP-verb-SU/Neg), the child data are relatively sparse. Therefore, the child corpus has been hand-searched for these examples, and the data presented here thus include occasional examples with other adverbs than negation.

The general finding is that both subject positions are in place early, in the production data from all three children. As in the adult data, full DP subjects are relatively rare in the child corpus, making up 10.3% of the attested examples (22/213). The corresponding percentage for the adult data is 6.1% (101/1667), cf. Table 3. In the child data, these full DPs always appear in the low position, illustrated by example (12). Pronouns, on the other hand, appear both high and low (64.9%, 124/191 vs. 35.1%, 67/191), as shown in (13) and (14).

(12) der kom ikke pappaen heller. (Ann.14, age 2;6.0)
    there come.PAST not daddy.DEF either
    ‘There the daddy didn’t come either.’

(13) den like ikke æ å se. (Ann.11, age 2;4.0)
    that like.PRES not I to see
    ‘That I don’t like to look at.’

(14) nei det kan dem ikke. (Ann.17, age 2;8.4)
    no that can they not
    ‘No, that they can’t do.’

The first conclusion that can be drawn from this is that children distinguish between pronouns and full DPs in a target-consistent way from early on, always placing full DPs low, which is generally what is found also in the adult data (98% low DP subjects, 99/101). Furthermore, while the children do have a preference for the high subject position for pronouns (64.9%), this is much weaker than for the adults, who produced pronominal subjects high as often as 86.1% (1349/1566), cf. Table 3. Thus, the children do not seem to simply pay attention to the most frequent word order when producing their first relevant examples of this construction.

In fact, a closer investigation of the child data reveals a development that indicates that they have the opposite preference at an early stage. Table 5 provides an overview
of the position chosen for pronominal subjects in the child data, divided into five stages. At stage 1, before age 2;3, there are hardly any relevant examples, but both positions are in fact attested. At stage 2, between age 2;3 and 2;6, both word orders are used, but all three children produce a predominance of examples with pronominal subjects in the low position. At stage 3, age 2;6-2;8, the situation turns for two of the children (Ann and Ole), as they begin to produce a higher proportion of the high position for pronominal subjects (numbers in bold face). This happens in the data of the third child (Ina) at stage 4, and continues into stage 5 in her data. The division into stages has been made specifically to demonstrate the developmental path; a too coarse division would obscure it, while a too fine-grained one would result in many similar stages.5

Table 5: Neg-S/S-Neg word order in non-subject-initial declaratives and questions with negation/adverbs and pronominal subjects, Norwegian child data.

<table>
<thead>
<tr>
<th>Child</th>
<th>Stage 1 (age 1;9-2;3)</th>
<th>Stage 2 (age 2;3-2;6)</th>
<th>Stage 3 (age 2;6-2;8)</th>
<th>Stage 4 (age 2;8-3;0)</th>
<th>Stage 5 (age 3;0-3;3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ina</td>
<td>0/0</td>
<td>7/4</td>
<td>7/4</td>
<td>10/36</td>
<td>5/21</td>
</tr>
<tr>
<td>Ann</td>
<td>0/2</td>
<td>9/7</td>
<td>1/3</td>
<td>0/12</td>
<td></td>
</tr>
<tr>
<td>Ole</td>
<td>1/1</td>
<td>21/3</td>
<td>0/13</td>
<td>6/18</td>
<td></td>
</tr>
</tbody>
</table>

Once the children start producing a predominance of the word order with high pronominal subjects (S-Neg), this situation is stable. Nevertheless, the children still produce a fair number of pronominal subjects low at the end of data collection (around age 3), but a comparison with the input reveals that this is in fact relatively similar to the figures in the adult data. The percentage of low pronominal subjects produced after the turning point for the three children is 17.6% (22/125), while the adult percentage is 13.9%, cf. Table 3. However, the children’s behaviour at the earlier stages seems to be quite different from the adult production: Before the turning point (stage 3 for Ann and Ole, stage 4 for Ina), the children produce as much as 68.2% (45/66) low pronominal subjects. These come in addition to the occasional full DP subjects that are also always found low in their data. Compared to the input they are exposed to, there is a clear discrepancy, as the adults only produce 13.9% low pronouns and 19% low subjects overall. This means that, at the earliest stage, the children seem to prefer the word order that is the least frequent one in the input.

Westergaard (2008b) interprets the findings in the following way: The Norwegian children have an early sensitivity to information structure, in that they distinguish between pronouns and full DPs from early on; i.e. DPs are always produced in the low position. This has also been found in other contexts, e.g. the choice between V2 and non-V2 in wh-questions in the Tromsø dialect (Westergaard 2009a), where non-V2 is clearly preferred with pronominal subjects (in both adult and child data). Nevertheless, in the context at hand, the children seem to show an early preference for the low position for pronominal subjects. In Westergaard (2008b), this is argued to be due to a simple principle of economy in the acquisition process, preventing or delaying syntactic movement in early child language. This principle has also been argued to be responsible for the children’s non-target-consistent word order in other

5 The ages given for the different stages have been simplified, in order to avoid having too much information in the table. The five stages do not overlap for any of the children.
contexts, see Westergaard and Bentzen (2007), Westergaard (2009a) and Anderssen et al. (forthcoming). As children are also very sensitive to fine distinctions in the input, this tendency for economy is relatively quickly overcome, and as shown in Table 5, they start to produce pronominal subjects overwhelmingly in the high position already around age 2;6-3;0.

As pointed out by two anonymous reviewers, the figures in Table 5 may not necessarily illustrate a development from target-deviant to target-consistent production, as low pronominal subjects are grammatical also in the adult language. It could be that children simply produce more contexts which require low subjects at an early stage, i.e. contexts where the subject is focused in some sense. It is thus necessary to show that the children violate the pattern of information structure at an early stage, while their later production is more target-like. Examples showing the former are provided in (15)-(19), which include some of the relevant context.

(15) Context: Ina and her father are discussing a character in a book, referred to as \textit{han ‘he’} throughout the conversation (Ina.13, age 2;5.25).

\begin{itemize}
\item Ina: \textit{har ikkje han fota her?}\hspace{1cm} has not he feet here
\item Ina: \textit{har ikkje fota her?}\hspace{1cm} has not feet here
\item Ina: \textit{der han har en is.}\hspace{1cm} there he has an ice (cream)
\end{itemize}

A few lines later:
\begin{itemize}
\item Ina: \textit{har ikkje han penga her?}\hspace{1cm} has not he money here
\item Fat: \textit{har han ikkje penga der?}\hspace{1cm} has he not money there
\end{itemize}

(16) Context: Father wants Ann to tell a story, suggesting various options (Ann.12, age 2;4.23).

\begin{itemize}
\item Fat: \textit{men den kan du fortelle til pappa.}\hspace{1cm} but that can you tell to daddy
\item Ann: \textit{nei det kan ikke æ.}\hspace{1cm} no that can not I
\end{itemize}

(17) Context: Ann is telling stories to the investigator (Ann.13, age 2;5.10).

\begin{itemize}
\item Ann: \textit{det var mammaen til (s)krikerungan.}\hspace{1cm} it was mom.DEF to cry-babies.DEF
\end{itemize}

\text{‘It was the mom of the crybabies.’}

\begin{itemize}
\item Inv: \textit{ja.}\hspace{1cm} yes
\item Ann: \textit{det var en gang en mamma xxx.}\hspace{1cm} it was one time a mommie xxx
\end{itemize}

\text{‘Once upon a time, there was a mommie …’}

\begin{itemize}
\item Ann: \textit{no huske ikke æ.}\hspace{1cm} now remember not I
\item Inv: \textit{no huske du ikkje.}\hspace{1cm} now remember you not
(18) Context: Ole, the investigator and the mother are talking about things you can use to sweep the floor with (Ole.10, age 2;4.6).

Mot: det fantes en lilla sånn og den gikk i stykker i går. there exist.PAST a purple such and it go.PAST in pieces yesterday

‘There was a purple one and it broke yesterday.’

Inv: ja akkurat. yes exactly

Ole: den kan ikke vi koste med. that can not we sweep with

Inv: nei den kan ikkje koste med. no that can we not sweep with

(19) Context: Ole and his father are playing, and out of the blue, Ole asks if he has a diaper on (Ole.12, age 2;5.18).

Ole: har ikke æ bleie på?

have not I diaper on

Fat: har du ikkje bleie på?

have you not diaper on

In example (15), the pronominal subject han ‘he’ is the topic of the conversation and thus given information, and there is no reason in the context to compare or contrast this referent or in some way put focus on it. It therefore seems odd when the child puts this subject in the position after negation, which is done twice in this dialogue. In the second case, we also see that the adult, when repeating the child’s utterance, chooses the other word order, which is clearly more appropriate in this situation.

In examples (16)-(19), the subjects are first person pronouns (singular or plural), which are by definition always given information in a dialogue. That means that the normal position for these subject types would be the one preceding negation, unless there is a specific reason to focus or contrast the referent(s). That is, even when uttered out of the blue, as in examples (17)-(19), the low subject position chosen by the child is not target-like. In (16), the referent of the subject pronoun is additionally mentioned in the immediately preceding context. In (17)-(19) we again see the adult repeating the child utterance and choosing the word order with a high subject position, which is the more appropriate one also in these cases.6

Investigating some of the later child data, i.e. after the ‘turning point’ illustrated in Table 5, we still find a number of examples of non-target-consistent word order. One of these is illustrated in (20), again a first person pronoun in the low position. This means that the 17.9% low subjects produced at stages 3-4 in the child data (stages 4-5 for Ina) does not reflect completely target-consistent behaviour. Recall that the corresponding adult percentage of low subjects is 13.9%. Together with examples such as (20), this difference in child and adult percentages indicates that this construction is in fact not completely in place until somewhat later in the children’s development than what is indicated in Table 5.

6 These repetitions by the adult are presumably not to be interpreted as corrections to the child utterance.
(20) Context: Ole and the investigator are playing and talking about the toys he has (Ole.19, age 2,10.0).

Inv: da har du to sånne.
     then have you two such
     ‘Then you have two of those.’

Inv: ja.
     yes

Ole: no har ikke æ mer last igjen.
     now have not I more load left
     ‘Now I don’t have any more left of the (truck)load.’

Inv: nei # no har du ikkje mer last igjen.
     no now have you not more load left

Finally, (21) provides an example of a target-consistent use of a low pronominal subject, taken from the very last file of Ina’s data. The child is here contrasting the subject du ‘you’ to other people (vi ‘we’), and the word order is clearly appropriate for this context. As shown in Table 5, it is also the case that most pronominal subjects at this stage appear in the high position. Thus, it seems that the word order in this construction is target-consistent in the grammar of the three children at least by the end of data collection in the Tromso corpus. This conclusion is corroborated by findings in Anderssen et al. (forthcoming), showing that slightly older children have no problem with subject shift in experimental situations.

(21) Context: Grandmother is helping Ina (Ina.27, age 3;3.18).

Ina: har du tørka bare en gang?
     have you wiped only one time
     ‘Did you wipe only once?’

Gra: ja, bruke dokker å tørke to ganga?
     yes, use you.PL to wipe two times
     ‘Yes, do you normally wipe twice?’

Ina: ... vi bruke å tørke to ganga.
     ... we use to wipe two times

Gra: jaha.
     well

Ina: korfor bruке ikkje du det?
     why use not you that
     ‘Why don’t you do that?’

We now turn to the children’s production of subject positions in embedded clauses. Young children typically do not produce a high number of embedded structures, and in order for the two subject positions to be distinguishable, the clause must additionally contain negation or a sentence adverb. Thus, there are extremely few relevant examples of this kind in the corpus, only 24. Most of these examples are produced at a relatively late stage, close to the age of three. Table 6 gives an overview of the subject types and corresponding word order chosen in these examples.
Table 6: Pronominal and full DP subjects in embedded clauses, Norwegian child data.

<table>
<thead>
<tr>
<th></th>
<th>High position (S-Neg)</th>
<th>Low position (Neg-S)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pronoun</td>
<td>Full DP</td>
</tr>
<tr>
<td>Three children (age 1;8-3;3)</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

The extremely sparse data make it almost impossible to conclude anything from these numbers. Nevertheless, we may again note that both subject positions are available from the onset of relevant constructions, produced with equal frequencies (50%, 12/24). Moreover, despite the low number of examples, the three children do not seem to make a distinction between pronominal and full DP subjects the way they do in main clauses. That is, pronouns and full DPs appear in both positions with approximately equal proportions (8 vs. 9 and 4 vs. 3). Relevant examples are provided in (22)-(25).

(22)  \(xxx \text{ så } ikke \text{ dem } \text{ går ut igjen.} \) (Ann.16, age 2;7.14)

\(xxx \text{ so not they go out again.} \)

‘\(xxx \text{ so they won’t go out again.} \)’

(23)  \(… \text{ ho } \text{ måtte bare (s)kriere litt når ikke pappa } \text{ kom og henta ho.} \) (Ann.12, age 2;4.23)

\(… \text{ she must just cry little when not daddy come and pick-up her.} \)

‘She just had to cry a little when daddy didn’t come to pick her up.’

(24)  \(ja \# \text{ at det ikke dætt.} \) (Ann.10, age 2;3.9)

\(\text{yes that it not fall.} \)

‘… that it doesn’t fall.’

(25)  \(…\text{at pappaen min ikke reparere } \text{ den.} \) (Ann.17, age 2;8.4)

\(…\text{that daddy mine not repair it.} \)

‘That my daddy (could) not repair it.’

Again, it seems that the children do not have an early preference for the most frequent subject position in the input, the high position. According to Table 4, the adults produced only 18.7% (64/343) low subjects in embedded clauses. The corresponding figure for the NoTa corpus mentioned above (Westergaard forthcoming) is 12.7% (81/640). This is also very similar to what Garbacz (2004) found to be the case in the Big Brother corpus of spoken Norwegian (various dialects), viz. 12.4% (36/291). This means that, despite the low numbers in the child data, there is an indication that young children in fact have an early preference for the low position also in embedded clauses, in that they produce 50% (12/24) low subjects. We may thus argue that the principle of economy of movement is playing a role in

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7 It should be noted that six of these examples appear with non-target-consistent verb movement (one full DP subject, 5 pronouns), as illustrated in (i), see Westergaard and Bentzen (2007).

(i)  \(\text{han } // \text{ at } \text{ han skjønne ikke.} \) (Ann.10, age 2;3.9)

\(\text{he that he understand not.} \)

‘He that he doesn’t understand.’ Target: …at han ikke skjønne.
this context too, just as in main clauses. Importantly, this again indicates that the children have an early preference for the position that is the least frequent one in the input.

In the next section, we discuss word order variation in possessive constructions in Norwegian and show that a comparison between adult and child preferences gives a similar result.

4. Possessives

4.1 Word order in the target language

Like many other varieties of Norwegian, the Tromsø dialect allows two different word orders in possessive structures. The possessor may either precede or follow the noun, as illustrated in (26).

(26) Min bil/ bil-en min er på verksted
    my car/ car.DEF my is on garage
    'My car is at the garage'

The two word orders do not yield the same interpretation. In the varieties that permit both orders, the prenominal possessive structure is usually used when the possessive interpretation is important or when the noun phrase expresses a contrast (or emphasis).8 This difference in the interpretation of the two word orders is also reflected in the prosodic structure of the noun phrases; in DPs with prenominal possessives, it is the possessor that has prosodic prominence (min bil), while in DPs with postnominal possessives, the noun is the most prominent element (bil-en min). The difference in interpretation between the two word orders is very clear in yes/no-questions of the type illustrated in (27). In a situation where a person sees a dress and produces the utterance in (27), the question with the prenominal possessive asks whether the interlocutor is the owner of the dress, while the one with the postnominal possessive asks whether this is the dress mentioned earlier (and owned) by the interlocutor.

(27) Er dette din kjole / kjolen din?
    is this your dress / dress.DEF your
    'Is this dress yours/your dress?'

Before we move on to consider the input data and the child production data, it is necessary to specify exactly what kinds of possessors are included in the investigation and provide some background on the analysis of these elements. Table 7 gives an overview of the distribution of Norwegian possessors in person and number. As we can see, first, second and third person possessors in both the singular and the plural

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8 We will be referring to the prenominal possessives as involving a contrastive interpretation. An anonymous reviewer asks whether the interpretation could not be emphatic rather than contrastive. This seems to be the case in the sense that contrast represents a specific kind of emphasis, and the two are often treated together, both in relation to stress patterns and in relation to the accompanying interpretation (see e.g. Huang 2004). However, it is difficult to see how it is possible to put emphasis on a possessor without (at least) implicitly contrasting it with another possessor.
can be used pre- and postnominally. This also includes the two different third person singular forms, one which has to be bound (sin) and one which has to be free (hennes ‘hers’ or hannes ‘his’).\(^9\) Third person singular possessors that occur with names, however, make use of different forms in pre- and postnominal position; sin is used prenominally, while hennes/hannes must be used postnominally.

### Table 7: Possessors in the Tromsø dialect.

<table>
<thead>
<tr>
<th>Number</th>
<th>Person</th>
<th>Poss + Noun</th>
<th>Noun + Poss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singular</td>
<td>1st</td>
<td>min bil</td>
<td>bil-en min</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>din bil</td>
<td>bil-en din</td>
</tr>
<tr>
<td></td>
<td>3rd free</td>
<td>hennes bil</td>
<td>bil-en hennes</td>
</tr>
<tr>
<td></td>
<td>3rd bound</td>
<td>sin bil</td>
<td>bil-en sin</td>
</tr>
<tr>
<td></td>
<td>3rd w/name</td>
<td>Lisa sin bil</td>
<td>bil-en hennes Lisa</td>
</tr>
<tr>
<td>Plural</td>
<td>1st</td>
<td>vár(es) bil</td>
<td>bil-en vár(es)</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>dokkers bil</td>
<td>bil-en dokkers</td>
</tr>
<tr>
<td></td>
<td>3rd</td>
<td>demmes bil</td>
<td>bil-en demmes</td>
</tr>
</tbody>
</table>

In the plural, the possessive forms are invariant and not sensitive to the gender or number of the head noun, meaning that the form dokkers does not just occur with masculine nouns such as bil 'car' but also with feminine nouns such as seng 'bed' or plural nouns such as bila 'cars'.

(28) *bilen / senga / bilan dokkers*  
    car.DEF/bed.DEF/car.PL.DEF your.PL  
    'your car/bed/cars'  

The singular possessive forms, however, agree with the head noun in gender and number. Consequently, if the head noun is feminine, the feminine form of the possessor is used (29), and if it is masculine, the masculine form is used (30), and so on (31)-(32).

(29) *senga mi / di si*  
    bed.DEF 1ST/2ND/3RD  
    'my/your/his or her bed'  

(30) *bilen min / din/ sin*  
    car.DEF 1ST/ 2ND/3RD  
    'my/your/his or her car'  

\(^9\) The difference between the two types of third person possessors is thus similar to the difference between pronouns and reflexives in the sense that one (sin) must be coreferential with a local referent, while the other (hennes/hannes) must be coreferential with a non-local referent. Consequently, in (i), sin must be coreferential with Emily, while hennes cannot be.

(i) *Emily, vaska bilen sin\(_{vb}/\) hennes\(_{vk}\)*  
    Emily washed car.DEF her (bound)/her (free)  
    'Emily, washed her\(_{vb}\) car.'
The only exception to this is the third person free form, which varies according to the gender of the possessor rather than the possessee, yielding *hennes* 'her' with a feminine possessor and *hannes* 'his' with a masculine possessor (33). This possessor is not sensitive to the number or gender of the head noun, neither when it appears on its own nor when it co-occurs with a name (34).

In the current study, the possessors that occur with names have been excluded, as these possessive structures do not make use of the same possessor in the pre- and postnominal forms. Recall that (some form of) *sin* occurs in prenominal position while *hennes* ‘her’ or *hannes* ‘his’ occurs in postnominal position (cf. Table 7, row four). Because the various forms of *sin* generally occur with names, the bound third person possessive construction has also been excluded. This has mainly been done to avoid all the occurrences of *sin* with names, and has been done for both the child and the adult data, so it should not influence the final outcome of the comparison.

Let us now take a brief look at how these possessive structures are analysed in the adult language. The central issue is how to account for the alternation between the pre- and postnominal possessives and the accompanying difference in definiteness marking. In the target language, there is reason to believe that possessors are base generated in a low position, either in the specifier position of a projection just above the NP, or in the specifier position of NP (for the first view, see e.g. Julien 2005 and Anderssen 2006; for the second, see e.g. Taraldsen 1990 and Vangsnes 1999; see also Svenonius 1993 for the view that the pre- and postnominal possessors originate in different positions). On this assumption, postnominal possessives are generated by leftward movement of the noun past the possessor to attach to the definite suffix higher up in the structure. This means that the basic word order is the one with a prenominal possessive, as schematized in (35) and illustrated in (36), while the postnominal order is derived, as illustrated in (37).

(31)  
\[
\text{huset} \quad \text{mitt} \quad /\text{ditt} / \text{sitt}
\]
house.DEF 1ST / 2ND/3RD
'my/your/his or her house'

(32)  
\[
\text{bilan} \quad \text{mine} \quad /\text{dine} / \text{sine}
\]
car.PL.DEF 1ST / 2ND / 3RD
'my/your/his or her cars'

(33)  
\[
\text{senga} / \text{bilen} / \text{huset} / \text{bilan} \quad \text{hennes/hannes}
\]
bed.DEF/car.DEF/house.DEF/car.PL.DEF her/ his
'her/his bed/car/house/cars.'

(34)  
\[
\text{senga} / \text{bilen} / \text{huset} / \text{bilan} \quad \text{hennes Sunniva} / \text{hannes Markus}
\]
bed.DEF/car.DEF/house.DEF/car.PL.DEF her Sunniva / his Markus
'Sunniva's/Markus' bed/car/house/cars.'

(35)  
\[
\text{DEF} - \text{POSS} - \text{NOUN}
\]

(36)  
\[
\text{hennes stemme}
\]
her voice

(37)  
\[
\text{stemmen hennes stemme}
\]
voice.DEF her voice

(POSS - NOUN)
If this analysis is correct, the construction with a postnominal possessive is more complex than the one with a prenominal possessive, as the former involves syntactic movement, while the latter does not. This is what will be assumed in the present paper.\(^\text{10}\)

4.2 Input frequencies

Let us now turn to the input data. There are clear quantitative differences between the pre- and postnominal possessive constructions in the target language. Adult speakers exhibit a preference for the postnominal possessive construction, in the sense that it is used much more frequently. This is illustrated in Table 8, which gives an overview of the distribution of pre- and postnominal possessive structures produced by the adult speakers in the corpus.

<table>
<thead>
<tr>
<th></th>
<th>Poss-N (%)</th>
<th>N-Poss (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOT Ina.01-27</td>
<td>15 (19.7)</td>
<td>61 (80.3)</td>
</tr>
<tr>
<td>FAT Ina.01-27</td>
<td>3 (7.5)</td>
<td>37 (92.5)</td>
</tr>
<tr>
<td>MOT Ann.01-21</td>
<td>25 (19.2)</td>
<td>105 (80.8)</td>
</tr>
<tr>
<td>FAT Ann.01-21</td>
<td>1 (100)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>MOT Ole.01-22</td>
<td>9 (23.1)</td>
<td>30 (76.9)</td>
</tr>
<tr>
<td>FAT Ole.01-22</td>
<td>3 (14.3)</td>
<td>18 (85.7)</td>
</tr>
<tr>
<td>INV Ina.01-12, 14, 17-27</td>
<td>99 (26.4)</td>
<td>276 (73.6)</td>
</tr>
<tr>
<td>INV Ann.01-21</td>
<td>54 (23)</td>
<td>142 (77)</td>
</tr>
<tr>
<td>INV Ole.01-11, 13</td>
<td>23 (21.1)</td>
<td>86 (78.9)</td>
</tr>
<tr>
<td>INV Ole.13-22</td>
<td>52 (35)</td>
<td>96 (65)</td>
</tr>
<tr>
<td>Total</td>
<td>284 (25%)</td>
<td>851 (75%)</td>
</tr>
</tbody>
</table>

There are also clear qualitative differences between the two types of possessive constructions. Recall that the prenominal possessive construction yields a more marked, contrastive interpretation of the possessor, while in the postnominal

\(^{10}\) Those who know Scandinavian DP structure well will realise that there is a problem with this assumption. A subset of these languages, including Norwegian, exhibit a phenomenon referred to as double definiteness. Double definiteness occurs when a definite noun phrase is modified by an adjective. In these structures, an additional determiner appears in front of the adjective, while the aforementioned definite suffix appears after the adjective, attached to the head noun, as in (37). This yields the order den vakre stemme-\textit{n hennes} ‘the beautiful voice.\textsc{def} her’. Because of structures such as these, the complete basic order in the DP is assumed to be as in (i).

(i) \hspace{1cm} \textsc{def} - \textsc{adj} - \textsc{def suffix} - \textsc{poss} - \textsc{noun}

When prenominal possessives appear with an adjective, the possessor precedes the adjective and no pre-adjectival determiner occurs, yielding the order \textit{hennes vakre stemme} ‘her beautiful voice’. This suggests that the prenominal possessive construction also involves movement, specifically movement of the possessor itself (at least in modified structures), which is problematic for the assumption that prenominal possessives are less complex. Interestingly, however, the Tromsø dialect generally does not allow adjectival modification with prenominal possessives. So for this dialect, the original statement still holds, viz. that DPs with prenominal possessives are less complex than DPs with postnominal possessives, in that they do not involve syntactic movement.
possessive constructions, the possessive relationship is more parenthetical. Some examples illustrating this difference in the adult language are given below. In the dialogue provided in (39), Ann's mother is telling the investigator that Ann is a bit of a chatter box; in the first possessive construction, the mention of Ann's mouth is neutral and hence the postnominal variant is used, while in the second, the mother is contrasting Ann's voice with the voices of the other children, and consequently, the prenominal version is preferred.

(38) Mot: ja den derre jabba hennes den går i ett sett. yes that there mouth.DEF her it goes in one set 'Yes, that mouth of hers it moves non-stop.'
Mot: æ hørte hennes stemme over alle de andre når æ kom og I heard her voice over all the other when I came and henta ho. fetched her 'I heard her voice above all the others when I came to pick her up.' (Ann.05, age 1;11.26)

Another example of the contrast between pre- and postnominal possessives is found in Ina's files. In the relevant context, Ina is lying on the floor and the investigator is trying to get her to try to stand on the investigator's feet. As we can see, in the initial mention, when the investigator is simply asking Ina to stand on her feet, the postnominal possessive is used, but later on, when Ina has stood up, the investigator contrasts her foot with Ina's and then the prenominal possessive construction is used.

(39) Context: Ina is lying on the floor.
Inv: klare du å stå på fotan mine? manage you to stand on foot.PL.DEF my 'Can you stand on my feet?'
Inv: å gå på fotan mine? to walk on foot.PL.DEF my 'To walk on my feet?'
Inv: øj øj øj øj dear dear dear dear
Ina: æ må en til. I must one to 'I must try one more time.'
Inv: prov ø stå oppå min fot. try to stand up-on my foot 'Try to stand on my foot.' (Ina.12, age 2;4.28)

Thus, in the adult input data, the two possessive constructions are used in different contexts, with the prenominal being a marked, contrastive structure. Furthermore, it clearly is the postnominal possessive that is used most frequently by the adult speakers investigated here. On average, only 25% of all possessives are prenominal. Consequently, if frequency represents a major factor in the acquisition of possessives, we would expect the children who are exposed to these input data to start out by using postnominal possessors and to use them at a much higher rate than prenominal ones. As we will see in the next section, however, this does not appear to be the case.
4.3 Child data

In this section, we consider the production of possessive structures in the Norwegian child language corpus. When compared to the input data in the previous section, the child data are interesting for two reasons. First, prenominal possessives are attested first in the data of all three children. Second, when the children start producing both pre- and postnominal possessives, they produce more prenominal ones than the adult speakers in the same corpus, who were shown to use prenominal possessives on average only 25% of the time.

An overview of the three children’s production of possessives across the corpus is given in Table 9. As in Table 5, the division into stages has been made to highlight the development, while simultaneously providing an even and natural distribution of time; stages 2-4 cover four months each, while stage 5 only consists of three, due to the termination of data collection. Stage 1 is also made up of three months, taking us up to the age of two.\textsuperscript{11}

<table>
<thead>
<tr>
<th>Child</th>
<th>Stage 1 (age 1;9-2;0)</th>
<th>Stage 2 (age 2,0-2;4)</th>
<th>Stage 3 (age 2;4-2;8)</th>
<th>Stage 4 (age 2;8-3;0)</th>
<th>Stage 5 (age 3;0-3;3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ina</td>
<td>0/0</td>
<td>4/8</td>
<td>6/37</td>
<td>51/84</td>
<td>18/21</td>
</tr>
<tr>
<td>%</td>
<td>---</td>
<td>(33/67)</td>
<td>(14/86)</td>
<td>(38/62)</td>
<td>(46/54)</td>
</tr>
<tr>
<td>Ann</td>
<td>2/0</td>
<td>9/10</td>
<td>7/27</td>
<td>10/20</td>
<td>---</td>
</tr>
<tr>
<td>%</td>
<td>(100/0)</td>
<td>(47/53)</td>
<td>(21/79)</td>
<td>(33/67)</td>
<td>---</td>
</tr>
<tr>
<td>Ole</td>
<td>5/0</td>
<td>8/6</td>
<td>8/23</td>
<td>62/43</td>
<td>---</td>
</tr>
<tr>
<td>%</td>
<td>(100/0)</td>
<td>(57/43)</td>
<td>(26/74)</td>
<td>(59/41)</td>
<td>---</td>
</tr>
<tr>
<td>Total</td>
<td>7/0</td>
<td>21/24</td>
<td>21/87</td>
<td>123/147</td>
<td>18/21</td>
</tr>
<tr>
<td>%</td>
<td>(100)</td>
<td>(47)/(53)</td>
<td>(19)/(81)</td>
<td>(46)/(54)</td>
<td>(46)/(54)</td>
</tr>
</tbody>
</table>

As can be seen from stage 1 in Table 9, the observation that the children start out exclusively with prenominal possessives is based on very little data; recall that we are considering structures which appear to be relatively infrequent in language production, as in the nearly 73,000 utterances made by the adult speakers in the corpus, there are only 1,135 relevant examples. Since we are considering very early stages of development, it is likely to that these examples are even less frequent in child data. Furthermore, this observation is not made visible in Table 9 for the data of one of the children (Ina): Possessives are only attested in her production after the age of two. Consequently, the first examples do not appear at stage 1, but at the next stage, when the first postnominal possessives are attested as well (four of each).

Despite these complicating factors, it is true for the data of all three children that prenominal possessives are attested first. For example, Ann produces one prenominal possessive in the fourth file (age 1;11.0) and one in the fifth file (age 1;11.26), while in the sixth file (age 2;0.17), she produces two postnominal possessives. The seventh file (age 2;1.7) includes one postnominal and four prenominal possessives. Examples of both orders are provided in (40) and (41).

\textsuperscript{11} As in Table 5, the ages given for the different stages have been simplified, in order to avoid having too much information in the table. The five stages do not overlap for any of the children.
Similarly, in Ole’s data prenominal possessive structures are attested before postnominal ones. In his case, prenominal possessives can only be found in one file (file three, age 1;10.22) before the first postnominal possessive appears in the fifth file (age 2;0.10). However, file three contains as many as five prenominal possessives. Relevant examples are provided in (42) and (43).

(42) han er min mann. (Ole.03, age 1;10.22)
he is my man

(43) han være i skufla di. (Ole.05, age 2;0.10)
'He is going to be in your shovel.'

Finally, Ina’s prenominal possessives in stage 2 are all produced in the seventh file (age 2;1.23), while the four postnominal possessives appear in the eighth file (age 2;1.29).

(44) det er min kjole. (Ina.07, age 2;1.23)
it is my dress

(45) nei no døtt ned mannen på foten min. (Ina.08, age 2;1.29)
now no fall down man.DEF on feet.DEF my
'Now the man is falling down on my foot.'

Thus, prenominal possessives are attested in the data of all three children before postnominal ones, even though in Ina's case, the two constructions appear with only a few days’ difference. This is somewhat surprising, given that the postnominal possessives are much more frequent in the input. However, as the children generally produce more prenominal possessors than the adults, it is possible that this seemingly exclusive use of the Poss-N order at stage 1 is simply a sampling effect, a result of the generally high proportion of this word order in the data at this stage. Indeed, if we were to collate stages 1 and 2, there would be a slight dominance of the prenominal possessives, which might be the explanation for the occurrence of the Poss-N structures in the earliest data. As the distribution in the child language data is so close to 50/50, it is difficult to draw any firm conclusions about this.

We will not make any claims about whether these early (stage 1-2) prenominal possessives are target-like or not, in the sense that they occur in a situation in which it is natural to use the possessor contrastively. Some of these examples clearly are target-like. This is true of Ann's utterance in (40), which is the answer to her mother's question of whose bed Ann is going to sleep in that night. In this context, the prenominal possessive is perfectly acceptable. The same seems to be true of Ole's example (42) and possibly Ina's (44). Generally, it is quite difficult to determine whether the use of prenominal possessives in the earliest files is target-like, as the
children's utterances are relatively short and are more difficult to judge in context. Therefore, we would like to be cautious and leave this question open with regard to stage 1. What is clear, however, is that if we consider the later files, all the children do produce prenominal possessives in contexts in which they are inappropriate according to the adult system, that is, when there is no contrastive situation.12 Bearing this in mind, let us turn to the second way in which the child data are different from the adult data, namely the fact that the children produce more prenominal possessives than the adult speakers.

If we consider Table 9 more closely, we can observe the following development: As already pointed out, the children start out producing only prenominal possessives at stage 1. At stage 2, almost half of the possessives are prenominal (33-57% for the individual children), in contrast with the adult speakers, who use prenominal possessives only 25% of the time according to the overview in Table 8. At the third stage, the proportion of pre- and postnominal possessors (the latter in bold) seems to have reached a target-like level (19 vs. 81% in the children's production as compared to 25 vs. 75% in the adult data), which suggests that the system has been acquired at this stage. However, the proportion of prenominal possessives increases again at stage 4 (and stage 5 for Ina). If the distribution of pre- and postnominal possessives observed in stages 1-3 is the expression of a progressively more target-like grammar, the high proportion of prenominal possessives at stage 4 (and 5 for Ina) is surprising. One explanation that naturally presents itself for both the dominance of prenominal possessives at the earliest stage and for the increase of these structures again in the last two stages is that children are more likely to stress the possessive relationship than adults and hence use possessives contrastively more often. However, it is unlikely that this can explain both the observed developments. If a preference for contrastive possessives explains the high use of these structures in both the early and the late files, it is difficult to see why there should be a gradual decrease of prenominal possessives in stages 2 and 3, especially as this development can be observed in all three children.

We would therefore like to argue that even though the data is not transparent enough to determine whether there are any examples of non-target uses of the prenominal possessive at stage 1 (that is, prenominals used in contexts not suitable for contrastives), it is possible to show that this is the case at the subsequent stages. This is especially true of stage 2, but such examples can also be found later. Stages 4-5 are different from stage 2, however, as there is a high number of contexts causing the number of licit contrastive, and thus prenominal, possessives to increase again, both in the child and the adult data. We illustrate this by providing an overview of the distribution of pre- and postnominal possessives produced by the adult interlocutors (the investigators) on a stage by stage basis in Table 10 below. First, however, let us consider the target-deviant uses of prenominal possessives in the child data.

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12 By contrastive, we here simply mean that there is either one referent such that two different people might claim ownership of it, or two referents of the same kind such that they are distinguished by their different owners (cf. example 52 below). We cannot be inside the heads of the children to determine whether they are intending to contrast one possessor with another, but according to the general convention in language acquisition studies, it is possible to consider the context of an utterance and make a judgement about whether the use of a given form is acceptable/appropriate in that context according to the target language. This is what has been done here.
Starting with stage 2, it is possible to show that there are examples of prenominal possessive structures in contexts that are not contrastive in the files of all three children. Let us consider some examples of this:

(46) Ole:  
\[ \text{her } \text{dætt } \text{av} \text{ hjulan.} \]  
here fall off wheel.PL.DEF
'The wheels are falling off here.'

Inv:  
\[ \text{dætt } \text{hjulan } \text{demmes } \text{av}? \]  
falls wheel.PL.DEF their off
'Are their wheels falling off?'

Ole:  
\[ \text{ja, } \text{demmes } \text{hjula } \text{dætt } \text{av.} \]  
yes their wheel.PL fall off
'Yes, their wheels are falling off.'

In (46), there is no contrastive situation, and the natural choice would thus be to use the postnominal possessive, which is what the adult speaker does here. In the next example (47), there is talk about Ann's love of music, when she suddenly says 'here is my guitar', using the prenominal possessive, even though there is no contrastive situation (and in fact, no guitar at all). Similarly, in another one of Ann's files, her father pretends to eat her finger, and when telling the investigator, Ann uses the prenominal possessor in a non-target-consistent way (48). In yet another example, Ann can see the reflection of some TV characters in the investigator's glasses and utters the sentence in (49). Again, there is no contrastive situation. The same is true of the final example provided here, taken from from Ina's files (50). In this context, Ina is drinking from a straw and pointing out that the drink is going into her mouth, using a prenominal possessive in a non-contrastive situation. Notice that the adult speaker repeats the phrase, using a postnominal possessive.

(47) Ann:  
\[ \text{her er } \text{min (g)itar.} \]  
here is my guitar

Inv:  
\[ \text{gitar?} \]  
guitar

Ann:  
\[ \text{ja.} \]  
yes

Mot:  
\[ \text{du har no ikke gitar.} \]  
you have now not guitar
'But you don't have a guitar.'

(48) Ann:  
\[ \text{Merete pappa (s)piste } \text{min finger.} \]  
Merete daddy eat.PAST my finger
'Merete, daddy ate my finger.'

(49) Ann:  
\[ \text{æ ser lysvennan } \text{inni } \text{dine brilla.} \]  
I see light-friend.PL.DEF inside your glasses
'I can see the light friends (characters from children's programme) in your glasses.'
(50) Inv:  

_‘Yes, I can see it coming up through the straw.’_

Ina:  

_‘Into my mouth.’_

Inv:  

_‘And into your mouth, yes.’_

It should be pointed out that, at the same time, the children also produce prenominal possessives in contexts where this is the natural and grammatical choice. Moreover, they never overuse the postnominal possessive. This means that, as in the subject shift construction, children seem to have an early sensitivity to the principles governing the choice of word order in the adult grammar.

Let us now consider the increase in prenominal possessives at stages 4 and 5. A closer investigation of the data at these stages reveals that, even though there are still a few examples of non-target-consistent prenominal possessors, the vast majority of these structures are used in a target-like way. This means that the high proportion of prenominal structures are the result of specific characteristics of the child-investigator interaction in these files. In the case of Ann and Ina, the increased proportion of prenominal possessors is caused by the investigator asking who owns the different things that are being talked about during the recordings. This is a result of the investigator at the time having discovered that the children sometimes add a non-target-consistent definite article to nouns occurring with a prenominal possessive, as in (51). These structures are not relevant to our discussion in the present paper.

(51)  

_‘She must come into my bed.’ Target: _mi seng_.

In the case of Ole’s data, the interaction between Ole and the investigator in the late files is characterized by numerous situations in which they talk about referents that either belong to Ole or the investigator. For example, Ole and the investigator are playing with two airplanes that they both refer to as _my plane_ and _your plane_. They also talk extensively about _my vs. your tape recorder_ and _my vs. your microphone_, as they contrast Ole’s toys with the tape recorder and microphone that the investigator uses. These three nouns alone (_plane, tape recorder and microphone_) occur with 34 of the 62 prenominal possessors in Ole’s stage 4. Consider the following example:

(52) Inv:  

_‘Let's build a bit on my plane now.’_

Ole:  

_‘We build a little.’_

Inv:  

_‘Yes that is good’_

Ole:  

_‘Now build 1 little on my plane’_.
'Now I will build a little bit on my plane.' Target: *mitt fly.*

In order to illustrate that there is a difference between the late and the early files in the sense that the former have more contexts appropriate for the prenominal possessive, the data from the investigators in the files of all three children have been divided into the same stages as the children's data, so that the adults' use of possessors can be compared to that of the children. This information is provided in Table 10. Admittedly, the data do not include the parents of the children, but it is the investigators that mainly interact with the children during the recording sessions. This is reflected in the fact that the two investigators produce the vast majority of the adult utterances in the corpus (67.8%, 41,849+7,365=49,217 of 72,933), as well as the majority of possessive constructions (74.7%, 680+148=848 of 1,135).

### Table 10: Poss/-N/-Poss orders in Norwegian adult investigators' data with percentages.

<table>
<thead>
<tr>
<th>Investigator in files of</th>
<th>Stage 1 (age 1;9-2;0)</th>
<th>Stage 2 (age 2;0-2;4)</th>
<th>Stage 3 (age 2;4-2;8)</th>
<th>Stage 4 (age 2;8-3;0)</th>
<th>Stage 5 (age 3;0-3;3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ina</td>
<td>6/22</td>
<td>2/43</td>
<td>13/51</td>
<td>54/126</td>
<td>24/34</td>
</tr>
<tr>
<td>%</td>
<td>(21/79)</td>
<td>(4/96)</td>
<td>(20/80)</td>
<td>(30/70)</td>
<td>(41/59)</td>
</tr>
<tr>
<td>Ann</td>
<td>8/14</td>
<td>5/37</td>
<td>12/51</td>
<td>29/76</td>
<td>___</td>
</tr>
<tr>
<td>%</td>
<td>(36/64)</td>
<td>(12/88)</td>
<td>(19/81)</td>
<td>(28/72)</td>
<td>___</td>
</tr>
<tr>
<td>Ole</td>
<td>4/19</td>
<td>9/29</td>
<td>16/39</td>
<td>46/80</td>
<td>___</td>
</tr>
<tr>
<td>%</td>
<td>(17/83)</td>
<td>(24/76)</td>
<td>(29/71)</td>
<td>(37/64)</td>
<td>___</td>
</tr>
<tr>
<td>Total</td>
<td>18/55</td>
<td>16/109</td>
<td>41/141</td>
<td>129/282</td>
<td>24/34</td>
</tr>
<tr>
<td>%</td>
<td>(25/75)</td>
<td>(13)/ (87)</td>
<td>(23)/ (77)</td>
<td>(31)/ (69)</td>
<td>(41)/ (59)</td>
</tr>
</tbody>
</table>

In comparison with Table 9, Table 10 reveals that the adults use a much lower proportion of prenominal possessors than the children at the first two stages. At the third stage, the percentages for the adults and the children are quite similar. At the last stage (the last two for Ina), however, the proportion of prenominal possessives increases in the data of both adult and child speakers.

To summarize this section on possessives, we have seen that Norwegian children, who are acquiring a language in which possessors may be either pre- or postnominal, are exposed to a much higher proportion of postnominal possessives. Nevertheless, in the attested data, all three children produce their first prenominal possessive construction before they produce their first postnominal one. Furthermore, we have seen that the children continue to produce more prenominal possessors than their adult counterparts at stage 2, while the level of prenominal possessives is more comparable to the adult target at the third stage. This naturally leads to the question why children initially have such a high rate of prenominal possessives. It seems clear that frequency cannot play a major role in the acquisition of these structures. If it did, we would expect the postnominal possessive construction to be acquired first and used more frequently by the children.

In the next section we propose that economy of movement offers a plausible explanation for this behaviour, as in postnominal possessive constructions we assume that the noun has moved into a higher position to attach to the definite suffix.\(^\text{13}\)

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\(^\text{13}\) Note, however, that the problem is not the use of the definite suffix itself. Studies of the acquisition of the definite article in both Norwegian (Anderssen 2006) and Swedish (Bohnacker 2004) show that
5. Discussion: frequency vs. economy

In this paper, we have considered the acquisition of two structures in Norwegian that permit word order variation, and investigated whether the relative frequency of the different word orders has an impact on the order of acquisition and children’s target-deviant behaviour. The two structures in question are subject placement in relation to negation (S-Neg/Neg-S), discussed in section 2, and pre- and postnominal possessives (Poss-N/N-Poss), discussed in section 3. The results of our study suggest that frequency does not play a major role in the acquisition of these constructions: In both cases the children are shown to start out with the word order that is the least frequent one in the input and to subsequently continue to produce a higher rate of the less frequent word order at the early stages of acquisition.

Admittedly, our analysis is based on relatively sparse data. As pointed out by an anonymous reviewer, a complicating factor in all language acquisition studies is the question to what extent the sample considered is comprehensive enough and representative of the children's production. This is an important issue to keep in mind, as the recordings on which our analysis is based only constitute a small fraction of the total language output of the children as well as the adults in the study. Consequently, it would be helpful to know to what extent we have captured the distribution of the elements we are considering and the frequency with which they occur. One way of assessing this would be to investigate how often the target structures appear in relation to the total number of utterances. As mentioned above, there are relatively few occurrences of the structures under investigation, both in the adult and child data. The corpus consists of approximately 73,000 adult and 47,000 child utterances. In sections 2 and 3, we found that there was a total of 1,667 non-subject-initial declaratives and questions involving pronominal subjects and negation in the adult data and 191 in the child data, while there were 1,135 relevant possessor structures in the adult production and 469 produced by the children. This means that the S-Neg/Neg-S structures appear in 2.3% of the adult utterances and 0.4% of the child utterances, while the possessor construction (Poss-N/N-Poss) is found in 1.6% and 1% of the adult and child production respectively. However, the problem with this measurement is that it does not really tell us anything unless we also know how frequent other types of structures are in the same sample.

Another way of estimating how reliable our data are is to calculate the frequency of the phenomenon under investigation in the real world compared to the temporal density of the samples. This is discussed in Tomasello and Stahl (2004: 107-108), who use a Poisson distribution to estimate the capture rate of various hypothetical targets (occurring from 7 to 70 times per week in the real world) in relation to how frequently data collection takes place (from 0.5 to 10 hours per week). They assume that a normal child is awake and talking 10 hours/day (70 hours/week), which means that, with a sample rate of once a week, 69 hours of the language production (and input) will be lost every week. For example, they show that a target that occurs 7 times per week in the real world will only occur in a sample twice in the course of a week.

The discrepancy between the adults and children with respect to the subject data is presumably due to this construction involving utterances of at least four words, which are obviously quite infrequent at very early stages of development in the child data.
year, if the sample rate is 0.5 hour/week. In the real world, there would be 364 targets, so this kind of sampling frequency only picks out 0.5% of the total. If the sampling rate were increased to one hour per week, six of the targets should be picked out. Using the same methodology, we can try to estimate the real world rate of the structures investigated here. Following Tomasello and Stahl, we assume that the child is awake and talking 10 hours/day (70 hours/week). The corpus that was used includes three children, who were recorded once every three weeks each. If we collate the data, this gives us a sampling rate of approximately 1 hour/week, and the recordings were carried out for approximately 82 weeks. The total number of targets were 1,667 S-Neg/Neg-S structures in the adult and 191 in the child sample, while the possessive structures were attested 1,135 and 469 times in the adult and child data respectively. Averaging these numbers out to occurrences per one sample yields 20.3 adult and 2.3 child targets/hour for the subject structures and 13.8 adult and 5.7 targets/hour for the possessives. The numbers per day and week should then be 203, 23, 138 and 57 target/day and 1,421, 161, 966 and 399 target/week, respectively. This means that the data investigated here based on a one hour/week sampling scheme capture 1.4% of the total output, on the assumptions followed in Tomasello and Stahl (2004). Consequently, a certain level of caution is necessary when assessing our results.

In spite of this, we would like to argue that our results provide clear indications that our claims are well founded: First, the difference in distribution between the two word orders in the input is found in the production of all the eight adult speakers, for both constructions investigated. For the subject data, a similar distribution is also attested in the total numbers calculated for a corpus of 166 Oslo speakers (Westergaard forthcoming). Second, the preference for the least frequent word order is attested in the behaviour of all three children. We would argue that these facts clearly support our argument. Furthermore, the possible objection that the children simply produce more contexts than the adults where the least frequent word order would be appropriate does not hold. In section 3 we provided several examples of children’s target-deviant production of prenominal possessives at early stages of development. Similarly, in section 2 we presented a number of examples from the corpus where the children choose the low position for a pronominal subject when the high one would be more target-consistent (and is the one chosen by the adult interacting with the child). In fact, if anything, children seem to produce more contexts than adults where the high subject position would be more appropriate, given their tendency to talk about familiar referents in the here and now.

We may now consider the findings from sections 2 and 3 in relation to some previous work on Norwegian word order variation which also focuses on the impact of input frequency. In the introduction we referred to Westergaard (2008a), which shows that clause types with different word orders are attested in child data virtually without errors, despite very different input frequencies. Furthermore, in two types of embedded clauses, both attested with a low input frequency, the children are found to produce non-target-consistent word order in only one of the contexts (Westergaard and Bentzen 2007). And in two constructions with very different frequencies, subject

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15 At this point, it is necessary to simplify somewhat. For practical reasons, it was not possible to keep the 1 hour/week sampling scheme going continually, due to holidays, illnesses and other factors beyond our control. Consequently, only 70 recordings were made in the course of the 82 weeks. Most of these last for one hour, but there are some that last longer, making the total number of hours around 73. 73 hours in the course of 82 weeks yields a sampling time per week of 0.9 hours, but for simplicity, we will assume 82 one-hour recordings in our calculation.
and object shift, the children are found to produce target-deviant word order in both (Anderssen et al. forthcoming). Thus, our previous work has concluded that input frequency by itself has little predictive power with respect to children’s production. In the latter two cases, however, it is argued that input frequency may play a role for the persistence of an error that is caused by other factors.

The factor that has been argued to be relevant for these cases is a principle of economy, preventing syntactic movement operations in child grammar unless there is clear evidence for this in the input. It has often been noted that children are conservative learners, not overgeneralizing syntactic patterns from one context to another; see Snyder (2007) for a recent discussion. Thus, the non-target-consistent behaviour typically seen in child language are errors of omission, not errors of commission. With respect to syntactic movement, it is typically the case that young children are found to move less, rather than more, than what is found in the target language. An example of this the often noted lack of subject-auxiliary inversion in wh-questions in English child language, see e.g. Radford (1994), Rowland and Pine (2000), Westergaard (2009b), while overgeneralization of inversion in e.g. declaratives is virtually non-existent in English acquisition data (Radford 1992, Roeper 1999, 2007). This is illustrated in (53) (Brown 1973, MacWhinney 2000).

(53) Why I can keep dem? (Adam, age 3;2.21)

For the acquisition of Norwegian, this principle of economy has been used to account for the lack of object shift in Norwegian child data, delaying movement of a pronominal object past negation, as illustrated in (54). This has been found in the production of the three children in the Tromsø corpus as well as in experimental data collected from somewhat older children (Anderssen et al. forthcoming). Economy is also used in Westergaard (2009a) to account for these three children’s occasional failure to produce V2 word order in declaratives. Relevant examples are provided in (55) and (56).

(54) han kjenne ikke ho. (Are, 3;8.7)
   he know.PRES not her
   ‘He doesn’t know her.’ Target: Han kjenne ho ikke.

(55) nå æ skal (s)t(r)ikke litt til. (Ole.10, age 2;4.6)
   now I shall knit little more
   ‘Now I will knit a little more.’ Target: Nå skal æ strikke litt til.

(56) han Ole ikke må røre den. (Ole.06, age 2;1.5)
    DET Ole not must touch it
    ‘Ole must not touch that.’ Target: Ole må ikke røre den.

We would like to argue that the word order variation in the two contexts discussed in the present paper may be accounted for in a similar way. In the case of the two subject positions, the word order with a high subject is assumed to be the result of movement of an informationally light element across negation or an adverb. In the possessive constructions, postnominal possessors are generated by moving the noun past the possessor to attach to the suffixal article. This means that the children’s early avoidance of these constructions may also involve economy. That is, the slight delay in the production of word orders involving syntactic movement in subject shift and
possessive constructions may be due to this general principle of economy in language acquisition.

It is of course possible that the children’s target-deviant behaviour in the contexts discussed in this paper is not due to economy, but to more specific problems with the constructions at hand that might be revealed in further studies of these phenomena. However, the children seem to display an early sensitivity to the relevant factors responsible for the choice of word order in the adult grammar. We have also shown that the word order argued to involve movement is the most frequent one in the input. This means that both with respect to subject placement and possessive-noun word order, the most complex structures correspond to the most frequent word order in the input. This is a relatively unusual situation, as lack of complexity and high frequency often go hand in hand. These constructions are therefore especially interesting as a test case for the relative importance of the two factors in early child language, complexity vs. frequency. The results of our study show that, in both the subject shift and possessive constructions, the children have an early preference for the word order that is the least frequent one in the input. We would therefore argue that the findings presented in this article constitute relatively strong evidence that input frequency alone cannot account for children’s early production.

6. Summary

Norwegian children acquiring the Tromsø dialect are exposed to two word order options both with regard to subject placement and the relative order of possessors and nouns in the DP. An investigation of a corpus of three Norwegian children and eight adult speakers shows a discrepancy between the frequencies with which the two constructions are used. While the high subject position and the postnominal possessive construction are produced considerably more frequently than the alternative word order by the adults in the corpus, a study of the child language data reveals that, at the early stages of acquisition, there is a clear tendency for the children acquiring this dialect to prefer the low subject position and the prenominal possessive construction. This suggests that input frequency cannot be used to account for the children’s production at the earliest stages of development, as this is characterized by a preference for the least frequent word order. We have proposed that economy of movement might be an alternative explanation for the development observed here. Of the two subject positions that the children are exposed to, the low position has the characteristic that it does not involve any syntactic movement, while the high one does, and hence the latter comes at a higher cost. With respect to the two possessive constructions, postnominal possessives are argued to be the result of movement of the noun past the possessive, while the prenominal possessives do not involve any syntactic movement in the Tromsø dialect. Thus the former word order is the result of a more costly operation. We therefore conclude that, with respect to the acquisition of the two constructions investigated here, Norwegian children are not paying attention to the word order that is the most frequent one in the input. Instead, they show an early sensitivity to the principles of information structure governing the word order choice in the adult grammar. Nevertheless, at the very early stages of development, the children’s production seems to be affected by a principle of economy, delaying syntactic movement.
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