

The Word Order of Embedded Clauses in Norwegian Child Language

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1. INTRODUCTION

- ✚ Embedded declaratives with Neg/Adv and embedded *wh*-questions are very infrequent in the input Norwegian children are exposed to.
- ✚ Norwegian children overgeneralize main clause word order into embedded clauses with Neg/Adv (they produce **V–Neg/Adv**), but they **do not** overgeneralize main question word order into embedded *wh*-questions (they **do not** produce **V–Subject**).
- ✚ From an economy perspective such unnecessary verb movement past negation in embedded declaratives is at first sight unexpected.

2. THE WORD ORDER OF NORWEGIAN

- Norwegian is V2 language with obligatory verb movement to the second position in main clauses, (1)-(2), but generally no verb movement in embedded clauses, (3)-(4):

- (1) Ifjor **så John** en llama. (Tromsø/StN)
last-year saw John a llama
'Last year John saw a llama.'
- (2) John **liker ikke** tog.
John likes not trains
'John does not like trains.'
- (3) Har du hørt [hvorfor John **{*liker} ikke {liker}** tog]?
have you heard why John {likes} not {likes} trains
'Have you heard why John doesn't like trains?'
- (4) Har du hørt [hvorfor **{*liker} John {liker}** tog]?
have you heard why {likes} John {likes} trains
'Have you heard why John likes trains?'

- Northern Norwegian - the target dialect of the children in this study - has optional V2 in main *wh*-questions with the monosyllabic *wh*-words *kem* 'who,' *ka* 'what,' *kor* 'where' (cf. Westergaard 2003). The verb also has to follow negation in such contexts, (6):

- (5) Kem **{like} han John {like}** best? (Tromsø/*StN)
who {likes} he John {likes} best
'Who does John like the best?'
- (6) Kem han **{*lån-te} ikke {lån-te}** penga til?
who he {lent} not {lent} money to
'Who did he not lend money to?'
- (7) Koffer **{gikk} han {*gikk}** hjem så tidlig? (Tromsø/StN)
why {went} he {went} home so early
'Why did he go home so early?'

- However, verb movement in non-V2 contexts is optionally allowed past certain adverbs other than negation in this dialect (cf. Bentzen 2005):

- (8) Vi leverte radioen til han Hårek ...
we delivered radio.the to he Hårek
 ... ettersom han {kunne} som oftest {kunne} reparere sånt.
as he {could} as often.est {could} fix such
 'We handed the radio over to Hårek as he could usually fix such things.'

3. CHILD DATA

3.1 Previous studies on the acquisition of verb placement in embedded clauses

- Clahsen and Smolka (1986): German-speaking children correctly place the verb clause-finally in embedded clauses already in the very first instances of such clauses.
- Gawlitzek-Maiwald et al. (1992): German-speaking children occasionally produce incorrect verb movement in embedded clauses (cf. similar findings for Swedish children, Håkansson and Collberg 1994, and for bilingual German-English children, Döpke 1998).
- Schönenberger (2001): Two Swiss German (Lucernese) girls overgeneralize verb movement to embedded clauses almost up to the age of 5.
- A suggested correlation between the acquisition of verbal inflection and verb movement:
 - Between finiteness and V-to-C movement (cf. Santelmann 1995 and Platzack 1996 for Swedish, Meisel and Müller 1992 and Clahsen et al. 1996 for German)
 - Between agreement and V-to-I movement (cf. Déprez and Pierce 1993 for French)
 - In Northern Norwegian there is no agreement morphology (person or number), and for many verbs, also no finiteness marking in the present tense, i.e. the infinitive and the present tense forms are identical.

3.2 Data from Young Norwegian Children

- Tromsø corpus: 70 one-hour recordings of 3 Norwegian children, age approx. 1;9-3.¹

✓ Few embedded declarative clauses with a finite verb and Neg/Adv:
 4 examples have the target-consistent word order **Neg/Adv-V**, (9).
 9 examples display the ungrammatical order **V-Neg/Adv**, (10).

- (9) bare når dem **ikke hold** på da dette dem xxx. (Ina, 3;3.18)
only when they not hold.PRES on then fall.PRES they xxx
 'Only when they are not holding on, then they fall.'
- (10) det er ho mamma som **har** **også** tegna. (Ina, 3;2.05)
it be.PRES DET mommie who have.PRES also draw.PART
 'It is mommie who has also been drawing.'
 Target form: Det er ho mamma som også har tegna.

¹ Apart from ten files that have been recorded and transcribed by one of the authors (Westergaard), the corpus has been collected by Merete Anderssen.

✓ Only one main clause non-V2 *wh*-question with negation; word order **V–Neg**, (11):

- (11) kem som **vil ikkje** være ilag med han? (Ina, 3;1.08)
who SOM will not be together with him
 ‘Who doesn’t want to be with him?’
 Target form: Kem som ikkje vil være i lag med han?

✓ 108 embedded *wh*-questions, all with target-consistent non-V2 word order, **Subject–V**:

- (12) se her ka **Ina gjør**. (Ina, 1;11.22)
look.IMP here what Ina do.PRES
- (13) Ann vet ikke kor **han er** henne. (Ann, 2;2.19)
Ann know.PRES not where he be.PRES LOC
 ‘Ann doesn’t know where he is.’
- (14) skal æ vise # korsen **man trøkke** på knappen? (Ole, 2;10.15)
shall I show...how one push.PRES on button.DEF
 ‘Do you want me to show (you) how you push the button?’

3.3 Investigations of Older Children

- Sporadic recordings and diary notes from two children, Iver (1;8.10 - 5;9.15) and Henning (2;4.4 - 8;0.17) (Bentzen 2003).
- Results from a pilot experimental study with the same two children at age 5;9.18 and 8;0.20.

✓ The word order **V–Neg/Adv** is attested in several non-V2 contexts:

- (15) æ like alt som **er ikke** sterkt og alt som er sterkt. (Henning 4;2.7)
I like everything that is not hot and everything that is hot
 ‘I like everything that isn’t hot, and everything that is hot.’
- (16) æ må ta på ullæsta for at æ **skal ikke** bli så kald. (Iver 4;11.29)
I must take on wool-socks for that I shall not get so cold.
 ‘I need to put on wool socks in order to not get too cold.’
- (17) kem som **var ikke** helt i form? (Henning 4;5.0)
who that was not completely in shape
 ‘Who wasn’t feeling too well?’

✓ In embedded *wh*-questions, the word order **V–Subject** is never attested:

- (18) vet du ka **det her er**, tante? (Henning 3;11.12)
know you what this here is auntie
 ‘Do you know what this is, auntie?’
- (19) æ vet korsn **dem lage** et hus sånn her. (Iver 4;7.10)
I know how they make a house like-that here
 ‘I know how to make a house in this way.’

- The pilot experimental study elicited embedded *wh*-questions with negation or an adverb. We read the children a story, and afterwards they were asked to question the hippo Hårek to see how much he remembered of it. They had to ask by saying ‘Do you remember...?’ The setup is illustrated in (20):

- (20) INV: *So, Karsten couldn't go to the kindergarten today, and that was because he was ill. Therefore he couldn't go to the kindergarten. We remember that that was why, but ask Hårek if he remembers why.*
 CHILD: *Do you remember why Karsten didn't go to the kindergarten today?*

• Results:

- ✓ The older child: **Neg/Adv-V** in all the 11 questions he produced, (21)-(23).
- ✓ The younger child: **V-Neg/Adv** in 7 out of the 8 questions he produced, (24)-(26).

- (21) huske du koffer han Karsten **ikke var** i barnehagen? (Henning 8;0.20)
remember you why he Karsten not was in kindergarten.DEF
 'Do you remember why Karsten wasn't in the kindergarten?'
 (22) huske du koffer ho **ikke ville** kjøpe den potta?
remember you why she not wanted buy that pot.DEF
 'Do you remember why she didn't want to buy that pot?'
 (23) huske du koffer en mann **ikke fikk** kjøpe Løveungen?
remember you why a man not got buy Lion-baby.DEF
 'Do you remember why a man didn't get to buy the Lion baby?'
 (24) huske du koffer han Karsten **var ikke** i barnehagen? (Iver 5;9.18)
remember you why he Karsten was not in kindergarten.DEF
 'Do you remember why Karsten wasn't in the kindergarten?'
 (25) huske du koffer dama **ville ikke** kjøpe en nattpote?
remember you why lady.DEF wanted not buy a night.pot
 'Do you remember why the lady didn't want to buy a chamber pot?'
 (26) huske du koffer Løveungen **var ikke** til salgs?
remember you why Lion-baby.DEF was not for sale
 'Do you remember why the Lion baby wasn't for sale?'

✓ No instances of **V-Subject** in these embedded *wh*-questions for either of the children.

- Children overgeneralize verb movement past negation from main clauses into embedded clauses (perhaps for as long as to the age of 6).
- Children do **not** overgeneralize verb movement past the subject from main *wh*-questions into embedded *wh*-questions.

4. INPUT

Samples of the adult material from the Tromsø corpus investigated in detail.

- Evidence for V2 in main clauses is very frequent (approx. 60-70%), see Table 1 (figures from Westergaard 2005); similar findings for Swedish are reported in Josefsson (2004).
- Evidence for non-V2 is very infrequent (0.5-1.3% for Neg/Adv-V in embedded declaratives and main non-V2 *wh*-questions; 1.04-2.5% for Subject-V in embedded *wh*-questions), see Tables 1 and 2:

✓ Embedded clauses with negation or an adverb (Neg/Adv-V), cf. (10), (15), and (16):

- (27) pass på at den **ikkje faller** over. (INV, file Ole.14)
watch on that it not fall.PRES over
 'Watch out so it doesn't fall over.'

✓ Main non-V2 *wh*-questions with negation or an adverb (Neg/Adv-V), cf. (11) and (17):

- (28) kem som **ikkje** får kjøre? (INV, file Ole.14)
who SOM not get.PRES drive
 ‘Who doesn’t get to drive?’

✓ Embedded *wh*-questions (Subject-V), cf. (12)-(14) and (18)-(19):

- (29) vet du ka slags farge **det er**? (INV, file Ole.14)
know you what kind color that is
 ‘Do you know what color that is?’

Table 1: Overview of the number of certain types of utterances in a sample of child-directed speech, INV in file Ole.14 (N=561, all complete sentences).

EVIDENCE for V2		EVIDENCE for non-V2		
Questions + non-subject-initial declaratives	Subject-initial declaratives w/Neg, Adv	Embedded clauses w/Neg, Adv	Non-V2 <i>wh</i> -questions w/Neg, Adv	Embedded (non-subject) <i>wh</i> -questions
337 (60.1%)	43 (7.7% of total, 35% of all subject-init. decl., N=123)	6 (1.1%)	1 (0.2%)	6 (1.1%)
TOTAL 67.8%		TOTAL 1.3%		TOTAL 1.1%

Table 2: Overview of utterances providing evidence for non-V2 word order in samples of child-directed speech, INV in files Ole.15-Ole.22 (N=6351, all utterances) and MOT in files Ann.01-21 (N=8860, all utterances).

	Embedded clauses w/Neg	Non-V2 <i>wh</i> -questions w/Neg	Total	Embedded (non-subject) <i>wh</i> -questions
INV	32 (0.5%)	0	32 (0.5%)	66 (1.04%)
MOT	39 (0.44%)	41 (0.46%)	80 (0.9%)	224 (2.5%)

✓ Little difference between the two types of evidence for non-V2 (Adv/Neg-V and Subject-V) with respect to frequency in the input.

5. THEORETICAL BACKGROUND

Split-CP clause structure (Rizzi 1997, Westergaard & Vangsnes 2005, Westergaard 2005).

- (30) $_{CP} [(Int^{\circ} Top^{\circ} \dots) \dots [(Wh^{\circ}) Fin^{\circ}]_{IP} [InTop^{\circ} T^{\circ}$

- The functional structure in the CP domain depends on clause type – a *wh*-question is an Int(errogative)P, a declarative a Top(ic)P, etc.
- V2 is the result of verb movement to different heads in the CP domain – triggered by the feature $[X^{\circ}_{EPP}]$. This accounts for various V2 grammars, e.g. English (which has verb movement to Int° , but not to Top°) vs. certain Norwegian dialects (e.g. Nordmøre, which has verb movement to Top° , but not to Int°).
- Embedded declaratives are bare $FinPs$, embedded questions are bare $WhPs$. These heads lack the $[X^{\circ}_{EPP}]$ feature – thus no verb movement in embedded contexts.

Structure building (Clahsen et al. 1996, Safir 1993, Westergaard 2005).

Children build clause structure based on

- UG (universal “pool” of categories)
- input cues

Structural economy

- children only build as much structure as there is evidence for in input
- children only move elements as far as there is evidence for in input

6. ANALYSIS

- Adult Norwegian: The verb in all main clauses moves to a head in the CP domain, e.g. Int° in *wh*-questions or Top° in non-subject-initial declaratives.
- Early child language: the verb moves to the appropriate head in questions and non-subject-initial declaratives, as there is clear and frequent evidence in the input that the verb moves across the subject (see Table 1).
- Cue for verb movement past Neg/Adv in subject-initial main clause declaratives relatively frequent (7.7% of global input, **35%** of the relevant constructions, see Table 1). No clear evidence that this involves movement to the CP domain.
- Children very early produce target-consistent word order (V–Neg/Adv) in subject-initial main clause declaratives, see (31).

(31) æ vet ikkje. (Ann, 1;9:18)
I know.PRES not
'I don't know.'

- Following structural economy, children initially pick the lowest head that ensures V–Neg word order, viz. the head InTop^o in the IP domain, see (32) (i.e. V-to-I movement).

(32) ..._{FinP} [_{InTopP} [**æ** **vet** _{TP} [ikkje **æ** ~~vet~~]]] (Child structure)
I know not

(33) $\text{TopP}[\text{æ vet} \dots]_{\text{FinP}}[\text{InTopP}[\text{æ vet} \text{TP}[\text{ikkje æ vet}]]]$ (Adult structure)
I know not

- This means that the children misinterpret the cue for verb movement in subject-initial main clause declaratives to be the cue for V-to-I movement, which could be formulated as (34):

(34) $_{IP}[\dots V \text{ Neg/Adv } \dots]$

- Verb movement to InTop° in child language should then also result in non-target-consistent V–Neg/Adv word order in other contexts where the verb does not move to the CP domain:
 - all embedded clauses, see e.g. (16')
 - non-V2 *wh*-questions, see e.g. (17')
 - and occasional non-target-consistent forms lacking V2, see (35):

(16') æ mǫ ta pǫ ullæsta for at æ **skal ikke** bli sǫ kald. (Iver 4;11.29)
I must take on wool-socks for that I shall not get so cold.
 'I need to put on wool socks in order to not get too cold.'

(17') kem som **var ikke** helt i form? (Henning 4;5.0)
who that was not completely in shape
 'Who wasn't feeling too well?'

- (35) <ogs+>[/] og så du **kan ikke** tegne mer sånn. (Ann 2;8.4)
and s+... and so you can not draw more such
 ‘And then you can’t draw more like that.’
 Target form: Og så kan du ikke tegne mer sånn.

- This means that children’s apparent choice of an uneconomic word order pattern in embedded clauses (involving verb movement) is caused by an economy principle operative in main clauses.
- The evidence that main clause verb movement targets a higher head than InTop° is the lack of verb movement across Neg/Adv in embedded clauses and non-V2 *wh*-questions.
- Low input frequencies of these constructions cause children to produce non-target-consistent verb movement to InTop° for a considerable time (at least until the age of 6?). Cp. with German: Evidence that there is no verb movement in embedded clauses much more frequent in the input ⇒ No overgeneralization of V2 in embedded contexts in child language.
- Embedded questions lack interrogative force – thus children will not project an IntP in these cases. Therefore no ‘transfer’ of the [X°_{EPP}] feature on Int°, and no overgeneralization of verb movement across the subject from main to embedded questions. This is knowledge provided by UG – lack of input is therefore irrelevant in this case.
- Additional factors for the non-target-consistent word order:
 - Inconsistent input (V-Neg/Adv word order occasionally occurs in embedded clauses, especially in Northern dialects, cf. Bentzen (this workshop)).
 - Complexity of the construction.

Question: Could the non-target-consistent word order in child language be a result of the inconsistent input in the dialect the children are exposed to?

Probably not – as children exposed to Northern dialects will have extra evidence for the lack of verb movement to the IP domain in the non-V2 *wh*-questions (see Table 2).

7. SUMMARY AND CONCLUSION

- ✚ No clear cue in Norwegian subject-initial declaratives that the verb moves to the CP domain.
- ✚ Due to an economy principle, Norwegian children move the verb to the lowest head that ensures the word order V–Neg/Adv, viz the head of the InTopP in the IP domain.
- ✚ Children thus overgeneralize this word order into embedded clauses and main non-V2 *wh*-questions.
- ✚ The non-target-consistent V–Neg/Adv word order persists in child speech for a considerable time due to:
 - low input frequencies of the clause types that express the cue.
 - inconsistent input.
 - complexity of the construction.
- ✚ The corresponding lack of input evidence for word order in embedded questions does not lead to a similar overgeneralization from main clause questions. The reason for this is that main and embedded questions do not have the same illocutionary force and thus do not share the same functional architecture in the CP domain.

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