

Subject Positions and Information Structure in the Acquisition of Word Order: Evidence for Economy in Child Language

Marit R. Westergaard

University of Tromsø - CASTL (Center for Advanced Study in Theoretical Linguistics)
marit.westergaard@hum.uit.no

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This paper reports on a study investigating three children acquiring Norwegian (age 1;9-3). It is shown that, although verb second (V2) word order is generally attested early in non-subject-initial declaratives and questions, the children produce certain non-target forms in these constructions with respect to the position of pronominal subjects in relation to negation. This is analyzed within a syntactic model that assumes the existence of two different subject positions, one for informationally given subjects and a lower one for subjects conveying new information. The data are accounted for in terms of a continuity approach which includes aspects of structural economy, where children are assumed to move elements only as high up in the clausal structure as there is evidence for in the input.

1. INTRODUCTION

✚ Evidence for weak continuity/structure building:

- (1) darf **nich Julia** haben. (Mathias, stage II) German: (X)-V-Neg-S
may not Julia have
'Julia may not have that.'
Target form: Das darf Julia nicht haben. (From Clahsen, Penke&Parodi 1993/94)

✚ Evidence for strong continuity/full clause hypothesis:

- (2) den tiegt **a nich** wieda. (Andreas, age 2;1) X-V-S-Neg
that.ACC gets he not again
'He won't get that back.'
Target form: Den kriegt er nicht wieder. (From Poeppel and Wexler 1993)
- (3) nå skal **ikke dem** sove. (Ole.09, age 2;3.15) Norwegian: X-V-Neg-S
now shall not they sleep
'Now they shouldn't sleep.'
- (4) og no kan **æ ikke** drikke det. (Ole.19, age 2;10.0) X-V-S-Neg
and now can I not drink it
'And now I can't drink it.'

2. THE WORD ORDER OF NORWEGIAN

❖ Standard Norwegian has V2 word order in all main clauses:

- (5) Jeg liker ikke jordbær /*Jeg ikke liker jordbær.
I like not strawberries.
'I don't like strawberries.'
- (6) Jeg vet [at han ikke liker jordbær].
I know that he not likes strawberries
'I know that he doesn't like strawberries.'

- (7) Jordbær liker jeg faktisk /*Jordbær jeg liker faktisk.
Strawberries like I actually
 ‘Strawberries I actually like.’
- (8) Liker du jordbær?
like you strawberries
 ‘Do you like strawberries?’
- (9) Hvilken bok likte du best?
which book liked you best
 ‘Which book did you like best?’
- ❖ Tromsø dialect: Optional V2 in questions with monosyllabic *wh*-constituents:
- (10) Ka legen sa?/ Ka sa legen?
what doctor.DEF say.PAST/ what say.PAST doctor.DEF
 ‘What did the doctor say?’
- (11) Kor du bor?/ Kor bor du?
where you live.PRES/ where live.PRES YOU
 ‘Where do you live?’
- (12) Kem den nye læreren er?/ Kem er den nye læreren?
who the new teacher.DEF be.PRES/ who be.PRES the new teacher.DEF
 ‘Who is the new teacher?’
- ❖ Westergaard (2003), investigation of word order in sample of adult speech:
- (13) a. Statistically significant patterns:
 V2: Subject: DP/dem. pronoun Verb: *be*
 Non-V2: Subject: personal pronoun Verb: all other verbs
 b. Generalization:
 V2 with informationally new subjects (often a full DP)
 Non-V2 with informationally given subjects (often a personal pronoun)
- (14) kor er mitt fly? (INV, file Ole.17)
where is my plane
 ‘Where is my plane?’
- (15) kor vi lande henne? (INV, file Ole.17)
where we land LOC
 ‘Where do we land?’
- ❖ Two subject positions in questions/non-subject-initial declaratives w/ negation:
- (16) Dette kan ikke Peter gjøre./ Dette kan Peter ikke gjøre.
this can not Peter do
- (17) Kan ikke Peter gjøre dette?/ Kan Peter ikke gjøre dette?
can not Peter do this
- ❖ Westergaard&Vangsnes (2005), informationally given subjects precede, informationally new subjects follow negation. Westergaard (2005), low subject position is SpecTP, high subject position is SpecIn(ner)Top(ic)P.
- (18) _{IP} [**InTopP** Given subjects [**TP** Sentence Adverbs/Negation [**TP** New subjects
- (19) *?Dette kan ikke du gjøre./Dette kan ikke DU gjøre.
this can not you do

3. THE CHILD DATA

Table 1: Overview of the Norwegian acquisition corpus, Tromsø dialect.¹

NAME OF CHILD	AGE	FILES	NO. OF CHILD UTTERANCES
Ina	1;8.20-3;3.18	Ina.01-27	20,071
Ann	1;8.20-3;0.1	Ann.01-21	13,129
Ole	1;9.10-2;11.23	Ole.01-22	13,485
Total			46,685

- ❖ Westergaard (2005), V2 attested early in all relevant construction, cp. (5), (7)-(9).
 - (20) æ vet ikkje. (Ann.02, age 1;9.18)
I know.PRES not
'I don't know.'
 - (21) der er stor stor Ole Brumm. (Ann.01, age 1;8.20)
there be.PRES big big Ole Brumm
'There is (a) big big Winnie the Pooh.'
 - (22) er det båt? (Ina.03, age 1;10.23)
be.PRES it boat
'Is that (a) boat?'
 - (23) kor e babyen? (Ina.06, 2;1.0)
where be.PRES baby.DEF
'Where is the baby?'

- ❖ Westergaard (2003, 2005), both V2 and non-V2 in *wh*-questions produced early, with same patterns as in adult sample, cp. (14)-(15).
 - (24) kor er Ann sin dukke hen? (Ann.04, age 1;11.0)
where is Ann POSS doll LOC
'Where is Ann's doll?'
 - (25) ka du skal finne? (Ina.5, age 2;0.5)
what you shall find
'What do you want to find?'

- ❖ Westergaard (2005), Westergaard&Bentzen (2005), some overgeneralization of V2 in embedded contexts, cp. (6):
 - (26) det er ho mamma som har også tegna. (Ina.26, age 3;2.05)
it be.PRES DET mommie who have.PRES also draw.PART
'It is mommie who has also drawn.'
 - (27) han sa han ville ikke spise <han> [?]. (Ann.17, age 2;8.4)
he say.PAST he would not eat him
'He said that he wouldn't eat him.'

- ❖ Non-subject-initial declaratives/questions with negation (213 examples in corpus):
 - ✓ Full DP subjects always follow negation (in early as well as late files):
 - (28) der snakke ikkje mannen. (Ina.09, age 2;2.12)
there speak.PRES not man.DEF

¹ Apart from 10 files that have been collected and transcribed by the author, the corpus has been collected by Merete Anderssen.

SUBJECT POSITIONS AND INFORMATION STRUCTURE

- (29) komte ikke reven med mæ # i senga mi? (Ina.18, age 2;8.12)
come.PAST not fox.DEF with me in bed.DEF mine
 ‘Didn’t the fox come with me in my bed?’
- (30) no har ikke Ann mat til han. (Ann.09, age 2;2.19)
now have.PRES not Ann food for him
- (31) der kom ikke pappaen heller. (Ann.14, age 2;6.0)
there come.PAST not daddy.DEF either
- (32) der står ikke alle folkan. (Ole.12, age 2;5.18)
there stand.PRES not all people.DEF/PL
- (33) korfor kommer ikke mummien sæ laus? (Ole.17, age 2;8.24)
why come.PRES not mummi.DEF REFL loose
 ‘Why is the Mummi troll stuck?’
- ✓ Pronominal subjects follow negation (early files) or precede (later files):
- (34) har ikkje han fota her? (Ina.13, age 2;5.25) (Neg-S)
have.PRES not he feet here
- (35) no kan ikke han sove mer. (Ann.10, age 2;3.9)
now can not he sleep more
- (36) det får ikke æ lov til. (Ole.12, 2;5.18)
that get.PRES not I allowed to
 ‘That I am not allowed to do.’
- (37) nei, nå må han ikke røre. (Ina.21, age 2;9.18) (S-Neg)
no now must he not touch
- (38) nei det kan dem ikke. (Ann.17, age 2;8.4))
no that can they not
 ‘No, that they can’t do.’
- (39) korfor ser æ ikke skoan? (Ole.17, 2;8.24)
why see.PRES I not shoe.DEF/PL
 ‘Why don’t I see the shoes?’

Table 2: The number of sentences with Neg-S_(pronoun) word order (left-hand columns) and S_(pronoun)-Neg order (right-hand columns) in non-subject-initial declaratives and questions containing negation, across five periods in the Norwegian child data.

PERIOD 1		PERIOD 2		PERIOD 3		PERIOD 4		PERIOD 5	
Ina, age 1;8.20-2;2.12		Ina, age 2;3.12-2;5.25		Ina, age 2;6.19-2;7.22		Ina, age 2;8.12-2;11.26		Ina, age 3;1.8-3;3.18	
0	0	7	4	7	4	10	36	5	21
Ann, age 1;8.20-2;2.19		Ann, age 2;3.9-2;6.0		Ann, age 2;6.21-2;7.14		Ann, age 2;8.4-3;0.1			
0	2	9	7	1	3	0	12		
Ole, age 1;9.10-2;2.12		Ole, age 2;3.15-2;6.2		Ole, age 2;6.21-2;7.20		Ole, age 2;8.5-2;11.23			
1	1	21	3	0	13	6	18		

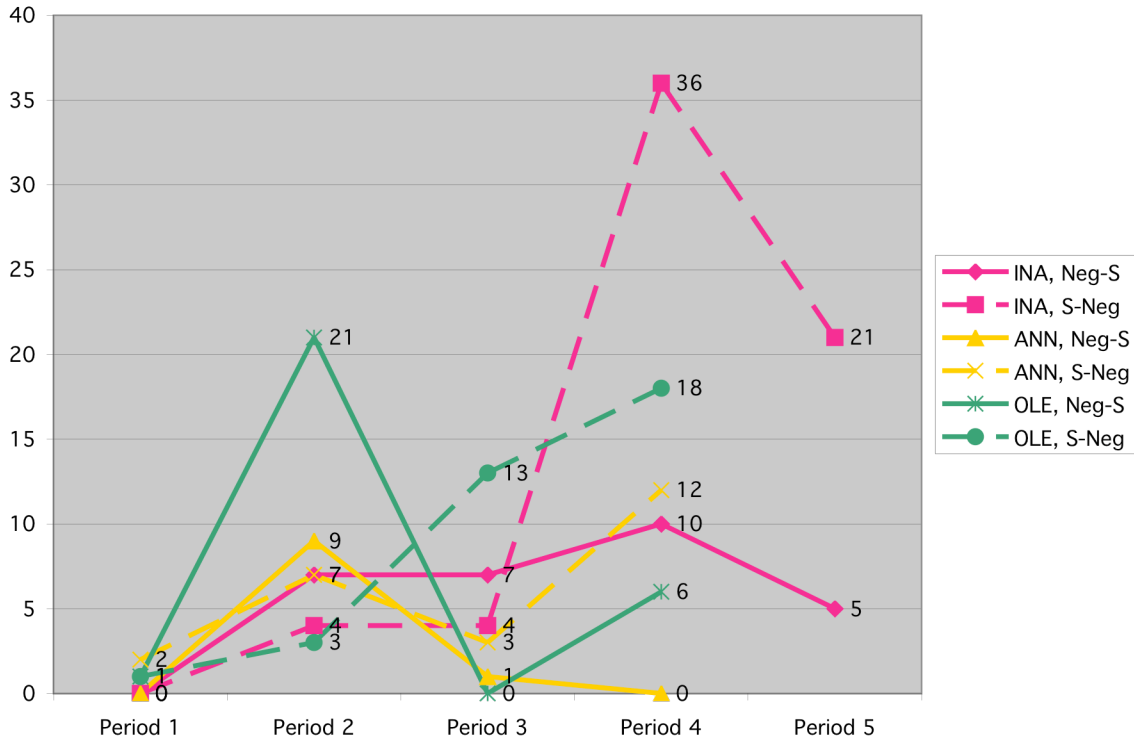


Figure 1: The development of Neg-S word order (solid lines) and S-Neg word order (broken lines) in non-subject-initial declaratives and questions containing negation in the files of the three Norwegian children, divided into five time periods.

4. AN ACCOUNT OF THE DATA: PRAGMATICS OR ECONOMY?

- ❖ Syntax is early, pragmatics is late? e.g. Hyams (1996), Chien&Wexler (1990), Avrutin&Wexler (1992), Batman-Ratyosyan&Stromswold (2002). Schaeffer (1995, 2000), “Concept of Non-shared Knowledge”.

Possible pragmatic analysis of the Norwegian child data: The lack of the concept of non-shared knowledge makes young children unable to distinguish between informationally given and new subjects.

- ❖ Economy-based account of the Norwegian child data?
 - (40) Children build clause structure based on
 - UG (universal ‘pool’ of categories+various rules/constraints)
 - input cues
 - (41) Structural economy
 - children only build as much structure as there is evidence for in the input
 - children only move elements as far as there is evidence for in the input

Example from Norwegian child data (Westergaard 2005, Westergaard&Bentzen 2005): Verb movement in early subject-initial declaratives, e.g. (20’), not to CP domain as in target grammar, but to InTop^o, lowest head ensuring that verbs precede negation, cf. (18’). This causes overgeneralization of V2 in embedded contexts, cf. (26’).

(20’) æ vet ikkje. (Ann.02, age 1;9.18)
I know.PRES not

(18') _{IP} [**InTopP** Given subjects [**TP** Sentence Adverbs/Negation [**TP** New subjects

(26') det er ho mamma som har også tegna. (Ina.26, age 3;2.05)

it be.PRES DET mommie who have.PRES also draw.PART

'It is mommie who has also drawn.'

✚ No mixture of pronouns and full DPs in the two positions. DPs always in target-consistent (low) position, only informationally given subjects undergo movement.

✚ Lack of concept of non-shared knowledge should cause children to erroneously treat new subjects as given, cf. Gordishevsky&Avrutin (2004). Opposite situation in the Norwegian data, i.e. given information treated as if it were new (occurring in position normally reserved for new information).

✚ The children found to distinguish between informationally given and new subjects in the two types of *wh*-questions allowed in their dialect of Norwegian at an early age, with the same preference patterns for subject and verb types as adults, cf. (24')-(25').

(24') kor er Ann sin dukke hen? (Ann.04, age 1;11.0)

where is Ann POSS doll LOC

'Where is Ann's doll?'

(25') ka du skal finne? (Ina.05, age 2;0.5)

what you shall find

'What do you want to find?'

✚ Other recent studies also conclude that information structure is in place early, e.g. De Cat (2003), Gordishevsky&Avrutin (2004).

✚ Similar delay in subject movement attested in Swiss German (Schönenberger 2002): Overgeneralization of V2 in embedded contexts until age five; at early stage (age 3;10-4;03) all subjects appear below the verb; around age 4;04 pronominal subjects appear in a higher position. Children discover principle of non-shared knowledge around 4;04? Why should such a general principle be acquired later by Swiss German children? Alternative account: Syntactic complexity + frequency (Swiss German data attested in embedded clauses; more complex and less frequent than main clauses).

✚ Relatively scarce input data: Questions/non-subject-initial declaratives w/negation attested 8% (42) in sample of adult speech from corpus. Inconsistent input: 66.7% (28) subjects precede Neg (all pronominal), 33.3% (14) follow (7 DPs, 7 pronouns).

(42) har han ikkje et dyr? (INV, file Ole.14)

has he not an animal

'Doesn't he have an animal?'

(43) har ikkje han Postman Pat en katterpus? (INV, file Ole.14)

has not DET Postman Pat a kitty

'Doesn't Postman Pat have a kitty?'

✚ Complexity of construction: 1) Verb movement to CP domain, 2) movement of non-subject or *wh*-phrase to initial position, 3) movement of informationally given subjects to SpecInTop.

- ✚ Non-saliency of landing site, cp. subject-initial declaratives (where subject movement is attested extremely early, irrespective of verb movement, cf. (44)).

- (44) æ ikke låne. (Ole.03, age 1;10.22)
I not borrow.INF
 ‘I (will) not borrow (it).’

5. CONCLUSION

In the study of the acquisition of word order in Norwegian child language, a certain delay was attested in the children’s movement of informationally given subjects to a position preceding negation in non-subject-initial declaratives and questions. A pragmatic account of this delay in terms of a lack of the principle of non-shared knowledge was considered, but argued not to be relevant in this case, mainly because the children are found to distinguish between informationally given and new subjects very early in *wh*-questions. Instead, I argued for a continuity model of language acquisition which includes structural economy, where children are assumed to move elements only as high up in the clause structure as there is evidence for in the input. Within this approach, the delay in subject movement in non-subject-initial declaratives and questions was argued to be due to a general economy principle, relatively infrequent (and inconsistent) input, the non-saliency of the landing site, as well as the complexity of the constructions where the cue for this type of movement is manifested.

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