Triggering V2: The Amount of Input Needed for Parameter Setting in a Split-CP Model of Word Order

Marit R. Westergaard
University of Tromsø – CASTL

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1. INTRODUCTION

In this paper I argue that children generally need relatively little input evidence to set word order parameters. Within a type of Split-CP model of clause structure, I suggest that children make no global search of the primary linguistic data, but scan the input for designated word order cues, focusing exclusively on the relevant clause type. I investigate child data from a dialect of Norwegian (Tromsø), where there is verb movement and verb second (V2) word order in some clause types, but not in others. The findings show that parameters are set early and that there seems to be no overgeneralization of word order from one construction to another. This is argued to be due to different clause types having different heads in the CP domain.

2. THE WORD ORDER OF NORWEGIAN

- Standard Norwegian: V2 in main clauses (standardly assumed to be caused by verb movement to C, e.g. Vikner 1995).

(1) Vi **drikker ikke** fransk vin/*vi ikke drikker fransk vin. (V-Neg)
we drink not French wine
'We don't drink French wine.'

(2) Italiensk vin **drikker vi** ofte/*italiensk vin vi ofte drikker. (V-S)
Italian wine drink we often
'Italian wine we often drink.'

(3) **Drikker han** mye vin? (V-S)
drinks he much wine
'Does he drink much wine?'

(4) Hvilken vin **likte du** best? (V-S)
which wine liked you best
'Which wine did you like best?'

- Many Norwegian dialects: No strict V2 requirement in *wh*-questions (e.g. Vangsnes 2004).
- Tromsø dialect: Strict V2 in questions with 'long' *wh*-constituents, (5)-(6). Questions with monosyllabic *wh*-elements have V2 with informationally new subjects (8), non-V2 with given subjects (9), see Westergaard (2003).

(5) Ka slags vin **drakk du**?/*Ka slags vin du drakk? (V-S)
which wine drank you/
'Which wine did you drink?'

(6) Korfor **gikk ho**?/*Korfor ho gikk? (V-S)
why go.PAST she /why she go.PAST
'Why did she go?'

(7) kor **er mitt fly**? (INV, file Ole.17) (V-S)
where is my plane
'Where is my plane?'

(8) kor **vi lande** henne? (INV, file Ole.17) (S-V)
where we land LOC
'Where should we land?'

- Non-V2 also in exclamatives, and embedded contexts: Neg/Adv precede verbs in embedded declaratives, subjects precede verbs in embedded questions.

(9) Kor stor **du er** blitt!/*Kor stor er du blitt! (S-V)
how big you are become
'How big you have become!'

(10) Det finnes studenter [som **aldri drikker** vin/*som drikker aldri vin].[1] (Adv-V)
it exist students who never drink wine
'There are students who never drink wine.'

(11) Jeg lurer på [hva **han drikker**]/[*hva drikker han]. (S-V)
I wonder on what he drinks
'I wonder what he drinks.'

Table 1: Overview of clause types with V2 and non-V2 in Norwegian (Tromsø dialect).

V2	**Non-V2**
Subject-initial declaratives (with adverbs/negation)	Embedded declaratives
Topic-initial declaratives	Embedded questions
Yes/no-questions	Exclamatives
Certain matrix *wh*-questions	Certain matrix *wh*-questions

- Cue for V2 syntax in a model with an an unsplit CP:

(12) $_{CP}$[XP $_{C}$V...] (from Lightfoot, forthcoming, p. 103)

3. INPUT FREQUENCIES

Table 2: Overview of clause types with V2 and non-V2 word order in an adult sample of child-directed speech, the investigator in the file Ole.14 (age of child 2;6.21), with percentages calculated relative to the total number of complete sentences (N=561).[2]

V2		**Non-V2**	
Subject-initial declaratives (with adverbs/negation)	*21.9% (123)* 7.7% (43)	Embedded declaratives (with adverbs/negation)	*14.1% (79)* 1.1% (6)
Topic-initial declaratives	23.4% (131)	Embedded questions	2.0% (11)
Yes/no-questions	33.9% (190)	Exclamatives	1.2% (7)
Certain *wh*-questions	2.9% (16)	Certain *wh*-questions	5.0% (28)
Total evidence for V2	**67.9% (380)**	**Total evidence for non-V2**	**9.3% (52)**

[1] V2 word order is possible, but not preferred, in certain embedded clauses in Norwegian, notably in complements to so-called bridge verbs (see Vikner 1995 and Bentzen 2003).
[2] The figures in Table 2 do not add up to 100%, as there were a number of minor constructions that have been disregarded here, e.g. 23 examples of imperatives (4.1%).

- Further evidence for non-V2 (0.2%): Main clause non-V2 *wh*-question with negation:

(13) kem som **ikkje får** kjøre? (INV, file Ole.14) (Neg-V)
who that not gets drive
'Who doesn't get to drive?'

- Similar findings in larger samples of input data:
  - Josefsson (2004), 14,033 adult utterances (Swedish): High frequency of V2; *yes/no*-questions 22-28%, non-subject-initial declaratives 12-27%.[3]
  - Westergaard&Bentzen (2005), 15,211 adult utterances (Norwegian): Low frequency of non-V2; embedded clauses w/negation 0.47%, main clause non-V2 *wh*-questions w/negation 0.27%, embedded questions 1.9%.

- Overgeneralization from V2 to non-V2 to be expected?

4. THE CHILD DATA

Table 3: Overview of the Norwegian acquisition corpus, Tromsø dialect.[4]

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

- V2 attested early, in *yes/no*-questions (14), non-subject-initial declaratives (15), and subject-initial declaratives with negation (16).

(14) **ser** **du** nokka? (Ann.07, age 2;1.7) (V-S)
see.PRES you something
'Do you see anything?'

(15) så **tegne** **æ** mamma. (Ina.02, age 1;10.4) (V-S)
then draw.INF/PRES I mommie
'Then I draw mommie.'

(16) ho mamma **er** **ikke** på jobb. (Ole.02, age 1;10.0) (V-Neg)
DET mom be.PRES not at work
'Mom is not at work.'

- Children also produce target-consistent V2 and non-V2 in *wh*-questions early, cp. (7) and (8) from the adult data (Westergaard 2003, 2005).

[3] More specifically, Josefsson (2004) has investigated the structure FV-SU-(OBJ) (finite verb followed by a subject and possibly an object), which is occasionally used to express other functions than *yes/no*-questions, and the structure XP-FV-SU-(OBJ). In the former case, the percentage seems to be calculated on the basis of the total number of utterances in the file, which may account for the somewhat lower percentage than for *yes/no*-questions in the Norwegian input sample, where the total used for calculation is the number of complete sentences.

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

(17) kor **e** **babyen**? (Ina.06, 2;1.0) (V-S)
where be.PRES baby.DEF
'Where is the baby?'

(18) ka **du skal** finne? (Ina.05, age 2:0.5) (S-V)
what you shall find
'What do you want to find?' (cp. examples (7)-(8))

- Target-consistent non-V2 in embedded questions (no verb movement across subjects):

(19) se her ka **Ina gjør**. (Ina.04, 1;11.22) (S-V)
look here what Ina does

(20) Ann vet ikke kor **han er** henne. (Ann.09, 2;2.19) (S-V)
Ann know not where he is LOC
'Ann doesn't know where he is.'

(21) skal æ vise # korsen **man trøkke** på knappen? (Ole.20, 2;10.15) (S-V)
shall I show ... how one pushes on button.the
'Do you want me to show (you) how you push the button?'

- Target-consistent non-V2 in exclamatives:

(22) så fint **det var**. (Ina.23, age 2;10.22) (S-V)
so nice it be.PAST
'How nice it is!'

(23) kor store mage **han har**. (Ina.27, age 3;3.18) (S-V)
where/how big stomach he have.PRES
'What a big stomach he has!'

- BUT: Overgeneralization of V-Neg word order in (all) embedded clauses **and** non-V2 main clause *wh*-questions:

(24) det er ho mamma som **har** **også** tegna. (Ina.26, age 3;2.05) (V-Adv)
it be.PRES DET mommie who have.PRES also draw.PART
'It is mommie who has also drawn.'

(25) han sa han **ville** **ikke** spise <han> [?]. (Ann.17, age 2;8.4) (V-Neg)
he say.PAST he would not eat him
'He said that he wouldn't eat him.'

(26) kem som **vil** **ikkje** være ilag med han? (Ina.25, 3;1.8) (V-Neg)
who that will not be together with him
'Who doesn't want to be with him?' (cp. example (13))

- Similar examples attested in the production of somewhat older children acquiring the Tromsø dialect (Bentzen 2003 and Westergaard&Bentzen 2005):

(27) æ vet at æ **har** **ikke** gjort det. (Henning 4;8.13)
I know that I have not done it
'I know that I haven't done it.'

(28) du må få dæ en biffkniv som **er** **ikke** sånn. (Iver 5;8.16)
you must get you a steak.knife that is not like-that
'You need to get a steak knife that isn't like that.'

(29) 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.'

(30) når han Iver **er ikke** her så kan æ ta med den store skjeia. (Henning 4;6.27)
when he Iver is not here then can I take with the big spoon
'When Iver isn't here, I can use the big spoon.'

(31) kem som **var ikke** helt i form? (Henning 4;5.0)
who that was not completely in shape
'Who wasn't feeling too well?' (from Westergaard&Bentzen 2005)

- Findings confirmed by small experiment eliciting embedded *wh*-questions with negation: V-Neg word order produced up to the age of (at least) six, no V-S attested (Westergaard&Bentzen 2005).

(32) huske du koffer han Karsten **var ikke** i barnehagen? (Iver 5;9.18)
remember you why he Karsten was not in kindergarten.the
'Do you remember why Karsten wasn't in the kindergarten?'

(33) huske du koffer han Karsten **ikke var** i barnehagen? (Henning, 8;0.20)
remember you why he Karsten not was in kindergarten.the
'Do you remember why Karsten wasn't in the kindergarten?

5. SYNTACTIC ANALYSIS

- Split-CP model of clause structure, originally developed in Westergaard&Vangsnes (2005), slightly revised in Westergaard (2005).

(34) $_{CP}$[(Int° Pol° Top°) Foc° (Wh°) Fin° $_{IP}$[InTop° T°

Table 4: Overview of syntactic heads in the CP domain and corresponding clause types.

SYNTACTIC HEAD	CLAUSE TYPE
Int°	*Wh*-questions
Pol°	*Yes/no*-questions
Top°	Declaratives (Norwegian) (English: only topic-initial declaratives)
Fin°	Embedded declaratives (Norwegian) (English: subject-initial main clause declaratives)
Wh°	Embedded questions, Exclamatives

- V2 word order is the result of an EPP *head* feature ([X°$_{EPP}$]) on syntactic heads in the CP domain, which attracts the verb.

Table 5: The requirements for filled C° heads in three different V2 grammars.

Head feature	Standard Norwegian	Nordmøre dialect	English
[Int°$_{EPP}$]	+	-	+
[Top°$_{EPP}$]	+	+	-
[Pol°$_{EPP}$]	+	+	+
[Wh°$_{EPP}$]	-	-	-
[Fin°$_{EPP}$]	-	-	-

- Tromsø dialect is like Standard Norwegian + the two word orders in *wh*-questions due to the FocP, which attracts elements with low information value (given subject or informationally light verb, often *be*). Target-consistent production because of early sensitivity to information structure (Westergaard 2003, 2005).

- Functional architecture provided by UG; children have to learn from input which CP heads have the [X°$_{EPP}$] feature. In this process, they rely on input cues.[5]

(12') $_{CP}$[XP $_{C}$V...] (from Lightfoot, forthcoming, p. 103)

- Within the present split-CP approach, there must be several cues expressing V2 syntax, depending on clause type.

Table 6: Overview of cues expressing V2 syntax in a split-CP model.

CUE	PRESENCE IN THE INPUT
$_{IntP}$[(*wh*) $_{Int°}$V...]	+ (English, Standard Norwegian) - (Nordmøre dialect)
$_{TopP}$[XP $_{Top°}$V...]	+ (Norwegian, German etc.) - (English, Italian etc.)
$_{PolP}$[$_{Pol°}$V...]	+ (Norwegian, German, English, some Northern Italian dialects) - (Standard Italian, Venetian dialect)
$_{FinP}$[(XP) $_{Fin°}$V...]	+ ? - (Norwegian, German, English)
$_{WhP}$[(XP) $_{Wh°}$V...]	+ (Belfast English embedded questions?, Danish exclamatives?) [6] - (Norwegian, English)

- No global cue for V2 syntax, but separate cues for each clause type. Scanning the PLD for cues is a selective process where only a particular clause type is relevant. No transfer of feature values predicted from one clause type to another.

- How then account for overgeneralization of V2 (V-Neg/Adv) in embedded contexts? Westergaard (2005), Westergaard&Bentzen (2005): Due to an economy principle of structure building, the child grammar misinterprets V-Neg word order in subject-initial main clause declaratives, e.g. (16), to be the cue for verb movement to a head in the IP, to the In(ner)Top(ic)° (i.e. V-to-I movement, see (35)).

(16') ho mamma **er** **ikke** på jobb. (Ole.02, age 1;10.0) (V-Neg)
DET mom be.PRES not at work
'Mom is not at work.'

(35) $_{IP}$[... V Neg/Adv ...] (V-to-I movement)

[5] This is in contrast with what is argued in some recent work, e.g. the variational model of grammar competition in Yang (2002), where children are assumed to pay attention to statistical frequencies in the input and keep several grammar types in the hypothesis space for an extended period of time. According to Yang's model, V2 falls into place relatively late, around age 3;0-3;3.

[6] Note that if this is the case, it suggests that there must be two separate functional heads involved in exclamatives and embedded questions, as Danish does not have embedded V2 in *wh*-questions and Belfast English presumably does not have V2 in exclamatives.

- Missetting this parameter causes V-Neg/Adv word order in all non-V2 contexts i.e. embedded clauses, e.g. (27), and main clause non-V2 *wh*-questions, e.g. (31).

(27') æ vet at æ **har ikke** gjort det. (Henning 4;8.13) (V-Neg)
I know that I have not done it
'I know that I haven't done it.'

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

- In all other constructions, which require V2, the verb moves to the CP domain, which makes verb movement to the IP invisible. Westergaard&Bentzen (2005): Resetting the parameter in (35) is delayed because embedded clauses with negation are relatively infrequent in the input.

- Crucial for the purpose of this paper: Word order overgeneralization only appears in the IP domain, where all clause types have identical projections. Transferring a feature value from one clause type to another, in this case from subject-initial declarative main clauses to main clause *wh*-questions and all embedded contexts, is in fact expected. This is in contrast to the CP domain, where all clause types have different heads. Consequently, no word order transfer is expected in this domain, and is also not attested in the Norwegian child data.

- Selective cue-searching means that the cues for word order are much more robustly expressed than the percentages in Table 2 suggest. For most functional heads, the cue is attested in 100% of relevant utterances.

6. CONCLUSION

How much triggering experience is needed to set word order parameters? The answer to that question is presumably 'very little', as even clause types that are infrequent in typical child-directed speech are acquired with target-consistent word order from early on. The Split-CP model accounts for early acquisition of word order in languages where different clause types have different word orders, such as the Tromsø dialect (or English). If children are assumed to focus exclusively on the relevant clause type when searching the input for syntactic cues, this also explains why there seems to be no word order transfer from one clause type to another. However, word order overgeneralizations are attested in the IP domain, which is shared by all clause types.

Postscript:

In Westergaard (in press) I discuss the loss of V2 in declaratives in Old and Middle English, and in Westergaard (forthcoming) I investigate the optional word order of wh*-questions in two Norwegian dialects and argue for a diachronic development towards loss of V2. In both situations, only one of the CP heads is affected by the change (Top° in English, Int° in Norwegian), providing some further support for the Split-CP approach.*

References:

Benincà, Paola and Cecilia Poletto. 2004. 'Topic, Focus and V2: defining the CP sublayers.' In Luigi Rizzi (ed.), *The Structure of CP and IP: The Cartography of Syntactic Structures* 2, pp. 52-75. Oxford/New York: Oxford University Press.

Bentzen, Kristine. 2003. 'V-to-I Movement in the Absence of Morphological Cues: Evidence from Northern Norwegian.' *Nordlyd: Proceedings from the 19th Scandinavian Conference of Linguistics* 31.3, pp. 573-588, University of Tromsø.

Josefsson, Gunlög. 2004. 'Input and Output: Sentence patterns in Child and Adult Swedish.' In G: Josefsson, C. Platzack and G. Håkansson (eds.) *The Acquisition of Swedish Grammar* [LALD 33], pp. 95-133. Amsterdam/Philadelphia: John Benjamins.

Lightfoot, David. 1999. *The Development of Language: Acquisition, Change and Evolution.* Malden, MA and Oxford: Blackwell.

Lightfoot, David. Forthcoming. *How New Languages Emerge.* Cambridge University Press.

Platzack, Christer. 1996. 'The initial hypothesis of syntax: a minimalist perspective on language acquisition and attrition.' In H. Clahsen (ed.), *Generative Perspectives on Language Acquisition: Empirical Findings, Theoretical Considerations, Crosslinguistic Comparisons* [LALD 14], pp. 369-414. Amsterdam: John Benjamins.

Poeppel, David and Ken Wexler. 1993. 'The Full Competence Hypothesis of Clause Structure in Early German.' *Language* 69, pp. 1-33.

Poletto, Cecilia. 2000, *The Higher Functional Field: Evidence from Northern Italian Dialects.* New York/Oxford: Oxford University Press.

Polo, Chiara. 2005. 'Syntactic aspects of interrogative clauses in some Veneto dialects.' Paper presented at the Scandinavian Dialect Syntax Meeting, Leikanger, Norway, August 24-28.

Rizzi, Luigi. 1997. 'The fine structure of the left periphery.' In Liliane Haegeman (ed.) *Elements of Grammar: Handbook of Generative Syntax*, pp. 281-337. Dordrecht: Kluwer.

Rizzi, Luigi. 2001. 'On the position "Int(errogative)" in the left periphery of the clause.' In Guglielmo Cinque and Giampolo Salvi (eds.), *Current Studies in Italian Syntax*, pp. 287-296. Amsterdam: Elsevier.

Vangsnes, Øystein A. 2004. 'On *wh*-questions and V2 across Norwegian dialects: a survey and some speculations.' *Working Papers in Scandinavian Syntax* 73, pp. 1-59.

Vikner, Sten. 1995. *Verb Movement and Expletive Subjects in the Germanic Languages*. New York: Oxford University Press.

Westergaard, Marit R. 2003. 'Word Order in *wh*-questions in a North Norwegian Dialect: Some Evidence from an Acquisition Study.' *Nordic Journal of Linguistics* 26.1, pp. 81-109.

Westergaard, Marit R. 2005. *The Development of Word Order in Norwegian Child Language: The Interaction of Input and Economy Principles in the Acquisition of V2*. Dr. philos. dissertation, University of Tromsø.

Westergaard, Marit R. In press. 'Norwegian child language and the history of English: the interaction of syntax and information structure in the development of word order.' In Kevin McCafferty, Tove Bull and Kristin Killie (eds.), *Contexts - Historical, Social, Linguistic. Studies in Celebration of Toril Swan,* pp. 293-410. Bern: Peter Lang.

Westergaard, Marit R. Forthcoming. 'Optional word order in *wh*-questions in two Norwegian dialects: a diachronic analysis of synchronic variation.' *Nordic Journal of Linguistics* 28.2.

Westergaard, Marit R. and Kristine Bentzen. 2005. 'The (non-) effect of input frequency on the acquisition of word order in Norwegian embedded clauses.' Paper presented at DGfS, Köln, February 23-25. Submitted to the SOLA series.

Westergaard, Marit and Øystein A. Vangsnes. 2005. '*Wh*-questions, V2, and the left periphery of three Norwegian dialects.' *Journal of Comparative Germanic Linguistics* 8, pp. 117-158.

Yang, Charles D. 2002. *Knowledge and Learning in Natural Language*. Oxford/New York: Oxford University Press.