

The Acquisition of Linguistic Variation: Parameters vs. Micro-cues

Marit Westergaard
CASTL, University of Tromsø

Against the backdrop of some traditional generative work on parameters as well as some recent constructivist work, this paper discusses how children handle variation that they are exposed to in the input. Investigating different types of word order variation, the paper finds no evidence for parameters in language acquisition data and instead argues for a model of micro-cues, according to which children are sensitive to fine distinctions in syntax and information structure from early on. Furthermore, the generalizations that are made in the acquisition process are argued to apply only to the relevant class or subcategory. This accounts for the lack of (over-)generalization in child data, often referred to as conservative learning.

1. Introduction/Background

1.1 Traditional generative work

Common assumption that, to be learnable, grammars must consist of (major) parameters, which account for ease and speed of language acquisition.

Pinker (1994):

All [children] have to learn is whether their particular language has the parameter value head-first, as in English, or head-last, as in Japanese. They can do that merely by noticing whether a verb comes before or after its object ... *Huge chunks of grammar are then available to the child, all at once*, as if the child were merely flipping a switch to one of two possible positions. [emphasis MW]

Valian (1990: 105):

Parameter-setting theories of language acquisition are attractive because they directly address a deep and basic puzzle of acquisition: children learn language rapidly - any language - yet languages seem to vary enormously ... As a theory of language, *parameter-setting regularizes and systematizes the variety of languages*. [emphasis MW]

Children's mistakes often considered to be parameter mis-setting, e.g. Hyams (1986): All children start out with pro-drop grammar - accounts for null subjects in early child language in non-null-subject languages, e.g. English (examples from CHILDES, MacWhinney 2000, Brown corpus, Brown 1973), or Norwegian (examples from Tromsø corpus, Anderssen 2006):

- (1) a. want some grape juice. (Eve.03, age 1;7)
b. draw lady. (Eve.06, age 1;9)
- (2) tegne ikke (s)tolen. (Ann.03, age 1;10.2)
draw.PRES not chair.DEF
'(I'm) not drawing the chair.'

Valian (1990, 1991): Children acquiring English quantitatively&qualitatively different from e.g. Italian children wrt proportion of null subjects: American children (average age 2;0)

produce 69% subjects - Italian children 30%. They also produce many more pronominal subjects. Rapid increase in the production of subjects - average age 2;5, approx. 90%.

1. Null subject parameter initially set for +/No initial setting: English/German/Norwegian children would have positive evidence for both values; would never (re-)set parameter.

2. Null subject parameter set for -: If children start out with English-type grammar, Italian-like input will be interpreted as ungrammatical (or a bare VP), not change the grammar. If it did, English children would be expected to change their grammar when hearing subjectless sentences (occasionally found in input). Furthermore, this goes against child language data.

Indirect negative evidence useful – i.e. parameter set for [+pro-drop], then the child expects to hear null subjects and doesn't? (Lasnik 1983) BUT:

Valian (1990: 114): “Indirect negative evidence is an example of the kind of reasoning that parameter-setting was intended to eliminate as a feature of language acquisition. Pure parameter-setting as a model of acquisition cannot legitimately incorporate a notion like indirect negative evidence, because it requires the child to evaluate and weigh evidence. The reasoning of indirect negative evidence is the reasoning of hypothesis-testing and theory construction, not the automatic triggering of parameter-setting.”

3. Both values available simultaneously: OK - but then we must “beef up” the learning mechanism – i.e. children must be able to detect minor distinctions in the input (distribution: restriction to initial position (in English), difference main/embedded clauses, etc.). “A wealth of data suggest that children are adept at distributional analysis.” (Valian 1990: 118)

So, early generative work recognized the need to modify the idea of parameter setting as an automatic process. Did not lead to a rejection of parameters. Instead:

Wexler (1999): Very Early Parameter Setting (VEPS): Parameters set even before children start producing relevant utterances. Various constraints that have to mature in children's grammars are responsible for non-target-consistent production (e.g. Unique Checking Constraint).

But on closer inspection, matters are much more complex, e.g. V2 (Westergaard 2008, 2009a, b) or pro-drop):

Gordishevsky & Avrutin (2004), Zdorenko (2005): Null subjects in Russian related to information structure (IS), overt subjects do not carry additional emphasis or stress (as in Italian/Spanish): Children acquiring Russian have no trouble figuring out under what conditions null subjects are to be used, i.e. IS also part of early linguistic knowledge. Some overuse of empty elements in child data.

	Adultlike null subjects	Non-adultlike null subjects	Total
Stage 1 (age 1;9-2;0)	23% (185/801)	36% (285/801)	59%
Stage 2 (age 2;0-2;6)	17% (184/1090)	6% (66/1090)	23%

Some delay in the production of overt subjects (due to the lack of the <i>Concept of Non-shared Knowledge?</i> , Shaeffer 2000), but children very early zoom in on the target grammar (English, Italian, Russian).

Smith & Law (2009): Three-way distinction among *Universal Principles, Parameters, and Accidents*. Parametric choices must satisfy seven criteria (cognitively represented, systematic, dependent on the input, deterministic, discrete, mutually exclusive, irreversible). A lot of variation previously argued to be due to a parameter is really due to accidents. Examples of 'real' parameters are pro-drop, word order, etc.

1.2 Constructivist work

Classic study - Akthar (1999): English-speaking children do not have a general understanding of SVO; instead rely on verb-specific formulas, e.g. [NPpusher-form of the verb PUSH-NPpushee]. Learning is data-driven, a gradual process verb-by-verb, involving generalization from a high number of examples.

Experiment with children in three age groups (2-/3-/4-year-olds), using novel verbs:

- (3) SVO, e.g. *Elmo dacking the car*
- SOV e.g. *Elmo the car gopping*
- VSO e.g. *Tamming Elmo the car*

Parameter-setting models: Children will not use SOV/VSO orders because they have already set the head direction parameter.

Constructivist model: Children are conservative early in development because they acquire word order on a verb-by-verb basis.

Results: Younger age groups equally likely to use non-English orders spontaneously as to correct them to SVO, whereas the oldest children consistently corrected to SVO.

Control condition (familiar verbs): Also the youngest children corrected to SVO – i.e. did not accept non-English word order with verbs for which they had already constructed a schema.

Increasing number of studies of this kind in the constructivist literature.

2. Variation in the input

Traditional approach: Cross-linguistic variation. Tromsø approach: Variation that children are exposed to in the primary linguistic data (e.g. VIA project).

2.1 Variation in parameters

A. Variable VO/OV

Old/Middle English (Pintzuk 1991, 2005, Roberts 1997), Old Icelandic (Hróarsdóttir 2004), present-day Russian (Dyakonova 2003): Word order dependent on fine syntactic distinctions (e.g. whether object is negated or quantified) as well as specificity or information structure.

- (4) We ne magan eow neadian (OE)
we NEG can you constrain
'We cannot constrain you. . .' (from Pintzuk, 2005: 129)
- (5) Se wolde gelytlian þone lyfigendan hælend
he would diminish the living saviour
'He would diminish the living saviour . . .' (from Pintzuk 2005: 117)

- (6) að hann hafi **hana drepið** (Old Icelandic)
that he had her killed
 'that he had killed her'
- (7) hvört hann vilji ei **kaupa þræla**
whether he wanted not buy slaves
 'whether he didn't want to buy slaves' (from Hróarsdóttir 2004: 144-5)
- (8) Ivan **potseloval tsarevnu.** (Russian)
Ivan kissed princess.ACC
 'Ivan kissed the princess.'
- (9) Ivan **tsarevnu potseloval.**
Ivan princess.ACC kissed
 'It was the princess that Ivan kissed.' (from Dyakonova, 2003: 11)

What do children do?

Russian: Both OV and VO produced in appropriate contexts from early on (no overuse of basic word order):

- (10) a. Ja **moju rech zapisyvaju.** (Varvara 1;10)
I.NOM my speech.ACC record
 'I am recording my speech.'
- b. Hochu **vot eto pochitat.**
want.1sg this one.acc read
 'I want to read this one.'
- (11) Kubik **est kosti.** (Varvara 2;0)
Kubik eats bones.ACC
 'Kubik eats bones.' (from Dyakonova 2003: 60)

Also: Distinction DP/pronominal objects (the latter almost exclusively in preverbal position, cf. (10b)). Slight delay in OV with pronominal objects (due to economy?) and certain overuse of OV with DP objects (the latter explained in terms of lack of *Concept of Non-shared Knowledge* (Schaeffer 2000).

B. Variable V2

Word order dependent on clause type, verb type, initial element & information structure.

E.g. V2 in subject-initial declaratives, non-V2 in embedded clauses. Variation across present-day V2 languages ⇒ must be learned from input.

- (12) Noen nordlendinger **liker faktisk** Oslodialekt. (Norwegian)
some Northerners like actually Oslo.dialect
 'Some Northerners actually like the Oslo dialect.'
- (13) Det finnes noen Oslo-folk [som **ikke forstår** nordnorsk].
it exist some Oslo.people who not understand North.Norwegian
 'There are some Oslo people who don't understand Northern dialects.'

Certain exceptions in declaratives (with *kanskje* 'maybe' and focus-sensitive adverbs):

- (14) Kanskje **kongen kommer.** / Kanskje **kommer kongen.** Non-V2/V2
maybe king.DEF come.PRES
 'Maybe the king will come.'

- (15) Han **bare smilte**./Han **smilte bare**. **Non-V2/V2**
he just smiled
 'He just smiled.'

Tromsø dialect: Questions with long *wh*-elements (phrases) require V2, questions with monosyllabic *wh*-elements (heads) *ka*, *kor*, *kem* ('what', 'where', 'who') allow non-V2, dependent on IS.

- (16) Korfor **går du**? /*Korfor du går? **V2**
why go you
 'Why are you leaving?'
 (17) a. *kor er skoan hannes henne?* (INV, file Ole.17) **V2**
 where are shoe.DEF/PL his LOC
 'Where are his shoes?'
 b. *kor dem er henne?* **Non-V2**
 where they are LOC
 'Where are they?'

Old/Middle English: V2 variation in declaratives, dependent on IS (Bech 2001, Eitler 2007, van Kemenade & Westergaard 2012):

- (18) This ordre **be-gan Seyn Dominice** þe Zer of oure Lord a Mccxvj. (*Sermon* 147.7)
 'This order was founded by Saint Dominique in the 1216th year of our Lord.'
 (19) Thre of his dukes **he took** ... (*Chronicle* 199.30)
 'He captured three of his dukes ...'

Present-day English: S-aux inversion, restricted to clause and verb type (questions - auxiliaries/*be*):

- (20) Which wine **has Peter** tried? / *This wine has Peter tried.
 (21) Let me show you [what **I am** reading] / *what am I reading.
 (22) What **did Peter** say? / *What said Peter?

What do children do?

Norwegian: V2 and non-V2 attested early; no overgeneralization across clause types.

- (23) så **tegne æ** mamma. (Ina.02, age 1;10.4) **V2**
then draw.PRES I mommie
 'Then I draw mommie.'
 (24) se her ka **Ina gjør**. (Ina.04, age1;11.22) **Non-V2**
look here what Ina does
 'Look here what Ina is doing.'

Mixed word order in *wh*-questions attested early; subject/verb preferences as in adult speech. Early sensitivity to IS (Westergaard 2003, 2009a, b).

- (25) a. *kor e babyen?* (Ina.06, age 2;1.0) **V2**
 where is baby.DEF
 'Where is the baby?'
 b. *ka du skal finne?* (Ina.05, age 2:0.5) **Non-V2**
 what you shall find
 'What do you want to find?' **V2**

- (26) a. ka **hete** **han der?** (Ina.07, age 2;1.23)
what is-called he there
 'What is HE called?'
 b. ka **løva** **like** å spise mamma? (Ann 2;6.21) **Non-V2**
what lion.DEF likes to eat mommie
 'Mommie, what does the lion like to eat?'

Children pay attention to different initial elements, e.g. questions with long/phrasal *wh*-elements virtually only target-consistent V2 (97/101, 96%), initial *kanskje* 96.4% non-V2 (27/28), as in adult data. Focus-sensitive adverb *bare*, 0.06% in child data, 0.07% in adult data.

- (31) korfor **får** **den** ikkje mat? (Ole.16, age 2;8.5) **V2**
why get.PRES it not food
 'Why doesn't it get any food?'
 (32) kanskje **dem** **krangla**. (Ole.14, age 2;6.21) **Non-V2**
maybe they fight.PAST
 'Maybe they were fighting.'
 (33) de **bare datt** av. (Ole.08, age 2;2.12)
they just fall.PAST off
 'They just fell off.'

English: Early inversion with *be*. Auxiliaries often missing, but generally inverted.

- (34) a. where **is a box?** (Adam, age 3;0.11)
 b. what **Fraser doing?** (Eve, age 2;0)
 c. Sue # what **are you** folding? (Eve, age 2;1)

No overgeneralization of inversion to other clause/verb types (Radford 1992, Roeper 1999, 2007). Generally target-like non-inversion in embedded contexts, Westergaard (2009b).

- (35) So we can know [where **the mailman is**]. (Adam, age 3;2.21)

Occasional delay in verb movement in Swedish and Norwegian child data (Waldmann 2008, Westergaard 2009a): V2 starts with *be*, extends to sentences with new/focused subjects.

- (36) där **den inte** **ramlar** ner på golvet. (Tea, age 3;1.05) (Swedish)
there it not falls down on floor.DEF
 'There it doesn't fall down on the floor.' Target: Där ramlar den inte ner på golvet.
 (37) der **Ann har** et. (Ann, age 2;1.28) (Norwegian)
there Ann have.PRES one
 'There Ann has one.' Target form: Der har Ann et.

Occasional delay in inversion in English with auxiliaries/certain *wh*-elements, e.g. Adam: age 3;2-3;5: Inversion with *be* 96.4% (455/472), aux 34.2% (25/73), *what* - 96.6% (689/713), *why* - 11.9% (7/59).

- (38) Why **he can't** hit? (Adam, 3;4.01)
 (39) What **am I** saying? (Adam, 3;4.01)

The child grammar 'undergenerates' V2: Having learned V2 with *be*, no immediate generalization to aux or lexical verbs; V2 with *what* does not generalize to linguistically distinct *wh*-words, e.g. *why*, etc.

2.2 Word order variation NOT due to a parameter

C. Subject placement

Two subject positions in e.g. OE/ME (van Kemenade & Los 2006) or present-day Norwegian (e.g. Svenonius 2002, Westergaard 2011), dependent on clause type (high position in the process of being default in embedded clauses) and IS:

- (40) a. *Hu mæg he ðonne ðæt lof & ðone gilp fleon.*
 how may he then praise and vainglory avoid
 'How can he avoid praise and vainglory...?'
 b. *Hu gerades mæg ðonne se biscep brucan ðære hirdelican are.*
 how properly may then the bishop enjoy the pastoral dignity
 'How, then, can the bishop properly enjoy the pastoral dignity?'
- (41) a. *He ne mihte swapeah æfre libban, þeah ðe he hine þa ut alysde,*
 he not-could nevertheless ever live though that they him then released
 'Nevertheless, he could not live forever, though they then released him.'
 b. *Gif him þonne God ryhtlice & stræclice deman wile.*
 if him then God justly and strictly judge will
 'If God will then justly and strictly judge him.' (van Kemenade&Los 2006: 231)
- (42) Denne boka har **ikke Peter** lest. / Denne boka har **Peter ikke** lest.
this book.DEF has not Peter read / this book.DEF has Peter not read
 'This book Peter hasn't read.'
- (43) Jeg visste at **ikke Peter** hadde lest boka / at **Peter ikke** hadde lest boka.
I knew that not Peter had read book.DEF / that Peter not had read book.DEF
 'I knew that Peter hadn't read the book.'

What do children do?

Both positions in place early, with similar proportions and IS patterns as in adult data. Also distinction between pronominal/DP subjects and main/embedded clauses.

- (44) den treng **ikke Ann**. (Ann.09, age 2;2.19)
that need. PRES not Ann
 'That one Ann doesn't need.'
- (45) gjør **den ikke**. (Ann.04, age 1;11.0)
do.PRES it not
 '(That) it doesn't do.'

Occasional delay of high pronominal subjects in early data, due to economy(?). Falls into place earlier in main clauses:

- (46) no kan **ikke han** sove mer. (Ann.10, age 2;3.9)
now can not he sleep more
 'Now he can't sleep any more.'
- (47) ...ho si at **ikkje det** er min kjærreste. (Ina.27, age 3;3.18)
 ...she says that not it is my sweetheart
 'She says that it isn't my sweetheart.'

D. Possessive constructions

Pre- or postnominal possessors in Norwegian, dependent on IS (prenominal possessor is focused), Julien (2005), Lødrup (2011, 2012), Anderssen & Westergaard (2010). Postnominal possessor construction more complex (derived by movement) and more frequent (75%).

- (48) **min bil/ bil-en min** (Norwegian)
my car/ car.DEF my
 'My car.'
- (49) a. *ja den derre jabba hennes, den går i ett sett.*
 yes that there mouth her it goes in one set
 'Yes, that mouth of hers, it moves non-stop.'
- b. *æ hørte hennes stemme over alle de andre når æ kom og henta ho.*
 I heard her voice above all the others when I came and picked-up her
 'I heard HER voice above all the others when I came to pick her up.'

What do children do?

Both word orders in place from early on, frequencies similar to adult data:

- (50) *han er min mann.* (Ole.03, age 1;10.22)
he is my man
 'He is my man.'
- (51) *han være i skufla di.* (Ole.05, age 2;0.10)
he be in shovel.DEF your
 'He (should) be in your shovel.' (from Anderssen & Westergaard 2010)

A slight preference for prenominal word order at early stage, attested in mono- and bilingual child data (Anderssen & Westergaard 2010, 2012) – due to economy of movement?

Summary: Children's production target-consistent from early on – make fine distinctions in syntax and information structure. Slight delay in syntactic movement, in clause structure or within DP – due to economy of movement. *No difference whether variation is part of a parameter or not.*

Question: If children early and easily learn word order variation that is exceptional or not based on parameters, i.e. variation that has to be learned from input, why do we need parameters to explain "basic stuff" like VO/OV, V2, pro-drop, etc.?

3. Discussion

3.1 Conservative learning

Common observation in language acquisition studies that children are 'conservative learners', mainly making errors of omission (e.g. Snyder 2007).

Constructivism: Item-based, usage-based learning of chunks and frames – input frequency crucial, e.g. Tomasello (2003, 2006), Rowland and Pine (2000, 2003), Ambridge et al (2006).

Combination of parametric approach and statistical learning (grammar competition), e.g. Yang (2002, 2010).

3.2 Cue-based acquisition and change

Lightfoot (1999, 2006): Children scan primary linguistic data for designated cues, i.e. abstract pieces of structure in the children's I-language (not input strings), e.g.

(52) Cue for OV word order: $_{VP}[DP V]$

(53) Cue for V2 word order: $_{CP}[XP cV...]$

Lightfoot (1999: 93-4): Cues must be obligatory (UG requirement), for reasons of learnability.

Given recent findings in acquisition data - children sensitive to more fine-grained distinctions, i.e. **micro-cues** (Westergaard 2008, 2009a, Lightfoot & Westergaard 2007):

(54) Micro-cues for V2 (Westergaard 2009a):

a. Cue for V2 in *wh*-questions: $_{IntP}[wh_{Int} V...]$

b. Cue for V2 in declaratives: $_{DeclP}[XP_{Decl} V...]$

etc.

(55) Cue for V2 in *wh*-questions (English): $_{IntP}[wh_{Int} I...]$

(56) Cue for V2 in *wh*-questions with mono-syllabic *wh*-elements (Norwegian):

$_{IntP}[_{Int}[wh]_{TopP}[_{Top^0}[V... XP_{+FOC} ...]]]$

Micro-cues also for structures that are not traditionally considered to be part of parameters:

(57) Micro-cue for Subject Shift: $_{InTopP}[DP_{[-FOC]} ...]$

Are micro-cues similar to cues, just smaller? NO.

Lightfoot assumes a rich UG, cues are provided by the innate language faculty. In the micro-cue approach, cues are language-specific and learned from input, but made up of syntactic primitives provided by UG.

Model of micro-cues: generative approach assuming UG consisting of pool of possible syntactic primitives (categories, features), general principles of structure building (merge, move) and universal constraints. But NO PARAMETERS!

Micro-cues do not exist in UG, but are part of the grammar of a *specific language* – i.e., they emerge in the acquisition process as a result of interaction between UG and input.

Different from constructivist approach in that micro-cues are not chunks/frames, but pieces of syntactic structure resulting from parsing the input.

Acquisition process also affected by more general cognitive factors, e.g. memory limitations, *Concept of Non-shared Knowledge*, or economy.

Economy: Children only build as much structure as is triggered by the PLD, avoid movement, movement initially targets positions that are as low as possible.

Children have *smaller* grammars than adults, make even finer distinctions, e.g. Adam's lack of S-aux inversion, Norwegian/Swedish children's slight delay in V2 (typically very brief stages).

But how do children generalize?

Parameter account: Immediate generalizations across large categories, based on little input.

Constructivist account: Late generalizations based on large number of examples in input.

Micro-cue approach: Rapid generalizations ACROSS SMALL CLASS OR SUBCATEGORY based on positive evidence in input. (No 'unlearning' necessary).

Don't children ever overgeneralize? Yes, but only within class/subcategory.

- (55) a. what **calls that**?
b. what **means that**? (from Roeper 2007)

Model of micro-cues may thus makes sense of some of the findings in constructivist literature (i.e. conservative learning is not item-based, but class-based or feature-based).

Important further question for this research program: What constitutes a natural class/subcategory (i.e. a next step) for a child in the learning process?

4. Summary/Conclusion

- Children sensitive to fine distinctions in syntax and information structure from early on.
- No evidence for parameter setting – hardly any overgeneralizations in child data.
- Micro-cue model related to common observation that children are *conservative learners*, hardly ever making errors of commission.
- Children generalize only across a class or subcategory, not to a major category (one feature at a time?).
- This may cause a delay in cases where generalization would result in target-consistent production.
- When producing non-target-consistent forms, children typically have *smaller* grammars than adults.
- Micro-cues are language-specific, emerge as a result of interaction between UG and input.
- Economy plays a major role, accounting for slight delays in syntactic movement.

REFERENCES

- Anderssen, Merete. 2006. *The Acquisition of Compositional Definiteness in Norwegian*. Doctoral Dissertation, University of Tromsø.
- Anderssen, Merete and Marit Westergaard. 2010. 'Frequency and economy in the acquisition of variable word order.' *Lingua*, 120.11, 2569-2588.
- Anderssen, Merete & Marit Westergaard. Forthcoming/2012. Tospråklighet og ordstilling i norske possessivkonstruksjoner. [Bilingualism and word order in Norwegian possessive constructions]. *Norsk Lingvistisk Tidsskrift*.
- Akhtar, Nameera. 1999. 'Acquiring basic word order: evidence for data-driven learning of syntactic structure.' *Journal of Child Language* 26: 339-356.
- Ambridge, Ben, Caroline F. Rowland, Theakston A. L. & Michael Tomasello. 2006. 'Comparing different accounts of inversion errors in children's non-subject wh-questions: "What experimental data can tell us?"' *Journal of Child Language* 33: 519-557.

- Bech, Kristin. 2001. *Word Order Patterns in Old and Middle English: A syntactic and pragmatic study*. Doctoral dissertation, University of Bergen.
- Bresnan, Joan & Tatiana Nikitina. 2007. 'The Gradience of the Dative Alternation.' In Linda Uyechi and Lian Hee Wee (eds.), *Reality Exploration and Discovery: Pattern Interaction in Language and Life*. Stanford: CSLI Publications.
- Bresnan, Joan, Anna Cueni, Tatiana Nikitina & Harald Baayen. 2007. 'Predicting the Dative Alternation.' In G. Boume, I. Kraemer & J. Zwarts (eds.) *Cognitive Foundations of Interpretation*. Amsterdam: Royal Netherlands Academy of Science, 69-94.
- Brown, Roger. 1973. *A First Language: The Early Stages*. Cambridge, MA: Harvard University Press.
- Diakonova, Marina. 2003. *The Acquisition of Word Order in English and Russian*. Masters thesis, University of Tromsø.
- Dyakonova, Marina. 2004. 'Information structure development: Evidence from the acquisition of word order in Russian and English.' *Nordlyd* 32.1, 88-109.
- Dyakonova, Marina. 2009. *A phase-based approach to Russian free word order*. Doctoral dissertation, University of Amsterdam, LOT Publications 230.
- Eitler, Tamás. 2006. *Some sociolectal, dialectal and communicative aspects of word order variation in late Middle English*. Doctoral dissertation, Eötvös Loránd University.
- Hróarsdóttir, Thorbjörg. 2004. 'Cues and expressions.' *Nordlyd* 32.1: *Tromsø Working Papers in Language Acquisition*, 135-155.
- Hyams, Nina. 1986. *Language acquisition and the theory of parameters*. Dordrecht: Reidel.
- Julien, Marit. 2005. *Nominal Phrases from a Scandinavian Perspective*. [Linguistics Today 87]. Amsterdam: John Benjamins.
- Kemenade, Ans van & Bettelou Los. 2006. 'Discourse adverbs and clausal syntax in Old and Middle English.' In Ans van Kemenade & Bettelou Los (eds.), *The Handbook of the History of English*, 224-248. Malden, MA and Oxford: Blackwell.
- Kemenade, Ans van & Marit Westergaard. 2012. 'Syntax and information structure: Verb-second variation in Middle English.' In Anneli Meurman Solin, María José López-Couso & Bettelou Los (eds.) *Information Structure and Syntactic Change in the History of English (Oxford Studies in the History of English 2)*, 87-118. New York: Oxford University Press.
- Lightfoot, David. 1999. *The Development of Language: Acquisition, Change and Evolution*. Malden, MA and Oxford: Blackwell.
- Lightfoot, David. 2006. *How New Languages Emerge*. Cambridge University Press.
- Lightfoot, David & Marit Westergaard. 2007. 'Language Acquisition and Language Change: Interrelationships.' *Language and Linguistics Compass* 1 (5), 396-415.
- Lødrup, Helge. 2011. Norwegian possessive pronouns: Phrases, words or suffixes? in Butt, Miriam & Tracy Holloway King (eds): *Proceedings of the LFG11 Conference*. Stanford: CSLI Publications.
- Lødrup, Helge. 2012. Forholdet mellom prenominale og postnominale possessive uttrykk. In Enger, Hans-Olav, Jan Terje Faarlund & Kjell Ivar Vannebo (eds) *Grammatikk, bruk og norm*, 189-203. Oslo: Novus.
- MacWhinney, Brian. 2000. *The CHILDES Project: Tools for analyzing talk*. 3rd Edition. Vol. 2: The Database. Mahwah, NJ: Lawrence Erlbaum Associates.
- Pinker, Stephen. 1994. *The language instinct*. New York: W. Morrow & Co.
- Pintzuk, Susan. 1991. *Phrase Structures in Competition: Variation and Change in Old English Word Order*. Ph. D. dissertation, University of Pennsylvania.
- Pintzuk, Susan. 2005. 'Arguments against a universal base: evidence from Old English.' *English Language and Linguistics* 9.1, 115-138.
- Pintzuk, Susan & Ann Taylor. 2006. 'The loss of OV order in the history of English'. In Ans van Kemenade & Bettelou Los (eds.), *The Handbook of the History of English*. Oxford: Blackwell.

- Radford, Andrew. 1992. 'The acquisition of the morphosyntax of finite verbs in English.' In Jürgen M. Meisel (ed.), *The Acquisition of Verb Placement: Functional Categories and V2 Phenomena in Language Acquisition*. 23-62. Dordrecht: Kluwer Academic Publishers.
- Roberts, Ian G. 1997. 'Directionality and word order change in the history of English.' In Ans van Kemenade & Nigel Vincent (eds.), *Parameters of Morphosyntactic Change*, 396-426. Cambridge: Cambridge University Press.
- Roeper, Tom. 1999. 'Universal Bilingualism.' *Bilingualism: Language and Cognition* 2 (3), 169-186.
- Roeper, Tom. 2007. 'What frequency can do and what it can't.' In Gülzow, I. and N. Gagarina (eds.), *Frequency effects in language acquisition: Defining the limits of frequency as an explanatory concept*, [Studies on Language Acquisition]. Berlin: Mouton de Gruyter. 23-48.
- Rowland, Caroline F. and Julian M. Pine. 2000. Subject-auxiliary inversion errors and wh-question acquisition: 'What children do know?' *Journal of Child Language* 27, 157-181.
- Rowland, C. F., Pine, J. M., Lieven, E. M. V. & Theakston, A. L. (2003). Determinants of acquisition order in wh-questions: re-evaluating the role of caregiver speech. *Journal of Child Language* 30, 609-635.
- Smith, Neil & Ann Law. 2009. 'On Parametric and Non-Parametric Variation.' *Biolinguistics* 3.4, 332-342.
- Snyder, William. 2007. *Child Language: The Parametric Approach*. Oxford/New York: Oxford University Press.
- Svenonius, Peter. 2002. Subject positions and the placement of adverbials. In Peter Svenonius (ed.), *Subjects, Expletives and the EPP*, 201-242. New York: Oxford University Press.
- Tomasello, Michael. 2003. *Constructing a Language: A Usage-based Theory of Language Acquisition*. Cambridge, MA: Harvard University Press.
- Tomasello, Michael. 2006. 'Acquiring linguistic constructions'. In D. Kuhn & R. Siegler (eds.), *Handbook of Child Psychology*, 255-298. Hoboken, NJ: Wiley.
- Valian, Virginia. 1990. 'Null subjects: A problem for parameter-setting models of language acquisition.' *Cognition* 35.2: 105-122.
- Valian, Virginia. 1991, 'Syntactic subjects in the early speech of American and Italian children'. *Cognition* 40, 21-81.
- Waldmann, Christian. 2008. *Input och output: Ordföljd i svenska barns huvudsatser och bisatser*. PhD dissertation, Lundastudier A 65, University of Lund.
- 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, 81-109.
- Westergaard, Marit. 2008. 'Acquisition and Change: On the Robustness of the Triggering Experience for Word Order Cues.' *Lingua* 118.12, 1841-1863.
- Westergaard, Marit. 2009a. *The Acquisition of Word Order: Micro-cues, Information Structure and Economy*. [Linguistik Aktuell/Linguistics Today 145], Amsterdam: John Benjamins.
- Westergaard, Marit. 2009b. 'Item-based vs. Rule-based Learning: The Acquisition of Word Order in Wh-Questions in English and Norwegian.' *Journal of Child Language* 36.5, 1023-1051.
- Westergaard, Marit. 2011. 'Subject positions and information structure: The effect of frequency on acquisition and change.' *Studia Linguistica* 3, 299-332.
- Wexler, Kenneth. 1999. 'Very Early Parameter Setting and the Unique Checking Constraint: A New Explanation of the Optional Infinitive Stage'. In Antonella Sorace, Caroline Heycock and Richard Shillock (eds.), *Language Acquisition: Knowledge Representation and Processing*, special issue of *Lingua*, Elsevier, Amsterdam, 23-79.
- Yang, Charles. 2002. *Knowledge and Learning in Natural Language*. Oxford/New York: Oxford University Press.
- Yang, Charles. 2010. 'Three factors in language variation.' *Lingua* 120, 1160-1177.
- Zdorenko, Tatiana. 2005. *The Acquisition of Subjects in English and Russian*. Masters thesis, University of Tromsø.