

VERY EARLY PARAMETER-SETTING: NEW EVIDENCE*

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1. Introduction

Over the past twenty years, language acquisition studies within the Principles-and-Parameters approach (Chomsky 1981) have convincingly demonstrated that the invariant principles of UG constrain the course of acquisition from virtually the very beginning, namely as soon as the child becomes able to use relevant lexical items and structures (see Otsu 1981 and Crain & Thornton 1998, among many others). Recent progress suggests that this conclusion should be extended to the settings of ‘basic’ parameters. According to Wexler (1996, 1998), parameters relevant to word order and null subjects are set correctly at the earliest observable stages, contrary to the traditional expectation that parameter-setting takes time, given its experience-dependent nature. In this study, I present two case-studies that argue for Wexler’s view. The first case-study demonstrates that the word-order parameter is correctly set from the earliest stages even in Japanese, a free word-order language. The second case-study shows that the acquisition of clitic-climbing in Spanish is consistent with an early setting of the null-subject parameter. These findings not only provide new evidence for Wexler’s proposal, but more importantly lend further support to the postulation of innate constraints on language variation.

2. Very Early Parameter-Setting

It has been observed at least since Brown (1973:156) that in the early speech of English-learning children, “the violations of normal [word] order are triflingly few.”¹ The correct word order of verb-object (or more accurately, head-complement) is displayed quite early, which suggests that children reach the correct value of the head-parameter at an extremely young age.

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¹ Still, incorrect object-verb order is observed occasionally. See Koizumi (2002) for a minimalist analysis of these OV sentences in child English.

The same observation has been made in the acquisition of German. Poeppel & Wexler (1993) report that early child German exhibits a strong correlation between the structural position of the verbs and their finiteness: [+finite] verbs systematically appear in second clausal position, and [-finite] verbs consistently remain in final position, after the object.²

- (1) a. Ich hab ein dossen Ball. S-V_[+fin]-O
 I have a big ball
- b. Thorsten Caesar haben. S-O-V_[-fin]
 Thorsten C. (= doll) have
- (Poeppel & Wexler 1993:5-6)

Under the assumption that [-finite] verbs occupy their base-generated position, sentences like (1b) show that child German has the underlying object-verb order, the basic word order of German that can be detected in subordinate clauses in the case of adult grammar. Again, the data from child German suggest that the setting of the head-complement parameter is completed quite early.

Going back to the acquisition of English, it is well-known that before or around the age of two, children produce sentences that lack overt subjects, as in (2):

- (2) a. See window.
- b. Want more apple. (Hyams 1986:63)

The seminal work by Hyams (1986) proposed a grammar-based parametric account for this phenomenon. Based on the observation that the availability of null-subject sentences is a distinctive property of adult Italian and Spanish, Hyams suggested that subject omission in the child's speech follows from the early non-adult-like setting of the null-subject parameter.

However, this parametric account of null subjects ran up against a number of empirical challenges (see e.g. Bloom 1990 and Valian 1991). A compelling argument against this analysis came from the distribution of null subjects in child language. As summarized in Hyams (2001:36), various studies have shown that in a number of non-null-subject languages, there is a strong correlation between the omission of subjects and the expression of finiteness on the verb: In these languages, children's use of null subjects is largely contingent on the use of non-finite main verbs, as exemplified in (3).

- (3) a. Zahne pussen German
 teeth brush-inf.
- b. Dormir tout nu French
 sleep-inf. all naked

² For discussion of why the child grammar permits [-finite] verbs in matrix contexts, see e.g. Hoekstra & Hyams (1998), Hyams (2001), Rizzi (1993/1994), and Wexler (1994, 1996, 1998).

- | | | | | | |
|----|------|------|-----------|-------|-----------------|
| c. | Niet | neus | snuiten | Dutch | |
| | not | nose | blow-inf. | | (Hyams 2001:36) |

Since finite clauses permit null subjects in adult Italian and Spanish, this observation is directly at odds with the parametric account. In addition, since null subjects are allowed in the subject position of an infinitive even in adult English (and in other non-null-subject languages) as exemplified in (4), the correlation between subject omission and finiteness suggests that null subjects in children's speech stems not from the mis-setting of the null-subject parameter but from incorrect use of infinitives in root clauses.

- (4) I love [____ to work in my garden].

These findings concerning the word-order parameter and the null-subject parameter have led Wexler to propose the hypothesis of *Very Early Parameter-Setting* (VEPS):

- (5) *Very Early Parameter-Setting* (Wexler 1998:25):
 Basic parameters are set correctly at the earliest observable stages, that is, at least from the time that the child enters the two-word stage, around 18 months of age.

According to Wexler (1998:29), 'basic parameters' include at least the following:

- (6) a. Word order, e.g. VO versus OV (e.g. Swedish versus German)
 b. V to I or not (e.g. French versus English)
 c. V2 or not (e.g. German versus French or English)
 d. Null subject or not (e.g. Italian versus English or French)

The hypothesis of VEPS is quite stimulating, since it goes against the traditional view (adopted in Hyams 1986) that parameters are set relatively late, only after the child has been exposed to 'sufficient experience'. Yet, whether and to what extent this hypothesis is correct remain important questions. In light of this situation, this study puts VEPS to further empirical tests, by examining (i) the acquisition of basic word-order in Japanese and (ii) the acquisition of clitic-climbing in Spanish.

3. Case-Study I: Acquisition of Basic Word-Order in Japanese³

3.1. VO Sentences in Japanese

In Japanese, word order is flexible. For example, both SOV and OSV orders are possible for a simple transitive sentence:⁴

³ This section is based on Sugisaki (in press).

⁴ For arguments that OSV order is derived from SOV order via movement (scrambling), see Saito (1985) and Nemoto (1999), among many others.

- (7) a. Dylan-ga chaahan-o tabeta yo. SOV
 Dylan-Nom fried rice-Acc ate Excl(amation)
- b. Chaahan-o Dylan-ga tabeta yo. OSV
 fried rice-Acc Dylan-Nom ate Excl
- ‘Dylan ate fried rice.’

In addition, English-like SVO order is available:

- (8) Dylan-ga tabeta yo, chaahan-o. SVO
 Dylan-Nom ate Excl fried rice-Acc

Yet such SVO sentences exhibit various restrictions that do not apply to SOV order. First, SVO order cannot appear in embedded contexts.

- (9) a. Susan-ga [Dylan-ga chaahan-o tabeta to] omotteiru.
 Susan-Nom Dylan-Nom fried rice-Acc ate C think
- b. *Susan-ga [Dylan-ga tabeta, chaahan-o to] omotteiru.
 Susan-Nom Dylan-Nom ate fried rice-Acc C think
- ‘Susan thinks that Dylan ate fried rice.’

Second, idiom chunks that consist of a verb and an object lose their idiomatic interpretation when the object is located after the verb (Tanaka 2001:575).

- (10) a. Dylan-ga hara-o tateta yo.
 Dylan-Nom stomach-Acc set up Excl
- b. ??Dylan-ga tateta yo, hara-o.
 Dylan-Nom set up Excl stomach-Acc.
- ‘Dylan got upset.’

Third, the SVO order is incompatible with direct-object *wh*-questions, as illustrated in (11).

- (11) a. Dylan-ga nani-o tabeta (no)?⁵
 Dylan-Nom what-Acc ate Q
- b. *Dylan-ga tabeta (no), nani-o?
 Dylan-Nom ate Q what-Acc
- ‘What did Dylan eat?’

⁵ The Q-particle *no* can be omitted when the sentence is pronounced with an appropriate question intonation. See Yoshida & Yoshida (1997) for a detailed discussion of Q-particle drop.

questions with SVO also results from this empty pronoun. The underlying structure for (11b) is represented in (16).

- (16) [S₁ Dylan-ga *pro* tabeta no], [S₂ nani-o₁
 Dylan-Nom ate Q what-Acc
~~[Dylan-ga t₁ tabeta no]~~] ?
 Dylan-Nom ate Q

A *wh*-phrase in a question is inherently focused and bears new information. Thus, it cannot be an empty pronoun in S₁, making the sentence ungrammatical.

To summarize this section, we have seen that Japanese permits both SOV and SVO orders. Yet, the latter exhibits various restrictions that do not apply to the former, which suggests that the head-final order is the basic one. According to Tanaka (2001), the marked SVO order in fact consists of two separate sentences, the latter of which undergoes scrambling and deletion.

3.2. VO Sentences in Child Japanese and Very Early Parameter-Setting

Japanese-learning children around the age of 2;5 (years;months) sometimes produce utterances that contain VO order. Some examples are provided in (17).

- (17) a. Yomoo, koko. (Aki, 2;7: Miyata 2004a)
 read this part
 ‘Let’s read this part.’
- b. Akete, kore. (Ryo 2;5: Miyata 2004b)
 open this
 ‘Open this.’
- c. Morattekita, kore.
 got this
 ‘(I) got this.’ (Tai 2;2: Miyata 2004c)

There are two possible syntactic sources for these VO sentences in child Japanese. One possibility is that the child has already figured out that the target language takes the head-final value of the head parameter, and that VO sentences are derived in exactly the same way as in the adult grammar (the derivation in (12), under Tanaka’s (2001) analysis). This is what is predicted by VEPS, the hypothesis which claims that the word-order parameter is correctly set already at the earliest stages of production. The other possibility, which is consistent with a more traditional view of parameter-setting, is that children are still entertaining both values of the head parameter, and that sentences like those in (17) stem from the head-initial value. If the former possibility is right, then VO sentences in the child’s speech should obey the

constraints on this order discussed in the previous section. On the other hand, if the latter possibility is correct, then OV and VO sentences should have the same syntactic status in the child grammar, and hence VO order should show no restrictions compared to the OV order.

3.3. Transcript Analysis

In order to determine which of the two possibilities discussed in the previous section is correct, I analyzed three longitudinal corpora for Japanese (Miyata 2004a,b,c) from the CHILDES database (MacWhinney 2000), which provide a total sample of more than 48,000 lines of child speech. Since embedded sentences and idiom chunks are extremely rare in early child speech, I focused on the restriction on direct-object *wh*-questions exemplified in (11), repeated here as (18).

- (18) a. Dylan-ga nani-o tabeta (no)?
 Dylan-Nom what-Acc ate Q
- b. *Dylan-ga tabeta (no), nani-o?
 Dylan-Nom ate Q what-Acc
- ‘What did Dylan eat?’

Every sentence with either OV order or VO order that appeared after the first clear use of a direct-object *wh*-question was picked out by hand.⁶ The corpora I analyzed are summarized in (19), and the results of my analysis are presented in (20). Some actual utterances are given in the Appendix 1.

- (19) Corpora analyzed:

<i>Child</i>	<i>Age</i>	<i># of child utterances</i>	<i>Collected by</i>
Aki	2;6.15 - 3;0.0	12,415	Miyata (2004a)
Ryo	2;4.25 - 3;0.30	5,901	Miyata (2004b)
Tai	1;9.3 - 3;1.29	29,980	Miyata (2004c)

- (20) Results of the transcript analysis:

	Aki		Ryo		Tai	
	(S)OV	(S)VO	(S)OV	(S)VO	(S)OV	(S)VO
Total # of utterances	518	38	252	43	1120	50
# of direct-object <i>wh</i> -questions	185	0	40	0	70	1
% of direct-object <i>wh</i> -questions	38.7	0	15.9	0	6.3	2

⁶ OV and VO sentences include not only sentences that contain a verb and a nominal object but also those that contain a verb and a prepositional complement.

- (22) French:
- a. non-climbing: Je veux le voir.
 I want MSg see
 ‘I want to see it.’
- b. clitic-climbing: * Je le veux voir.
 I MSg want see

Given this intriguing contrast between Spanish and French, a number of syntactic studies have addressed the issue of what parameter is responsible for this difference between these closely-related languages.

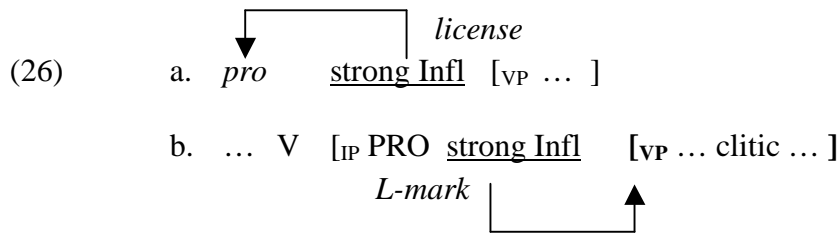
Kayne (1989) proposed that the cross-linguistic variation in clitic-climbing is tightly connected to another notable difference between Spanish and French: the possibility of null-subjects. Spanish permits null subjects by taking the positive value of the null-subject parameter, as shown in (23). In contrast, French takes the negative setting and disallows null subjects, as shown in (24).

- (23) Spanish:
- a. overt subject: Él está en la escuela.
 he is at the school
 ‘He is at the school.’
- b. null subject: ___ Está en la escuela.
 is at the school
- (24) French:
- a. overt subject: Il est à l’ école.
 he is at the school
 ‘He is at the school.’
- b. null subject: * ___ Est à l’ école.
 is at the school

Under Kayne’s analysis, the correlation between the availability of clitic-climbing and the licensing of null subjects is obtained in the following way. He postulates that the null-subject parameter consists of two values, which distinguish between languages with ‘strong’ INFL and languages with ‘weak’ INFL.

- (25) Null-Subject Parameter: INFL is {strong, weak}.

Spanish selects the ‘strong’ value, and French takes the ‘weak’ one. The ‘strong’ INFL has the following two properties. First, it licenses null subjects in its specifier position. Second, it L-marks its VP complement.



In order for a clitic to move up from an infinitival complement to the matrix clause, it must be able to escape from the infinitival VP. However, VP is potentially a barrier to antecedent government, and it loses its barrierhood only when it is L-marked by a ‘strong’ INFL. Thus, clitic-climbing is possible only in languages with the ‘strong’ INFL that licenses null subjects.^{10,11}

4.2. Prediction for the Acquisition of Spanish

Under Kayne’s (1989) parametric system, the availability of clitic-climbing follows from the positive setting of the null-subject parameter. As for child language, the hypothesis of VEPS claims that the null-subject parameter is set correctly from the earliest observable stages. If both of these claims are correct, then the essential prerequisite for clitic-climbing is available to children from very early on and hence we make the following prediction.

- (27) Prediction for Acquisition:
- a. Spanish-learning children will begin to use clitic-climbing as soon as they acquire other relevant knowledge (specifically, clitics and infinitival complements).
 - b. In other words, they will never go through a stage in which the non-climbing option (as in (21a)) is consistently chosen over clitic-climbing (as in (21b)).

4.3. Transcript Analysis

In order to evaluate the acquisitional prediction in (27), we selected five longitudinal corpora for Spanish from the CHILDES database (MacWhinney 2000), which provide a total sample of more than 23,000 lines of child speech. The corpora we analyzed are summarized in (28).

¹⁰ Under Kayne’s account, *wh*-movement in French escapes VP by adjoining to this maximal projection. Clitics do not have this option because clitics, being heads, may adjoin to another head but never to a maximal projection.

¹¹ For a minimalist implementation of Kayne’s parametric proposal, see Ogawa (2003).

(28) Corpora Analyzed

<i>Child</i>	<i>Age</i>	<i># of child utterances</i>	<i>Collected by</i>
Juan	2;8 - 4;8	2,520	Linanza
Koki	1;7 - 2;11	4,303	Montes (Montes 1987, 1992)
María	2;0 - 3;10	7,706	Ornat (López Ornat 1994)
Eduard	1;4 - 3;10	1,560	Serra
Emilio	2;5 - 4;6	7,129	Vila

The results are summarized in (29). We take the age of acquisition for a construction to be “the age of first clear use, followed soon after by additional uses” (Stromswold 1996, Snyder & Stromswold 1997).¹² One child (Eduard) produced only clitic-climbing forms by the end of his corpus. The remaining four children showed uses of both non-climbing and clitic-climbing forms. Among these four, two children (Koki and Emilio) produced the non-climbing option first, and the other two children (Juan and María) produced the clitic-climbing form first. The former type of child is potentially problematic for the prediction in (27), which maintains that Spanish-learning children should never acquire the non-climbing option significantly earlier than clitic-climbing.

In order to determine whether the observed age difference between the acquisition of the non-climbing form and the acquisition of clitic-climbing is statistically significant in the development of these two children, we counted the number of clear uses of non-climbing forms before the first clear use of clitic-climbing. We next calculated the relative frequency of the two constructions in the child’s own speech, starting with the transcript after the first clear use of clitic-climbing, and continuing through the end of the corpus. We then used a Binomial Test to obtain the probability of sampling the observed number of tokens of the non-climbing construction simply by chance, before the first use of the clitic-climbing construction, under the null hypothesis that both became available concurrently and had the same relative probability of use as in later transcripts (Stromswold 1996, Snyder & Stromswold 1997).

The results of the statistical analysis show that the age-discrepancy did not reach significance ($p > .10$ by Binomial Test). Thus, the prediction in (27) was borne out: We found no child who acquired the non-climbing form significantly earlier than clitic-climbing. These results in turn provide support for (i) Kayne’s (1989) parametric proposal that the possibility of clitic-climbing follows directly from the positive setting of the null-subject parameter, and (ii) the VEPS hypothesis that the null-subject parameter constitutes one of the early-set parameters.

(29) Results of the Transcript Analysis:

¹² See Appendix 2 for the actual utterances.

hey look this

‘Hey, look at this!’ (file 36: 2;7.12)

(31) Examples from Ryo’s speech:

a. (S)OV: Hirokun no tsukue ni notta.
Hiro Poss desk Dat got on

‘(I) got on Hiro’s desk.’ (file r20927: 2;9.27)

b. *wh*-question: nani yatteru no@fp ?
what doing Q

‘What (are you) doing?’ (file r20927: 2;9.27)

c. (S)VO: Ryookun wa iku, gakkoo.
Ryo Top will-go school

‘Ryo will go to school.’ (file r20913: 2;9.13)

(32) Examples from Tai’s speech:

a. (S)VO: bokujoo motteru yo.
ranch have Excl

‘(I) have a ranch.’ (file t940414: 2;0.4)

b. *wh*-question: hoochoo wa doko itchatta?
kitchen knife Top where went

‘Where did the kitchen knife go?’ (file t940714: 2;3.4)

c. (S)VO: jibun de motteru, kore.
oneself by keep this

‘(I) keep this by myself.’ (file t940526: 2;1.16)

Appendix 2: First Clear Uses in the Acquisition of Spanish

(33) Koki:

a. non-climbing (1;7): no puede cerrar+lo
not can close+it-3pMSg-CL

‘I cannot close it.’

b. clitic-climbing (2;1): me voy a hacer popó
1pSg-CL go to make poo poo

‘I’m going to make poo poo.’

(34) Emilio:

- a. non-climbing (2;5): voy a poner+la aquí
 go to put+3pFSg-CL here
 ‘I’m going to put it here.’
- b. clitic-climbing (2;8): hoy no me puedo levantar
 today not 1pSg-CL can stand up
 ‘I cannot stand up today.’
- (35) Juan:
- a. clitic-climbing (2;8): te tiene que bajar
 1pSg-CL has to put down
 ‘He has to put you down.’
- b. non-climbing (3;9): todos a coger+la
 everybody to catch+3pFSg-CL
 ‘Everybody go to catch it.’
- (36) María:
- a. clitic-climbing (2;0): me vas a comprar unos?
 1pSg go to buy ones
 ‘Are you going to buy me some ones?’
- b. non-climbing (2;1) vamos a guardar+los
 go to lock+3pMPI-CL
 ‘Let’s lock them.’
- (37) Eduardo:
- a. clitic-climbing (3;10): la voy a poner
 3pFSg go to put
 ‘I’m going to put it.’
- b. non-climbing: not attested

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