

PARAMETERS AND (L2)ACQUISITION: VERB-RAISING

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'This one I really gave everything. I lived in the 23rd century for nine months. I don't want anyone who watches to eat calmly their popcorn.' Luc Besson on the 'Fifth Element', New York Times 5/7/97

"My life for me is very normal because I've played already tennis for 14 years...." Martina Hingis in *Tennis*, September 1996 (New York Times Company)

1. INTRODUCTION

For the acquisition of a first language, it is assumed that there is an innate language acquisition device, that can be equated with a universal grammar, UG. This innate grammar comprises the principles of language and, in order to account for the diversity of human languages, it also contains parameters which are set in the course of language development according to the input encountered in the ambient language.

As to the acquisition of a second language, several questions have been raised recently. The most obvious one is the question of whether Universal Grammar is available for the acquisition of a second language (L2-acquisition) and if so how long it stays available. Another question concerning especially L2-acquisition in natural settings, i.e. in settings where a second language is learned simply by exposure to and immersion in the foreign language environment, is whether such an L2-learner acquires the target language in the same manner as a child learning it as his/her first language. If that is not the case, what are the first steps in the second language? Quite another group of questions emerges when we depart from a natural setting and ask what happens in formal teaching. How much transfer do we find? Do classroom learners arrive at correct parameter settings? If we have answered these first two data oriented questions, we may go on to another more fundamental one: Will the language faculty, i.e. UG, be available for learning a language in the classroom or will other cognitive strategies be dominant?

The assumption that UG may be available up to a certain age only is the generative way of speculating about what is also known as the critical period (Lenneberg 1967). The importance of the age factor has been summarised by Pinker (1994:290-293) in the following manner:

"Everyone knows that it is much more difficult to learn a second language in adulthood than a first language in childhood. Most adults never master a foreign language, especially the phonology - hence the ubiquitous foreign accent. Their development often "fossilizes" into permanent error patterns that no teaching or correction can undo [...] Many explanations have been advanced for children's superiority[...] Holding every other factor constant, a key factor stands out: sheer age. [...] In sum, acquisition of normal language is guaranteed for children up to the age of six, is steadily compromised from then until shortly after puberty, and is rare thereafter".

The general classification which emerges from observations on the age factor is the following: A) Exposure to L2 before the age of three which is also called simultaneous acquisition of two or more languages or bilingual first language acquisition. B) Exposure to L2 between age three and puberty which gives a good chance of acquiring the second language up to near native competence. C) exposure to L2 past puberty (adult L2-acquisition), which may but need not lead to the phenomena described by Pinker above. Tracy (1994) has argued that adults may learn a foreign language without fossilization effects and attributes this to the fact that greater cognitive resources may compensate for an already deficient language faculty. See also Clahsen and Muysken (1986) for different opinions on UG for adults.

As to the questions of how much UG access and how much transfer we can expect, it has recently been argued by Schwartz (1998), that UG is fully available for data analysis, but that the first phase of L2-acquisition is L1 transfer. So a model emerges which assumes an L2 initial state, UG access and the target language input as the dominant factors in the acquisition of a second language. The L2 initial state is described as the parameter settings of the first language. Eubank (1993) also provides a discussion of parameter transfer in L2-acquisition, but see Klein and Perdue (1997) for a different approach.

In the following I want to single out the verb-raising parameter for investigation. I will show which grammatical phenomena group with this parameter (section 2) and provide cross-linguistic and diachronic evidence for its correlation to a certain form of inflectional richness. I will then turn to language acquisition and first show that in L1-acquisition, this parameter is acquired early (section 3). I will also describe an experiment which was designed to test the acquisition of this parameter by L2-learners and was run with young French immersion learners of English (in section 4). Finally I will report on the results which a new experiment has shown for German classroom learners of English (section 5).

2. THE VERB MOVEMENT PARAMETER

2.1. Cross-linguistic evidence

It is well known that languages differ considerably with respect to adverb placement and the placement of negation markers. It was a considerable breakthrough, when Pollock (1989) did not try to define adverb positions per se but postulated that in French the finite main-verb raises across the adverb whereas in English it stays below.

- (1) a. Jean voit souvent Marie
 Jean sees often Marie
 'Jean often sees Marie'

- (1) b. John often sees Mary

The examples (1a,b) show this phenomenon for French and English with respect to the sentence adverb *souvent*, examples (2a-e) show it in French with respect to the negation particle *pas*. Infinitives and past participles do not raise (2a,d and e) and finite verbs may not stay in base position in French as we see from the contrast of (2b) and (2c).

- (2) a. Jean n' a pas t_i mangé la soupe
 Jean (n) has not eaten the soup
 'Jean has not eaten the soup'

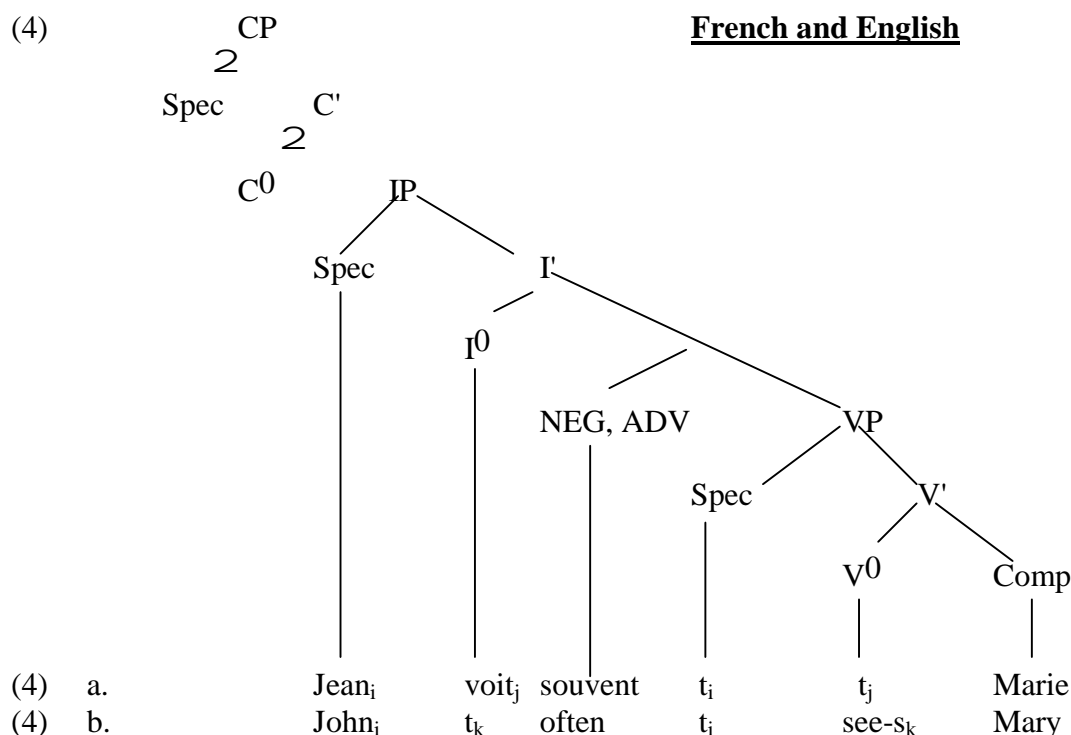
- (2) b. Jean ne mange_j pas t_i t_j la soupe
 Jean (ne) eats not the soup
 'Jean doesn't eat the soup'

- (2) c. *Jean ne pas t_i mange la soupe
 J (ne) not eats the soup
- (2) d. Pour ne pas t_i manger la soupe
 In order to (ne) not eat the soup
 'In order not to eat the soup'
- (2) e. *Pour ne manger pas t_i la soupe
 In order (ne) eat not the soup

In English, the paradigm emerging from the examples (3a-) shows that only main verbs cannot raise, auxiliaries and modal verbs take their place to the left of the adverb.

- (3) a. John often sees Mary
 (3) b. *John sees often Mary
 (3) c. John has often seen Mary
 (3) d. *John often has seen Mary
 (3) e. John can often see Mary
 (3) f. John often can see Mary

There is general agreement on the hypothesis that verbal inflection is 'strong' in verb-raising languages and so attracts the verb, whereas in non-verb raising languages like English, verbal inflection is not strong enough. The notion of strong inflection naturally has to be made precise and several attempts will be mentioned in 2.3. Since Chomsky (1957), it is assumed for English that inflection is lowered in order to be attached to the main verb. The picture which emerges from these considerations for French and English main verbs is captured by (4).



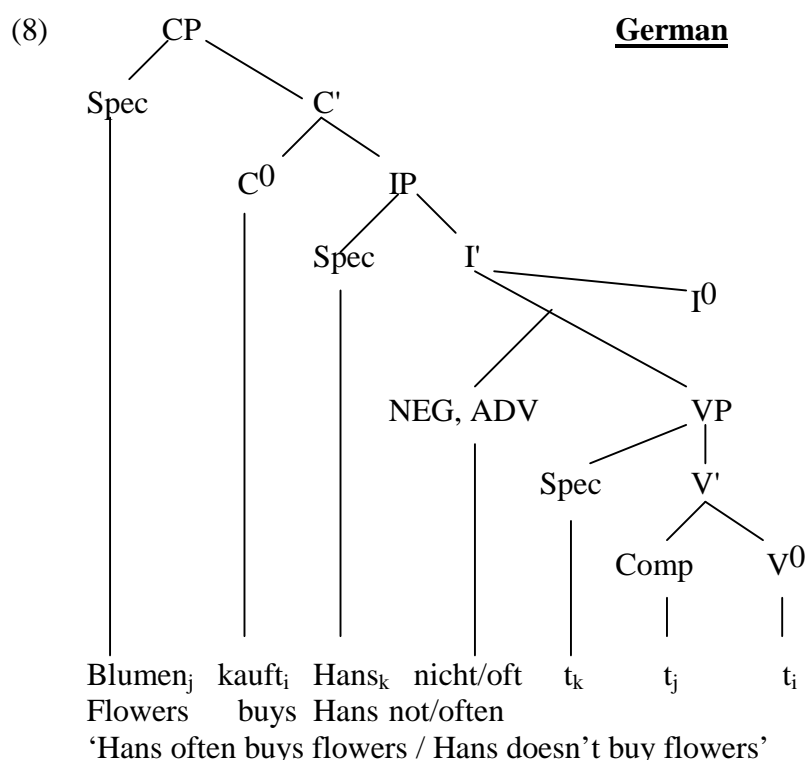
A similar phenomenon seems to exist in German and other germanic languages as shown in (5a,b).

- (5) a. Hans liest oft Bücher
Hans reads often books
'Hans often reads books'
- b. Hans hat oft Bücher gelesen.
Hans has often read books
'Hans has often read books'

However, in German the phenomenon is more general in that finite verbs always end up in second position in main clauses, see (6a-f). Moreover, the ultimate landing-site of the verb is different from French as we can see in subordinate clauses. In German, we have a difference in verb placement as shown by the contrast of (6a) and (7a) whereas in French, we get the same order in main and in subordinate clauses, compare (1a) and (7b).

- (6) a. Hans kauft jetzt immer Blumen für Marie
Hans buys now always flowers for Marie
'Now Hans always buys flowers for Marie'
- (6) b. Jetzt kauft Hans immer Blumen für Marie
Now buys Hans always flowers for Marie
'Now Hans always buys flowers for Marie'
- (6) c. Blumen kauft Hans jetzt immer für Marie
flowers buys Hans now always for Marie
'Now Hans always buys flowers for Marie'
- (6) d. Für Marie kauft Hans jetzt immer Blumen
For Marie buys Hans now always flowers
'Now Hans always buys flowers for Marie'
- (6) e. Er hat immer Blumen gekauft
He has always flowers bought
'He has always bought flowers'
- (6) f. Er will immer Blumen kaufen
He will always flowers buy
'He will always buy flowers'
- (7) a. ...dass Hans immer Blumen kauft
...that Hans always flowers buys
'...that Hans always buys flowers'
- (7) b. ...que Jean voit souvent Marie.
...that Jean sees often Marie
'...that Jean often sees Marie'.

These facts are explained by the assumption that in French, the verb raises as far as Inflection (I), whereas in German main clauses the finite verb raises to the Comp position (C). Unfortunately, because of the facts of German word order, it is almost impossible to determine whether the verb passes through I or not. With the assumption that the VP is head-final in German, it is indeed impossible to show V-to-I movement. Under a Universal Base hypothesis, (7a) may be taken as counter-evidence for V-to-I. However, using facts of participle placement Haegeman (1995) provided evidence for V-to-I in Westflemish and Dutch under a universal base hypothesis, which in all likelihood carry over to German. The fact that the German inflectional system meets all the criteria normally associated with V-to-I is strongly in favour of V-to-I in German. In any case, we have a verb-raising process which places the finite verb in main clauses to the left of adverbs and negation. This is shown in (8).



2.2. Parameters define a cluster of properties

In English, there is a striking phenomenon which follows from the inability of the main verb to raise to I. We observe that in negation and questions, we have *do*-support. This is due to the fact that whereas in French or German, main verbs raise to inflection (and can raise to C from there) in order to arrive in certain checking configurations, the English main verb cannot do this. In order to fulfill checking requirements or in order to fulfill the relevant criteria, a dummy auxiliary which carries the required features must be inserted in English.

- | | | | | | | |
|-----|----|-----|------|-----|------|-----------|
| (9) | a. | *He | sees | not | | the house |
| (9) | b. | He | can | not | see | the house |
| (9) | c. | He | has | not | seen | the house |
| (9) | c. | He | does | not | see | the house |

In constituent questions this is even more striking: In French and German, main-verbs, modals, and auxiliaries raise to a position right next to the Wh-word so that we get subject-verb inversion, see (10a,b,c) and (11a,b,c). In English, we find only 'residual verb second' in so far as subject-verb inversion concerns only auxiliaries: we have subject-auxiliary inversion in questions and, once again, in main-verb questions we need to insert the dummy auxiliary 'do' in order to guarantee that the required feature is in a position suitable for checking or for the fulfillment of the Wh-criterion. The examples (12a-d) and (12') show the paradigm. The examples in (12) also provide the glosses for those in (10) and (11).

(10) a.	Wen	sieht	sie	(nicht)?	
(10) b.	Wen	kann	sie	(nicht)	sehen?
(10) c.	Wen	hat	sie	(nicht)	gesehen ?
(11) a.	Qui (ne)	<u>voit</u> -(t)-	<u>elle</u>	(pas)?	
(11) b.	Qui (ne)	<u>peut</u> -(t)-	<u>elle</u>	(pas)	<u>voir</u> ?
(11) c.	Qui (n')	a-(t)-	elle	(pas)	vu ?
(12) a.	*Who(m)	<u>sees</u>	<u>she</u>	(not)?	
(12) b.	Who(m)	<u>can</u>	<u>she</u>	(not)	<u>see</u> ?
(12) c.	Who(m)	has	she	(not)	seen ?
(12) d.	Who(m)	<u>does</u>	<u>she</u>	(not)	<u>see</u> ?
(12')	Who(m)	<u>doesn't</u>	<u>she</u>		<u>see</u> ?

From the patterns of negation and question formation in French, German, and English, we deduce that the verb-raising parameter triggers a cluster of properties. These are summed up in (13) below. Another property is the richness of inflection which usually comes together with V-to-I. It will be discussed in 2.3.

(13) The Verb-Raising Parameter

	Negative setting :	Positive setting:
adverb placement:	S A (main)-V...,	S (main)-V A...
negation:	<i>do</i> -support for main-verbs	finite verb before Neg
WH-questions:	subject/aux inversion, <i>do</i> -support for main-verbs	subject/verb inversion
Instantiation:	English	French with V-to-I, German with V-to-C

2.3. The properties of inflection : cross-linguistic and diachronic evidence

Verb-raising goes together with rich inflection because for rich or strong inflectional paradigms, inflectional endings are generated in the lexicon and categorised as I. The inflectional ending is inserted in the tree under the I node and the verb moves to its suffix. A weak inflectional system has a V+infl entry in the lexicon or there is some mechanism like Affix-hopping (Chomsky 1957) which lowers the inflectional ending. In these languages, verb-raising happens only at LF, and thus is not overt. It seems to be a descriptive generalization that languages with a rich inflection have V-to-I, see the list in (14). In (14) the numbers simply mark the number of different endings in the present tense. It seems to be the case that 3 such endings are enough to make a language a verb-raising language as the example of French indicates. However, Faröer, a language which also has only 3 different endings, is not a verb-raising language. So a more sophisticated characterisation of inflectional richness is required in order to establish a correlation to verb-raising. Several attempts have been made in recent research as listed in (15).

- | | | | | | | |
|------|---|-----------|---|---|---------|---|
| (14) | + | V-to-I | | - | V-to-I | |
| | | Italian | 6 | | English | 1 |
| | | Spanish | 6 | | MScnd | 1 |
| | | French | 3 | | Farör | 3 |
| | | German | 4 | | | |
| | | Icelandic | 4 | | | |
| | | Yiddish | 4 | | | |
- (15) An inflectional system is rich enough to trigger verb-raising iff it has...
- | | | |
|----|--------------------------------------------|----------------------------|
| a) | person distinctions | (Platzack & Holmberg 1989) |
| b) | person distinctions in the plural | (Roberts 1992) |
| c) | distinctive markings of 1st and 2nd person | (Rohrbacher 1994) |
| d) | person distinctions in all core tenses | (Vikner 1997) |

Without adding anything to the particular arguments, I want to demonstrate that loss of inflectional endings in the course of the development of English led to loss of V-to-I. See also Lightfoot (1990), but especially Rohrbacher (1994) and Vikner (1997) for more details about the development of different Scandinavian languages and English dialects. Example (16) shows that Middle English had verb-raising (from Rohrbacher 1994). The development of verbal inflection in English is generally described as in (17).

- (16) Wepyng and teres counforteth not dissolute laghers
 (Love: Lyf of Jesu Christ, 1400-50)
 Weeping and tears comfort not dissolute laughers
 'Weeping and tears do not comfort dissolute laughers'

- | | | | |
|------|-----------------------------|--|-----------------------------------|
| (17) | about 1400 (Middle English) | | about 1500 (Early Modern English) |
| | Infinitive: sing-en | | Infinitive: cast(-e) |
| | Present indicative | | Present indicative |
| | SG PL | | SG PL |
| | 1. sing-e sing-en | | cast cast(-e) |
| | 2. sing-est sing-en | | cast-est cast(-e) |
| | 3. sing-eth sing-en | | cast-eth cast(-e) |

Soon after the simplification of the inflectional paradigm, V-to-I is lost as shown in (18) with respect to adverb placement, more precisely with respect to *never*, and for *do*-support.

- | | | | | |
|------|---------------------------------|-------------------|-----------------------|--------------------------|
| (18) | S <u>never</u> V _{fin} | <u>Do-support</u> | | |
| | | questions | negative declaratives | affirmative declaratives |
| | 1450-75 | 23% | 4.1 | 1.2 |
| | 1475-1500 | 34% | 6.4 | 4.8 |
| | 1500-1525 | 70% | 30 | 8 |
| | 1525-1550 | 90% | 39 | 20 |
| | 1550-1575 | 90% | 56 | 38 |
| | 1575-1600 | 97% | 57 | 24 |
| | 1600-1625 | | 64 | 37 |
| | 1625-1650 | | 75 | 31 |
| | 1650-1700 | | 77 | 46 |
- (from Rohrbacher 1994 after Ellegård 1953 and Kroch 1990)

The fact that a parameter had been set to a different value is shown by the rise of *do*-support, which seems about 25 or 50 years delayed with respect to adverb placement. This delay is due to the fact that *do* had to develop from a main verb into a semantically empty auxiliary. One consequence of the slow development of *do*-support is the existence of two systems for a time as exemplified in Shakespeare's English, see (19a-d). The examples from *Macbeth* are particularly revealing because in 24 main-verb negations 19 are still V-to-I, and in 16 main-verb questions 12 are still V-to-I.

- (19) a. I know thee not, old man King Henry IV, II, 5.5
 (19) b. What means your lordship? Hamlet, 3.1
 (19) c. Do not bid me speak Mac, 2.3
 (19) d. Why do we hold our tongues? Mac, 2.3

2.4. Summary

We have seen that in some languages the verb raises to inflection and in others it does not. This is the typical situation of a parameter set to different values. These phenomena are therefore described by the Verb-Raising Parameter. We have also seen that a cluster of properties goes together with the Verb-Raising parameter: Lack of verb-raising in English leads to *do*-support in negations and constituent questions with main verbs. We have demonstrated the correlation of several properties also with some diachronic facts about English, see (18). We have also tried to show that the richness of verbal inflection plays an important role and seems to be part of the property-cluster going with verb-raising. We will now turn to the acquisition of verb-raising by L1- and L2-learners.

3. VERB-RAISING AND FIRST LANGUAGE ACQUISITION

Research on L1-acquisition has shown that many parameters are set as early as the emergence of the first two word combinations. This seems to be true for the head-complement parameter (Penner, Schoenenberger and Weissenborn 1994, Radford 1997) as well as for the pro-drop parameter (Rizzi 1997, Wexler 1998). Another well investigated parameter is the V2 parameter of the Germanic languages. Young children learning German respect the distribution discussed in 2.1. very early as the tables 1 and 2 show. The same holds for children learning Swedish (Platzack 1990) and Danish (Plunkett and Strömquist 1992, Hamann and Plunkett 1998).

Table 1: Distribution of finite and non-finite verbs with respect to V2
 German (Poeppel and Wexler 1993: Andreas 2.1)

	+finite	-finite
V2/not final	197	6
Vfinal/not V2	11	37

Table 2: Distribution of finite and non-finite verbs with respect to V2

German (Clahsen, Eisenbeiss and Penke 1996:

Simone 1;10-2;7, Matthias 2;3-3;6, Annelie 2;4-2;9, and Hannah 2;0-2;7)

	Simone	Mat-Thias	Annelie	Hannah
Finite/non-finite				
Vfin in V2	93% (511)	87% (69)	88% (117)	80% (4)
Vfin in final pos.	7% (41)	13% (10)	12% (16)	20% (1)
V-fin in V2	2% (4)	2% (1)	1% (1)	X
V-fin in final pos.	98% (189)	98% (52)	99% (80)	X

Early parameter setting can also be shown for V-to-I. Pierce (1992) demonstrated that French children consistently put finite verbs in front of the negation particle *pas* and leave infinitives to the right of negation. So French children know from early on that finite verbs raise in French. This is shown in example (20) and in table 3.

(20) veux pas lolo vs. pas dormir (Pierce 1992)

Table 3: Distribution of finite and non-finite verbs with respect to negation

French (Pierce 1992: three children ranging from 1;8 to 2;6)

	+finite	-finite
<i>Pas</i> verb	11	77
Verb <i>pas</i>	185	2

Though there is some debate on the mastery of *do*-insertion in questions and negative structures in Early English, new results on question formation (Stromswold 1990, Guasti 2000) show that English children from early on know that auxiliaries raised in English. The above authors report between 93% and 99% correct subject-auxiliary inversion in Yes-no questions. See Guasti (2000) for more details. We can thus conclude that in L1-acquisition the verb-raising parameter is set correctly from the first pertinent word combinations. We go on to ask if and how this parameter is acquired in second language acquisition.

4. WHITE (1992): AN EXPERIMENT ON PARAMETER SETTING

4.1. The experiment

The experiment was run in Quebec, Canada with French speaking children of 10 to 12 years of age. UG access could thus be assumed as this is an age generally considered to be 'before puberty'. These children were enrolled in an intensive course of English. English was taught by native speakers, and there was no French spoken during the course. It was not a full immersion program, however, as other courses were held in French.

The transfer problem under investigation was the step from a verb-raising language to a non-verb raising language. The experimental questions were the following: Can classroom teaching lead to parameter setting? Will the teaching of one set of properties lead to parameter setting which will then influence the performance on the rest of the property cluster?

The experiment was designed in the following way. The basic experiment was a test story with cartoons using 4 frequency and 4 manner adverbs. There were other tests as well, such as judging given sentence pairs etc. The experiment began when the children were 3 months in the program. At that point there was a pretest. It was followed by a month of instruction. Immediately after the instruction period there was a test which was then repeated after 3 weeks and again after a year. The important point of the design lay in the instruction. One class was taught about adverb placement, the other about *do*-support in negation and question formation. Both classes were tested on adverb placement. The cartoon story was presented and the children were asked to change any strange sentences. The error-score was then computed by counting all unchanged *SVAO orders and all correct orders changed to *SVAO.

4.2. Results

The first test, administered after three months of the English course and before the specific instruction started, showed that the negation/question group and the adverb group did very badly on the cartoon story. Both groups performed significantly worse than a native control group of the same age. At the beginning of the experiment we thus find transfer of the verb-raising paradigm from the native language as the starting point.

The crucial tests after instruction showed that the negation/question group had not improved when compared to the first test on adverbs. For them transfer was still the dominant pattern. It can be concluded that for these children the overwhelming evidence of *do*-support had not become a trigger to set the parameter in the right direction.

As to the second group who was taught adverb placement directly, the two tests following the instruction period reasonably closely showed that these children now had near native performance. They performed just as well as the control group and showed definite improvement over the results on the first test round.

The test run after a year then showed that both groups were doing equally badly again, with scores comparable to the pre-test. The group which had been taught adverb placement explicitly had forgotten their lessons and the predominant pattern in both groups was transfer. These results certainly can lead to every teacher's despair and clearly show that no parameter setting had taken place.

There was one very interesting side result, however. There had been no explicit teaching on any difference of manner (A_m) and frequency (A_f) adverbs, but the adverb group almost performed like the control group in the 2nd and 3rd tests. White's native speakers changed SVA_fO order to SA_fV and SVA_mO orders to SVOA_m clearly showing a preference for manner adverbs at the end of the VP and for frequency adverbs in medial position. White's conclusion is that the positive (naturalistic) input received during instruction was enough to make the subjects sensitive to this subtle lexical difference.

The questions which emerge, especially when also considering the side result are the following: Is pattern drill an appropriate input for parameter setting? Will a language learner take formal instruction as language input or will it be treated by a more general cognitive mechanism? Addressing these questions in longitudinal studies should be of great importance in the long run and should influence language teaching, especially in view of some teaching methods still used in francophone countries. For the moment, I will show the results of an experiment very similar to White's performed with German highschool students of English.

5 . AN EXPERIMENT WITH GERMAN STUDENTS LEARNING ENGLISH

For technical reasons, this experiment did not include an instruction period nor a pretest or a post-test. Instead, students at different levels were tested and a questionnaire asked how long they had been taking English and whether they had ever spent some time in an English speaking country. The task, a grammaticality judgment task, specifically asked students not to think too long but to just mark things which «sounded» wrong and change them.

5.1. The design and the test story

Writing a test story proved to be not quite trivial as the natural choice of past tense for a narrative was problematic. First, it involved the use of irregular verbs which may not be familiar in the first or second year of English. Second, starting in the simple past and switching into complex tenses quite often so that the finite verb was an auxiliary. The difference between German and English with respect to verb-raising and adverb placement only emerges with main verbs, however. The solution was to use a habitual present for the narrative which also agreed quite well with the choice of frequency adverbs such as *usually* and *always*. The adverbs which were used are: *usually, carefully, always, slowly, easily, often, quickly, sometimes, rarely, busily, thoroughly*. Below I give the story before discussing the separate test sentences.

Robert Goes Hiking

(1) Robert likes to go hiking. **(2) He usually puts on his hiking boots and a hat.** **(3) He prepares carefully a nice, big picnic.** (4) He takes bread, cheese, salami, bananas, and a bottle of wine. (5) When his pack is full, Robert has left.

(6) Now look at what happens always to Robert when he goes hiking. **(7) He carries his pack easily.** (8) But soon it get too heavy. **(9) He climbs slowly up the mountain.** (10) He drags his feet at every step. **(11) He takes often a rest.** (12) But then he has his picnic on the top of the mountain. (13) At last Robert is content. (14) He has had a good picnic. (15) And he has drunk any wine! **(16) Robert quickly takes his empty pack and skips down the mountain.** (17) He is as happy as a lark.

(18) But Robert likes to collect things. **(19) He finds mushrooms sometimes.** **(20) Rarely he passes wild flowers without picking a few.** **(21) Busily he collects all sorts of items:** a colourful stone, a wagon wheel and whatever oddity he finds. (22) When he gets home, **Robert has usually not only sore feet, but also a sore back.** (23) But that matters not. **(24) He has thoroughly enjoyed himself.** (25) And he keeps everything!

Concerning the design, there are 4 control sentences, underlined here. These address the question of whether the students are still paying attention and whether the task is understood. In other words, the sentences (5) (8) (15) (23) show grammatical mistakes which are so blatant that they should certainly be noticed as odd and be marked as such. (5) is a violation of the sequence of tense, (8) has a missing 3rd person –s, (15) shows a polarity violation and (23) has the Middle English pattern of negation, i.e. no *do*-insertion and a raised main verb. Then there are the fillers which are necessary to carry the story and to distract the attention from the many adverbs.

The sentences with adverbs are given in bold print and a list follows below. Note that there are 4 sentences with adverbs in medial position which have to be changed and 4 adverb

The interesting result is that the classroom instructed student shows no sensitivity at all to the problem of adverb placement, while doing well on the other grammaticality judgement tasks. For one of the bilingual speakers of English, we also observe interference of the dominant, French, setting of the parameter. The learner following the national program seems to have set the parameter correctly but does not allow any other but medial adverb positions. The changed patterns are all changed to correct medial position.

5.3. An experiment with German students learning English at high school level

As the next step, the experiment was run in two German schools. One was the Realschule in Bad Krozingen where I could test the lower grades and the other was the Gymnasium Wehr for the higher grades. Both schools are in Baden-Württemberg so that the curriculum and the teacher's qualifications are approximately the same. In Krozingen, the test was run with class 9 and class 10, in Wehr with class 12, advanced level, and with the Berufskolleg, i.e. adult students perfecting their English. All students had only class room instruction. Some of them had profited in addition from a 2-3 week stay in an English speaking country. Class 9 is in their 5th year of English, class 10 in the 6th year, class 12 in their 8th year, and students in the Berufskolleg have had from 6 to 9 years of instruction. For beginners and advanced students there are 5 lessons per week, in between there are 3 lessons. Over the period of instruction, all the students thus had an average of 4 lessons per week. None of the classes had ever had a special grammar unit about adverb placement, whereas *do*-insertion in the context of negation and question formation is explicitly and repeatedly taught at several levels. The design of the experiment remained the same. There was the Robert-cartoon and the story and the task of marking and answering rapidly and without too much thought.

5.4. Results

5.4.1. Screening

As to the control tests or screening items, table 5 shows a great insecurity as to the 3rd person –s ending. 83% of class 9 did not detect it's omission, and 60% of class 12 still did not detect this. Some students even proceeded to cancel some of the correctly placed other 3rd person –s endings. *Do*-support was well mastered, however. 70% of class 9 detected the error and in class 12, almost everybody noticed it (90-100%).

Apart from giving the performance on the single screening items, table 5 also shows how many students participated in the rest of the experiment on the criterion of having detected at least 2 errors (>1) and on the stronger criterion of having detected at least 3 errors (>2). We call the first group the weak group and the second group the strong group.

Table 5: Performance on screening items (118 participants in all)

% spotted errors by all participants	Krozingen KL 9	Krozingen KI 10	Wehr 12Lk	Wehr Bk	Average
(5) seq. Of tense	31 (17:54)	63 (15:24)	100 (15:15)	84 (21:25)	58
(8) 3rd p. -s	17 (9:54)	25 (6:24)	40 (6:15)	60 (15:25)	30
(15) neg polarity	37 (20:54)	34 (8:24)	60 (9:15)	72 (18:25)	47
(23) do-support	70 (38:54)	67 (16:24)	100 (15:15)	92 (23:25)	78
% students (>1 er) admitted to the test	59 (32:54)	54 (13:24)	100 (15:15)	92 (23:25)	70
% students (>2 er) admitted to the test	15 (8:54)	29 (7:24)	66 (10:15)	64 (17:25)	36

5.4.2. Adverb placement

The error rate was calculated from unspotted *SVAO orders and from falsely changed or ticked SAVO. All other tests were treated separately. In the Berufskolleg two students had to be excluded because they were bilingual. We retain 21 students in the weak group and 10 in the strong group. Table 6 shows the error rates for adverb placement for the weak group and table 7 shows the same for the strong group.

We see that the error rate is very high in the ungrammatical orders which were accepted to a percentage significantly higher than chance by Class 9 and 10 and are at chance level for one of the conditions even at the higher levels. Correct orders were changed at a surprising rate, too. It is interesting to note that the percentage of errors in most classes is about equal for manner and for frequency adverbs, only class 10 does much worse with manner adverbs than with frequency adverbs.

Restricting the experiment to the students who performed better on the screening items did not raise the percentage of spotted errors in the uncorrect adverb orders. The younger students still do very badly, though we see a slight improvement over the other group in the older students. Again, error rates are equally distributed for manner and frequency adverbs, with the exception of class 10.

Table 6 : Percent Error Rates For Adverb Placement

admitting students to the test by the weak criterion (more than 1 error spotted)

81 participants

	SAmVO	SafVO	* SVAmO	* SVAfO	average error	Average manner	average frequ.
Kroz 9	9 (3:32)	0	59 (19:32)	78 (25:32)	36.5	34	39
Kroz. 10	38.5 (5:13)	0	85 (11:13)	54 (7:13)	44.4	61.7	26
Wehr 12	20 (3:15)	0	27 (4:15)	47 (7:15)	23.5	23.5	23.5
Wehr bk	10 (2:21)	5 (1:21)	52 (11:21)	43 (9:21)	27.5	31	24
Total	16	1.2	55.5	59.2	32.9	35.7	30.2

Table 7 : Percent Error Rates For Adverb Placement

admitting students to the test by the tough criterion (more than 2 errors spotted)
40 participants

	SAmVO	SAfVO	* SVAmO	* SVAfO	average error	average manner	average frequ.
Kroz 9	0	0	75 (6:8)	88 (7:8)	40.7	37.5	44
Kroz. 10	0	0	86 (6:7)	43 (3:7)	32.2	43	21.5
Wehr 12	0	0	20 (2:10)	40 (4:10)	15	10	20
Wehr bk	7 (1:15)	7 (14:15)	40 (6:15)	27 (4:15)	20.2	23.5	17
Total	2.5	2.5	50	45	25	26.2	23.7

5.5. Discussion

The results show clearly, that the V-to-I parameter is not set negatively for English. 20-40% errors is too high a rate to count as the natural performance errors encountered in test situations. The gradual accumulation of input seems to influence grammatical competence: the error rate goes down from class 9 to class 10 by about 10%, and the same is true for the step between class 10 and 12, at least in the groups which meet the tougher criteria.

We also note that nearly all students have *do*-support, but are highly error prone with adverbs. A cross-check showed that students who do not have *do*-support, did not make more errors than the others on adverb placement.

The errors concerning the 3rd person -s could lead to the hypothesis that the inflectional system is not mastered so the verb-raising parameter cannot be set (cf. Herschensohn 1997 concerning L2-French). However, the «loss» of -s leads to further impoverishment, so loss of V-to-I should follow directly.

Especially the last two points corroborate White's result that the cluster of properties belonging to a parameter is not acquired simultaneously in class-room L2-acquisition. As to the question of transfer, the results on the lower age groups seem to indicate that transfer is indeed one of the strategies which are employed in early phases of L2-acquisition.

6. CONCLUSION AND OUTLOOK

One might be tempted to conclude that UG is not available to students of high school level. This cannot be true, however, as all the students started to take English courses at around the age of 10 or 11 and so are in the same category as the students participating in White's experiment. Moreover, studies concentrating on L2-acquisition with naturalistic input normally come to the conclusion that children quite easily pick up the language at that age. The pilot study corroborates this with respect to the one student who had more of a naturalistic input than the others. If UG is generally considered to be available, what is the reason for the poor results (apart from poor teaching which I do not assume of my friends and former colleagues)?

A good candidate for blocking UG is the way language is encountered in the classroom. If the student is more or less confronted with a system of rules and items to memorise, this may

be treated a priori not by the language faculty but by the usual cognitive resources also brought to the instruction of biology or history immediately preceding or following the language course.

The factor of natural input provided by the teacher obviously should not be underrated. The more English is spoken or read or listened to on tapes, the better the students get – a result which emerges from the gradual amelioration of the error scores in my experiment and from the side result of White's. Given the importance of the correct prosodic input during the first year of life as emerging from studies on word recognition, this natural language input should ideally be provided by a native speaker. If that is impossible, the teacher of a foreign language should have near native competence in prosody and intonation as well as on the grammatical level. The consequences for teacher's training are obvious: a prolonged stay in an English speaking country and regular contact with native speakers should be indispensable. Language laboratory courses also might help teachers and students.

Another factor in order to ameliorate the success-rate of foreign language learners is, of course, the age factor. If children could start with a foreign language at primary school level much would be won. The sine qua non, however, is again that the teachers be competent and have a good pronunciation and intonation. The experiment recently started in France where English is now offered twice a week at some primary schools is thus doomed to failure: the teachers are initiated into English and into using some basic materials of language teaching in 3-6 week courses which can never provide a competence good enough for giving near native input.

Before we arrive at conclusions which are too far reaching for the evidence provided by the experiment, the experiment has to be ameliorated. More main verb examples would give more unequivocal adverb test conditions. It should then be run with controls, with class-room learners and with immersion learners in order to firmly prove the difference we have been taking for granted in the conclusion. It should also be run with students who have begun learning English at different ages. It is hoped to replicate the experiment in the near future with so called 'immersion' learners in Genevan schools and also adapt it to lower ages and test the transfer hypothesis with children at the kindergarten level who start from different source languages and are learning French by immersion.

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