

On the second language acquisition of L2 syntactic features and their projection domains

Manijeh Youhanaee

Assistant Professor, Department of Foreign Languages, Isfahan University

e-mail: youhanaee_m@hotmail.com

Abstract

This study is an attempt to investigate the issue of failure in second language acquisition syntax. The Failed Functional Feature Hypothesis (FFFH) proposed by Hawkins and Chan (1997) claims that parametric options not instantiated in L1 feature system of functional categories would lead to persistent difficulty even after a long time of exposure to L2 input and at very advanced levels of proficiency. This paper has focused on the acquisition of English interrogative clauses by adult Persian speakers. Based on the analysis of the elicited data, I argue that failure occurs where an L2 structure (trigger) is compatible with both L1 and L2 representations; however, where such compatibility does not exist L2 learners have a chance to acquire the new option.

Key Words: the Failed Functional Feature Hypothesis, functional categories, second language acquisition, trigger.

Introduction

The puzzle of L2 grammatical development has been the theme of an ongoing debate over the last decades of research within the principles and parameters (P&P) framework. Researchers having reported studies indicating L2 learners' failure to acquire a certain parameter setting (Schachter, 1990; Tsimpli and Roussou 1991; Bley-Vroman, 1989; Hawkins 2001, among many others) assume a dominating role for L1 in the course of L2 acquisition. However, there are also plenty of data presented in other studies with the conclusion that resetting in L2 grammatical development is eventually possible (White, 1996, 2003; Schwartz and Sprouse, 1996; Slabakova, 2001 to name a few). In order to find an answer to the question why L2 learners are not as successful as L1 learners we need to have a clear picture of what aspect of variation is difficult to acquire. This paper is an attempt to look at the issue from a different angle, investigating properties of *triggers* in language acquisition. A basic assumption in P&P theory holds that only positive evidence (L2 primary linguistic data/input) leads to setting values for parameters in L1 and L2 acquisition (Hawkins 1994; Schwartz 1993). Any positive evidence related to the acquisition of a certain parameter is referred to as the *trigger* required for setting that parameter. If L2 learners are successful in one grammatical area but not in another, the identification of triggers and their properties could be illuminating why some triggers do not lead to acquisition in L2 development while they do so in L1 development. To investigate this issue I have focused on the acquisition of interrogative clauses in English (a language with overt wh-movement) by speakers of Persian (a language with no wh-movement in overt syntax). Positive evidence like those in (1-2) seem to be enough for child L1 learners to not only formulate correct questions but also reject violations of subadjacency and ECP (see below) once the parameter is set.

- 1 What do you see in this picture?
- 2 Where is your book?

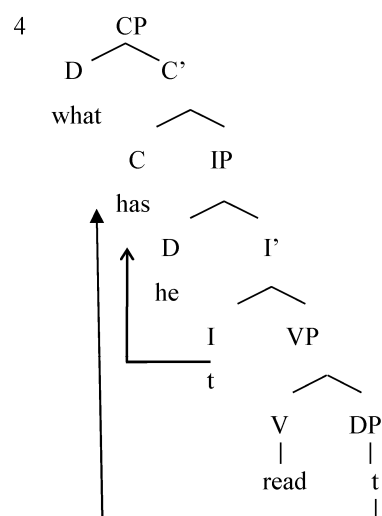
In L2 acquisition, however, high rates of correct questions are reported but rejecting the related violations of wh-movement is considerably less accurate than native speakers after considerable exposure to L2 even at advanced levels of proficiency (Hattori 2004). This difference between the performance of the L1 versus L2 speakers indicates that L2 learners have not reset the parameter hence are unable to perform accurately where abstract properties of the parameter are involved. In the following I will report the data I have collected on different types of English questions produced by Persian speakers. Based on the analysis of the data and linguistic properties of questions in Persian and English, I will argue that limited availability of triggers in the input provided for L2 learners might block resetting. Moreover, if the available trigger is compatible with both L1 and L2 representations, L1 features would persist in L2 interlanguage. In the following section I present linguistic assumptions underlying this study. Section 3 and 4 Present the methodology and results respectively.

Linguistic assumptions

It is assumed (cf. Radford, 1997 and references cited there) that the grammatical feature [Q] is generated on the functional category C in English. [Q] is a strong feature which must be checked by a [+wh] category in a specifier-head relation in overt syntax before spell-out. The operator moves to [spec, CP] to satisfy the wh-criterion as proposed by Rizzi (1991): an interrogative COMP requires an interrogative specifier and an interrogative specifier needs an interrogative head. On the other hand, [Q] has a [+affixal] property and needs merging with another category. The Shortest movement Principle requires that this category must be the

auxiliary in I. Thus, the two properties of [Q] in English dictate two types of movements: head-movement (to C position) and operator movement (to spec, CP position).

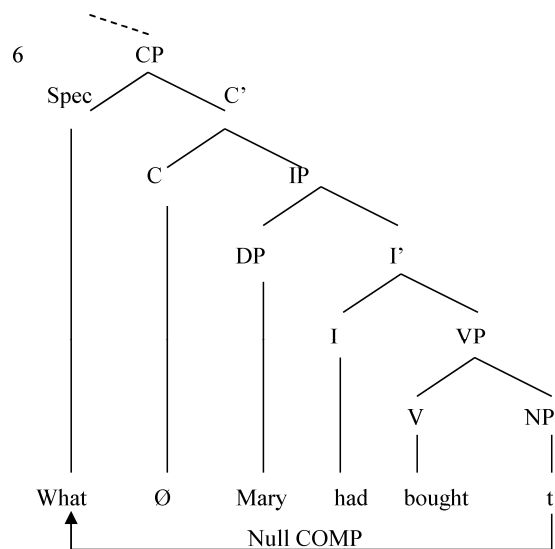
3 What has he read?



The moved element will leave a trace in its base position. The antecedent and the trace will form an A'-chain.

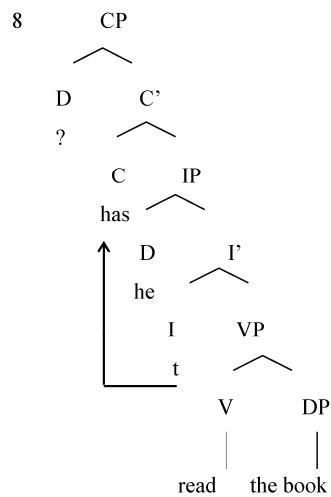
In embedded questions, the matrix verb selects a null COMP, thus Aux-movement is not motivated in embedded questions (as C position is filled with a null COMP) and it is only the wh-operator which moves to the specifier position to check off the [+Q] feature (cf. Radford 1997).

5 He asked what Mary had bought.



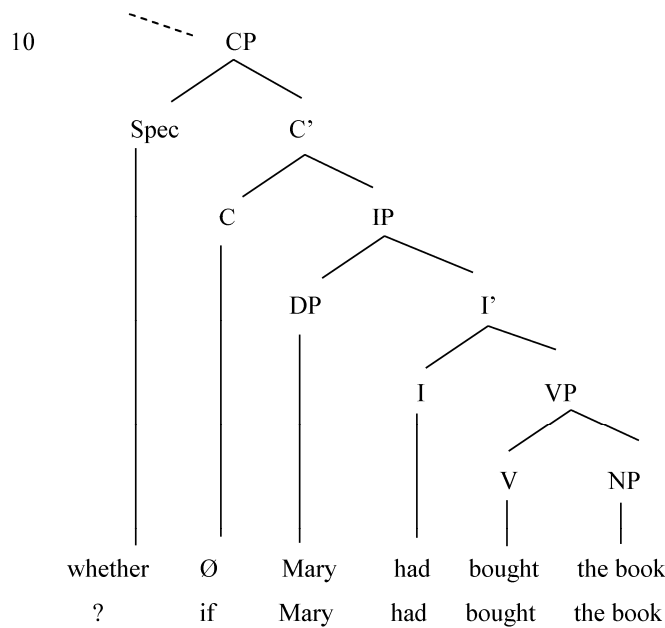
In main yes/no questions, the [+Q] feature is checked by a null operator in the specifier position. And the [+affixal] property of [Q] imposes Aux-movement.

7 Has he read the book?

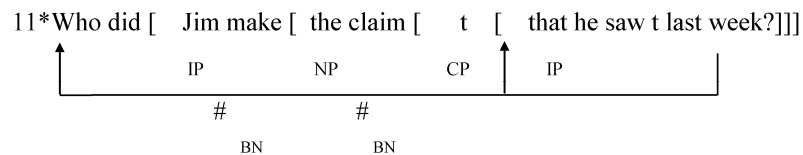


In embedded yes/no questions [Q] is realized either as a null COMP in which case the operator 'whether' is generated in the specifier position to satisfy the spec-head checking requirement, or it is realized as 'if' with a null operator in its checking domain.

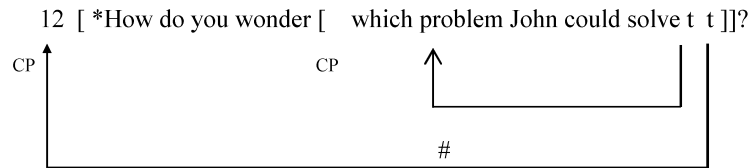
9 He asked whether \emptyset / ? if Mary had bought the book.



One aspect of +wh-movement parameter is the fact that it is not licensed in every case. In fact it might be constrained in certain conditions in order not to violate other principles of UG. One such principle is Subjacency :Movement cannot cross more than one bounding node, where bounding nodes (BN) are IP and NP (Chomsky 1986).



Another is the Short Movement Principle: Movement must be local (Haegeman 1994).



Persian is a wh-in-situ language; that is, all wh-arguments and wh-adjuncts occur in their base position (Karimi 1989; Lazard 1992; Raghidoost 1994; Bateni 1995 Mahootian 1997;). The particle ‘*aya*’ is optionally used for both yes/no questions and wh-questions.

13 (aya) æli ræft?

Q Ali went?

‘Did Ali go?’

14 (aya) pro ki-o entexab mikone?

Q who-Acc choose does

‘Who will he choose?’

15 (aya) pro koja mire?

Q where goes

(Where does he go?)

The fact that in multiple wh-questions all the wh-constituents appear in their argument position and the head of the sentence can be ‘*aya*’ indicates that wh-movement is not possible in Persian interrogative clauses.

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- 16 (aya) ki çi-o be ki dad?
Q who what-acc to who gave
'Who gave what to who?'

One reason why such movement is not licensed in Persian can be due to the proposal that in Persian [spec, CP] is a [-wh] position (Youhanaee 1997). Assuming that Persian instantiates the [-wh-movement] value of wh-movement parameter, It is predicted that unlike English it is not subject to subjacency and the shortest movement principles as the following examples indicate.

- 17 goft-i [(ke) [ki fekr mikone [(ke) [to çi xæridi] said-you
that who think does that you what bought
(*What did you say who thinks that you have bought t ?)

There is another difference between Persian and English questions as shown in the following examples:

- 18 pro nemidanest ke aya anha zende budænd ya morde
not-know-s/he that ? they alive were or dead
(s/he didn't know whether they were alive or dead.)
- 19 pro porsid ke ki ævvæl qayeq-ro dide bud
asked that who first boat-ACC seen was
(S/he asked who had first seen the boat?)
- 20 pro moræddæd budæm ke çetor ba-haş hærf bezænæm
doubt was-I that how to-him/her talk do-I
(I was not certain how to talk to him/her.)

The fact that both the question particle '*aya*' and all the wh-constituents follow the complementizer *ke* in Persian indicate that the feature [Q] must be generated on a different functional category. Following Koisumi (1995), I refer to this functional category as the Polarity Phrase. This seems to be the case in other wh-in-situ languages such as Japanese, in which the question particle '*ka*' appears before the complementizer '*to*' *that* (Japanese is a head last language). In fact, we find a reverse situation in a language like English whose specifier position is a [+wh] position, and only [-wh] constituents like topicalized and negative constituents appear in the specifier position of the lower CP after the complementizer *that*.

21 John says that those books he will put on the table.

22 I know that only with great care would he leave the party.

The main differences between Persian and English questions can be summarized in the following:

A. Persian and English differ in that they select different values for the grammatical feature [Q] which is strong in English (hence triggers wh-movement) but weak in Persian (hence no wh-movement).

B. English is subject to subjacency and the short movement principle but Persian is not.

C. [Q] in English is generated in CP, whereas it appears in a different projection called the Polarity Phrase.

The focus of the present study

The differences in the structure of Persian and English interrogative clauses follow if we assume that they select different values for the wh-movement parameter. Based on this parametric variation, we focus on the following question:

(1) Can Persian L2 learners of English reset the value of the wh-movement parameter from [-wh] to [+wh] such that:

(a) there is enough evidence that their correct interrogative clauses derive from underlying representations similar to English;

(b) there is enough evidence that their interrogative clauses in English are constrained by subjacency and the short movement principle?

A direct prediction based on the FFFH would be a negative reply to this question as the FFFH assumes a persistent role for L1 feature settings in the course of post-childhood language acquisition. This can be formulated as in the following specific hypotheses:

Hypothesis 1:

Persian speakers will show no sign of feature resetting of functional categories. Rather, they will resort to their L1 parameter settings and representations in the construction of L2 interrogative clauses at all stages of acquisition.

Hypothesis 2:

Persian speakers' interrogative clauses for L2 English will not be constrained by UG principles not instantiated in their L1.

Method

This study was undertaken among the second language learners of English at Isfahan University. The L2 learners (number 80) were selected on the basis of performance on a general proficiency test (Alan 1992). They were assigned to four proficiency groups: elementary(20), lower intermediate (19), upper intermediate (21) and advanced (20). The minimum amount of exposure to English was six years, predominantly in classroom setting.

Two tasks were used in the main study. The first was an oral translation task which included main yes/no questions (6 items), embedded yes/no questions (10 items), main wh-questions (15 items), and embedded wh-questions (6 items) in Persian to be translated into English. The second was a grammaticality judgment test including ungrammatical wh-movements due to violation of subadjacency (3 items) and the short movement Principle (3 items) and grammatical wh-movements sentences with no such violations (6 items). They were asked to write *correct* for any sentence they judged to be correct, *incorrect* for those they judged to be ungrammatical, or put (?) mark in front of the sentence if they were not sure. The items in both tasks were randomized and controlled for the type of verb they contained and for vocabulary (words were chosen from among the most frequent words in the English textbooks used in Iranian high schools).

In the first session, the placement test was administered to the students to assign them to the four groups of elementary, lower intermediate, upper intermediate, and advanced according to their proficiency levels. In the second session every participant was tape-recorded individually while s/he was translating the Persian sentences into English. The sentences were read one by one to the subject by the researcher and the participant was asked to translate them as quickly as possible without paying attention to their grammaticality and focusing only on the communication of the meaning. This session took 15-20 minutes depending on the proficiency and fluency of the learner but the whole procedure for the second session took about two months. Finally, in the third session, the grammaticality judgment task was administered. The oral translation data were later transcribed and scored. All correct translations/responses for the tasks were scored 1; otherwise, they were scored 0.

Results

In the analysis of Persian interrogative clauses, it was assumed that the question feature [Q] is specified for [-wh] value and does not motivate wh-movement. [Q] is, therefore, checked at LF to satisfy Procrastinate (Radford 1997). Thus, Persian speakers at initial stages of acquisition are expected to use declarative clauses with rising intonation for English interrogative clauses. In this section we analyze the results to see if there is any evidence which indicates that Persian speakers can go beyond this stage and acquire L2 feature specification in interrogative clauses.

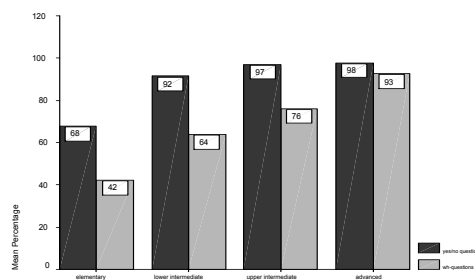


Fig. 1

As shown in Figure 1 subjects perform better on main yes/no and wh-questions as their proficiency level increases. The percentage of correct yes/no questions for the first group is 68% and from the second level on this percentage is above 90%. These results suggest that subjects acquired inversion in main yes/no questions from the second level on and scored as highly as the third and fourth groups. The results of wh-questions indicates lower scores; however, the mean gradually increases across proficiency levels. The results of an ANOVA performed on the yes/no questions scores (appendix 1) indicated significant differences between the groups ($F= 15.267$ $P= 0 .00$). Multiple comparisons of Sheffe test indicated that it was only the elementary group which was different from the other three groups. In other

words, movement operations seem to have been acquired quite early from the second stage on. The analysis of variance performed on the wh-questions scores showed the groups were significantly different ($F= 20.414$; $P= 0.00$). The differences were located between the elementary and the other three groups as well as between the lower intermediate group and the advanced group indicating a rather slower process in the acquisition of wh-questions as shown by the results of the post hoc comparisons (Sheffe test) (see appendix 1). Considering the errors produced by lower groups, it was found that most errors were due to inversion for subject questions.

- 23 *Who does see him every day?
- 24 *What did cause the accident?

These errors are significant in that they indicate that not only have the L2 learners acquired *Aux* inversion but also they have overgeneralized it to subject position where, in fact, features percolate to C position and there is no need for raising (Radford 1997). In other types of errors, learners at lower levels of proficiency either had raised the wh-operator or had raised the *Aux* only.

- 25 *To whom they lend the money?
- 26 *About who he talked?
- 27 *When he played football?
- 28 *Did he bring flowers for whom?
- 29 *Did you cut the paper with what?

We now consider subjects' performance on the embedded questions.

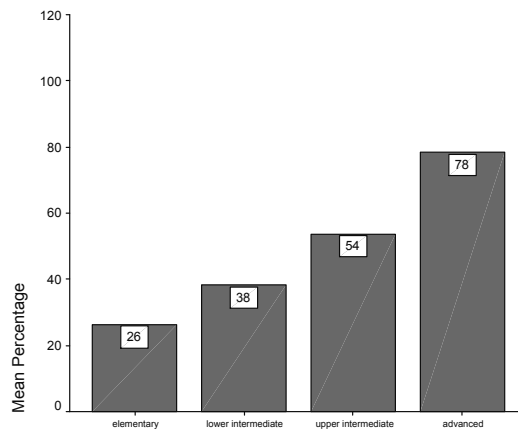


Figure 2. Accuracy of embedded questions

As Figure 2 shows, subjects did not perform on these questions as accurately as they did on root questions. The mean percentage of the elementary group is only 26% correct and it is lower than 80% correct for the advanced group. An ANAOVA performed on the scores showed that the groups were significantly different ($F= 19.662$, $P= 0.00$). Multiple comparisons of the Sheffe test indicated that there was no difference between the elementary and the lower intermediate groups but with the upper intermediate and advanced groups. The advanced group was found to be significantly different from the other three groups (appendix 1). These results clearly indicate that the acquisition of embedded questions in English is a persistent difficulty for Persian speakers. We now look at the type of errors produced by the L2 learners.

- 30 *I don't know that whether he finished his work.
- 31 *I'm not sure when will the film start.
- 32 *I doubt how old is he.
- 33 *She doesn't know that why he studies French.
- 34 *We know that why did he come late.

- 35 *I know that whose house you bought.
- 36 *I don't remember that whose book did he give to Ali.
- 37 *He forgot that to whom did Ali talk.
- 38 *Mary knows that what Ali showed to his friend.
- 39 *We don't know that who they help.
- 40 *Do you remember that who cooked the dinner?
- 41 *I'm not sure that who did open the door.

These errors were produced even by subjects who were in the advanced group though the percentage was lower for them. The errors which include (*that+wh-operator*) or (*that+wh-operator+Aux*) order are interesting in that they indicate that the *wh-operator* cannot be in [spec, CP] if we assume that *that* as a complementizer is in C position.

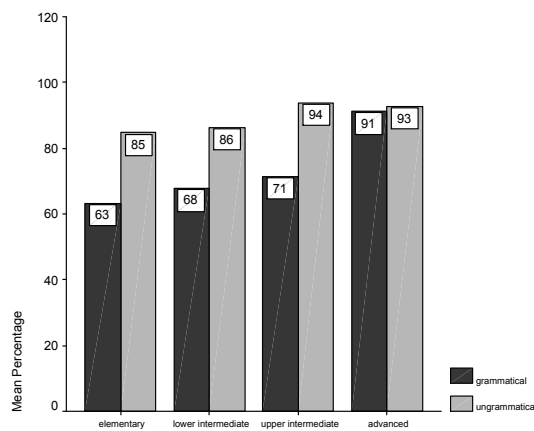


Fig. 3

We further consider the results of the grammaticality judgment test.

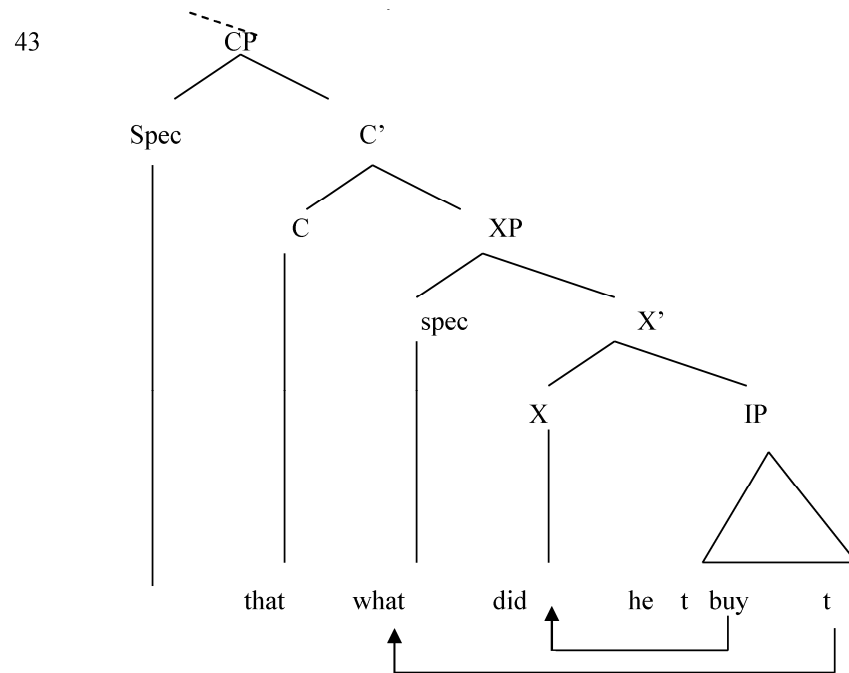
Results of the grammaticality judgment test indicate that learners had a tendency to reject both grammatical and ungrammatical sentences. Therefore they scored better on ungrammatical sentences than on grammatical ones.

However, the learners at the advanced stage show an increase in their intuition. Analysis of variance indicated significant that the groups were significantly different ($F= 76.823$, $P= 0.00$). The differences were found to be between the upper intermediate and all other three groups. Similarly between the advanced and the other three groups. These results suggest that their L2 grammar can be eventually constrained by UG Principles such as subadjacency and the short movement principle, though the process could be very gradual and ultimate attainment might happen at very advanced levels of proficiency.

To sum up, the results for main yes/no questions indicated that subjects had no problem in acquiring the strong feature of [Q] in English and its motivating force for movement. However, it seems that they need more time to acquire the relevant features in wh-questions. On the basis of these results, we can conclude that L2 learners are trying to reset [Q] from [-weak] to [+strong] resulting in overt movement before spell out in spite of their L1 properties which do not license wh-movement before LF. However, it is important to notice that these L2 learners had difficulty in forming correct embedded questions even at advanced level of proficiency.

Considering the errors as in the examples in 30-41, it is clear that in the interlanguage of these L2 learners, the complementizer *that* appears before a wh-operator or an inverted *Aux*. If complementizers like *that* universally appear in C position (Rizzi 1991), then we can conclude that once Persian L2 learners acquire wh-movement and *Aux* inversion in English, they move them to a lower projection than CP as shown in 42-43.

42 *We know that what did he buy.



This representation seems to be compatible with Persian embedded questions presented in (18-20). If this speculation is right, then the projection under the CP should be the Polarity Phrase. This means that Persian learners have not acquired the right projection where [Q] is generated in English, while the strong feature of [Q] and its motivation for movement has been acquired. In other words, Persian speakers have reset the wh-movement parameter on a projection different from their L2 English.

I suggest that this misanalysis of L2 representation by Persian speakers is due to the fact that in the L2 input there is clear evidence indicating obligatory operator and *Aux* movement in English. However, the evidence which can function as the trigger for the acquisition of the right functional category for [Q] feature is not available in the L2 input. The textbooks used

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for Persian speakers hardly show any instantiation of sentences such as 21 and 22 repeated here as 44 and 45.

44 John says that those books he will put on the table.

45 I know that never would he leave the party.

It can be concluded that resetting in the presupposed maturationally fixed part of grammar is possible but in this case it is subject to misanalysis due to the mismatch of the functional categories involved. More importantly, we can conclude that this failure is due to input rather than L2 learners. In this sense, The Failed Functional Feature Hypothesis accounts for only those cases for which L1 and L2 representations are different but compatible with a certain type of structure; otherwise, the incompatibility would lead to the acquisition of a new representation. This view indicates that the functional module is not inaccessible as new features can be acquired but it also implies that in some cases acquisition is blocked. One goal of SLA is to find those areas where resetting fails, why it fails, and whether we can find solutions for these cases.

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Appendix 1

Table 1. One way ANOVA and sheffe test on the scores of the yes/no questions.

ANOVA

yes/no questions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10319.555	3	3439.852	15.267	.000
Within Groups	15997.317	71	225.314		
Total	26316.872	74			

Multiple Comparisons

Dependent Variable: yes/no questions
Scheffe

(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
elementary	lower intermediate	-22.6761*	5.0765	.001	-37.2139	-8.1383
	upper intermediate	-28.3951*	4.8768	.000	-42.3609	-14.4292
	advanced	-28.9506*	4.8768	.000	-42.9164	-14.9848
lower intermediate	elementary	22.6761*	5.0765	.001	8.1383	37.2139
	upper intermediate	-5.7190	4.9517	.722	-19.8993	8.4614
	advanced	-6.2745	4.9517	.660	-20.4549	7.9059
upper intermediate	elementary	28.3951*	4.8768	.000	14.4292	42.3609
	lower intermediate	5.7190	4.9517	.722	-8.4614	19.8993
	advanced	-.5556	4.7467	1.000	-14.1489	13.0378
advanced	elementary	28.9506*	4.8768	.000	14.9848	42.9164
	lower intermediate	6.2745	4.9517	.660	-7.9059	20.4549
	upper intermediate	.5556	4.7467	1.000	-13.0378	14.1489

*. The mean difference is significant at the .05 level.

Table 2. One way ANOVA and Sheffe test on the scores of wh-questions

ANOVA

wh-questions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21170.611	3	7056.870	20.414	.000
Within Groups	22815.488	66	345.689		
Total	43986.099	69			

Multiple Comparisons

Dependent Variable: wh-questions
Scheffe

(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
elementary	lower intermediate	-20.8502*	6.5488	.023	-39.6386	-2.0618
	upper intermediate	-34.2308*	6.4789	.000	-52.8188	-15.6427
	advanced	-50.3017*	6.7102	.000	-69.5532	-31.0501
lower intermediate	elementary	20.8502*	6.5488	.023	2.0618	39.6386
	upper intermediate	-13.3806	5.9564	.179	-30.4694	3.7083
	advanced	-29.4515*	6.2072	.000	-47.2598	-11.6431
upper intermediate	elementary	34.2308*	6.4789	.000	15.6427	52.8188
	lower intermediate	13.3806	5.9564	.179	-3.7083	30.4694
	advanced	-16.0709	6.1334	.087	-33.6677	1.5259
advanced	elementary	50.3017*	6.7102	.000	31.0501	69.5532
	lower intermediate	29.4515*	6.2072	.000	11.6431	47.2598
	upper intermediate	16.0709	6.1334	.087	-1.5259	33.6677

*. The mean difference is significant at the .05 level.

Table 3. One way ANOVA and Sheffe test on the scores of embedded questions.

ANOVA

embedded questions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	25986.662	3	8662.221	19.662	.000
Within Groups	28195.511	64	440.555		
Total	54182.173	67			

Multiple Comparisons

Dependent Variable: embedded questions

Scheffe

(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
elementary	lower intermediate	-11.9048	7.6642	.496	-33.9114	10.1019
	upper intermediate	-27.4499*	7.2496	.005	-48.2661	-6.6337
	advanced	-52.0739*	7.2496	.000	-72.8901	-31.2578
lower intermediate	elementary	11.9048	7.6642	.496	-10.1019	33.9114
	upper intermediate	-15.5451	7.2496	.215	-36.3613	5.2711
	advanced	-40.1692*	7.2496	.000	-60.9854	-19.3530
upper intermediate	elementary	27.4499*	7.2496	.005	6.6337	48.2661
	lower intermediate	15.5451	7.2496	.215	-5.2711	36.3613
	advanced	-24.6241*	6.8099	.007	-44.1775	-5.0707
advanced	elementary	52.0739*	7.2496	.000	31.2578	72.8901
	lower intermediate	40.1692*	7.2496	.000	19.3530	60.9854
	upper intermediate	24.6241*	6.8099	.007	5.0707	44.1775

*. The mean difference is significant at the .05 level.

Table 4. One way ANOVA and sheffe test on the scores of grammaticality judgment test.

ANOVA

GJ

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3700.078	3	1233.359	76.823	.000
Within Groups	1220.144	76	16.055		
Total	4920.222	79			

Multiple Comparisons

Dependent Variable: GJ
Scheffe

(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
elementary	lower intermediate	-3.0553	1.2836	.139	-6.7254	.6148
	upper intermediate	-8.6167*	1.2519	.000	-12.1960	-5.0373
	advanced	-17.9250*	1.2671	.000	-21.5477	-14.3023
lower intermediate	elementary	3.0553	1.2836	.139	-.6148	6.7254
	upper intermediate	-5.5614*	1.2687	.001	-9.1887	-1.9341
	advanced	-14.8697*	1.2836	.000	-18.5398	-11.1996
upper intermediate	elementary	8.6167*	1.2519	.000	5.0373	12.1960
	lower intermediate	5.5614*	1.2687	.001	1.9341	9.1887
	advanced	-9.3083*	1.2519	.000	-12.8877	-5.7290
advanced	elementary	17.9250*	1.2671	.000	14.3023	21.5477
	lower intermediate	14.8697*	1.2836	.000	11.1996	18.5398
	upper intermediate	9.3083*	1.2519	.000	5.7290	12.8877

*. The mean difference is significant at the .05 level.