

FOREIGN LANGUAGE LEARNING AFFECTING MOTHER TONGUE

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The main argument of this study is that foreign language learning can support L1 development. This is not a new idea because Vygotsky (1962: 110) wrote the following:

“... a foreign language facilitates mastering the higher forms of the native tongue. The child learns to see his language as one particular system among many, to view its phenomena under more general categories and this leads to awareness of his linguistic operations”.

Although most linguists acknowledge that there must be a bidirectional interdependence between the first language (L1) and the foreign language (FL), only one side of this interaction has been emphasized in the relevant literature (cf. Cummins, 1979, 1984; Cook, 1991; Larsen-Freeman & Long, 1991). Much is known about the influence of the first language on the foreign language learning process but much less about the opposite direction: the effect foreign language learning has on the development of mother tongue skills. Cummins' (1979; 1984) interdependence hypothesis predicts transfer not only from L_x to L_y, but also from L_y to L_x, unless the exposure and motivation conditions are negative. While, in principle, transfer can occur both ways, Cummins emphasizes that we generally see only unidirectional transfer from the first language to the other language. He attributes the lack of transfer in the opposite direction to the absence of motivation and exposure in a second or foreign language environment. *We argue in this study that the interdependence hypothesis may work both ways in a foreign language environment, and Cummins is right when he considers motivation and exposure as criteria for positive transfer from L2 to L1.*

The nature and content of the effect of FL on the L1

A survey of bilingualism (cf. Weinreich, 1953/1968; Odlin, 1989) demonstrates that the effects of cross-linguistic influence are not monolithic but vary to a great extent according to the social context of the language contact situation. The L2--->L1 effect can be seen in the following cases:

1. second or foreign language serves as lingua franca,

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2. pidgin and creole,
3. immigrants studying the language of their new community,
4. bilingual first language acquisition (the child is exposed to two languages from birth; cf. De Houwer, 1990),
5. both languages are present, but one of them is dominant (e.g. Swedish in Finland),
6. instructed foreign language in a relatively homogeneous language community.

There is much literature on all but case number 6. This is mainly due to the fact that the FL ---> L1 influence is not considered as a bilingual situation. FL learners are not expected to become bilinguals because the target language community isn't present in any way in the FL environment. In this paper we will focus only on this particular case. The foreign language is learned through instruction in the classroom, and students don't have direct access to the target language culture.

Objectives

When we started this research we had two main hypotheses on our agenda.

Hypothesis 1: The symbiosis of subconscious, synthetic approach and conscious, analytic approach to linguistic operations can have a positive effect on any language development.

Hypothesis 2: New information, behavior patterns, language organization methods, speaking styles, different ways of thinking learned and obtained through the FL can enhance the background knowledge of students, improve their general linguistic skills and lead to a better understanding of not only the new culture, but also their own cultural identity.

In this study we will focus only on the first hypothesis³.

Foreign language effect on written L1

The idea of investigating the effect of foreign language learning on the development of mother tongue skills originates from a longitudinal experiment that was conducted in Hungary in 1988-90 with native speakers of Hungarian learning either English, French or Russian in different types of secondary schools (Papp, 1991; Kecskes & Papp, 1995). The aim of that experiment was to find out how FLL influences mother tongue development in a decisive period (age 14-16) when the acquisition of the mother tongue is intensive, and individual writing, learning, and problem solving strategies and styles are being developed. The

³ The effect of foreign language learning on the development of mother tongue skills is discussed from a broader perspective in our up-coming book *Foreign Language and Mother Tongue* to be published by Lawrence Erlbaum, Hillsdale, NJ, USA.

experiment targetted written speech only. Vygotsky (1962) argued that written speech is the most elaborate form of speech because it requires a high level of abstraction. Written speech is a separate linguistic function which differs from oral speech in both structure and mode of functioning. It demands conscious work and deliberate analytical action. In written speech, learners have to create the situation, to represent it to themselves. Planning is important because lacking situational and expressive supports, communication must be achieved only through words and their combinations. Vygotsky suggested that the study of grammar of the native tongue and writing are crucial for the mental development of the child because these two help children rise to a higher level of speech development by making them become aware of what they are doing with language, and teaching them to use their skills consciously. FL learning shows a great deal of similarity to that process.

Written speech in Hungarian schools

Written speech is developed by instruction in elementary education. In the state-run Hungarian elementary school system the teaching of composition was based on rather rigid patterns. The primary goal was not creativity itself but practicing and acquiring how to organize and construct a written composition⁴. Creativity was important only within the confines of the required schemata. Students' productions were not characterized by individual approaches, style, and particular handling of the linguistic material, but by the use of learned patterns, which required activities that were carefully guided by the schemata themselves. *Entrance to high school represented a dividing line*. Since high school encourages creativity and use of individual approaches and styles, the change in the school requirements is a real challenge for students. Because they have no required schemata and guidelines to work from, students have to learn how to handle linguistic material independently. Many are able to do this, while others are not. *We wanted to find out if foreign language learning can play any role in this development*. In the experiment we wanted to examine this period of change in cognitive and language development. Elementary education aims to make the use of language a conscious process by highlighting and practicing basic text-producing skills. The question is: how much of this knowledge becomes internalized? What external factors affect internalization? Will students develop a writing style of their own that keeps the well-constructedness of sentence structures and text (as was required by the patterns they learned

⁴ The experiment was conducted in 1988-90 when elementary schools were state-run in Hungary. After 1990 significant changes have taken place in the educational system, but that period is outside the scope of this paper.

and practiced) and moves in the direction of a higher level language use, or without particular guidance, they will more or less fall back on a writing style that is closer to the spontaneous structure of oral speech?

Dichotomy of codes

Our starting point was Bernstein's theory (Bernstein, 1962; 1973), according to which the system of communication is directed either by *the restricted code* or *the elaborated code*. Bernstein argues that the former is more characteristic for the language use of working class and the latter for the middle class, so the two codes are connected with the process of socialization. Several studies have proved the existence of these two different codes, but Bernstein's explanation connected with socialization has partially been rejected on the ground that the two codes do not necessarily represent different social classes (Lawton, 1970; Papp & Pleh, 1975; Biro, 1984; Lawton, 1986). What is important for our hypothesis is that *the two codes exist no matter how they are labeled and what factors result in the development of either*. Cummins (1991) calls the two codes: conversational and academic language proficiency. Ellis (1992) distinguishes between *syntactic and pragmatic codes* in communication and argues that these codes can take on various levels of specificity, in accordance with social experience, and are activated in "lived" interaction. The *pragmatic code* is linked to the oral style in which context and shared background are very important. The *syntactic code* is less context dependent, more explicit and differentiated (Ellis, 1992: 1). When schooling begins instruction focusses on the development of *elaborated code (i.e. syntactic code)* which is needed for written speech. The task is the same for all students no matter what social background they come from. As we concluded from the experiment the middle class background does not necessarily result in the high level use of written speech, and vice versa, students with working class background can develop excellent writing skills. The difference between the two codes can be explained mainly by *the development of learning, production and task-solving strategies based on controlled and conscious activities that are connected to schooling*. In order to prove this, we had to measure the qualitative level of the use of the mother tongue. Mother tongue development is a complex process including, among other factors, the development of vocabulary, the use of different syntactic structures, and the application of communication strategies (Kecskes & Papp, 1991). In this experiment we focussed mainly on the use of syntactic structures for two reasons: 1) well-structured sentences and the adequate use of more complex sentence structures are the best signs of mother tongue development; and 2) because our starting point was Bernstein's theory, we

tried to adapt the methods he and his followers and their critics used so that the results of our work could be legitimately compared to their results (Loban, 1963; Bernstein, 1962, 1973; Lawton, 1970, 1986).

The Experiment

The experiment was conducted to prove the validity of the following hypotheses:

1) Intensive and successful FLL can have a strong and beneficial influence on the development of L1 writing skills. 2) Intensive FLL helps the internalization of L1 because linguistic operations based on conscious ways of thinking used in FLL can be transferred to L1 activities.

The longitudinal experiment was conducted in three different types of classes with 14-16 year old Hungarian students studying either English, French or Russian as a foreign language. The locations of the experiment were three Hungarian high schools. All the students had the chance to study Russian for at least four years before entering high school. Many of them had already studied some English, but French was entirely new to the immersion class. The definition of the three types of classes involved in the experiment is as follows: *Immersion class*: Some school subjects such as math, biology, chemistry were taught in the foreign language. (36 students were involved in the immersion class which studied French.). *Specialized class*: Students in the specialized class studied English. They had seven or eight foreign language classes a week, but the target language was not the medium of instruction in any content area class. All the school subjects were taught in Hungarian. (A total of 35 students were involved.) *Control class*: Students had two or three hours of foreign language instruction a week in either English or Russian. School subjects were taught in Hungarian (33 students were involved). The students' social background and education were similar in each of the three classes. Most of them came from middle class families, all of them with good grades in the elementary school. The selected high schools are renown and prestigious institutions. The level of L1 use was tested at the beginning of the experiment. *No significant differences were recorded in any of the three different types of classes*. This is due mainly to the fact that all the students used the same or similar curricula and books, and had the same number of classes a week in Hungarian language and literature in the elementary school.

Methods of Testing

L1 and FL development and use were tested in writing three times during the two-year period. Each time the method of testing was different. We wanted to find testing methods that

suited the purpose of the experiment in the best possible way. *The first test* was administered in September 1988 and aimed to establish the level of mother tongue use among students. They were asked to write a composition titled “My home”, which is a fairly easy topic. We wanted to give students the chance to be as creative as possible within the confines of a format they knew very well. *The second test* was given in May 1989.

There is no composition teaching in high school although students are often required to write compositions. They are completely on their own in determining the format and content of their written speech. Topics also vary and do not resemble the ones students had to work on in elementary school. The second test aimed to identify the changes in the language use of students after a seven month period and consisted of three parts: 1) We wanted to see how much of the traditional composition format students still remember, so they were asked to write a composition titled “My life in twenty years”. The format is well-known but the topic is unusual and nothing like those assigned in elementary school. This topic requires imagination and a somewhat personal writing style. 2) Students were asked to develop a text in their foreign language based on a series of pictures which told them a story. 3) Students had to repeat the former task but this time in their native tongue. The series of pictures was basically the same with a slight change in the content of a picture and a couple of pictures missing from this version. That was already something students were not prepared for in elementary school. Not only the task and topic were unusual but also the fact that students were expected to write the story first in the foreign language. For the outcome of the whole experiment it was important that students were expected to do basically the same task in FL and L1, but always had to produce first in the FL. Research and teaching practice show that there is a strong influence from L1 on production in the FL. We wanted to find out if this effect could be brought about the other way round, and how strong the influence of FL is on production in the mother tongue⁵. *The third test* was administered in May 1990, one year after the second test. Students had already been in high school for almost two years when that test took place. They were supposed to have developed a writing style of their own and handle any kind of writing exercise in their own way. The task was chosen accordingly. Students received several classified advertisements from newspapers in Hungarian and the foreign languages. They had to choose one to answer in their L1 and another to answer in the FL they studied. Students were completely on their own and had to activate all the creativity they were supposed to have developed. The task is unusual, and students had to create the format of the

⁵ The results of this part of the experiment are reported in Kecskes and Papp, 1995.

answer on their own; there were no schemata to apply. They could use either conventional formulas or ad hoc sentences created by their fantasy, or both. This task was expected to be a real dividing line between students.

Methods of evaluation

We used the Bernstein - Lawton - Loban method to measure the qualitative level of mother tongue development. (Bernstein, 1962, 1973; Lawton, 1970, 1986; Loban, 1963). This is based mainly on *the use of complex sentences with particular emphasis on the frequency and types of subordinations therein*. Linguists investigating child language have proven that clauses of time, clauses of place, and noun clauses functioning as objects are acquired earlier than other types of subordinations (Slobin, 1973; Clark & Clark, 1977). These constructions appear both in oral and written speech more frequently than any other clauses.

In our survey, we distinguished these three types of clauses from the others. We used *four indexes*⁶ which are interrelated, interdependent, and connected with the use of subordinations to measure the level of conscious activities. They show us what kind of strategies learners use when a task has to be solved, how they construct sentences, and how confidently they use linguistic structures. As any of the four indexes can be misleading if used separately, *evaluation was always based on an analysis of the numerical data of all the four indexes* (Kecskes & Papp, 1995). That complex evaluation ensured the accuracy of the tests.

TABLE 1

DATE: 09/1988

INDEXES	FI	US	LI	LN
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⁵ 1. *Frequency Index*

$$F = \frac{\text{total of subordinations}}{\text{total of finite verbs}}$$

2. *Unusual Subordinations*

$$US = \frac{\text{total of unusual subordinations}}{\text{total of finite verbs}}$$

3. *Loban Index*

$$LI = \frac{\text{total number of B, C, D}}{\text{total number of A, B, C, D}}$$

Loban's Weighted Index of Subordination is based on four categories of subordinate clauses.

A (1 point): A subordinate clause that is directly dependent upon a main clause.

B (2 points): A dependent clause modifying or placed within another dependent clause.

C (2 points): A dependent clause containing a verbal construction (i.e. infinitive, gerund, participle)

D (3 points): A dependent clause modifying or placed within another dependent clause which, in turn, is within or modifying another dependent clause.

This index shows how the student tries to use the potential of the language. If this value is high and the Frequency Index is low, it means that well-constructed sentences can be found in the text.

4. *Loban Number*

$$LN = \text{total point value of A, B, C, D}$$

IMMERSION CLASS	BOYS	0.45	0.21	0.25	7.09
	GIRLS	0.51	0.25	0.23	11.96
INTENSIVE CLASS	BOYS	0.33	0.11	0.22	7.62
	GIRLS	0.43	0.27	0.23	8.12
CONTROL CLASS	BOYS	0.42	0.21	0.29	4.14
	GIRLS	0.55	0.34	0.21	5.35

TABLE 2

DATE: 05/1989

INDEXES		FI	US	LI	LN
IMMERSION CLASS	BOYS	0.53	0.285	0.268	10.66
	GIRLS	0.481	0.276	0.233	14.58
INTENSIVE CLASS	BOYS	0.308	0.115	0.28	5.33
	GIRLS	0.384	0.213	0.252	11.86
CONTROL CLASS	BOYS	0.412	0.197	0.138	5.25
	GIRLS	0.386	0.199	0.195	7

TABLE 3

DATE: 05/1990

INDEXES		FI	US	LI	LN
IMMERSION CLASS	BOYS	0.349	0.132	0.2	5.4
	GIRLS	0.410	0.177	0.246	7.875
INTENSIVE CLASS	BOYS	0.291	0.163	0.219	5.1
	GIRLS	0.257	0.121	0.234	5.95
CONTROL CLASS	BOYS	0.206	0.039	0.181	2.88
	GIRLS	0.225	0.053	0.158	4

FI= FREQUENCY INDEX; **US**= UNUSUAL SUBBORDINATIONS; **LI**= LOBAN NUMBER

Discussion of findings of the experiment

Figure 1 gives a summary of the results of all the three surveys. The first thing one notices in the chart is that most of the numbers show a decreasing tendency, i.e. results seem to be best in the first test and worst in the last test. This reading of numbers is very misleading. *The aim of the experiment was not to demonstrate some kind of increase but rather to relate to each other the results of three groups of students who studied a foreign*

language with different intensity, and demonstrate how the use of mother tongue changes under the influence of foreign language learning. The results can't be understood properly without taking into consideration two variables: type of test and relationship of the four indexes in each test. If we just compare the results of the three tests without careful analysis of these variables, no objective answer can be given to the research questions. What is important for us here is the change in the relationship of test results between the participating groups. *How do the results of each group change in relation to the results of the other two groups?* The results of the first test show that there was no basic difference between the three group of students when they started high school. All the four indexes were quite close in each group with no significant differences. The only exception was the Loban Number which refers to the complexity of sentence structures. The higher the number is the more complex, embedded sentences were used by the students. Consequently, it is not the number of subordinate clauses that counts but their complexity. A text can have numerous simple subordinations but still have a relatively low LN. This is basically what makes the difference between the *control group* and the other two groups. The control group students (especially girls) have a relatively high Frequency Index and Unusual Subordinations Index but their Loban Number is low. This means that these students used quite a number of subordinated clauses which were mainly type A, where there was only one subordinate clause directly dependent upon the main clause. The results of the *immersion group and intensive group* show a different picture. They used less subordinate clauses with more complex structures. The question is: will this slight difference develop into a significant difference during the two year period of the experiment in spite of the fact that immersion and intensive classes do not have as many Hungarian classes as normal classes do? The summary in Figure 1 tells us the following:

Type of task

In the first test students wrote a composition, in the second a composition and a picture series story, and in the third they were expected to write an answer to an advertisement. If we just look at these tasks theoretically without any student population in mind we can hypothesize that a composition will give students the chance to use subordinations more often than a letter to an advertisement does, furthermore adding a picture series story to the composition in the second test will also increase the possibility of using complex subordinations. The numbers in the summary seem to support this hypothesis. In comparison to the results of the first test there is increase in most of the numbers in the second test with the exception of the control group that has decreasing numbers in most categories. If

the results of the second test and the third test are compared, one can see a decrease in all the numbers. Consequently, the type of the task was quite decisive in the use of subordinations and complex sentence structures. This demonstrates that we can't use an *external approach* that compares values test by test but need an *internal approach* that compares values to each other within each category.

Comparing achievements of classes

1) In the first test the control class exceeded the immersion class in each category but LN. In the third test the control class lost to the other two in each category. Their distance from the immersion class and the intensive class seems to have increased by each test.

2) The immersion class is a leader in all categories but two both in the second and third test.

3) The F index (frequency of subordinations) shows that the control group still kept something of its advance (gained in the first test) over the intensive group in the second test, but in the third test the intensive group is clearly ahead of the control group.

4) If the LI is high, it means that well-constructed sentences can be found in the text because this index shows the rate of more complex subordinations and the total number of subordinations. This rate changes only to a small extent in the immersion group and the intensive group while it significantly decreases in the control group.

5) The LN index increases with one exception in the second test, and significantly decreases in each group in the third test. This is mainly due to the type of tasks: answer to an advertisement in the third test, and a composition and a picture series story in the second. But with the LN decreasing the LI basically remains the same in the first two groups. This means that these two classes maintain the quite frequent use of B, C, D type of sentences. The drastic decrease of LN in the control group confirms that this class can't compete with the other two any more.

Principle findings of the experiment

1. Intensive and successful foreign language learning can facilitate L1 development.

The experiment showed two different kinds of tendencies in the use of L1. While the immersion and specialized classes developed in the direction of creative use of their mother tongue, the control class could hardly maintain the previously reached level. Although the immersion groups (because their studies focused mainly on the FL) had fewer classes in the L1 (Hungarian language and literature) than the specialized and control classes, their production in L1 exceeded that of the two other types of classes. The specialized and control

classes had the same kind of instruction in L1 but by the end of the experiment the L1 level of the specialized class exceeded that of the control class. The immersion and specialized classes develop the previously learned patterns further and handled them not as schemata any more, but *as essential parts of their linguistic means and communicative competence* by amalgamating them with the conscious knowledge conditioned by linguistic operations used in both L1 and FL activities. In the control class an opposite process was recorded. Although these students had more instruction in L1 than the immersion class and as much instruction as the specialized class, the instruction in L1 itself was not enough for the students to adjust to the new requirement (i.e. the creative use of the language). Their written production became similar to their speech. It is more casual and spontaneous and resembles the dialog format. The findings of the experiment demonstrate that the significant difference in the L1 development in the three different class types is mainly conditioned by the intensive and successful foreign language learning.

2. *The differences between the restricted code and the elaborated code can be explained by the ontogenesis and development of written speech*

The experiment indicated that the differences between the restricted code and the elaborated code can be explained *mainly by the ontogenesis of written speech whose development is connected with school activities*. This process requires a high level of abstraction and careful verbal planning and develops into special learning strategies based on conscious and controlled operations. That is why combining subconscious mother tongue skills with conscious knowledge developed both in L1 and FL in school, learners can be expected to reach a higher level of development in L1. The control class did not show this development, which means that three hours of instruction in FL a week is not enough to bring about this positive change. *The beneficial effect of FL learning on the development of mother tongue skills is just a potentiality - not a necessity*. Further research is needed to explore every aspect of this potential.

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