

A COMPARATIVE STUDY OF THE LEXICAL AVAILABILITY OF MONOLINGUAL AND BILINGUAL SCHOOLCHILDREN¹

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In modern linguistic research much more attention and importance are being given to the study of syntax and general problems, like language acquisition, than to lexis.² This may be natural, but for a complete picture of a language, or rather as complete as is possible today, lexical descriptions must not be left out; a comparative survey of a language should contain information about word frequency, lexical availability and valence, collocations, coverage and range, among its lexical aspects. Lexis is a part of language although its study may not be of prime importance for the understanding of language mechanisms, nor be of a great interest to linguistics; it does and should have its place in all comprehensive descriptions of a language as well as in linguistic theory.³ Without a theoretical basis the lexical aspects mentioned above could not be adequately studied in concrete corpuses. The point we should like to make here is that every lingual aspect should be given adequate attention.

Because lexical studies have their immediate application in several disciplines (psychology, neurolinguistics, language teaching, etc.), there are quite a few word counts, word lists, special dictionaries, which are sometimes based on a very small corpus or small samples of population.⁴ What is lacking

¹ A part of this paper was read at the International conference on contrastive linguistics, held at Boszkowo in December 1978.

² It is surprising that even in contrastive analysis projects with a pedagogical slant, lexis is neglected in spite of the fact that many of the problems in foreign language learning are lexical ones.

³ It is interesting to note, however, that until quite recently, it was syntax that was neglected in neurolinguistic studies. The stress in this discipline was on phonology/phonetics, lexis, reading and speaking. This situation is rapidly changing and syntax is now coming into focus in this discipline too.

⁴ Cf. Tobin (1971), Wepman and Hass (1969); cf. also Fries and Traver (1960).

now is more theoretical work and experimental projects, not mere compilation of lexical material, though the latter has its value too.

The notion of lexical availability. The largest number of word lists are those which deal with word frequency.⁵ This is the result of the belief in the past that frequency reflects the usefulness of a word or its "importance". It has been shown, however, that frequency need not correlate with usefulness and that a lot of so called useful words (useful for a population or a sample of that population) are not always on a high place on the frequency list. They do not appear there even if the corpus on the basis of which the list was made is enlarged, or even if several frequency lists are put together. This kind of discrepancy between frequency and usefulness occurs mainly with common nouns. Therefore, other concepts of lexical aspects have had to be developed and taken into consideration in lexical analyses. One of them is *lexical availability*.

A word is available if, in a particular situation and context, regardless of its frequency and other lexical characteristics, it comes to mind easily and without searching. Thus a word may be available, may indeed have a high degree of availability, not because it is frequently used in speech or in writing, but because the object it denotes is frequently in use or because that object is important for the speaker (or for the whole sample of population). A word may be highly available if it is frequently in one's mind — like the names of some exotic animals for children from urban areas (see the lexical area "Animals", Table no. 1). Several factors may affect the *degree of availability* of words, such as sex, age, professional interests, social and cultural background, etc. Words often do not have the same availability for a native speaker and for a foreigner. The degree of availability is the correlation between the number of occurrences of a word in the test of lexical availability and the number of the testees. This is the degree of availability of a word for a sample of population. For example, if there are 30 students and the word "tiger" is given by all of them, it would mean that the word "tiger" had 100% availability for the tested sample of population.

The concept of lexical availability was partly taken from the French lexicographers, Michea and Gougenheim; however, the test by means of which we obtained pupils' responses differs considerably from the one administered by the French researchers.

The study of the word lists (their meanings among other things) out of context, has, naturally, its weaknesses and imposes certain problems. However, the validity of such an analysis depends on the technique of elicitation

⁵ Between 1909 and 1969 about eighty frequency lists were published (for English only); cf. Richards (1969).

of the words analysed. With the test which we used, it is believed that the major problems and constraints were avoided or solved. With fairly specified instructions (see further "The test of lexical availability") it was possible to be quite certain as to the meanings of the elicited words even without the context. One thing should be borne in mind, however. It is the "basic meaning" that we are dealing with here. Social, cultural and other possible "semantic charges" have necessarily been ignored.

The test of lexical availability. The methodology of elicitation of students' lingual responses (whether in linguistic or any other research) has developed over the past few decades so much that today there are various tests and techniques by means of which reliable language corpuses can be obtained. Having in mind the aim of our research, the notion of lexical availability, as we defined it, the sample of the pupils tested and other relevant factors (for instance the time available for testing schoolchildren), we decided to apply a fairly simple technique for the elicitation of pupils' responses. The pupils were asked "to put down, as quickly as possible, all the words they could think of in connection with animals, countryside, town, etc.", each lexical area being dealt with separately. They were also given some additional instructions, such as to ignore spelling problems, not to give the names of people (politicians in "Politics" and film stars and the like in "Entertainment"). The pupils were given five minutes for each lexical area. After careful pretesting both in Edinburgh and Novi Sad, it was concluded that five minutes for one lexical area was the optimum length of time. After that only a few pupils in each group were still writing; as a matter of fact, they were searching for some more words. The test had to be time limited in order to prevent the pupils from searching for words. Thus we hoped to get only those words which first and easily came to pupils' minds, only those which were really available to them at the moment of testing. If a word easily comes to one's mind, without being searched for, it is believed that it is more available for use at a particular moment and situation than others.

One possible weak point of our test is that it was written. One might suppose that if the test had been oral, we would have obtained more and different words than we did. It was impossible to have an oral test with almost 300 subjects, therefore we tested orally a smaller sample (about 10% of the total number of the subjects); they recorded their responses. The comparison of these responses with those given on the written test showed minimal differences, both in the number of words and their kind. What happened on the oral test was that the same words were repeated several times.

We did not restrict the selection of words to a particular part of speech, nouns, for instance, or only those the pupils considered as "the most useful

words", as was done in some other similar studies. However, as can be seen from the lists, nouns were given almost exclusively.

The test consisted of thirteen lexical areas⁶ as follows: "Animals", "Countryside", "Town", "Entertainment", "Jobs and professions", "Means of transportation", "Science", "Parts of the house", "Food and drinks", "Clothes", "Politics", "Parts of the body", "War and peace". The last two were not in the test administered in Edinburgh. The selection of the lexical areas was partly influenced by the Gougenheim's study (Gougenheim et al. 1956); however, some lexical areas, such as "Politics", were added because of the difference in the two populations (Edinburgh in Scotland and Novi Sad in Yugoslavia). Lack of space prevents us from giving explanations for the selections of lexical areas.

By not limiting the number of words which we asked the pupils to give we had an opportunity to see not only *what* words would be given but also *how many* they could give in five minutes. With the help of a computer (which we had in Edinburgh, but not in Belgrade) some other aspects of children's vocabulary could have been studied, such as collocations, the associative link between the lexical areas and the first words given in those areas, the correlation between some socio- and psychological factors and lexical availability.

The aims of our research. The aims of our research were as follows:

- a) To find out the degree of lexical availability of monolingual and bilingual schoolchildren from two age levels.
- b) To compare the results of the older Yugoslav sample with that which we had in Edinburgh (cf. Dimitrijević 1969).
- c) To compare the results of lexical availability between boys and girls.
- d) To compare the results of lexical availability in the mother tongue and the second language.
- e) To find out the correlation of the number of words obtained on the test of lexical availability and several psychological and social factors (intelligence, social status in school, school marks, the number of children in the family, parents' occupation and education).
- f) To compile a list of lexical availability, so that it could be compared with frequency lists and other types of vocabularies or word lists.
- g) To analyse quantitatively and qualitatively the results obtained (the total number of words and the number of different words).

⁶ Following Gougenheim's terminology (Gougenheim et al. 1956), in the Edinburgh study (Dimitrijević 1969) the term "center of interest" was used instead of lexical area, the term which we think is more adequate.

The population sample. The sample of population tested in our research consisted of 228 pupils from Novi Sad (Yugoslavia) and 185 pupils from Edinburgh (Scotland). The Yugoslav sample was subdivided according to pupils' age and mother tongue. There were 114 monolingual subjects (mother tongue Serbo-Croat) and 114 bilingual subjects (mother tongue Hungarian and second language Serbo-Croat). Both monolinguals and bilinguals from Novi Sad were taken from the V and the VIII class of the elementary school. We took the fifth class pupils because it is in that class that more formal teaching of the mother tongue starts, and the eighth class is the final one in the elementary school in Yugoslavia. The majority of the children in the fifth class were 11 years old and in the eighth class 14. All the subgroups were made up according to a number of variables which we thought could affect lexical availability and language development in general. Thus, pupils were selected according to their age, sex, intelligence (IQ) and school marks. This means that all the groups whose results on the test of lexical availability were compared were homogeneous as regards the given variables. We also had data about some factors which can affect children's language development and various forms of language behaviour, such as: the number of children in the family, their social status in school, their parents' profession and education. It was not possible, however, to achieve the same homogeneity of groups as regards the latter group of factors, but nonetheless correlation was found out between them and the number of words given by the pupils tested.

The statistical procedures used in this research⁷

a) The arithmetic mean: $M = \frac{\sum x}{n}$

b) Standard deviation:

$$\sigma = \sqrt{\frac{d^2}{n}} \quad \text{and} \quad \sigma = \sqrt{\frac{d^2}{n-1}}$$

c) The t-test:

$$t = \frac{M_1 - M_2}{\sqrt{M_1^2 + M_2^2}} \quad \text{and} \quad t = \frac{M_1 - M_2}{\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

d) Chi square:

$$\chi^2 = \sum \frac{(f_0 - ft)^2}{ft}$$

e) The contingency coefficient:

$$C = \sqrt{\frac{\chi^2}{n + \chi^2}}$$

⁷ All statistical processing was done by Dušan Djordjević.

f) The coefficient of correlation (Pearson's formula):

$$r = \frac{\sum(dx dy)}{dx^2 dy^2}$$

Results. The total number of words obtained in the Novi Sad study was 80.215 and in Edinburgh 15.271. The quantitative analysis showed the following:

1. The older monolingual children from Novi Sad gave more words than the bilinguals and the difference is statistically significant.
2. The monolinguals from Edinburgh gave more words than the bilingual speakers from Novi Sad but this difference was not statistically significant.
3. The monolingual subjects from Novi Sad gave more words than those from Edinburgh and this difference was statistically significant.
4. The younger monolingual pupils gave more words than bilinguals but the obtained difference had no significance. It may be supposed that the difference in the number of words between the two age groups is brought about between the ages 10—11 and 14—15.
5. Girls gave more words than boys and the difference is big enough to be statistically significant.
6. Older pupils, both monolingual and bilingual, gave more words than the younger ones.
7. Boys gave more *different* words than girls, regardless of the mother tongue (English, Serbo-Croat or Hungarian).
8. The same result was obtained when monolingual pupils were compared with the bilingual ones.
9. As regards the number of words in different lexical areas there was a correspondence among the samples of the population tested in our research.
10. Some lexical areas were "closer" to boys and others to girls, i.e. in some areas boys gave more *different* words than girls and v.v.

As regards the relationship between the number of words obtained from the test of lexical availability and some social and psychological factors, the following results were obtained:

1. The relationship between the quantitative aspect of lexical availability and intelligence was such that it clearly indicated the importance of the role of intelligence in the study of lexical availability, as in some other language areas.⁸

⁸ In the lists of the final report (in Serbo-Croat) apart from the number of occurrences for each word, as it is here (see the lists of words), the results were also shown according to three classes of IQ of the tested pupils, cf. Dimitrijević and Djordjević (1978). The paper read at the Boszkowo conference contained the first ten words and the final report (in Serbo-Croat) had the first thirty words. Even the final report could not include all the words because of high printing costs. (Cf. Dimitrijević and Djordjević 1978).

2. School marks and the number of words given related positively in a few comparisons only and thus general conclusions cannot be drawn.

3. The number of words given was rarely in a positive correlation with the sociometric status of the pupils or with the order of birth in the family, the parents' profession and education did not influence the number of words given on the test of lexical availability.

Having a corpus of over 80.000 words it is not possible to summarize similarities and differences between words given by five different samples of population. In studies like ours it is essential to analyse the lists of words themselves. Unfortunately, we can give here only the first five words from each list. However, the following can be pointed out:

1. Monolingual and bilingual samples of population did not markedly differ in the words which had a higher degree of availability.

2. Bilingual pupils gave a number of dialect words in their second language (Serbo-Croat) which were not found in the lists of the monolingual speakers, whose mother tongue was Serbo-Croat.

3. Boys and girls did not differ to a great extent in their selection of words, except in some lexical areas, such as "Professions", "Food and drinks", "Clothes".

4. There were some differences between the subjects from two different cultural and social backgrounds, particularly in the lexical area "Politics", "Food and drinks" and "Professions". Obviously, different ways of living influence lexical availability, as they do some other lexical aspects.

5. In both age groups only minor differences were found in comparing the lists of words in the mother tongue and the second language.

6. There were fewer words with a high degree of lexical availability in the lists given by the younger pupils than in those obtained from the older groups.

New possible investigations. On the basis of our research carried out in Edinburgh (Dimitrijević 1969) and Novi Sad, the following suggestions may be made as regards further similar lexical investigations:

1. In Edinburgh we had a sample of monolingual English speaking subjects. The same test could now be applied in other English speaking countries in order to find out the effect of social and cultural background on lexical availability in the same language.

2. Our bilingual sample of population in Novi Sad spoke Hungarian and Serbo-Croat, i.e. two typologically very distant languages, though they are in contact. Now a bilingual sample of subjects could be tested whose languages are closely related, such as Serbo-Croat and Bulgarian or Polish and Russian.

3. We had two different age groups and the comparison of their results is only partly reliable because they were *two* sets of different subjects. **A**

developmental study of the *same* subjects would give further and more reliable results as regards the differences between the two ages.

4. A comparison of adult subjects and schoolchildren from urban and rural areas would offer further possibilities for analyses of lexical availability.

5. By means of a computer analysis it would be possible to find out the number of pupils starting a list in a lexical area with a particular word and thus it could be seen whether that particular word has, for the tested subjects at least, an additional associative meaning, 'dog' for animals, for instance or 'football' for entertainment.

6. A computer analysis could offer some other information, such as the correlation of the degree of lexical availability and the morphology of the words, their length, frequency and other lexical aspects, such as range and coverage.

7. With the intensified interest among linguists in neurolinguistic research it would be interesting to apply the test of lexical availability in some neurolinguistic studies and then compare the results obtained with those obtained from subjects with undisturbed language (cf. Howes 1964; Borkowsky, Benton, Spreen 1967; Filby, Edwards, Seacat 1963; Lozar, Wepman, Hass 1972; Lesser 1973 and 1978).

What we hoped to achieve here, in a very limited space, is to give a definition of lexical availability, to describe a particular test which was applied to three different samples of the population, to give a very small sample of the lists of words we obtained and to make some suggestions for further studies. The analyses of words with a higher degree of availability unfortunately had to be omitted for the lack of space.

"ANIMALS"

A) *The older group*

TABLE No. 1

— Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. tiger	30*	1. dog	27	1. horse	25	1. lion	23
2. dog	29	2. cat	27	2. cat	24	2. cat	23
3. lion	29	3. lion	25	3. elephant	24	3. dog	23
4. cat	27	4. monkey	25	4. bear	22	4. horse	22
5. elephant	26	5. tiger	24	5. cow	21	5. pig	22

* The figures in this column represent the number of pupils from the tested sample who gave the words.

TABLE No. 2

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. tiger	26	1. dog	25	1. lion	23	1. horse	24
2. lion	25	2. monkey	25	2. horse	22	2. cat	23
3. dog	23	3. cat	25	3. cat	21	3. cow	20
4. horse	22	4. horse	24	4. elephant	21	4. lion	19
5. elephant	22	5. lion	24	5. tiger	20	5. duck	19

B) *The younger group*

TABLE No. 3

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. horse	26	1. cat	29	1. horse	25	1. cat	24
2. elephant	24	2. horse	28	2. cat	21	2. horse	21
3. dog	24	3. fox	26	3. elephant	18	3. lion	19
4. cat	24	4. cow	26	4. tiger	18	4. rabbit	18
5. tiger	24	5. dog	25	5. hen	17	5. hen	17

TABLE No. 4

— Monolinguals —

Serbo-Croat L₁

<i>boys</i>		<i>girls</i>	
1. horse	26	1. horse	27
2. dog	26	2. wolf	26
3. wolf	24	3. fox	26
4. elephant	24	4. rabbit	25
5. fox	23	5. cow	28

"TOWN"

A) *The older group*

TABLE No. 5

— Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. shop	29	1. bus	29	1. cinema	22	1. cinema	24
2. bus	25	2. shop	28	2. factories	20	2. theatre	24
3. house	22	3. people	27	3. theatre	19	3. parks	19
4. people	20	4. cars	27	4. parks	16	4. cars	18
5. school	20	5. school	25	5. boulevards	15	5. factories	17

TABLE No. 6

—Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. cinema	21	1. cinema	19	1. cinema	19	1. house	17
2. house	20	2. park	19	2. parks	19	2. parks	17
3. park	18	3. theatre	18	3. schools	19	3. streets	16
4. theatre	17	4. house	18	4. house	18	4. factories	15
5. factories	16	5. streets	17	5. streets	17	5. schools	14

B) *The younger group*

TABLE No. 7

—Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. park	16	1. cinema	18	1. schools	15	1. house	13
2. cinema	15	2. theatres	18	2. house	10	2. schools	13
3. school	13	3. park	17	3. parks	9	3. factories	10
4. car	11	4. shops	16	4. cinema	7	4. buildings	7
5. store	11	5. school	15	5. streets	7	5. parks	7

TABLE No. 8

—Monolinguals —

Serbo-Croat L₁

<i>boys</i>		<i>girls</i>	
1. factories	20	1. factories	18
2. cinema	19	2. house	15
3. parks	16	3. streets	14
4. cars	16	4. cars	13
5. house	14	5. schools	13

"COUNTRYSIDE"

A) *The older group*

TABLE No. 9

—Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. tree	28	1. farm	25	1. forest	17	1. forests	19
2. farm	27	2. tree	24	2. cultivated		2. vineyard	15
3. hill	24	3. hill	24	field	12		
4. corn	24	4. grass	23	3. mountain	12	3. corn	11
5. meadows	24	5. field	21	4. tree	11	4. maize	11
				5. field	11	5. stream	11

TABLE No. 10

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. forest	25	1. tree	25	1. forest	19	1. forest	19
2. hill	23	2. forest	21	2. wood	17	2. grass	17
3. tree	22	3. grass	21	3. mountains	15	3. flowers	16
4. river	18	4. hill	21	4. grass	15	4. wood	14
5. grass	18	5. flowers	19	5. hills	12	5. hills	11

B) *The younger group*

TABLE No. 11

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. forest	23	1. field	21	1. wood	18	1. grass	21
2. hill	19	2. forests	20	2. grass	13	2. wood	19
3. field	18	3. flowers	19	3. forest	12	3. flowers	19
4. tree	18	4. river	18	4. rivers	10	4. forest	10
5. river	18	5. tree	16	5. sun	10	5. ground	9

TABLE No. 12

— Monolinguals —

<i>Serbo-Croat L₁</i>		<i>girls</i>	
<i>boys</i>		<i>girls</i>	
1. forest	21	1. forests	23
2. mountain	14	2. mountain	18
3. river	13	3. river	14
4. tree	10	4. grass	13
5. cultivated field	9	5. tree	12

"ENTERTAINMENT"

A) *The older group*

TABLE No. 13

— Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. TV	20	1. dancing	21	1. football	21	1. theatre	20
2. film	17	2. play	19	2. basketball	20	2. dancings	19
3. singers	15	3. film	19	3. cinemas	18	3. cinemas	16
4. theatre	14	4. TV	17	4. handball	17	4. swimming	12
5. actors	14	5. singers	13	5. theatre	16	5. skiing	12

TABLE No. 14

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. cinema	18	1. theatre	24	1. cinema	19	1. theatre	18
2. theatre	17	2. cinema	23	2. dancing	17	2. cinema	17
3. dancing	17	3. dancing	22	3. theatres	15	3. radio	16
4. handball	9	4. TV	21	4. football	13	4. dancing	15
5. radio	9	5. radio	17	5. basketball	10	5. record player	9

B) *The younger group*

TABLE No. 15

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. cinema	17	1. radio	16	1. cinema	14	1. cinema	14
2. radio	12	2. TV	15	2. radio	8	2. theatres	12
3. playing cards	11	3. cinemas	14	3. TV	8	3. radio	11
4. theatres	11	4. theatres	12	4. actor	7	4. singers	9
5. TV	11	5. sledging	9	5. theatres	7	5. television set	9

TABLE No. 16

— Monolinguals —

<i>Serbo-Croat L₁</i>		<i>girls</i>	
<i>boys</i>			
1. football	17	1. cinemas	19
2. cinemas	16	2. theatres	18
3. theatres	16	3. record player	13
4. chess	12	4. dancing	13
5. record player	11	5. music	12

"JOBS"

A) *The older group*

TABLE No. 17

— Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. teacher	27	1. teacher	28	1. professor	18	1. doctor	22
2. sailor	22	2. doctor	24	2. doctor	17	2. professor	20
3. policeman	20	3. nurse	19	3. cleaner	17	3. cleaner	19
4. soldier	19	4. typist	16	4. carpenter	16	4. engineer	18
5. doctor	18	5. policeman	16	5. driver	16	5. technician	18

TABLE No. 18

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. doctor	17	1. professor	23	1. teacher	13	1. teacher	19
2. carpenter	16	2. doctor	21	2. bricklayer	10	2. doctor	15
3. electrician	16	3. carpenter	17	3. professor	10	3. professor	13
4. merchant	15	4. tailor	17	4. auto- mechanic	9	4. teacher	11
5. professor	15	5. writer	15	5. locksmith	8	5. director	10

B) *The younger group*

TABLE No. 19

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. carpenter	20	1. professor	28	1. carpenter	14	1. teacher	21
2. professor	18	2. carpenter	21	2. teacher	12	2. carpenter	20
3. driver	15	3. principal	19	3. director	9	3. director	15
4. shoemaker	13	4. shoemaker	19	4. worker	9	4. baker	12
5. doctor	12	5. doctor	16	5. doctor	7	5. teacher	12

TABLE No. 20

— Monolinguals —

<i>Serbo-Croat L₁</i>		<i>girls</i>	
<i>boys</i>			
1. worker	19	1. engineer	19
2. clerk	18	2. doctor	19
3. professor	17	3. teacher	19
4. teacher (in general)	15	4. worker	18
5. teacher (in elementary school)	14	5. professor	17

"SCIENCE"

A) *The older group*

TABLE No. 21

— Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. physics	22	1. laboratory	15	1. experiments	9	1. test tube	9
2. chemistry	22	2. chemistry	15	2. astronaut	9	2. physicist	9
3. biology	14	3. alkalines	14	3. physicist	9	3. archeologist	8
4. laboratory	13	4. gas	14	4. chemist	9	4. explorer	8
5. gas	13	5. biology	13	5. analysis	7	5. synthesis	8

TABLE No. 22

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. chemist	18	1. chemist	15	1. chemistry	13	1. physics	10
2. physicist	16	2. physioist	14	2. physics	12	2. chemist	9
3. biologist	11	3. biologist	7	3. biology	9	3. biology	8
4. physics	9	4. biology	6	4. rockets	9	4. technology	8
5. scientist	8	5. composer	5	5. physicist	8	5. chemistry	8

B) *The younger group*

TABLE No. 23

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. scientist	10	1. scientist	11	1. professor	5	1. high school	7
2. university	4	2. university	9	2. biology	4	2. professor	5
3. engineer	4	3. high school	7	3. mathematics	4	3. college	5
4. professor	3	4. school	6	4. rocket	4	4. school	5
5. physics	3	5. professor	4	5. high school	3	5. wise	4

TABLE No. 24

— Monolinguals —

Serbo-Croat L₁

<i>boys</i>		<i>girls</i>	
1. scientist	10	1. scientist	11
2. rocket	10	2. physics	7
3. chemist	9	3. biology	6
4. universe	8	4. universe	6
5. astronaut	8	5. explorer	6

"MEANS OF TRANSPORT"

A) *The older group*

TABLE No. 25

— Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. punt	25	1. car	29	1. bicycle	27	1. plane	27
2. taxi	19	2. bus	29	2. plane	24	2. ship	27
3. feet	18	3. train	25	3. ship	24	3. bicycle	26
4. car	16	4. lorry	21	4. bus	22	4. train	22
5. steamship	16	5. bicycle	21	5. boat	21	5. car	20

TABLE No. 26

— Bilinguals —

Hungarian L_1				Serbo-Croat L_2			
boys		girls		boys		girls	
1. ship	26	1. train	26	1. plane	24	1. bicycle	25
2. plane	23	2. bus	25	2. bicycles	21	2. train	23
3. boat	22	3. ship	25	3. train	21	3. plane	21
4. train	21	4. plane	24	4. bus	21	4. bus	21
5. car	19	5. boat	23	5. ship	20	5. car	18

B) *The younger group*

TABLE No. 27

— Bilinguals —

Hungarian L_1				Serbo-Croat L_2			
boys		girls		boys		girls	
1. plane	26	1. car	28	1. bicycle	24	1. bicycles	26
2. ship	26	2. train	27	2. train	20	2. train	26
3. train	23	3. ship	27	3. bus	18	3. plane	23
4. car	21	4. plane	25	4. plane	17	4. bus	20
5. bus	21	5. bus	24	5. ship	16	5. lorry	18

TABLE No. 28

— Monolinguals —

Serbo-Croat L_1

boys		girls	
1. ship	30	1. plane	30
2. plane	29	2. ship	30
3. train	27	3. bicycle	27
4. bus	26	4. bus	26
5. boat	26	5. train	24

"POLITICS"

A) *The older group*

TABLE No. 29

— Monolinguals —

English L_1				Serbo-Croat L_2			
boys		girls		boys		girls	
1. county council	24	1. Prime Minister	26	1. congress	10	1. congress	21
2. M.P.'s	23	2. Parliament	22	2. presidents	10	2. communists	11
3. opposition	22	3. House of Commons	19	3. socialism	10	3. assembly	10
4. constitution	21	4. House of Lords	19	4. capitalism	8	4. conferences	8
5. cabinet	20	5. elections	15	5. conferences	7	5. SKOJ	8

TABLE No. 30

— Bilinguals —

<i>Hungarian L₁</i>		<i>Serbo-Croat L₁</i>					
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. congress	19	1. congress	19	1. congress	16	1. congress	16
2. president	19	2. president	15	2. communist	9	2. conference	11
3. communism	10	3. conference	15	3. president	9	3. president	10
4. socialism	9	4. vice president	8	4. conference	7	4. vice president	7
5. politician	8	5. communist	7	5. politician	7	5. party	6

B) *The younger group*

TABLE No. 31

— Bilinguals —

<i>Hungarian L₁</i>		<i>Serbo-Croat L₁</i>					
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. congress	17	1. congress	22	1. congress	5	1. 29th November	7
2. struggle for peace	16	2. peace	11	2. radio	4	2. congress	7
3. meetings	5	3. war	9	3. "Politika"	3	3. VIII congress	7
4. session	5	4. fight	7	4. war	3	4. war	5
5. AVNOJ	4	5. AVNOJ	6	5. meeting	3	5. radio	4

TABLE No. 32

— Monolinguals —

<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>	
1. congress	11	1. congress	14
2. AVNOJ	7	2. socialism	9
3. communists	7	3. politician	6
4. socialism	6	4. peace	5
5. session	5	5. republic	5

"PARTS OF THE HOUSE"

A) *The older group*

TABLE No. 33

— Monolinguals —

<i>English L₁</i>		<i>Serbo-Croat L₁</i>					
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. rooms	28	1. bedroom	25	1. walls	23	1. doors	25
2. dining-room	26	2. window	24	2. windows	23	2. windows	25
3. floors	25	3. door	24	3. door	22	3. walls	23
4. fireplace	24	4. kitchen	23	4. roof	22	4. roof	22
5. kitchenette	20	5. roof	22	5. cellar	20	5. room	19

TABLE No. 34

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. window	26	1. window	24	1. door	25	1. window	24
2. chimney	25	2. door	23	2. window	24	2. wall	23
3. door	24	3. chimney	22	3. wall	20	3. door	22
4. kitchen	18	4. attic	22	4. roof	17	4. roof	20
5. attic	18	5. wall	20	5. chimney	16	5. brick	19

B) *The younger group*

TABLE No. 35

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. door	23	1. door	23	1. window	21	1. window	21
2. window	22	2. window	22	2. door	18	2. door	19
3. floor	19	3. kitchen	19	4. roof	14	3. wall	16
4. cellar	18	4. attic	19	4. wall	13	4. pantry	12
5. roof	18	5. cellar	19	5. cellar	12	5. cellar	11

TABLE No. 36

— Monolinguals —

Serbo-Croat L₁

	<i>boys</i>	<i>girls</i>	
1. door	27	1. windows	28
2. windows	26	2. door	27
3. walls	22	3. walls	27
4. room	21	4. roof	24
5. bathroom	18	5. room	22

"FOOD AND DRINKS"

A) *The older group*

TABLE No. 37

— Monolinguals —

<i>English L₁</i>				<i>Serbo-Croat L₁</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. potatoes	26	1. potatoes	27	1. cabbage	21	1. wine	19
2. mutton	20	2. milk	27	2. wine	19	2. apple	19
3. cabbage	20	3. bread	23	3. meat	19	3. paprika	18
4. water	20	4. coffee	23	4. apples	18	4. brandy	18
5. milk	19	5. tea	23	5. pear	17	5. milk	17

TABLE No. 38

— Bilinguals —

<i>Hungarian L₁</i>		<i>Serbo-Croat L₂</i>			
<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>
1. wine 20	1. milk 23	1. wine 24	1. cabbage 21	2. brandy 22	2. potatoes 21
2. cabbage 20	2. apples 22	3. apple 17	3. wine 19	3. paprika 22	4. meat 19
3. paprika 20	3. paprika 22	4. milk 17	5. milk 19	4. wine 21	5. bread 17
4. milk 20	4. wine 21	5. bread 17		5. butter 19	
5. butter 19	5. butter 19				

B) *The younger group*

TABLE No. 39

— Bilinguals —

<i>Hungarian L₁</i>		<i>Serbo-Croat L₂</i>			
<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>
1. cabbage 20	1. wine 28	1. wine 21	1. potatoes 22	2. water 19	2. wine 21
2. paprika 20	2. brandy 26	3. brandy 19	3. tomatoes 21	4. potatoes 18	4. water 19
3. greens 19	3. cabbage 23	4. paprika 16	5. cabbage 18	5. paprika 16	
4. water 18	4. greens 21				
5. tomatoes 18	5. liqueur 21				

TABLE No. 40

— Monolinguals —

Serbo-Croat L₁

<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>
1. wine 24	1. wine 23	2. brandy 24	2. brandy 19
2. brandy 24	3. liqueurs 17	3. beer 20	4. meat 18
3. beer 20	5. potatoes 16	4. liqueurs 17	5. paprika 17
4. liqueurs 17		5. potatoes 16	
5. potatoes 16			

"CLOTHES"

A) *The older group*

TABLE No. 41

— Monolinguals —

<i>English L₁</i>		<i>Serbo-Croat L₁</i>			
<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>
1. shirt 30	1. cardigan 30	1. socks 25	1. stockings 25	2. coats 24	2. cardigan 25
2. socks 30	2. blouse 29	3. shoes 24	3. coats 24	4. cardigan 24	4. trousers 24
3. tie 29	3. socks 29	5. shirt 22	5. dresses 24		
4. trousers 28	4. hat 29				
5. shoes 28	5. skirt 28				

TABLE No. 42

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. shirt	25	1. blouse	27	1. shoes	26	1. skirt	27
2. trousers	24	2. stockings	27	2. shirt	25	2. stockings	27
3. pullover	24	3. suit/dress	26	3. coat	24	3. blouse	26
4. sock	24	4. shoe	26	4. pullover	22	4. shoes	26
5. shoe	24	5. shirt	24	5. skirt	22	5. coat	25

B) *The younger group*

TABLE No. 43

— Bilinguals —

<i>Hungarian L₁</i>				<i>Serbo-Croat L₂</i>			
<i>boys</i>		<i>girls</i>		<i>boys</i>		<i>girls</i>	
1. shirt	27	1. trousers	29	1. coat	26	1. shoe	28
2. trousers	27	2. stockings	29	2. shoes	23	2. stocking	28
3. pullover	27	3. coat	28	3. pullover	21	3. pullover	25
4. sock	27	4. blouse	27	4. sock	21	4. skirt	25
5. shoe	27	5. pullover	27	5. trousers	21	5. coat	24

TABLE No. 44

— Monolinguals —

Serbo-Croat L₁

<i>boys</i>		<i>girls</i>	
1. cardigan	28	1. stockings	29
2. socks	27	2. skirt	28
3. shirt	25	3. shoes	27
4. jersey	25	4. caps	26
5. shoes	25	5. slip	26

"PARTS OF THE BODY"

A) *The older group*

TABLE No. 45

— Monolinguals —

Serbo-Croat L₁

<i>boys</i>		<i>girls</i>	
1. ears	26	1. eyes	25
2. hair	25	2. ears	24
3. eyes	25	3. head	23
4. legs	24	4. nose	23
5. fingers	24	5. legs	23

TABLE No. 46

— Bilinguals —

<i>Hungarian L₁</i>		<i>Serbo-Croat L₂</i>	
<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>
1. arm 25	1. nose 27	1. ears 26	1. leg 27
2. ear 25	2. leg 25	2. leg 25	2. arm 27
3. eye 24	3. finger 25	3. nose 25	3. ears 27
4. leg 23	4. arm 24	4. eyes 25	4. nose 26
5. nose 23	5. eye 24	5. arms 25	5. eyes 26

B) *The younger group*

TABLE No. 47

— Bilinguals —

<i>Hungarian L₁</i>		<i>Serbo-Croat L₂</i>	
<i>boys</i>	<i>girls</i>	<i>boys</i>	<i>girls</i>
1. leg 28	1. arm 29	1. head 27	1. leg 29
2. eye 28	2. nail 29	2. legs 27	2. arms 29
3. ear 28	3. nose 29	3. arms 27	3. head 28
4. nose 27	4. ear 29	4. nose 25	4. ears 28
5. arm 26	5. leg 28	5. eyes 25	5. neck 26

TABLE No. 48

— Monolinguals —

<i>Serbo-Croat L₁</i>	
<i>boys</i>	<i>girls</i>
1. eyes 28	1. nose 30
2. nose 27	2. eyes 28
3. teeth 25	3. ears 28
4. fingers 25	4. legs 27
5. ears 25	5. arms 26

"WAR AND PEACE"

A) *The older group*

TABLE No. 49

— Monolinguals —

<i>Serbo-Croat L₁</i>	
<i>boys</i>	<i>girls</i>
1. rifle 16	1. rifle 18
2. bomb 13	2. freedom 16
3. cannons 13	3. bombs 15
4. tanks 11	4. gun 11
5. machine-gun 10	5. cannons 11

TABLE No. 50

— Bilinguals —

Hungarian L_1				Serbo-Croat L_2			
boys		girls		boys		girls	
1. cannon	17	1. rifle	17	1. rifle	20	1. rifle	19
2. rifle	17	2. cannon	15	2. bomb	18	2. bomb	17
3. bomb	14	3. bomb	13	3. machine-gun	18	3. machine-gun	13
4. peace	14	4. tank	13	4. cannons	16	4. tanks	13
5. tank	14	5. peace	10	5. tanks	15	5. cannons	12

B) *The younger group*

TABLE No. 51

— Bilinguals —

Hungarian L_1				Serbo-Croat L_2			
boys		girls		boys		girls	
1. bombing	16	1. joy	14	1. bombing	9	1. peace	8
2. joy	12	2. declaration of war	13	2. peace	8	2. freedom	8
3. firing	9	3. peace	11	3. bomb	7	3. war	7
4. peace	8	4. bombing	9	4. shooting	7	4. bombing	6
5. declaration of war	8	5. freedom	9	5. rifles	6	5. rifles	6

TABLE No. 52

— Monolinguals —

Serbo-Croat L_1

boys		girls	
1. rifle	20	1. rifle	14
2. machine-gun	18	2. freedom	13
3. cannons	17	3. bombs	11
4. tanks	17	4. peace	11
5. bombs	16	5. cannons	11

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