



THE BILINGUALISM OF CROATS LIVING IN HUNGARY

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Along the Croatian-Hungarian border, and beyond, there are many settlements with Hungarian-Croatian bilingual people maintaining their bilingualism and claiming to belong to the Croatian national minority living in Hungary. I carried out an interview and some tests with 6 of them. In this paper I will highlight the language use, language behaviour and code-switching mechanisms of these people. For a comparison, I will present the same analyses from the results of a Hungarian girl living in Croatia and belonging to the Hungarian national minority group in Croatia and a Croatian Croat living in Hungary (but not belonging to the Croatian national minority). I will analyse their spontaneous speech and the results of three psycholinguistic tests. Test 1: a free word association test (consisting of 188 items), in which the subjects were expected to respond to the oral stimulus word within 3 seconds. Test 2: a colour naming test, in which the subjects were supposed to name 30 different shades of different colours. Test 3: a picture naming test, in which subjects were asked to recognize and name printed pictures, drawings and recall words to the pictures. During the tests the language use was not restricted, the subjects could use either or both their languages.

Key words: bilingualism, code switching, psycholinguistics, Croatian, Hungarian

INTRODUCTION

According to the 1990 census and the 1999 Report on the situation of the Croatian national minority in the Hungarian Republic (Dávid 1999), 13.570 people considered themselves Croats in Hungary, and 17.577 claimed that their first language was Croatian. However, 80-90.000 people were estimated to be Croatian at that time. Since then a lot has happened in history that has changed the situation. With the war in Yugoslavia and the Croatian Republic becoming independent on the one hand, and the change of the regime in Hungary on the other, the relationship between the two countries has improved considerably, resulting in much better cooperation in many ways, provid-

ing the members of both nations with a feeling of mutual respect and acknowledgement. This new situation in both countries may contribute to a better understanding of minority questions. The maintenance of culture and language has become more important for the minorities living in their own territories.

In Hungary, because of a misguided policy, minorities lived in a variety of circumstances, and were treated in different ways. Sometimes the proclamation of their own nationality or language had very serious consequences. Although the policy related primarily to the Slovaks and the Germans and not the Croats, still its influence was felt among all the nationalities. As for the Croats in Hungary, they had their golden age in the 18th and the first half



of the 19th centuries. The size of the population, as well as their position in Hungarian society, were much more significant than later. As a result of assimilation, most of the villages once totally inhabited by Croats became Hungarian, and it is only the headstones in the cemeteries that indicate their previous inhabitants' nationality. From the second half of the 19th century, natural assimilation started, with the population of the once pure Croatian settlements becoming mixed with Hungarians, especially around Balaton, in the central Transdanubian area.

After WW II, there were many schools with Croatian as the language of instruction, mainly along the border. In 1949 the first college to open a Croatian department was the Teachers' Training College in Pécs, not far from the border. However, in the 1960s an edict from the Ministry closed down all schools with Croatian as the language of instruction, which contributed to the strengthening of the assimilation process.

As mentioned above, the change of regime made a significant difference in the policy towards national minorities living in Hungary, including the Croats, obviously. They have autonomous institutions; the National Croatian Minority Self Government has its regional self governments. "Hrvatski Glasnik" is a weekly, "Rijec" is an art and Zornica is a Catholic magazine for Croats in Hungary. They have programmes on the radio and on TV, and there are several schools functioning again with Croatian as the language of instruction, although their number is decreasing because of the small number of students.

The positive changes in the past few years have made the life of Croats living in Hungary significantly different, which makes us hope that the assimilation process can be slowed down and there will be more and more people admitting their national identity and language.

In this paper I will talk about the bilingualism of some Croats in Vas county where the gradišćanski Hrvati live, in Santovo where Šokci

live and in Nagykanizsa, where the podravinski Hrvati live. On the basis of data obtained from Hungarian Croats I will try to explore the bilingual mental lexicon. The debate about the structure of the bilingual mental lexicon concerns whether there is a common, a separate or a hybrid model of word storage. The controversy is whether the surface form in which a concept is presented contacts the same underlying representation in semantic memory.

■ SUBJECTS AND METHODS

Eight Croatian-Hungarian bilinguals took part in the experiments. Four of them are members of one family: a father, a mother and two daughters. The family language is Croatian and, as they say, all of them were first exposed to Hungarian when they started their schooling. They live in a village where the majority of the population is Croatian; however, there are Hungarians there, too. Even though they think they started the acquisition of Hungarian only at school, they also admit that they had contacts with Hungarians in the village earlier, so they can be considered bilinguals from birth. Two other subjects, Zorán and Gabi, are two young Hungarian Croats; they are both university students; Gabi studies Croatian and English at a teachers' training college, Zorán studies engineering.

Apart from these people living in Hungary, there are two other subjects from Croatia taking part in the experiment. Julianna is an English major at a university in Hungary. Janič is from Osiek with no Hungarian origin at all, but he has been living in Hungary for 6 years and speaks the language (which he learnt here) fluently. Julianna was exposed to Hungarian in her very early childhood since she is the daughter of a family belonging to the Hungarian minority in Croatia and the family language was Hungarian. Her exposure to Croatian began when she started school. Janič used to be a monolingual Croat. However, at school he learnt German and English, and having left school he started working first



in Austria, then in Germany, and then he arrived in Hungary to take up a job there. He seems to enjoy life in Hungary and intends to stay there for a longer period of time. He is the only subject who cannot be considered bilingual from birth. Still, in the years spent in Hungary he has developed a language command which makes it possible for him to live and study in Hungary, so now he can be called bilingual.

In what follows I will describe the tests carried out in order to gain a picture of my subjects' bilingual lexicon.

Experiment 1. Interview

First the testees and the experimenters had an interview about the subjects' linguistic history and background. They were asked how they felt about being bilingual, about their cultures, their identity, how they acquired the languages, what they considered to be the advantages or disadvantages of being bilingual, etc. The conversations were audio-recorded, transcribed and analysed from various points of view. Here it is the bilingual language behaviour that is the focus of attention.

Experiment 2. Word association test

The subjects were given the task of saying the very first word that came to their mind after hearing each of 188 Hungarian stimulus words one after the other. The words were identical to those enumerated in the 'Hungarian Verbal Associations' edited by Balló (1983) and Jagosztinné (1985) and carried out among Hungarian monolinguals in 1979 and 1981 in the Debrecen region. The test was oral and audio-recorded. The goal was to find out what syntagmatic or paradigmatic relations are observable in the mental lexicon of bilinguals. The responses were categorised according to the links between the prime words and the activated words, and were analysed from many different points of view (cf. Navracscics 2000a, 2000b, 2001a, 2001b).

Experiment 3. Colour naming test

The subjects were asked to search their mental lexicon for the appropriate entry (colour word) and name 30 different shades of the following basic colours presented one after the other: green, blue, yellow, red, purple, brown, pink and grey. The goal was to find out how culture is reflected in their thoughts, and consequently, in their linguistic realizations. The test was oral and audio-recorded. The responses were counted and categorised according to the shades and the basic colours (for a different analysis, see Navracscics 2002a, 2002b) and then analysed from the point of view of language mixing.

Experiment 4. Picture naming test

First the subjects were shown 28 pictures and they were asked to say what they saw in each of the pictures. Then, seeing the pictures once again, they were asked to retrieve as many words relating to the picture as they could. Here is the list of pictures the subjects were presented with:

10 animate: bird, horse, frog, dinosaur, owl, rooster, dog, butterfly, lion, tree;

8 inanimate: bus, armchair, plane, car, church, clock, Christmas decoration, sun;

6 professions: vet, hunter, optician, dentist, magician, musician;

4 branches of sport: football, working out, skiing, roller-skating.

The goal was to find out the relationship between a word and the entity it refers to in the physical world, in the subjects' mental world, or in the world of their experience, and also sense relations, i.e. hyponymy, meronymy. The responses were categorised from two points of view: code-switching and meaning relations. In the second part of this experiment I wanted to find out what sort of relations were reflected among the retrieved words, to what extent the hierarchical structure determined the subjects' thought processes, and what associative relations appeared on the basis of visual stimuli. In other



words, I wondered how their mental lexicon was structured.

All the tests were conducted in Hungarian as the base language, but the participants were encouraged to use either or both of their languages. Since the experimenter did not speak Croatian, the subjects were all in the monolingual mode.

■ DATA ANALYSIS. RESULTS

Experiment 1. Interview

All my subjects – except for Janič – come from bilingual families. They all use both of their languages on a regular basis in their everyday life. They feel happy and proud about their ability to speak two languages. At home they all use their minority language (i.e. all of them Croatian except for Julianna who uses Hungarian at home in Croatia) and in their home village they keep in touch with the speakers of both languages. They are so used to the bilingual form of speaking that they never get confused about the languages, and hardly ever do they code-switch in a monolingual mode. They have person-related language use and are very conscious not to use the guest language when speaking to a monolingual person. They think that maintaining the Croatian culture is crucial. The family are gradišćanski hrvati (Vilmos, Erzsébet, Gyöngyi and Szabina), they are the members of a cultural association in their home village, Szentpéterfa, where they come together with their friends and dance folk dances, sing folk songs and keep the customs and traditions. One of the daughters, Gyöngyi and her friend, Gabi, study Croatian at a college in order to be teachers in Croatian minority schools in Hungary. The college is quite close to their home village, so the girls are at home at weekends.

Zorán – a Šokac – is not a member of any cultural group and he studies quite a long way away from his home village, Hercegszántó (Santovo), in Veszprém, where there are no other

Croatians. When he misses the language too much, he calls his family or friends at home. He prefers talking in Croatian about everyday questions, but when it comes to the language of his profession (he is going to be an environmental engineer), he feels much more comfortable in Hungarian, the language in which he is studying. He is determined to teach his children the Croatian language even if they have a Hungarian monolingual mother. He speaks Serbian, too. He says it was quite difficult to study in Croatian in the secondary school in Budapest because the language of teaching was standard Croatian, and he speaks a dialect of it.

Julianna was born and brought up in a small village near Osiek. Her parents are both Hungarians. She also speaks Serbian besides Hungarian and Croatian, and studies English at university with a scholarship from the Hungarian Republic. She says her parents speak better Croatian, but she can try hard when they go to Zagreb or to the seaside, and has no problem with the language after a while. She says that in her everyday Hungarian there are always certain Croatian words appearing, e.g. she says 'sok' instead of syrup, or 'majica' instead of 'vest', or 'trenerke' instead of 'sports shoes' so she cannot always help code-switching. She learned English at school and liked watching TV programs in English. As a result, she is now an English major at a Hungarian university.

Janič is the only person who was not bilingual from birth or at least not in the Croatian-Hungarian respect. He can speak Croatian and Serbian, and at school he learnt German and English, and a small amount of Italian. Having left school he lived in German speaking countries, and 6 years ago he decided to come to Hungary. After a couple of years, he decided to apply for admission to a college in Hungary to study Italian. Now he is a student of Italian. He loves Hungary, where he has made many friends.

All the representatives of minorities feel very strongly about their national minority identity. Although they admit that their parents are better speakers of the language than

they are, but they still do not want to lose their language or identity. None of the subjects was able to mention any unpleasant occasions that were lamed by their being bilingual. As discussed, most of them are speakers of several languages. They do not find it difficult to learn a new language, and they are quite flexible about possible language variants or dialects. They claim it is an advantage to be bilingual rather than a disadvantage.

The interviews were done in the Hungarian monolingual language mode. During the interviews none of the subjects switched to Croatian (with the exception of words provoked by the experimenter) or any other language. The topics could have made it possible for them to switch, especially when they were asked to speak about how they celebrated the holidays, family feasts, or when they were asked to describe the seaside or the contrasts between people living in different parts of Croatia. They are very conscious language users, who are good practitioners of bilingual communication and have an excellently developed pragmatic competence.

Experiment 2. Word association test

The total number of responses amounted to 1316 items, which were categorised according to the links between the prime word and the activated words. The following links were discovered during the test: semantic, syntactic, lexical equivalents, morphological, phonetic and random. These links express paradigmatic (semantic, lexical, morphological), syntagmatic (syntactic) and associative (phonetic and random) relations between the stimulus word and the response.

The semantic category is made up of responses independent of language, which belong to the same semantic field, including synonyms, antonyms, idioms (50%). Syntactic links can be ascertained if the subjects used phrases which contain the stimulus word (13%). The lexical category assumes direct associations between the lexical representations of the equivalent words in the bilingual's two languages (15%). The morphological category is the collection of words which are the result of word formation, such as compound words, affixation, etc (4%). This category could

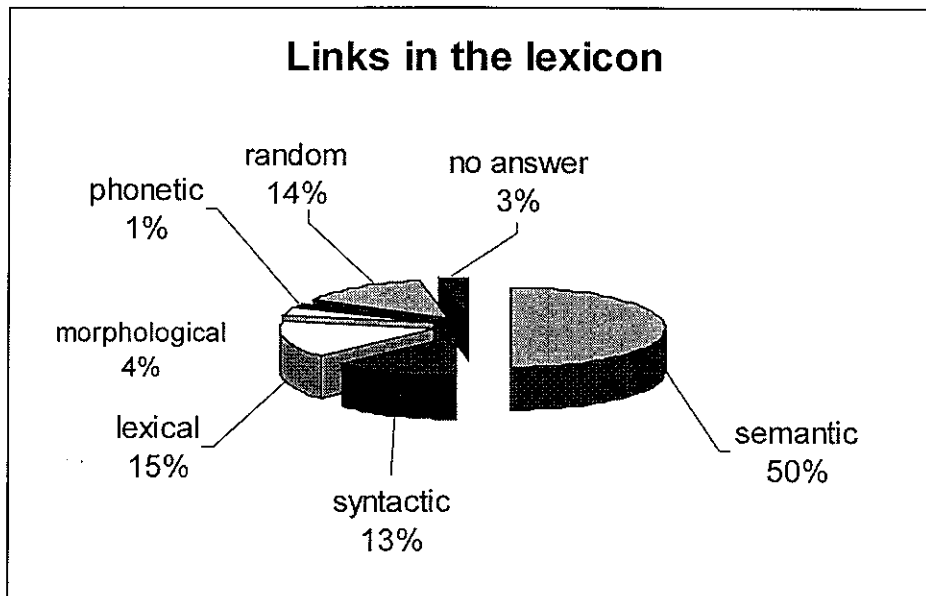


Figure 1: Links in the mental lexicon.



be a subcategory of the semantic one. In the phonetic category, for different reasons, it is the sounds of words that elicit the retrieval (1%). Random answers do not have any specific links to the stimulus words (14%), and there were no answers in 4% of the cases.

As for the language choice of the subjects: 15% of the responses were given in Croatian by the subjects. The total number of code-switches contained the same categories as mentioned above. However, only 1% of the responses could be categorized as a switch based on a phonetic stimulus or whose links to the stimulus word could not be recognized. 9% of the code-switches give evidence of semantic links between the stimulus word and the response. In these cases the semantic representation was expressed independently of the form, i.e. when the subjects did not pay attention to the actual language choice. They were more conscious of conveying the infor-

mation and trying to reflect what they had in mind in connection with the given stimulus word, e.g. *fiú* (boy) – *djevča*, *hosszú* (long) – *kratki*, *reggel* (morning) – *večer*, *hely* (place) – *Zagreb*, *szék* (chair) – *stol*, *szeret* (love) – *ljubit*. This means that subjects applying this mode of retrieval have a common semantic representation system, whose operation does not depend on the actual language used.

Those who acquired their languages in different contexts have lexical items for each concept belonging to each of their languages, and it is not so much the concept but rather the lexical item that is important for them. I consider that subjects who used a lot of mirror translations in the word association test belong to this category, since they gave responses like *ágy* (bed) – *krevet*, *aludni* (sleep) – *spavati*, *egyszerű* (simple) – *jednostavan*, etc. An amazingly large number of lexical links could be observed in the test: 86% of the responses were mirror translations.

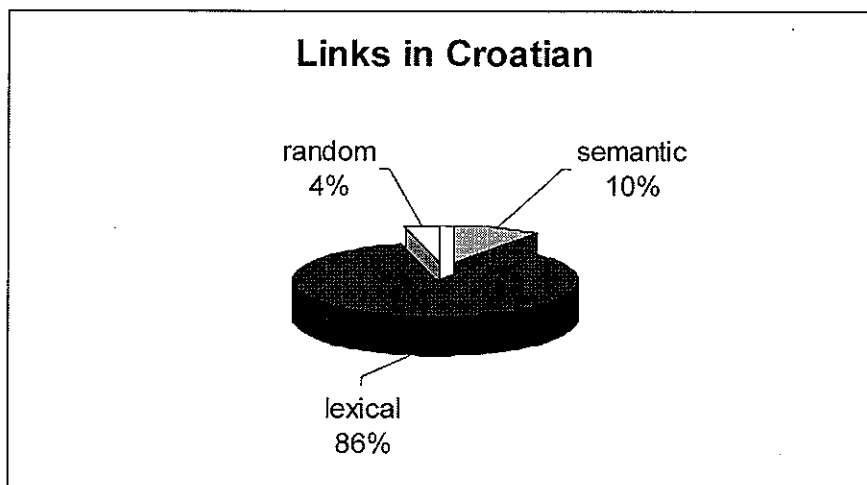


Figure 2: Links in the Croatian responses

Experiment 3. Colour naming test

All the subjects named all the colour shades and thus there were 240 responses to be categorised. The answers were put into the following categories according to the linguistic devices the subjects had chosen to express the most accurate shade:

- (i) basic colour name (*green*, *blue*, etc.) consisting of one lexeme;
- (ii) basic colour name plus intensity adjective: *light*, *medium* and *dark*;
- (iii) basic colour name plus qualifying adjective (*military green*, *brownish pink*, etc.)
- (iv) basic colour name plus nominal quali-

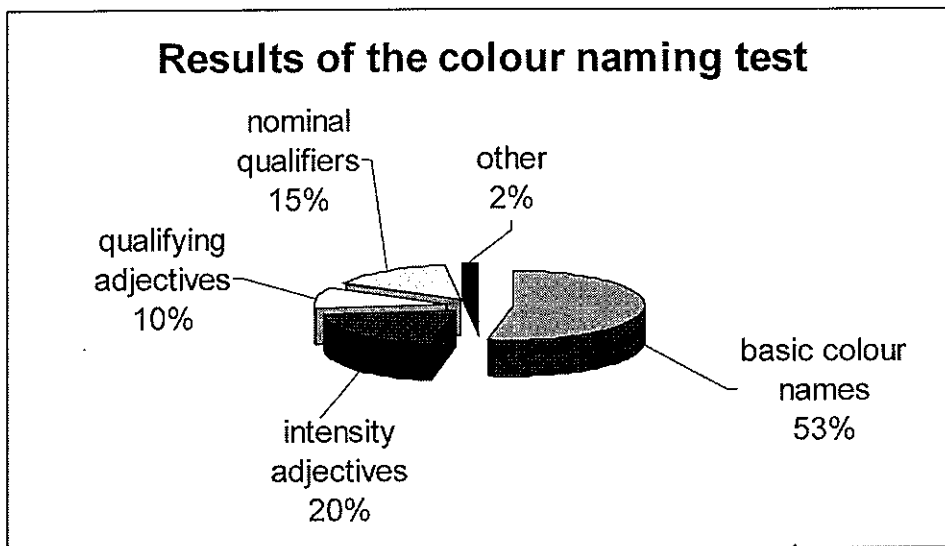


Figure 3: Results of the colour naming test

fier (*sky blue, midnight blue, field green, peanut brown*, etc.)

Figure 3. shows the distribution of the percentages of the different categories:

As shown in the diagram, more than half of the responses are basic colour names, i.e. the subjects were not too careful about specifying the colour shades. 40% of these answers are named in Hungarian, and 13% in Croatian (e.g. *barnasto, zeleno, squri, plavi, smeda, barnasti, zelena, crvena, žuto, trolevisnja, lilasto*, etc.). All the genders are represented: masculine, feminine and neuter, there is no significance in the occurrence of gender; sometimes the same colour name is used in all its gender forms (e.g. *zeleni, zelena, zeleno*). Some of the colour names do not belong to standard Croatian, they are dialect forms (*barnasto, lilasto*).

The second biggest group of answers is colour names with intensity adjectives: *light, medium, dark*. Within this group the subjects found it more important to emphasise the lightness of the colour rather than its dark shade: 15% of this category express light, 0.5% medium and 4.5% dark shades. There were no alternations between the languages in this category: all the shades were named in Hungarian.

15% of the answers contained a nominal qualifier such as: *oil green, poison green, stain brown, spinach green, grass green, steel blue, royal blue, sky blue, sea blue, party pink*. All these answers were in Hungarian. However there are colour names which do not exist in Hungarian in a compound, like *égkék, égboltkék* (sky blue, cf. in Hungarian 'égszínkék' which is 'sky colour blue'). The cultural differences could have been shown with these examples but the data obtained from these Hungarian-Croatian bilingual subjects do not provide any differences between the cultures.

10% of the answers contain qualifying adjectives: *brownish green, deep green, reddish brown, yellowish green, bluish grey, pale green, strong red, sea blue*. A comparison to another colour is applied most frequently the answers; however, the intensity of the colour is also expressed (*deep, strong, pale*, etc.). It is interesting to note that *sea blue* is also mentioned here, since two kinds of adjectives were observed in Hungarian: the nominal (*tengerkék* = sea blue), and the adjectival (**tengeri kék* = sea blue) compounds. This latter one should be the influence of Croatian, since the Hungarian language does not create an adjective with the suffix -i from





the noun 'sea', only if it is a nominal compound for denoting sea creatures. 2% of the answers go into the 'other' category: e.g. *another green, how should I know it, I have no idea*.

Experiment 4. Picture naming test

The subjects were to name 28 pictures each, so the total sum of the answers was 224. Only 3% of the answers were given in Croatian. The three subjects who code-switched while naming the pictures were Gyöngyi whose answers contained Croatian naming in 18% (e.g. *konj, sova, crkva, sunce, zubar*), Gabi 4% (*muzičan*) and Janič 4% (*sova*).

The answers were categorised according to the number of references per picture. Some pictures were given the same label by all the subjects (e.g. frog, rooster, etc), while others triggered a reference expressed by the same meaning but in the other language (cross-linguistic synonyms), or the references were expressed by different meanings in a paradigmatic relation (synonyms, hyponyms and meronyms).

Table 1. describes the categories with the types of naming and some examples.

Categories 1 – 2 enumerate the most easily recognisable entities, which did not show any alternation in the naming process: all of them were named with one meaning, though, this meaning may have been recalled in the other language, too. Category 3 groups all the picture naming where intralingual (i.e. only Hungarian) synonymous meanings were mentioned. Categories 4 and 6 contain words having paradigmatic hyponym ('kind of') or meronym ('part of') relations. The difference between the two is that in Category 4 there are only Hungarian words whereas in Category 6 there are words from Croatian brought in. Categories 5 and 7 gather words with different references mirroring the speakers' mental representation. Category 8 shows the most problematic picture naming. The subjects recognised these pictures in very different ways. Picture No. 1 was quite controversial, depicting a *bird* (used three times) as a hyperonym expression, as opposed to four different hyp-

onyms in Hungarian. Unfortunately, it is impossible to translate all of them into English due to cultural differences. A *heron* was used twice in Hungarian as '*kócsag*' and once as '*gém*', a *crane* '*daru*' and '*kárókatona*', which is a kind of pelican, were used once. Picture No. 24 described a musician who was playing the violin. This triggered recall of the words '*zenész*' (= musician) three times, '*hegedűművész*' (= violinist) three times, '*muzsikus*' (= musician) and *muzičan*. Pictures No. 26 and 28 depicted two branches of sports: body-building and scootering. They are not very traditional sports but have been gaining more and more popularity lately. For body-building there were 5 references retrieved (*body-builder, body-building, weight-lifting, weight-lifter, aerobics*) and for scootering there was only one naming which occurred three times, and that is *scootering*. All the other answers mentioned different things, e.g. *skating, a playing child, a romobil, going on the scooter, skates for children, etc.*

In the second round of this experiment the subjects were asked to enumerate as many things as they could when seeing the pictures one by one. I was interested to see the paradigmatic and syntagmatic relations of the words in the bilinguals' minds.

Synonyms, antonyms, hyponyms and meronyms are paradigmatic relations that occurred. There were numerous associative answers, too, which means the subjects collected words belonging to the semantic field of the stimulus reference or they expressed their feelings in connection with the reference. Syntagmatic relations are structural collocations with mutual expectancy (Jackson 2000). As presented in the table below, collocations were not represented significantly, only in a few cases, e.g. the picture of the rooster triggered the verb '*crow*', and the picture of the sun triggered the verb '*shines*'.

Three sorts of profession (vet, hunter and dentist) and three sorts of sport (football, body-building and scootering) triggered hyponym relations; they had neither associa-

tive answers nor collocations. Only the first 13 pictures – which depict animals and objects – had superordinate terms. As for the associative answers, heroes of fairy tales (frog,

owl), or subjects of the imagination (dinosaur), things promoting pleasurable feelings (butterfly, sun, church, Christmas decoration, musician) made subjects recall them.



Table 1: Results of the picture naming test

Category	References and relations	Examples
1. one referential meaning	One and the same reference is named; all the names are in Hungarian.	Frog, dinosaur, rooster, hunter.
2. cross-linguistic synonyms	One and the same reference is named, some are cross-linguistic synonyms.	Owl, sova.
3. intralingual synonyms	Two references of one and the same entity are expressed (synonyms).	Bus, armchair, airplane, car, butterfly, magician.
4. hyponyms and meronyms	Two references of one and the same entity are named, they are hyponyms or meronyms.	Watch – clock; dog – German shepherd; tree – palm tree; lion – lion head.
5. more than one referential meaning	Two references denoting two entities in one picture.	Football – football player; hairdresser – optician.
6. hierarchical sense relations	Two references (including meronyms) + cross-linguistic synonyms.	Horse – konj – horse head; Church – crkva – Catholic church; sun – sunce – wall decoration; doctor – zubar – dentist.
7. more than one referential meaning with several synonyms	Four references: different meanings, two cross-linguistic and two intralingual synonyms.	Musician – violinist – muzican; skiing – skier – ski.
8. plenty of referential meanings	Five references of one and the same entity described in the picture.	Bird – daru – kárókatona – kőcsag – szürke gém; Pine tree decoration – bomb – Christmas tree decoration – ball; Weight-lifting – aerobic – body-builder – weight-lifter; Roller-skating – roller skater – playing children – roller.

**Table 2:** Meaning relations between the recalled words

Pic. No.	Picture	Hyperonym	Hyponym	Associative	Collocation
1.	Bird	6%	82%	12%	0%
2.	Horse	10%	75%	15%	0%
3.	Frog	7%	29%	64%	0%
4.	Dinosaur	14%	29%	57%	0%
5.	Owl	8%	31%	54%	0%
6.	Bus	18%	36%	46%	0%
7.	Armchair	7%	47%	26%	20%
8.	Airplane	7%	57%	36%	0%
9.	Car	8%	66%	26%	0%
10.	Church	8%	33%	59%	0%
11.	Clock	0%	42%	58%	0%
12.	Rooster	18%	53%	23%	6%
13.	Dog	12%	50%	38%	0%
14.	Butterfly	0%	38%	62%	0%
15.	Christmas decoration	0%	17%	83%	0%
16.	Tree	0%	36%	64%	0%
17.	Sun	0%	13%	73%	14%
18.	Lion	0%	50%	50%	0%
19.	Vet	0%	100%	0%	0%
20.	Hunter	0%	100%	0%	0%
21.	Optician	0%	80%	20%	0%
22.	Dentist	0%	100%	0%	0%
23.	Magician	0%	67%	33%	0%
24.	Musician	0%	25%	75%	0%
25.	Football	0%	100%	0%	0%
26.	Body-building	0%	100%	0%	0%
27.	Skiing	0%	50%	50%	0%
28.	Scootering	0%	100%	0%	0%

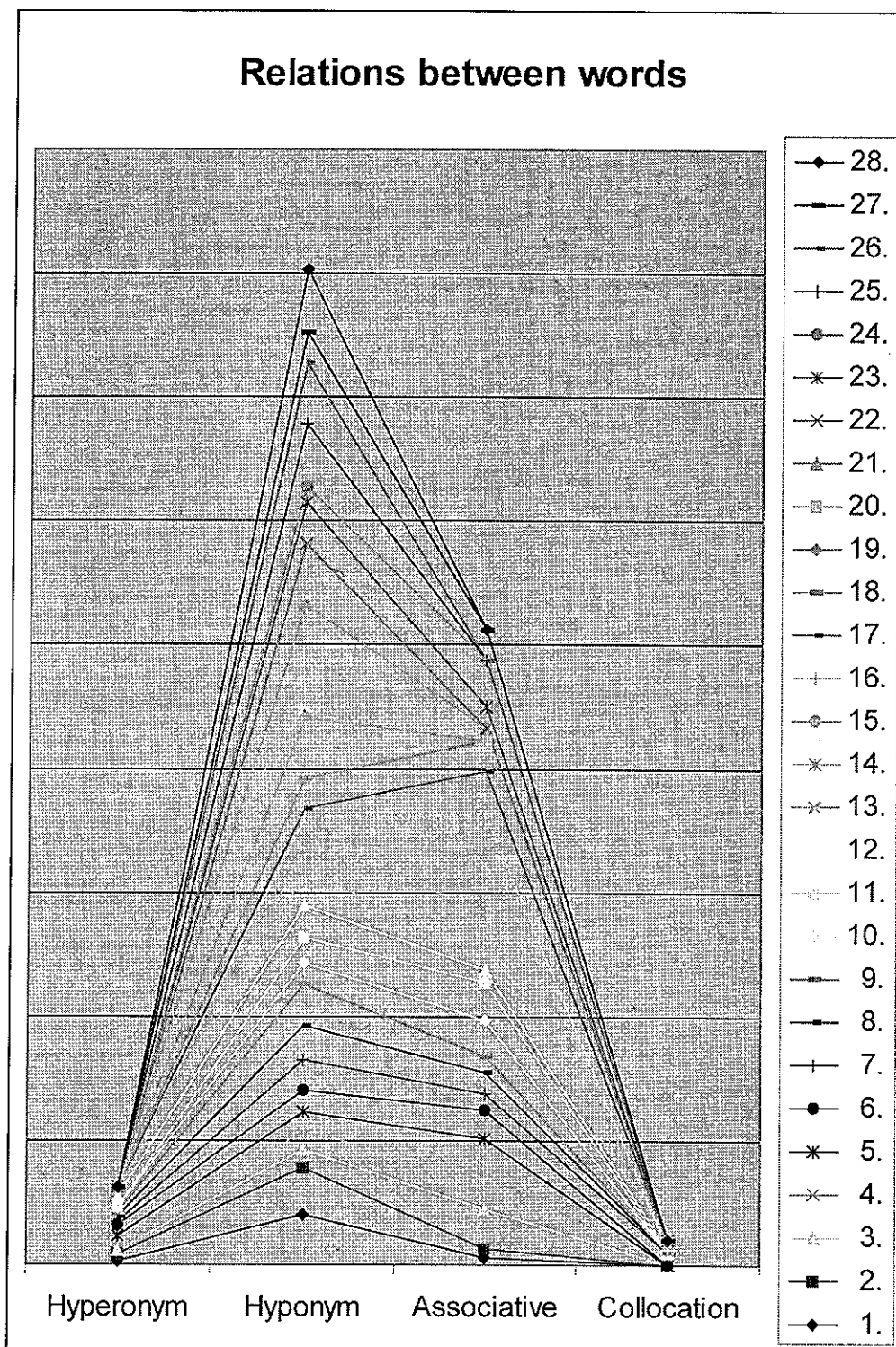


Figure 4: The frequency of sense relations in the lexicon based on visual stimulus



DISCUSSION

Recalling is a reconstruction of the actual mental state when the given information was fixed (Gósy 1998a). Different languages make different distinctions explicit and have different patterns of lexicalisation. Macroplanning is language-independent, microplanning is language-specific (Green 1993). In the case of bilinguals, the relationship between a given L2 word and a given L1 word in the mental lexicon will vary from individual to individual, depending on how the words have been acquired and how well they are known, as well as on the degree to which formal and/or semantic similarity is perceived between the L2 word and the L1 word in question (Singleton 1999). However, recalling is also influenced by the situation the bilingual is in when engaged in a conversation or carrying out a task.

When studying bilinguals, special attention must be given to the language mode the bilinguals are in at the time of the observation. Grosjean claims that it is critical that researchers control for the mode subjects are in when they are being recorded or tested experimentally. The original question, whether bilinguals have one integrated semantic system or two independent systems, is confounded with the language mode issue: "Failure to control for the bilingual mode factor produces at best variable data due to the fact that subjects are probably situated at various points along the monolingual-bilingual continuum, and at worst ambiguous data given the confound between this factor and the variable under study" (Grosjean 1997: 10).

According to the language mode hypothesis, if the bilingual talks to another bilingual with whom he/she shares the same languages, their language behaviour is quite lax, no particular linguistic efforts are needed to control their language use. In a situation like this numerous cases of code-switching can be expected. However, when a bilingual talks to a monolingual, he/she has to have a strong control over his/her speech behaviour, so that no

code-switching occurs, lest he/she might offend the monolingual person by using a language inaccessible for him/her. My subjects were all in the monolingual mode; the experimenters did not speak Croatian. In such circumstances no code-switching is expected to occur. In the different experiments subjects used different code-switching mechanisms. During the interviews none of the subjects brought any Croatian into the conversation unless the experimenter provoked it and asked directly about the subject's code-switching. However, during the other tests code-switching did happen, though not to a large extent.

In the word association test the main goal was to find out what relations can be discovered between the stored words in the lexicon and what the role of the surface form is, i.e. of the language in expressing the conceptual representation. As seen from the data, paradigmatic relations outnumber the syntagmatic ones (68%:13%) and we obtained additionally 19% of associative responses. Within the paradigmatic relations, the use of synonyms and hyponyms was the most frequent with 30% and 20%, respectively. Antonyms and meronyms were recalled in 18% and 14% of cases.

Code-switching occurred in 15% of answers when Croatian words were the responses to the Hungarian stimulus word. In the code-switches 86% are mirror translation, or rather cross-linguistic synonyms, and only in 10% could other sense relations be observed in the responses. The relatively small number of code-switches gives evidence on one hand of the fact that these bilinguals can keep their languages separate because they have developed outstanding pragmatic competence. They have developed the capacity to function as monolingual speakers of either language or as bilingual speakers. On the other hand, it also demonstrates that the common underlying representation can come to the surface in different languages, which can in some cases be explained by frequency of use. The core vocabulary stimulus words triggered the most basic words in Croatian (*čovjek, živjeti, dječak, riječ, liječnik,*



kaže, želi, žuto, težak, star, ide, dobro, hladno, trbuh, gost, ruka, noga, sidit, vidit, etc.). When the task requires access to the meaning of the concept, surface form appears to have minimal effect. Both of the two competing hypotheses, i.e. the common- and the separated-code hypotheses (Snodgrass 1993) have been justified in the data obtained and analysed. As a result, the hybrid model can be considered to be the most appropriate one for balanced bilinguals, which presumes the common underlying representation in semantic memory and that the surface may be formed differently depending on a number of factors (situation, partner, topic, mood, fatigue, etc.).

The colour naming test was also interesting for observing cultural differences (if there are any) and also to see to what extent they influence the language of bilinguals. Kay and McDaniel (1978) in a cross-cultural investigation found no evidence in perception of colours for different language speakers. They conclude that '...rather than language determining perception, it is perception that determines language.' (Kay and McDaniel 1978: 610 in Steinberg 1992). In our case, the fact that the most frequently used category was the basic colour name (53%) itself proves that the subjects did not really have problems or hesitations in recognising the colours presented. However, Figure 3. also shows that the structuring the spectrum is not careful enough, since they did not really make serious attempts to distinguish the different shades. The second most frequently used naming strategy was adding the intensity adjectives 'light', 'medium' or 'dark' to the basic colour name (20%). Colour names with qualifying adjectives and nouns are the indicators of the subjects' attempts at being careful about naming the correct shades. These amount to 25% altogether, scarcely more than the second category. These expressions tell the most about the culture of the subjects. Their metaphors and similes reveal their views and their perception of the world.

When naming basic colours, it was *brown* which was the most frequently used, which

means this is the colour which has no shades or at least whose shades are the least observable. The analysis of the 'light', versus 'dark' qualifiers made it clear that *blue*, *grey* and *yellow* are the most popular in this category. Besides, it is usually the 'light' shade which is accentuated as opposed to the 'dark' one. Qualifying adjectives were used mainly with colours *blue* and *green*. No nominal compounds were used for *red*, *grey* or *pink*. However, a large number were applied with the colours *yellow*, *green* and *blue*. The Hungarian language has a compound *citromsárga* ('lemon yellow'), which most of the subjects called *light/lighter/very light yellow* – only in two cases was this shade expressed with a nominal qualifier. The darker shade of this colour *narancssárga* ('orange yellow') was mainly named as *orange*, though, and only in two cases was it called *yellow*. The cultural difference can be shown only in the elaboration of yellow.

In the colour naming test the occurrence of code-switching was 13% and only the basic colour names were concerned. No careful description of the shade was expressed in Croatian. According to Gósy (1998b), children usually use the basic colour names. Elaborate colour names appear only at a later age. In the lexicons of the subjects who used Croatian, too, while naming the colours, the basic colour names were more quickly accessed in Croatian and the elaborate colour names in Hungarian. Gabi and Gyöngyi, the two college students of Croatian, switched to the Croatian language most frequently. They are the subjects who keep using Croatian both in the family and at the college in their everyday life. However, interestingly enough, they – instead of using standard Croatian – retrieve the dialect names of the colours, e.g. *barnasto*, *lilas-to*. As for the expression of gender: Gabi used the neuter forms in 73% and the masculine forms in 27% of cases, no feminine forms were mentioned. Gyöngyi, on the other hand, used all three genders: feminine (36%), masculine (45%) and neuter (19%) colour names.



The expression of gender did not depend on the colour, either: green had all the gender forms (*zeleno, zelena, zeleni*), brown (*barnasto, barnasti*) and blue (*plavi, plavo*) had only masculine and neuter, *smedja* occurred only in the feminine form. Lilac was named by Gabi and Gyöngyi as *lilasto* (neuter) but Janič used *trolevisnja* (feminine) for the same colour.

As for the picture naming test, as seen in Fig. 4. most of the responses had a hyponym relation to the stimulus picture. The second group is the associative answers, which shows that the subjects are always in touch with their own feelings and associations concerning the objects surrounding them. Hyperonym relations did not appear frequently at all, although it could have been expected that the pictures of animals would be named by the superordinate term. It happened only in some cases, e.g. with the picture of a rooster, the answer was *poultry*.

Indeed, when recalling words, the subjects seemed to be overwhelmed by the superordinate concept of the particular picture. It can be observed that pictures presenting similar concepts (e.g. car, bus, airplane or pictures depicting different kinds of professions and sports) made the subjects repeat more or less the same recalls, which were hierarchically subordinate to the same superordinate concept (e.g. means of transport, sports, professions, etc.).

CONCLUSION

What can be said about the bilingualism of Hungarian-Croatian bilinguals?

1. They are proud of their nationality, their identity is strong and they work hard in order to maintain their language and culture. They appreciate being bilinguals and consider themselves fortunate to be able to speak at least two languages. The younger subjects emphasise the role of their bilingualism in learning a third or a fourth language.
2. They are gifted bilinguals in interactions. Mixing or code-switching is not characteristic of their speech in a monolingual language mode.
3. When it comes to fulfilment of different tasks, they seem to forget about their disciplined language behaviour since code-switches do occur, even though not at a high rate. In the word association test the rate of using Croatian words was 15%, while in the colour naming test it was 13%. Interestingly enough, in the picture naming test there were code-switches only in 3% of cases while when recalling words to the pictures, it was in only 1.5%.
4. In the colour naming test no particular cultural differences could be identified. However, the typology of the languages made an impact on the production of colour terms.
5. The difference between the percentages of the various types of sense relation observable in the subjects' recalling could be due to the type of the task. In the word association test, paradigmatic relations were expressed much more frequently than in the others.

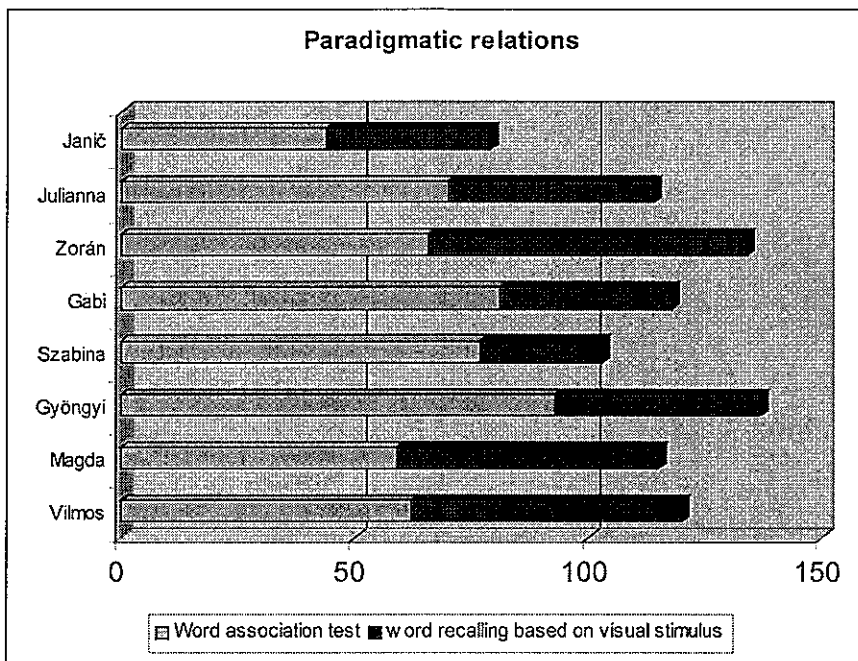


Figure 5: The percentage of paradigmatic relations discovered in the word association and the word recalling tests

Syntagmatic relations were expressed in the word association test but not so much in word recalling on the base of visual stimuli:

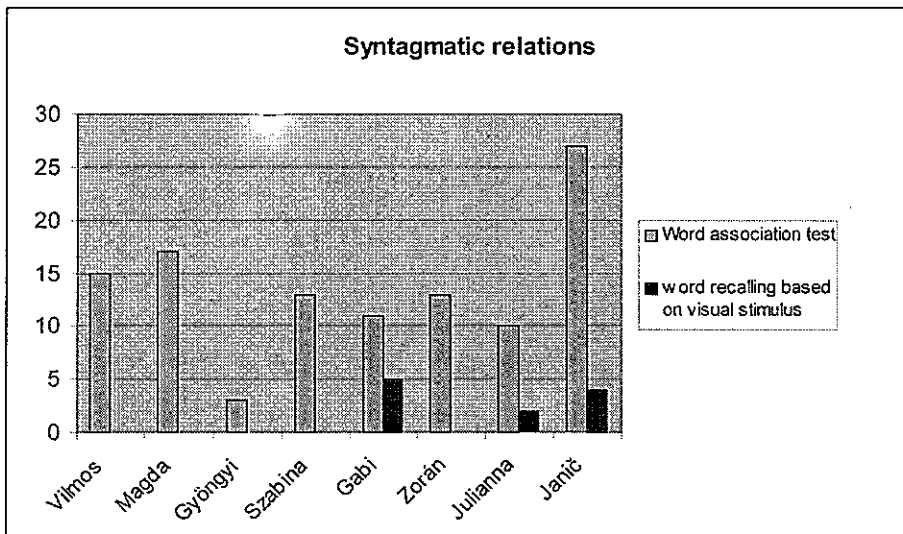


Figure 6: Percentage of syntagmatic relations in the two tests



Associative relations were expressed in both tests but as seen in Figure 7., they appeared much more frequently in the word recalling test.

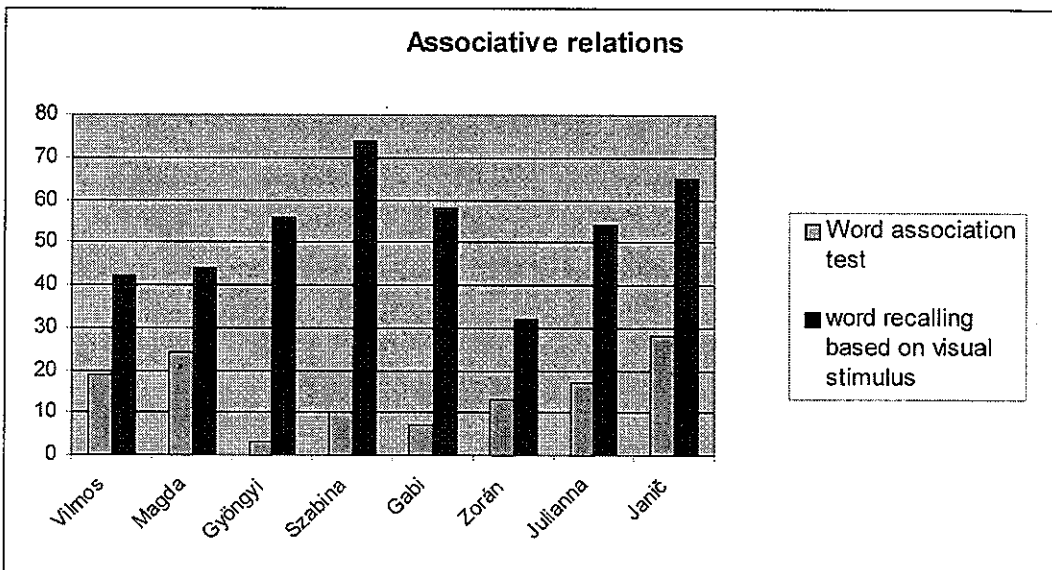


Figure 7: The percentage of associative responses in the two tests

- The determining factor in the structure of their mental lexicon is that paradigmatic relations outnumber syntagmatic relations and associative links as demonstrated in the word association and picture naming tests.

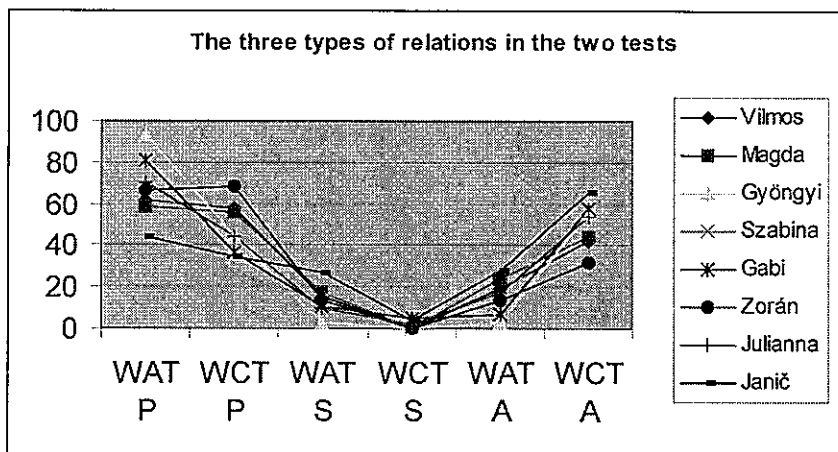


Figure 8: Paradigmatic, syntagmatic and associative relations in the word association and the word recalling tests¹

7. Finally, as seen in Figure 9., all the subjects' paradigmatic relations occupy more than half of the responses, except for Janič, who has more associative answers than paradigmatic ones. At the same time, he has the largest number of syntagmatic responses among the subjects, which may refer to the mode of his language acquisition. He is the one and only subject who is not bilingual from birth. Consequently, bilingualism from childhood promotes the building-up of the mental lexicon in a compound way, and second language acquisition at a later age contributes to a more collocative and associative type of structuring.

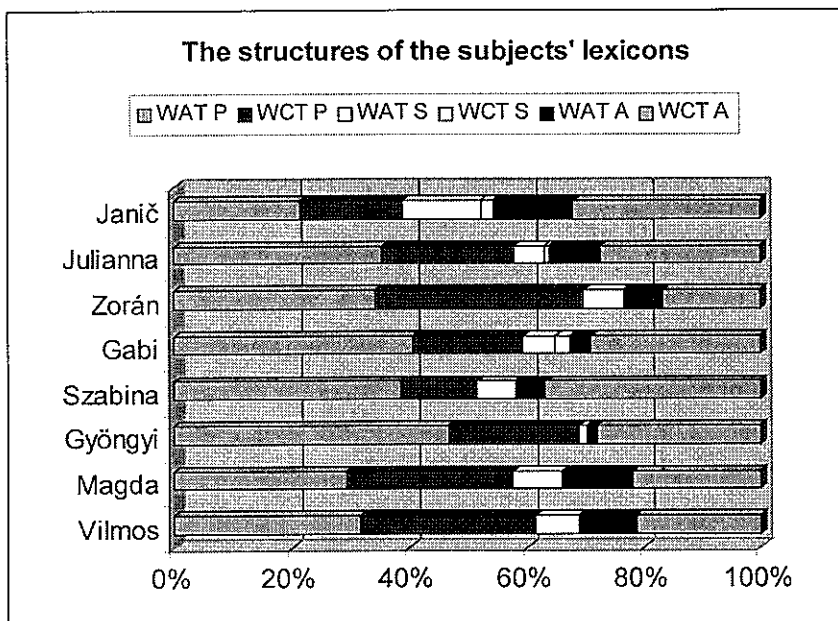


Figure 9: The structures of the subjects' mental lexicons



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BILJEŠKE

¹WAT P: word association test paradigmatic; WCT P: word recalling test paradigmatic, WAT S: word association test syntagmatic; WCT S: word recalling test syntagmatic; WAT A: word association test associative, WCT A word recalling test associative

