Priming: the influence of life experience on semantic domains

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Content:

1. Introduction

In this thesis I am investigating the process of p*riming* and its effects on word associations. More precisely, I will use the word association test to try to show that the choice of a certain word out of one's mental lexicon highly depends on their knowledge of the world and their life experience. What is important to emphasize is the fact that I am going to deal with and Croatian native speakers and speakers of fluent English. I will look into how their life experience influences their mental representations. Also, I am interested in whether the process of creating semantic domains is the same among Croatian speakers and speakers of foreign languages. Semantic domains, fields that contain words related to one meaning, will thus be one of the focuses in this research, as well as the process of priming. I want to see how these linguistic processes are connected to one's life experiences. Finally, I will compare Croatian and foreign speakers in terms of the aforementioned processes, to see if there are any differences between them.

2. What is *Priming?*

In this paper, my main focus is the process of *priming*. This means that I am looking into the process which happens when a person is introduced to a certain concept. Of course, the exposure to a certain concept triggers a series of events in a person's mind, and in this research, I am particularly interested in the results of that series of events. What will happen? Will the results be free of all influences or will they be influenced by a person's previous knowledge and experience? These are the questions that I will try to answer. But, let's start from the beginning.

Priming is "the implicit memory effect in which exposure to a stimulus influences response to a subsequent stimulus. "(Gulan, Valerjev 2010, 53) It occurs unconsciously and is thus the method which will be used in this research. There are several types of priming: semantic priming, mediated priming, form-based priming and repetition priming (Gulan, Valerjev 2010, 54-55). The type which will be in focus of this paper is semantic priming. Priming as such is often researched from a psychological point of view, but in this paper the focus will be on the linguistic point of view, which will clearly be corroborated by psychology. This is the reason why I will deal mostly with semantic priming. In this case, linguistics and psychology are inseparable, because this paper will try to show that the manner in which we store and recall words is almost always dependant on our personal experience, which influences the array of meaning that we tend to connect to a particular concept

2.1. Semantic priming

Semantic priming is very often researched, especially in word association tasks. The crucial fact is that this type of priming is "produced by true relations of meaning. "(Gulan, Valerjev 2010, 53). Meaning is thus a key reference scientists use when investigating this type of priming.

> Semantic priming refers to the observation that a response to a target (e.g., dog) is faster when it is preceded by a semantically related prime (e.g., cat) compared to an unrelated prime (e.g., car). Semantic priming may occur because the prime partially activates related words or concepts, facilitating their later processing or recognition. (American Psychological Association 2014)

In other words, the generally agreed fact related to this type of priming is that words that come up in one's mind when they are introduced with a stimulus word are connected by meaning. As was already mentioned, priming is an unconscious process and scientists thus agree that, due to the speed required in word association tests, participants will only respond with words that are connected with the given words by meaning. This means that participants are expected to have associations which are linked to the stimulus word by meaning – they could be synonyms, antonyms, subordinate terms or collocations. However, we can argue if the meaning of a word is the same for all speakers of a language. Of course, all words do have dictionary meanings, but the purpose of this paper is to investigate if and how words acquire specific meanings, which are individual. This means that each person assigns certain meaning or a context to a word, which then leads to the automatic retrieval of this meaning when a person is presented with a particular word. It is widely believed that participants in word association tests produce similar answers and such tests are usually conducted with little information about the participants.

On the other hand, generally speaking, it is fairly obvious that, when presented with a very common word, one is likely to produce an expected answer, which is a word of similar meaning, a collocation or a synonym. This happens because of the fact that the words in the mind are organized, and this organization is called a semantic network. Here, it may be problematic what this term refers to. Is it just a cluster of intertwined words, or is it individual and unique to each person? Hasan, Cloran, Williams and Lukin explain it as follows:

- the semantic network ‘is a’ hypothesis about meanings accessible to speakers in some specific context type and the form of the network represents how those meanings are related to one another;
- the semantic network is the ‘input’ to the lexicogrammar: in other words, its options are realised lexicogrammatically;
- the input to the semantic network is some sociologically significant and specific context. (Hasan, Cloran, Williams and Lukin 2007)

Semantic networks are based on meaning and participants in the word association tests unconsciously rely on them when presented with a certain word. Of course, it is logical that it is easier to retrieve a word which is a part of the same semantic network, but are those networks always the same? This question has already been asked several times.

I would like to emphasize the fact that words acquire meanings in relation to *context.* This is why the results of word association tests are not universal. All participants will not have the same answers even when presented with simple and common words, such as for example *grass*. Despite the fact that it is a very simple word with almost no homonymy or polysemy, not all participants will answer in the same manner. This happens because of the context. The aim of this paper is to show that the participants’ answers will heavily rely on their personal life experience. All speakers of all languages do learn denotative meanings of words, but in this specific kind of tests, these meanings will not always be the answer. This happens because unconscious responses always happen in some form of relation with one’s mind and experience and are not just a result of one’s mental lexicon. It is fairly clear that each person tends to react to a stimulus word more quickly if they are familiar with the term, or, more importantly, if they are involved in an activity that the word represents. All this will shift their focus on the activity that is linked to the stimulus word, which may ultimately result in a less common answer, but one which still makes perfect sense to the person that gave it.

As is already mentioned, word association tasks are a good mechanism in investigating this process, because they require speed and do not allow thinking about the stimulus word and its possible meanings or pairs. However, if a scientist is to research all this in the aforementioned manner, it is crucial to ask for specific information about the participants, and not just introduce them to a set of words. Why is this so? This is crucial due to the fact that it is important for a scientist to know some basic information about the participants in order to be able to analyse their data. The purpose of this paper is to show that these information about the participants will often be linked in one way or another to the answers they provide. Even

though we all share similar mental lexicons, the groups in which words are stored in our minds are not the same. Denotative meanings of words does not have anything to do with this, the only issue which one has to look into is the fact that the way we store words in semantic networks depends on the meaning that a particular word has for us, which often will not be the same as for another person.

Harley (2001) makes an interesting statement:

> The effect of context on speech recognition is of central importance, and has been hotly debated. Is speech recognition a purely bottom-up process, or can top-down information influence its outcome? If we can show that the word in which a sound occurs, or indeed the meaning of the whole sentence, can influence the recognition of that particular sound, then we will have shown a topdown influence on sound perception. In this case, we will have shown that speech perception is in part at least an interactive process; knowledge about whole words is influencing our perception of their component sounds. Of course, different types of context could have an effect at every level of phonological processing, and in principle the effects might be different at each level. (Harley 2001)

He emphasizes the fact that context is crucial for speech perception, making it an "interactive process". Furthermore, he discusses the fact that different types of context are important for each level of phonological processing, which means that context actually affects recognition of separate phonemes. Speakers of all languages are thus able to recognize if a stimulus word is an actual word or a nonword. In simple terms, this means that one is able to choose the appropriate word in a sentence, but it can also be argued that this is crucial when we speak about the choice of a word from mental lexicon. We have the ability to choose the appropriate word in a sentence, however, in a similar manner, we are also able to retrieve a word when presented with a stimulus word. Clearly, those two processes are not the same. While most people will choose the same word as an appropriate word in a sentence, the choice of an individual word may be different. The reason for that is simple; when we read the sentence, we automatically imagine a certain context or scene, based on our life experience, but, on the other hand, when we are presented with a single word, there is no context given, which means that we will automatically put the word in a context which will emerge in our minds. The result of this is the fact that participants will sometimes provide answers from a different semantic domain in word association tasks. The fact that we

recognize and use the same word in a sentence should not be used as an evidence supporting the fact that we will have similar responses to stimuli words in word association tasks.

3. Word association tests and previous research

Word association tasks "have been used to investigate the content and organization of words and concepts in the mind." (Fitzpatrick 2015). These tasks have long been used to identify some mental abnormalities and used in various personality tests, but recently have extensively been used in research of mental lexicon and similar linguistic issues. The whole test is fairly simple – the participant is presented with a stimulus word, and in a short period of time is asked to produce a word which comes to their mind first.

The aim of these tests is that "associative response to a stimulus word has to consist of a single word that is the first word that came to the subject's mind when reading or hearing the stimulus word." (de Groot 1989, 824). This is crucial, the response has to be the first word that comes to an participant's mind when they are presented with the stimulus word. This is the only way how these tests can provide real results. Now, the question arises if these responses are similar among all participants, or if they can be different from person to person.

We have to differentiate between concrete and abstract concepts. Which one of these is linked to a larger number of nodes has long been debated. In fact, there are two different views. De Groot actually describes two opposite views of this situation:

> One of the views is that more information is stored about abstract concepts than about concrete concepts, or in network terminology, that the nodes representing abstract concepts are linked up with a larger number of other concept nodes than are those representing concrete concepts. In support of this view, Schwanenflugel and Shoben (1983) and Wattenmaker and Shoben (1987) point out that abstract concepts are rated as occurring in a greater variety of contexts than do concrete concepts (Galbraith & Underwood, 1973). The second view claims the opposite, namely, that the nodes for abstract concepts contain less information than those for concrete concepts (see also Kieras, 1978, p. 543). The second view is accompanied by the assumption that the "denser" representations of concrete concepts contain one or more links that are stronger than any of the links in the less dense representations of abstract concepts.' (de Groot 1989, 825)

This is very interesting, but is actually difficult to test in word association tests without measuring time. The reason for this is the fact that, if each of these appears in a larger number

of contexts, the participants will need less time to produce the word as a response to a stimulus word. However, I would argue that either of these claims cannot be universal. Each person has their own knowledge of the world and life experience, which means that one does not have to link a certain abstract word with a larger variety of contexts than a concrete word. For another person, the situation can be opposite. If a person is familiar with a concept, whether it be abstract or concrete, they will produce a word faster than if they were not familiar with it. In this paper, among other claims, I will try to show that a response to a stimulus word exclusively depends on the persons familiarity with the stimulus and the 'amount' of their exposure to it.

De Groot (1989, 825) also claims:

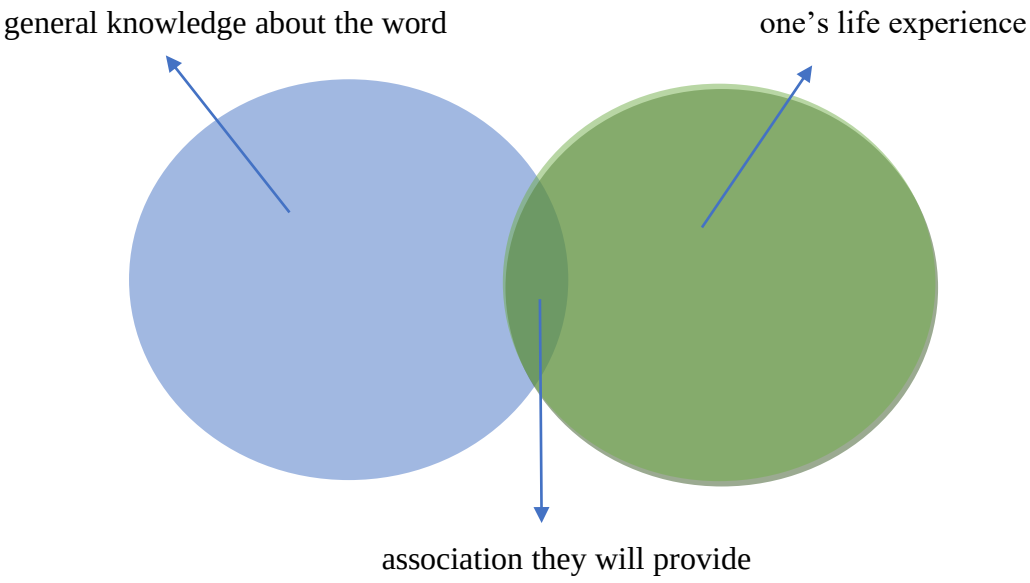
> The representations of high-frequency words, presumably occurring in a relatively large variety of contexts, may be linked up with more other concept nodes than the representations of low-frequency words. This would have the effect that association retrieval would be slower for high-frequency words than for low-frequency words.

I firmly disagree with that, because, even though de Groot might have a point here, I believe that if one is exposed to a word frequently, their response will be faster. They will immediately and unconsciously choose the answer that is relevant for them, despite the fact that the stimulus word can occur in a variety of contexts. Moreover, if the stimulus word is not a word to which a participant is often exposed, it is clear that the response will be slightly slower. This shows that our minds are not the same, but are unique and function in different ways.

In short, de Groot does mention some results of the experiment, which prove that for concrete words participants needed less time to produce an answer and produced less heterogenous words. Despite the fact that she conducted an experiment to prove this, I simply cannot agree. The truth is that concrete stimulus words might require less time for an answer, simply because we generally 'use' concrete terms more than abstract ones, but I firmly disagree with the fact that all participants will provide similar or the same answers, which is supported in my research. I believe that these answers must be connected with a person's representation of the word and the context they made for it. As I already mentioned, even the simplest words do not have the same meaning for all people.

4. The aim of the conducted word association test

For all aforementioned reasons, I decided to conduct a word association test and investigate its results as a part of my master's thesis. For several times we as students have been taught that the results of such tests are always similar and that most people will produce answers that belong to the same semantic domain. The word association test I made consisted of 16 different words, both abstract and concrete, not at all linked to each other. Participants in this research were speakers of English and native speakers of Croatian. They were required to give some basic information about themselves, such as their age, interests, hobbies etc. The reason why I decided to ask for that extra information is because my test is not simply a linguistic test made to examine the mental lexicon of participants, but a test linking mental lexicons of participants with their previous experience. In other words, I wanted to show that one's organization of words and concepts in the mind was heavily (if not exclusively) based on their experience.



I believe that our mind is heavily influenced by the things we like, which means that we form accompanying categories – each category for each 'concept' we like. Except for some general issues, that categories also apply to our mental vocabulary. This actually means that we memorize the words that are in some way linked to our various points of interests easily and that we organize them into categories based on that concept, not on the denotative meaning of a word. This is interesting, because many words are homonyms, which means that those words do look alike, but have different and unrelated meanings.

This is also applicable to word association tests of this type, which study the way our experience is linked to our linguistic knowledge and the knowledge of vocabulary. Here, it is important to mention that it is very likely that all participants in such word association tests know the 'most common' meaning of a certain word. However, what is interesting here is my claim that participants are more likely to produce a word which has a personal meaning for them. This means that, when presented with a stimulus word, participants will produce the word which comes to their mind first, but I believe that this word might not be 'expected', for example a synonym, a collocation or something like that. I believe that their response will depend on how they perceive the stimulus word, and what it means to them.

To illustrate my claim, I will provide a few examples. It is important to notice that these examples are not from the word association test I conducted, and whose results will be discussed later in the thesis.

Take, for example, the word *base*, which is a polysemous word. When participants are presented with this word, they may and probably will have different associations. The 'most common' meaning of this word is as follows: "the main place you live or where a business (or army) operates from." (Hornby 2005)

So, this means that an expected association may be *a house, an army, a home*… However, I believe that the answer will heavily depend on a person's life experience. For example, if a person is interested in hiking or mountain climbing, they are likely to produce the word *camp* as an association, because the term *base camp* is often used among hikers. Furthermore, if one is interested in sports, they can come up with a word *ball* as an association, as they may think of *baseball*. However, one can have an entirely different association, and may produce the word *meme, GIF* or *Zero Wing*. We can almost immediately conclude (if we are familiar with the phrase) that the person who provided these answers is either a gamer or a frequent Internet user (or both)[1]. The reason why this was so popular is the fact that it is actually a poor translation, and because of its popularity it would not be surprising if a person came up with the aforementioned associations. Furthermore, if a person only heard the word *base* without reading it, it can be misinterpreted as *bass*, so one can come up with associations such as *DJ, frequencies, 200 Hz* etc., which would imply that a person is familiar and interested in electronic music and producing it. On the other hand, even though the pronounciation is slightly different, one can even come up with association such as *fish*,

[1] To clarify, these associations are based on a funny quote from a video game Zero Wing, which was very popular among Internet users – "All your base are belong to us."

which would that imply that a person is interested in fishing or familiar with various types of fish.

From all this we can conclude that, even though this was just a random example, one's associations to a stimulus word are in many cases based on their personal experience. This means that there often may be answers that are completely different from 'normal' or 'expected' associations. I believe that scientists should take into consideration some general information about the participants in word association tasks, which will then enable them to, first of all, examine the results more objectively, and secondly, get better insight into how one's mind functions, and what is one's mental lexicon based on.

In the next couple of paragraphs, I will present my research, analyse and discuss the results, and based on that, I will try to support my claims that have already been mentioned throughout this paper.

4.1. General description of the word association test

I decided to use word association test to support my claims. The reason for this is because I believe that even such a simple and short test can provide crucial information which is needed for a research like this. Moreover, I decided not to use the tests that would require advanced knowledge of a language, in order to make my results more general and applicable to a wider variety of people.

The test consisted of two parts: in the first part the participants were required to provide general information about themselves, and the information needed for this test were their age, country, education, occupation, interests, hobbies, sports and ambitions. It is important to mention that none of these information is very personal and the test itself was anonymous, as I did not ask for anyone's name, so the results could not be in any way influenced by anything but the information that were provided by the participants or a short conversation with them.

The criteria for the asked information were as follows; it is important for the researcher to know how old the participant is because it may influence the answers. It is important to emphasize that, even though participants were asked to provide their age, there was no age limit so participants could take the test regardless of their age. Another essential information is the country where participants come from. The reason for this is fairly simple. Firstly, it will provide information about the participants' mother tongues and the language

that they use in general. Secondly, it is crucial to have certain information about the participants' cultural background, as it is also likely that their answers will be influenced by that. This is especially interesting, as certain words have meanings that differ greatly from culture to culture. Furthermore, the participants were asked to provide information about their education, since this can affect their answers in a way that a person who works or is educated in a particular field can more easily come up with associations connected to their field, and these associations may even be triggered by some ordinary and widely used stimulus words. This can illustrate how people working in a certain field recall word meaning that is connected to that field more easily than other meanings of the same word. A similar situation arises with another important piece of information – interests. Of course, when one has a certain interest, they tend to acquire a lot of information about that. Whatever the interest might be, one is likely to read a lot about it and generally know many different facts about that certain point of interest. Clearly, this will influence their mind and they will be more likely to recall associations connected to their interest, rather than other 'expected' associations of a stimulus word. The same idea is behind hobbies as well. This may be even more illustrative. People usually tend to enjoy certain hobbies more than work and tend to be more knowledgeable in them than in their interests[2]. The reason for this is that hobbies are interactive, one can actively participate in them, while interests are more passive. One of the focuses of this paper are hobbies, as I believe that people are most likely to produce associations connected to their free time activities. This is likely to be so, because when one enjoys a particular activity, they tend to learn a lot about it, which, as a consequence, results in a wider vocabulary regarding the particular hobby. Such vocabulary can and probably will contain words that are very common, but the question is whether their meanings will be the most common meanings. This, of course, depends on the type of a hobby and the size and complexity of the vocabulary connected to it. Sports that a person is involved in can produce a similar effect. This is also very intriguing, as there are many expressions related to sports, which mean something completely different in an ordinary, every-day language. When one is participating in a sport, both professionally or recreationally, certain words may acquire different meanings in their minds, and thus the associations are likely to be different. Finally, the last asked information was ambitions. This is actually closely linked to education, as the focus here was put on one's career. However, ambitions can contain more diverse information and work and education do not need to be the focal point of someone's plans for the future.

[2] Hobbies are activities in which the participant is actively involved in, while interests are everything that the participant likes, but without participating.

This can influence one's associations as well, as particular words may trigger the associations connected to their ambitions and plans for the future, however realistic or unrealistic they may be.

All of the aforementioned pieces of information are crucial for this research, as they provide general but important information about the person participating in the test. For this reason, this test is not entirely linguistic, but has psychological elements to it, because I believe that these two fields are generally inseparable, and researching linguistics in this way cannot be complete without psychology, which makes word association tests an important part of psycholinguistics. Here, the focus was on simple word associations, but I wanted to look deeper and investigate how our mental lexicons function and what is more important during the process of retrieving an association, the meaning of the word or our life experience. I see it differently, because in my opinion words do have their own meanings, but certain meanings are contributed solely by us. This results in mental lexicons that vary greatly from person to person, since we put words into categories based on what they mean to us, and not based on their meaning in general. This does not apply only to specific words with narrow and very specified meanings, but to all words that exist in a vocabulary of a language. However wide the meaning might be, we organize words into categories individually and entirely independently from all rules and dictionary definitions.

In order to support the claims from the previous paragraph, I set up a word list that consists of 16 unrelated words. This means that words were randomly ordered and had little similarity in meaning. Moreover, all of these words are common words which are widely used in both the English and the Croatian language. There are 13 concrete nouns and three abstract nouns. The reason for this was already discussed in this paper. De Groot discussed two opposite views about this, where one claimed that it is easier to come up with an association when presented with an abstract stimulus word, while the second one claimed that it would take less time to recall an association connected with a concrete word. It was difficult to test this, since I did not measure time, but this was not a focal point of my research. I decided to use a larger number of concrete words to see if a concrete word will trigger more unrelated associations for different people. Finally, this is the list of the words I decided to use, and it can be seen that they are all common words used often in every-day conversation:

	ENGLISH	CROATIAN
1.	instrument	1. instrument

2. case	2. kofer
3. philosophy	3. filozofija
4. road	4. cesta
5. water	5. voda
6. door	6. vrata
7. happiness	7. sreća
8. suit	8. odijelo
9. grass	9. trava
10. heart	10. srce
11. gear	11. oprema
12. rope	12. uže
13. tank	13. spremnik
14. phone	14. telefon
15. machine	15. stroj
16. relaxation.	16. opuštanje.

By using the listed words, I tried to investigate how the participants perceive them and what the words meant for them. I will be analysing if the associations were common or not, and if more than one person used the same word as an association. Another focus will be put on language of the speakers, so I will try to see if the associations were in any way similar between English and Croatian speaking participants. I will also see if they responded with abstract or concrete associations. Finally, I will see if there was any connection with the participants' associations and the information that they gave about themselves, and by doing this, I will try to show that one's mental lexicon is influenced by their life experience in general, their ambitions, education, hobbies etc.

Regarding the participants, I chose non-native speakers of English and native speakers of Croatian, all of different age and different education levels, which is evident from the table below. The reason for this is simple; I wanted to have a wide variety of people from different walks of life, from different countries, levels of education and with different hobbies and interests. In terms of choosing the participants, their age was not relevant, as well as their gender, because everyone was invited to participate.

In total there were 40 participants in this word association test, of which 24 female (60%) and 16 male participants (40%). Age varies from 14 to 56 (average age is 35), which means that the generation gap is significant. Furthermore, the education of the participants

also varies, so I had participants who have just started high school and those who are already working. There are persons with secondary education degrees (23 people) and people with higher education degrees (17 people). The participants are educated in various fields, which means that most of them are not familiar with linguistic tests or linguistics in general. 30 of 40 participants are Croatian speakers, while the other ten participants are from different countries all over the world, with the highest number being from South America. To put it into percentages, 72,5% of the participants are Croatian, while the other 27,5% are foreigners. They come from Brazil, New Zealand, Argentina, South Africa, Pakistan, the USA, Bolivia and Chile.

Another important fact to put down is the language in which the participants took the test. As is already obvious, 30 participants took the test in Croatian (29 Croatian speakers and one Serbian speaker), and ten participants took the test in English. That means that 75 % of the participants speak Croatian language, and the other 25% speak the English language. It is important to notice here that English is not the mother tongue of all foreign speakers, but they are all fluent in it. Also, they are all in the process of learning Croatian, but this is not in the focus of my research. Due to the fact that they come from different countries all over the world, I will be particularly interested in associations triggered by their cultural background.

PARTICIPANTS		CROATIAN	FOREIGN
AVERAGE AGE		27	28
GENDER	F	18	6
	M	12	4
COUNTRY		Croatia and Serbia	Brazil, New Zealand, Argentina, South Africa, Pakistan, the USA, Bolivia and Chile
EDUCATION LEVEL	High school	20	2
	College	9	8
	Higher	1	-
OCCUPATION	Student	14	1
	Employed	16	9

4.2. Analysis of the word association test

In the following paragraphs I present my analysis to see if my claims are born out. I compared the answers of the participants regarding their age, culture and other general information, but also with regard to their individual interests and hobbies, which is in a special focus during this analysis. I analyzed how the participants responded regarding word type and concreteness or abstractness of the answers, to see if this has any relevance to my research. I was also interested if the answers are in any way 'comparable' regarding age and of course, simply, if the participants provided answers that reflect their personal information in general.

By doing this, my aim is to show that mental lexicons are formed individually. I analysed the answers of the Croatian speakers first, and later compared them to the answers of the English-speaking participants.

4.2.1. Analysis of the answers provided by the Croatian participants

The first word in the list was *instrument* (instrument). Upon hearing this word, one usually immediately thinks about a musical instrument, but I wanted to see if this word had different meaning to any of my participants. The results showed that 22 of 30 participants (70%) listed some kind of a musical instrument as their association. The most frequent answers were *gitara* (guitar) and *klavir* (piano). Out of the 22 people who listed a musical instrument, three stated playing an instrument as their hobby. They all play the guitar and they all listed *gitara* (guitar) as their association. Even though they were not the only ones who had such association, I firmly believe that their association was triggered by the fact that they play that particular instrument. On the other hand, there were other interesting associations. Another six people had associations related to music – four had *glazba* (music) and one had *Tonči Huljić*, who is a Croatian musician. Here the association was triggered by the fact that they like that particular musician, as the person stated in the questionnaire. However, there were two participants who did not have any kind of musical association to the word instrument. They listed *Unimer* (multimeter) and *teodolit* (theodolite) as their answers. *Unimer* or multimeter is an electronic measuring instrument which combines several measurement functions in one unit, such as voltage, amperage and other similar units. The person who listed it as an association is an IT expert with finished courses in informatics and in educated in electronics and electrical engineering. This makes their association logical and somewhat expected. The other person listed *teodolit* (theodolite), which is an instrument for

measuring angles between designated visible points in the horizontal and vertical planes. This person wrote *geodet* (land surveyor) as their occupation, which means that they use that particular instrument on a daily basis. For this reason, it is expected that this association will be triggered when they are presented with the word instrument. I believe that this supports my claim that the associations are usually triggered by one's life experience, despite the fact that most of the participants did list an actual musical instrument as their association. From my results I concluded that, upon hearing the word *instrument*, an association related to music is the most common association, except in those cases where participants have some specific associations related to their job or interest. This might be connected to the fact that that word has only a few meanings which are not related to music, and hence they are evoked only in people who use another type of instruments in their life.

The second word was *kofer* (case). This word did produce a slight confusion among English speakers, which is discussed later in the text. In Croatian this word refers to the case used for traveling. Indeed, 13 out of 30 participants (43%) had the word *putovanje* (trip or traveling) as their association. Out of all this people, just one had traveling listed as their hobby. Even though this may sound contradictory, I believe that this makes sense. People who are not interested in traveling logically do not have many associations to the word *kofer* (case), so they put down *putovanje* (traveling) as this is an abstract word and is not linked with anything in particular. On the other hand, eight participants had traveling as their hobby, but interestingly, seven of them did not put traveling as their association. Four of them put *prtljaga* (luggage), which is also connected with traveling, but more concrete and thus expected. Four put *odjeća* (clothes), which is also linked to traveling, but not exclusively, as this is a noun used in many other contexts. One person had the word *pun* (full), which in Croatian is linked with the idiomatic expression *pun kufer*, meaning that someone has had enough of everything. One person had *Sunny Day* as their association, which is the name of a Croatian song where the word *kufer* is mentioned. This clearly shows that a person is a fan of that particular song or they have recently heard it. One person put *kutija* (box) as their association, and here it is quite difficult, if not impossible, to guess why they had such an association. One person put *crveno* (red), which can also be quite confusing. Another association connected to traveling was *automobil* (car), and the reason for this may be the fact that that particular person usually travels by car. One person has *Njemačka* (Germany), as an association, and the reason for that can be concluded by their education; they had an extensive education in German language and they have the desire to visit the aforementioned country, as

expressed in an informal conversation with the researcher. Finally, three participants had *motor* (motorcycle) as their association. All of them listed motorcycles as their interest and hobby, so it is quite easy to conclude why the association was such. Most people who do not like motorcycles do not know that motorcycle cases are called *kofer* in Croatian and is thus logical that this association happens only among people interested in motorcycles. In this case, it is obvious that many of the given associations were triggered by the participants' personal experience and interests.

The next word was *filozofija* (philosophy). I was very interested to see which associations were triggered among my participants and some of them were very interesting. Only two people among the participants put a person, a philosopher as their association. One put *Kant* and the other put *Socrates*. Some participants put other persons as an association. One put *majka* (mother) and one put *profesor povijesti* (history professor). I found these association rather amusing, as it is easy to assume that these participants connect the people they see every day to philosophy and philosophers. Other participants had a wide variety of associations. Five people had rather negative associations, such as *užas* (horror) and *dosada* (boredom), which reflect their negative attitude towards philosophy. However, these associations, generally speaking, are in no way linked to the word philosophy and are not from the same semantic domain. Three of the participants had *Filozofski fakultet* (Faculty of Philosophy) as an association, which is expected, since these people attended this faculty. That shows that the word did not trigger an association which is linked to science itself, but to the name of the faculty where they studied. This example shows how the choice of an association is linked to one's life experience, as none of the other (Croatian) participants had similar associations.

The next word on the list was *cesta* (road). This is a very common word and there were various associations, some of which were less expecte. The most common were *auto* (car) and *putovanje* (travelling). These are expected and logical. However, there were some that could be considered more 'personal'. One such association is *motori* (motorcycles). This is a means of transport, but only people who had motorcycles as their hobby put it as an association. The same situation is with the word *bicikl* (bicyle). One participant put *adrenaline* which could be based on the person's interests, because they put some adrenaline-based activities, such as hiking, as their hobby, and other associations they provided were mostly related to adrenaline and adventure. Despite certain association, the associations to this word were mostly from the same semantic domain.

The next word, and the one which resulted in many different associations, is *voda* (water). 10 people provided the most obvious associations – *pićе* (drink), *žeđ* (thirst) and *čaša* (glass). This is not surprising as water is primarily used for drinking. Several people had associations connected to various types of water in nature, such as *more* (sea), *led* (ice) or *potok* (stream). One person had *ronjenje* (diving) as an association, and this person also put it as a hobby, and two people listed *swimming*. A particularly interesting association was *Nazor* (Croatian poet). *Voda* is a short story by this author, and this association clearly shows that the participant is interested in poetry. Most of the associations were in some way linked to water as an element of nature, except for the last mentioned association, where the association is linked to literature. Even among the associations from the same semantic domain it may be seen how they are influenced by one's life experience. This is particularly obvious in associations such as *ronjenje*, where the person actually practises diving. This shows that even the commonest words do trigger associations which are influenced by person's interests and hobbies, rather than just words which are from the same semantic domain. On the other hand, associations may be triggered by a negative experience, which is evident in one of the answers, where the participant provided *strah* (fear) as an association.

As the next stimulus I decided to use a word which is not homonymous, the word *vrata* (doors). The reason for this is the fact that I wanted to see how the participants responded to a word which does not necessarily have so many unrelated meanings. I wanted to see if they will only have associations from the same semantic domain or if there will be certain associations which one would not normally link to that word. 11 Croatian speakers had associations connected to entering or exiting. Eight people had some form of subordinate or superordinate terms, such as *kvaka* (doorknob) or *kuća* (house). One person had an interesting association – *Vrata Jadrana* (a gas station and a restaurant in Croatia near the border with Slovenia). Here, the person is obviously familiar with the place, and the association was produced when they heard the word *vrata*. However, it would be wrong to argue that the association is from the same semantic domain as the stimulus word, as this is purely the name of a place. Moreover, one person provided the name of the popular TV series *Star Trek* as an association. From the last answer it can be concluded that even words with few unrelated meanings can trigger associations influenced by one's life experience. It is evident from this example since the person is obviously familiar with the TV show and its plot. Thus, they provided an answer which makes sense to them, but may be difficult to understand to a person who has never seen the show. It can thus be seen that the word *vrata*, despite being a word

with few unrelated meanings, did trigger associations from different semantic domains, despite the fact that the associations were mostly related to the word by subordination, superordination or a similar process.

The following word was an abstract noun – *sreća* (happiness). Before the beginning of the test I strongly believed that this word would provide many different associations, because each person would put down something that brings happiness for them. This is exactly what happened. Only three people put an antonym – *nesreća* (unhappiness) as their association. Four people put *osmijeh* (smile), which may be regarded as a word from the same semantic domain. All other answers were different. There were associations such as *obitelj* (family), *djeca* (children), *ljubav* (love), *motor* (motorcycle), *film* (movie), *planina* (mountain) etc. What is particularly interesting here is the fact that all participants who put very concrete associations had the same things listed as their interests and hobbies. For example, two participants who put *motor* as an association listed motorcycles as their hobby. Two people put *planina*, and both of them had hiking as their hobby. Even the person who put *film* as their association listed films as their interest. One person even had the name of their romantic partner as an association. I strongly believe that this shows how our semantic domains are influenced by our life experience. This is especially evident in an abstract word such as *happiness*, as almost each and every person put a thing, a concept or a person who makes them happy as an association. From this example it is evident that a larger number of associations were triggered by one's life experience, and not by their linguistic knowledge and the knowledge about the denotative meaning of the word.

The following word was *odijelo* (suit). I was interested to see which associations will the participants provide and, despite a number of expected answers, I did get a few interesting and rather different associations. Four people put *kravata* (tie) as an association, which I would consider to be expected, as a tie is often worn with a suit. Another expected associations were *svadba* (wedding), *formalnost* (formality), *sastanak* (meeting). Three people had associations connected to a proverb *odijelo ne čini čovjeka* (clothes does not make a man). This is specifically linked to Croatian language, as the proverb is slightly different in English. Two participants had very interesting answers, which could in no way be linked to the denotative meaning of the word. One had *Vojko V*, a Croatian rapper, and the other had *Tonči Huljić*, a Croatian musician. When asked why they put *Vojko V* as an association, the participant had an interesting explanation. They said that they had recently seen a commercial for a Croatian suit manufacturer starring *Vojko V*. They found it funny, so it was their first

association to the word *suit*. The person who put *Tonči Huljić* mentioned that that is their favourite musician in an informal conversation with the researcher. They also put him as an association for the word *instrument*, and the title of one of his songs as an association to the word *relaxation*. The participant did say that *Tonči Huljić* is their favourite artist, so I believe that this is a clear example of how our choice of associations is linked to a wide variety of our interests.

The following word was *trava* (grass). There were many different associations. The ones most connected with grass were *košenje* (mowing), *zeleno* (green), *livada* (lawn). Some of the participants had animals who eat grass as associations (cow, sheep). One person put *marijuana*, which may even be expected upon mentioning the word *grass*. Two people had *priroda* (nature), one had *park* (park) and one had *stadion* (stadium) as associations, which could also be linked to the word. However, three people had different associations, some of which may be difficult to explain. One had *šator* (tent), which may be linked to their life experience, as they put outdoors as their hobby. One person had *blue* as an association and one person had *Filozofski fakultet* (Faculty of Philosophy). Without further explanations, one can only assume what these associations mean.

The associations to the next word could be divided into two categories. The stimulus word is *srce* (heart) and the association were either connected with love or with anatomy. The most common association was *ljubav* (love). Similarly, a few participants put *dečko* (boyfriend) or even the name of a particular person as an association. On the other hand, several participants had *krv* (blood), *organ*, *život* (life), *otkucaj* (heartbeat). One person had *kardiokirurgija* (cardiac surgery), which is a very concrete association. They provided an explanation for their choice – they work in a hospital. This word did not provide too many different or unexpected associations. The aforementioned one was the most unusual, and even though it is linked with the stimulus word, it still is influenced by the person life experience, a job in this particular case. The same could be said for the person who provided the name of their boyfriend, as it is without a doubt an influence from their own life.

One of the words that triggered numerous different associations is the word *oprema* (gear). There were more abstract associations such as *sport* or *servis* (service), but most of them were quite concrete. Six participants listed a word connected to motorcycles as their association (*moto oprema, motoristička, motori, kaciga za motor*...) and all of them put motorcycles as their interest or hobby. Three people had hiking terms as associations (*alpinizam, penjački pojas, planinarenje*). All of them listed hiking or climbing as their

interest or hobby. One person, who is pursuing a career as a DJ listed *DJ oprema* (DJ equipment) as their association. Moreover, one person who listed kickboxing as the sport that they train put *kickboxing* as their association. This clearly shows, probably due to the wide variety of uses that the word *oprema* (gear) has, that each person chose an association which portrays their interests. As was previously mentioned, each participant provided an association which they are familiar with, which means that these associations do provide certain background information about the person. Even if there was no questionnaire at the beginning of the word association test, one could use the answers of each participant to guess what they are interested in and in which activities they like to participate.

The word that produced fewer associations was *spremnik* (tank). 12 participants listed *benzin* (gasoline) or *gorivo* (fuel) as their association. Surprisingly, only four participants listed *voda* (water) as their association. This might be surprising, but, on the other hand, in the contemporary world it is more common to have a tank of fuel than a tank of water. There were some unique answers, such as *ronjenje* (diving). The tank filled with air is used in diving, but the participant did not put it as their interest or hobby. Two people provided synonyms as their association, which is the first case of synonyms among associations. They put *rezervoar* (reservoir). It is interesting that so far I did not have any examples of synonyms among associations, because it is often mentioned that word association tests frequently elicit synonyms or antonyms; "The typical assumption underlying these word association tests is that the response terms function either as synonyms or antonyms, an assumption that restricts unnecessarily the potential value of such tests." (Spiteri 2014). Here, it is obvious that it is not always the case.

The associations related to the next word – *telefon* (telephone) – were very wide. By this I want to point to the fact that associations provided by the participants were different in terms of the period when a certain 'type' of phone was used. 11 participants had abstract associations such as *komunikacija* (communication) or *razgovor* (conversation). All of the others had different associations related to various types and ways of communication. Six participants had the word *mobitel* (mobile phone) as an association. People who provided this as an association were from 15 to 55 years old, which shows the already well-known fact – that people of all ages use mobile phones more than traditional phones. One person put *posao* (work, job) as an association, which means that they mostly link phones to their job. This might be expected, as the person wrote that is a businessman. Interestingly, only five people had associations connected to the 'traditional' telephone – *slušalica* (earphone) or *žica* (wire).

The next word triggered various associations, which means that the word *uže* (rope) is used differently among different people. 14 people put associations connected to mountain climbing – *penjanje* (climbing), *planina* (mountain), *alpinizam* (alpinism), *spas* (safety), *pomoć* (help). Seven people out of these 14 put hiking or mountain climbing as their hobby. That means that only two people who put hiking as their hobby did not have an association directly linked to that activity. Two remaining participants who enjoy hiking had the same association – *život* (life). That could also be linked to the aforementioned activity, as the rope is used for safety reasons. Besides that group, other participants had associations such as *skakanje* (jumping), *vješanje* (hanging) or *vuća* (pulling). One had a particularly unique association – *paracord*. This is a type of rope widely used for bracelets, and the person who provided this association often makes such bracelets.[3]

The following word, *stroj* (machine) triggered various associations which can be linked to the participants' interests, hobbies or jobs. Also, there is an example of synonyms of the word *stroj* – *mašina* (machine) in three participants. Three participants provided *tvornica* (factory) as their association, which could be linked to their general world knowledge. Out of more specific association, one participant put *CNC s*troj as their association, and in the questionnaire they wrote that they work on such machines as their job. Three participants put *motocikl* (motorcycle) as their association, and all three of them put motorcycles as their hobby. One person wrote *tokarski stroj* (lathe machine) and in a conversation they mentioned that their friend works on such machines. From this example it is evident that participants who work on certain machines or their hobby is machine-related will put associations linked to their job or hobby. All participants who work or are interested in certain type of machines put a concrete association, instead of abstract one. This shows that life experience clearly influences our associations and the fact whether they will be more concrete or more abstract.

Speaking of concreteness or abstractness of words, the next stimulus word is an abstract word. I was thus interested which association the word *opuštanje* (relaxation) will produce. Six participants put associations of similar meaning – *odmor* (rest), *mir* (peace), *relaksacija* (relaxation – also a synonym). All other participants had more concrete answers. Two out of four people who put motorcycles as their hobby listed *motorcycles* as an association. Interestingly, only one person who enjoys hiking put a similar association – *mountain*. Six people had associations connected to sleeping – *spavanje* (sleeping), *krevet* (bed). Four people had associations connected to music and two had associations connected to

[3] The participant mentioned this in a conversation.

the summer and the sea. There were a few unique associations, such as *watching a movie* or *sauna*. I found this stimulus word very interesting, as it is one of the words that provided only a few associations corresponding the participants' answers in the questionnaire. The reason for this may be the fact that people do not necessarily need to take part in their favourite activity in order to relax. From this research, it seems that only motorcycle lovers enjoyed that activity for relaxation.

After analyzing 16 different words, one can conclude that all of them, to a certain extent could be linked to participants' interests, hobbies or jobs. For this reason, I strongly believe that life experience plays a crucial role in the organization of semantic domains. It can be argued that semantic domains do not necessarily need to be organized only around the denotative meanings of words. I would argue that this may depend on one's life experience, as I believe that semantic domains can contain relations that are in some way relevant in one's life. This is shown in the table below, as in some instances the numbers of the expected and specific answers vary.

WORD	EXPECTED ANSWERS	SPECIFIC ANSWERS
Instrument	27	3
Kofer	20	10
Filozofija	9	21
Cesta	21	9
Voda	19	11
Vrata	19	11
Sreća	8	22
Odijelo	16	14
Trava	18	12
Srce	20	10
Oprema	0	30
Uže	12	18
Spremnik	22	8
Telefon	22	8
Stroj	14	16
Opuštanje	9	21

4.2.2. The analysis of the answers of English-speaking participants

In the next paragraphs I will analyze the answers of English-speaking participants, to see if their answers are different and if their mental lexicons function in a different manner.

The first word was *instrument*. Among English speakers, all but one speaker put a musical instrument as their association. Six out of nine participants put *guitar* as their association. Only one of them listed playing the guitar as their hobby. Furthermore, one person mentioned playing the clarinet as their hobby, and they put *clarinet* as their association. The person who did not put a musical instrument as their hobby put the word *technique*. This is an interesting choice of a word because, despite being slightly related to playing an instrument, it is not an expected 'musical' association. That participant did not put any interest or hobby that would justify their choice of word.

The second word was *case*. I intentionally did not put the word *suitcase* because I was interested in how the participants would perceive the word due to its polysemy. The results were interesting. Four participants put a synonym – *bag* or *suitcase*. One put the word *suit*, which is slightly ambiguous, because it is not clear whether the person was referring to the word *suitcase*, or to the word *suit*, which could then be connected to the word *case*. On the other hand, two people understood the stimulus word completely differently – as a grammatical case. Thus, one had the Croatian word *padež* (case) as an association, while the other had the word *accusative*. There were more different associations, one of which was the word *glasses*. The participant who provided this association wears glasses, so it is no surprise that this was their first association. This word shows how a simple word can be understood in different ways by a small group of people. The only connection that could be made among the participants is the fact that all of the participants who put words such as *bag* or *suitcase* as their associations also put travelling as their interest.

The third word was *philosophy*. I did not expect a wide variety of different and unexpected answers, but some of them were interesting. Most of the participants put the name of a philosopher, such as *Aristotle* or *Plato* as their association. One person put the word *college*, referring to the Faculty of Philosophy, where they are currently studying. One person put the word *passion* as their association, while also stating philosophy as their interest. Unlike Croatian speaking participants, none of the English-speaking participants had a particularly negative association.

The following word was *road*. Here, the associations were similar, but they differed from participant to participant. Speaking of numbers, three participants had the word *car* as their association, which makes it the most common association, similarly to the group of Croatian participants. Two participants had the word *street* as their association, and the other two also had somewhat logical associations – *drive* and *trip*. However, there were two interesting answers. One was *66*, probably referring to the famous road in the USA, the Route 66. I found this very interesting, because the stimulus word was *road*, not *route*, so the participant might have thought of a synonym first, which then triggered another association. One answer was fairly philosophical, as the participant put the word *life* as their association. This was the only association which did not have any connection to cars, streets or travelling, and it is interesting how that participant had such a unique association, despite the fact that it may be connected to life as a journey. Finally, in the questionnaire I did not manage to find any justification for that answer, but other associations of that particular participant were also unique.

The following word was *water*. The most common associations were related to the sea (*sea, swim, boat, salty water*). One participant who put *swim* as their association also put swimming with her daughter as their hobby, as well as another participant, who put *clean* as their association. Interestingly, one person put *voda* (*water* in Croatian) as their association, which I found very interesting. The person is currently learning Croatian, so this may be the reason for such an association, however, neither of the Croatian speaking participants who learn English had association in English. One of the possible reasons for this may be the fact that Croatian is obviously the mother tongue of all Croatian participants, whereas English is not the mother tongue of all participants who took the test in English. What is even more interesting here is the fact that they did not think of an association in their mother tongue (Spanish in this case), but they thought of an association in Croatian, which they have just started learning.

Unlike Croatian participants, English-speaking ones reacted differently to the word *door*, which was the next word on the list. Here, only one participant had the word *car* as their association. Two participants had different door 'parts', like a *handle* or a *bell* as their association. Three participants had *open* or *close* as their associations, which shows a different perception of the concept of the door. Two participants had an entirely different association – *the Doors*, referring to the popular band. Both of them listed music as their interest, and one of them did mention the fact that they like the aforementioned band in an informal

conversation. This shows that even such common word such as *door*, which represents a very common concept, will not always trigger associations linked to that concept, if a person has attributed a different concept to the word. The choice of the concept will thus depend on the person's life experience, their interests in this case.

The following word was an abstract word *happiness*, which triggered various different associations among Croatian participants. Here, the situation was the same, and most of the answers could be seen as answers to the question 'what makes you happy?'. All of the associations were different and most of them did match the participants' answers in the questionnaire. The person who put *music* as their association also put music as their interest. The person who put *travelling* as their association also put travelling as their hobby. The person who put *Argentina* as their association is from Argentina. In this example, all of these associations, along with the fact that all of the associations are different, contribute to my claim that associations are individual and that they are formed in the brain not exclusively on the basis of one's semantic domains, but also on the basis of one's life experience, interests and hobbies. Furthermore, only one person had an antonym, *sadness*, as their association, which is the first case of an antonym among English-speaking participants.

The following word was *suit* and the associations were slightly similar to those of Croatian speakers. There were examples of associations such as *tie*, *dress*, and some of them were provided by the Croatian participants as well. One person put *majica* (shirt in Croatian) as their association, which is one more example of a Croatian word among associations, but this time provided by a different participant. As in the previous case, English is not the mother tongue of this participant, but neither is Croatian, which makes it interesting to see that they put their association in Croatian. This person is currently learning Croatian, but despite that it may be expected that participants are more likely to provide answers in their mother tongue or in English, since the questionnaire was in English. Furthermore, one association that differed from all others was *New Balance*. It would be difficult to guess why the participant put such an association, but one of the reasons might be the fact that they put tennis as the sport they play and New Balance is a brand of sports equipment.

Grass, which was the following word, triggered only a few varied associations. Unlike Croatian participants, the foreign ones had only one unusual association. The commonest one was *green*, which was provided by five participants. Two participants had *park* and one had *football* as their association. The latter person did note football as their hobby. The unusual association I referred to was *God.* In an informal conversation with the author, the participant

did mention that they were religious, so that fact must have influenced their answer. They also had one more association that directly referred to religion, which is to be discussed in the next paragraph.

The following word was *heart*. The associations can be put in two categories among foreign participants as well. One group, which linked the stimulus word with emotions, had *love* as their association. The other group, which was referring to the heart as an organ, had *beat* as their association. However, three participants do not fit into those categories. The religious participant put *sin* as their association, one put *srce* (Croatian word for heart) as an association. This participant has just started the process of learning Croatian language. One participant misheard the word, hearing *hard* instead of *heart*. They put *gym* as their association. This is the first case of mishearing the word, both in Croatian and the foreign group of participants.

The following word was *gear*, a rather polysemous one. Despite that, most of the participants had similar associations. Three participants had *car* as their association, one had *driving*, one had *mechanics*, and one had number *five*, probably referring to five gears in a car or a motorbike. One had *bike* as their association, which fits into the same category. Moreover, one had the word Spanish *fábrica*, meaning factory. The participant is from Argentina, and Spanish is their mother tongue. This is the first case of a participant providing an association in their mother tongue.

The following stimulus word, *rope*, triggered various different associations. One participant had a rather negative, but not unexpected association. They provided the word *die*. The association provided by one more participant could be considered to be negative, because they provided the word *last* as their association. Furthermore, two participants put words which describe the form of a rope – *tight* and *long*, and the other two put activities connected with ropes – *tie* and *hang*. Finally, two participants put outdoor activities which require ropes – *boat* and *mountain*. Both of these participants did not provide any information in the questionnaire that would explain such answers.

The following word was *tank*, meaning the tank for liquids. However, due to the homonymy of the word, most participants understood it as an armoured fighting vehicle. For this reason, five participants put *war* and *fighting* as their associations. Only one understood the intended meaning of the word and put *water* as an association. One association was somewhat difficult to describe and understand, as the person provided the word *number* as an

association. It is possible that the person misheard the word, hearing ten instead of tank. This would then be the second instance of a misheard word.

Phone was the following stimulus word. In this case, there are two groups of associations. One group contains associations referring to the mobile phones and the other one contains associations referring to traditional phones. Participants from the first group provided associations such as *charger* and *cell phone*, but also certain specific ones, such as *Samsung*, a mobile phone brand, and *Twitter*, the name of a popular social network. On the other hand, participants from the second group put the words such as *dial* and *call*, while one participant put the word *mom*, referring probably to the fact that they often have telephone conversations with their mother.

The last concrete word on the list was *machine*. Most of the participants put the word referring to a certain machine, such as a *car*, *washing machine*, *computer* or a *laptop*. One participant put the word *gun*. The explanation for that could be found in their questionnaire, where they put Krav Maga as their hobby. Krav Maga is an Israeli self-defense system where people, among other things, learn how to defend themselves from an armed person. Fake guns are often used in trainings, so that might be the reason why that participant put such a word as their association.

The last word on the list, *relaxation*, triggered many different associations. One participant put an antonym – *stress* - as their association, while all other participants had different answers. Thus, there were associations such as *spa*, *holiday*, *books*, *music*, *relationship* or *coffee*. It is difficult to link associations with the participants' answers from the questionnaire, but it would be logical to assume that they provided the words which depict the activities they like to do for relaxation.

In the following table it can be seen how many expected and how many specific answers the participants had. In most instances the number of expected answers was higher than the number of specific answers. However, in most cases, as mentioned in the analysis of each word, specific answers could be linked to the information that the participant provided. It is difficult to say whether they would provide the same answers if they did not have a particular hobby or interest, but it is evident that certain associations were evoked based on the participant's life experience.

WORD	EXPECTED ANSWERS	SPECIFIC ANSWERS

Instrument	9	1
Case	7	3
Philosophy	6	4
Road	8	2
Water	8	2
Door	7	3
Happiness	2	8
Suit	6	4
Grass	8	2
Heart	7	3
Gear	6	4
Rope	2	8
Tank	7	3
Phone	5	5
Machine	6	4
Relaxation	2	8

4.2.3. Discussion

As one could see, both Croatian and foreign participants did provide various different associations. My claim was that semantic domains are organized around the things that a person likes and that the associations they will provide will depend on that fact. From the findings from the test I can conclude that this claim can be supported to some degree. The participants did not exclusively have associations based on their interests, but that was expected, as their knowledge of the very meaning of words has to be taken into account. However, despite the fact that in many cases the associations could be predicted, there were instances where they were exclusively based on the person's life experience. That could be seen in concrete and common words, such as *instrument*, even more so in abstract words. This could easily be attributed to the fact that abstract nouns do not describe a particular thing, but rather refer to a particular feeling or state. For this reason, it is expected that participants will have a wider variety of associations. Thus, in words such as *happiness* or *relaxation*, there were more associations influenced by a person's life experience than among other concrete nouns.

The claim that associations are influenced by one's life experience was more evident among Croatian participants, as they provided more answers that could justify that claim. The reason for this should be further investigated, but it could be explained by the fact that Croatian language was the mother tongue of all Croatian-speaking participants, while English was the mother tongue of only one English-speaking participants. This may influence the results, as it is innate to every individual to think in their mother tongue. Of course, every person is always more fluent in a language that they use on daily basis, and thus mental lexicons are wider, or in other words, the person can connect more words with one semantic domain. I believe that the results of this test also show the fact that the mental lexicon in a foreign language is not as wide as those in our mother tongue. For this reason, it can be assumed that we store more words in our mental lexicon in our mother tongue (or a language that we use every day), while mental lexicon connected to foreign languages can contain less words. Mental lexicon in our own language is very wide, and thus we can arrange words by any criteria, which is often our interests, hobbies and our life experience in general. On the other hand, mental lexicon in foreign languages is not as wide, especially if we are not fluent in that language. This is shows that the domains are formed during the process of learning, not only a foreign language, but also our mother tongue – we add new words into already existing domains and thus expand our vocabulary.

Finally, this shows that we add words into them based on different criteria, most usually our linguistic knowledge and our life experience. On the other hand, the formation of semantic domains is crucial for learning and remembering vocabulary of a foreign language, and due to the fact that we become fluent in our mother tongue before we learn a foreign language, mental lexicon of a foreign language usually contains fewer words. I believe that this is the reason why foreign participants had more 'narrow' associations than Croatian ones.

As was already mentioned, the words in the word association test were chosen randomly. On the other hand, the order in which they were organized was very carefully planned. This was crucial to avoid any influence on associations, or in other words, to prevent the participants from connecting one stimulus word to another, which would heavily influence their associations. For the same reason, the participants did not know what the aim of the research is, so their associations were as automatic as possible. In order to further investigate the process of priming in this sense, the researcher would need to focus on one group only (only Croatian native speakers, for example). The word list should be longer and the stimulus words should be organized from the most abstract to the most concrete word. This would

enable the researcher to compare and analyse the results in more details, and finally, to provide more evidence that word associations are influenced by one's life experience. This research would make a good starting point for further experiments.

5. Conclusion

In conclusion, this test did show that certain associations were triggered by one's life experience. Of course, knowledge of the language cannot and should not be ignored, and thus there were examples of answers influenced solely by the participants' knowledge of language and meaning. However, this still supports my claim that semantic domains are partially organized around our life experience, especially when we speak about our mother tongue. As we grow, we learn new words and organize them into categories. This test shows that participants provided various and completely unrelated associations to many of the given stimulus words, which proves that words are linked in varied ways, not just by meaning.

Finally, I believe that this experiment supports my claim that categories are, among other things, organized around concepts based on one's life experience. This can be seen in many examples in the conducted word association test. The results indicate that most of the answers were not 'typical' or 'expected' and could not be predicted. I firmly believe that this has to be contributed to the fact that the organization of words into semantic domains is not solely based on linguistic knowledge, but rather influenced by one's life experience.

6. Literature

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7. Appendix

7.1. Croatian version of the questionnaire

Poštovani sudionici,

Ovo istraživanje dio je mog diplomskog rada.

Molim Vas da ispunite sljedeći obrazac. Istraživanje je potpuno ANONIMNO, što znači da vas neću tražiti ime, prezime ili slične podatke. Jedino što tražim je da napišete neke općenite informacije o sebi, budući je to ključan dio mog istraživanja.

Hvala!

GODINE_____

SPOL_____

DRŽAVA _____

OBRAZOVANJE (formalno i tečajevi)_____

ZANIMANJE_____

INTERESI (stvari koje volite, ali u njima ne sudjelujete, npr. filmovi, glazba, knjige itd.)_____
_____

HOBIJI (aktivnosti kojima se bavite u slobodno vrijeme)_____
_____

SPORT (rekreativno ili profesionalno)_____
_____

AMBICIJE (stvari koje želite ostvariti u budućnosti)_____
_____

Sada vas molim da ispunite ovaj vrlo jednostavan zadatak. Pročitajte zadanu riječ i napišite riječ koja vam PRVA padne na pamet. Ne biste trebali puno razmišljati ili analizirati, cilj je da napišete prvu riječ na koju vas asocira zadana riječ. Nema ispravnih ili pogrešnih odgovora.

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7.2. English Version of the questionnaire

Dear participants,

This research is a part of my master's thesis.

Please fill out the following form. This is completely ANONYMOUS, you do not have to give your first name, last name or any similar information. You are only asked to provide some background information about yourself, as this is vital for my research.

The results of this research can be used for scientific purposes and may be published. Anonymity and confidentiality of the data are guaranteed at every stage of the research.

Thank you!

AGE_____

GENDER_____

COUNTRY (where you have spent the most of your life)_____

EDUCATION (formal and various specialized courses) _____

_____

OCCUPATION _____

INTERESTS (generally things you like, but not necessarily practice; for example movies, music, cars etc.)

_____

_____

HOBBIES (things you like doing; for example hiking, photography, swimming, traveling, Internet etc)

_____

_____

SPORT (do you play any sport, either recreationally or profesionally, and which one?)_____

_____

AMBITIONS (what would you like to do or achieve later in life?)_____

_____

Now please fill out the following form. You are going to hear words in a random order, and for each one you hear, you have to write down the word that comes to your mind FIRST. This means that you should not think and analyze, you just need to provide the first association evoked by the given word. There are no right or wrong answers.

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