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## THE ROLE OF FOREIGN LANGUAGE LEARNING IN METAPHOR IDENTIFICATION: AN EXPERIMENTAL STUDY

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**Abstract:** The paper endeavors to investigate the conceptual metaphor awareness via a psycholinguistic experiment done by Serbian grammar school and EFL students. The analysis is carried to determine the extent to which the students are aware of the differences between metaphor identification processes in the two languages and whether, in an attempt to offer satisfactory solutions, they resort to applying the mother tongue knowledge in case of not being able to interpret foreign language metaphors. The psycholinguistic experiment conducted in this research is composed of 28 metaphorical and non-metaphorical sentences in Serbian and English taken from the available corpora. The experiment was conducted by presenting the participants with equal stimuli, where they were supposed to determine whether there is metaphorical content present in the sentences or not. In the final section of the research the results of the two analyses are compared to reveal that the assumptions we set off with were mostly correct. The obtained results suggested that language proficiency, the amount of exposure to L2 and direct formal instruction in various aspects of L2 are significant factors for fast and successful metaphor identification.

**Key words:** metaphor, identification, metaphorical, literal, psycholinguistics

### **Introductory Remarks**

Extended metaphoric systems are a remarkable feature of our language. People use analogies and metaphors from familiar concrete domains to explain less familiar or abstract domains: e.g., flowing water for electricity (Gentner and Gentner 1983) or a long journey for marriage (Quinn 1987). Of course, during ordinary language use people rarely think about whether words and phrases have literal, figurative, or some other type of meaning – they simply try to make sense of the discourse in relation to the present context and their own personal goals. This fact about ordinary language use raises the question of whether there is anything special about figurative language, such as employing different cognitive processes to produce and understand it as compared to nonfigurative speech. A great deal of psycholinguistic research confirms that many forms of figurative language may be interpreted in the same way as most nonfigurative discourse, although there are instances where some forms of figurative meaning

may require a lot more effort to understand and may employ special cognitive processes (Gibbs 1994). In traditional psycholinguistic terms, the human language processor is intended for the analysis of literal meanings, whereas

nonliteral, indirect, and figurative meanings are secondary products, and dependent on some prior analysis of what words and expressions literally mean. This general theory implies that nonliteral meanings should always take more time to interpret than are the literal meanings. (Traxler and Gernsbacher 837)

This study attempts to reach underneath the surface into the mechanisms of metaphor identification processes, and, hopefully, it goes beyond the recurring explanations. The assortment of sentences gathered for the purposes of this research presents the body for the ongoing investigation of metaphor awareness. Moreover, it is expected that it will endorse the acknowledged principles of organization of human thought and experience. The focus in this study will be on metaphorical and non-metaphorical expressions in Serbian and English. The theories that provide the basis for this research are the metaphor comprehension theories from the psycholinguistic point of view. Apart from these theories, the research will also refer to the previous studies dealing with the same phenomenon. Metaphorical and non-metaphorical sentences in Serbian and English, taken from the online corpuses of the two languages, were collected and used in the psycholinguistic experiment for the purposes of this research. The obtained results will be noted and analyzed through reliance on authors' observations as well as previous similar research.

### **Research Purpose and Aim**

The primary aim of this research is to analyze, present and explain the level of metaphor identification in mother tongue and foreign language based on the results obtained via a psycholinguistic experiment done by Serbian grammar school and EFL students belonging to two age groups (1<sup>st</sup> and 2<sup>nd</sup> year of grammar school and 3<sup>rd</sup> and 4<sup>th</sup> year at the Department of English). Data collection can be characterized as objective because data were taken from online databases of the Serbian and English language corpuses, respectively. The primary method of research will be a psycholinguistic experiment comprised of the presentation of equal stimuli (metaphorical and non-metaphorical sentences in Serbian and English). Besides this, the research attempts to explain whether, in an attempt to offer satisfactory solutions, the students resort to applying the mother tongue knowledge in case of not being able to interpret foreign language metaphors. Also, the research endeavors to account for the influence of previous experience with certain metaphors, their

frequency, occurrence and metaphoricity on metaphor awareness. Finally, the research strives to emphasize the importance of the teacher/professor in improving metaphor perception based on different mechanisms operating behind it, that is, to propose adequate methods for teaching metaphor in relation to those mechanisms. Two criteria on which the entire empirical design is based have been established: (1) the correspondence and equivalence between the metaphors of Serbian and English, and (2) the difference between the participants of the two age groups (grammar school and college students), that is, the influence of the duration of foreign language learning on metaphor identification.

### **Theoretical Framework**

#### **Different Approaches to Metaphor**

There has been a lot of debate on whether metaphor should be explored within the field of linguistics, literary studies, cognitive sciences, psychology or philosophy, which has, in turn, produced an extensive amount of literature. The earliest scholarly discussion on metaphor was first established in ancient Greece. Aristotle was one of the first who analyzed them in greater detail in his *Poetics* and *Rhetoric* (Ricœur 1978). Aristotle regarded metaphor as a sign of eloquence and brilliance, and as a suitable ornament for poetry. According to the *classical tradition*, metaphors are meant to surprise and impress the hearer, whereas in contemporary research, metaphors simply reflect the way we think. Aristotle treated metaphor as deviant and as a substitution; his metaphor involves a comparison of two semantically remote concepts which are connected by an analogy standing for the similarity between the two terms, namely, genus and species.

Another approach, radically different from the classical, was a result of a large amount of theoretical work on metaphor finally completed by George Lakoff and Mark Johnson's shared work *Metaphors We Live By* (1980) in which they propose the revolutionary view that metaphor is an inseparable part of everyday language and thought. Their approach to the study of metaphor is also known as *cognitive* or *modern approach* and is completely opposed to everything proposed by the traditional view of metaphor. The greatest difference between these approaches lies in the way metaphor is perceived; in the classical approach metaphor was seen as a decorative addition to poetic language, whereas in the cognitive, it presents the way we perceive the world around us (Lakoff and Johnson). Lakoff and Johnson's major statement is that human thought is predominantly metaphorical in nature. However, a proper perception of a metaphor is possible only if there is a set of conceptual mappings between source and target domains. Source domains are more concrete aspects of conceptual structure, whereas target domains are less

familiar aspects of conceptual structure, and these abstract, complex target domains are expressed in terms of concrete, physical source domains (Kövecses 2010a). In order to make the connection between the source domain and the target domain, a transfer of meaning from one domain to another must be performed – a mapping. In other words, CMT (*Conceptual Metaphor Theory*) regards linguistic metaphors as instances of conceptual metaphors in specific utterances or sentences. One of the basic principles operating behind mappings in metaphor is analogy, a mechanism which functions on the basis of comparisons of mental representations, where inferences are created through patterns of relational roles. Analogy is a form of relational reasoning, whereas relational reasoning involves retrieval of structured knowledge from long-term memory, manipulating bindings in working memory, generating analogical inferences, learning abstract schemas, etc. Two situations can be said to be analogous “if they share a common pattern of relationships among their constituent elements, even though the elements themselves differ across the two situations” (Holyoak 234).

### **Direct and Indirect Processing Models**

There are two basic theoretical approaches to understanding metaphors. The first approach, which includes direct processing models, is based on the notion that metaphor may be processed directly from the information at disposal, without rejecting the initial literal interpretation as nonsensical. Generally speaking, direct processing models assume that the literal meanings do play a certain role in constructing the metaphorical meaning; however, rejecting the entire literal interpretation before metaphor processing begins is not a necessary step here. The second general approach to metaphor comprehension is indirect and is best explained through the three-stage model of Searle (1979), also known as the standard pragmatic model. According to this model, a metaphor is first interpreted on the literal level and if the utterance is found to be in some way defective, either logically or because of surrounding context, then a search for a nonliteral interpretation is attempted. This means that the process of metaphorical interpretation can only begin after the literal interpretation has been already performed and rejected.

### **Sentence and Metaphor Processing**

Glucksberg and Keysar (1990) argue that: “Metaphors are not understood as implicit similes. Instead, metaphors are understood as they are – as class-inclusion statements” (p. 17). It is considered that literal language processing is automatic and triggered by any linguistic input. On the other hand, figurative language processing is triggered only when the literal interpretation

fails to make sense. From all this, it naturally follows that figurative interpretations must take more time than literal, because such interpretations are taken into consideration only after a literal interpretation has been discarded as unsuitable. However, there are two basic factors for refuting this statement: firstly, fast recognition is facilitated by the previous experience with the particular metaphor; and secondly, even if the metaphor is not familiar, it can be recognized relatively quickly if it is apt. Direct experience with a metaphor may be helpful in clarifying the intended meaning so that later comprehension is facilitated. For example, experience is what helps us highlight the prominent features to be mapped from the target to the source domain where metaphor serves as a sort of conceptual bridge for the reorganization of the relevant domains.

### **Similar Research**

When it comes to understanding nominal metaphors such as “My lawyer is a shark,” most people would understand that the source domain “my lawyer” has certain properties of the target domain “shark”, but at the same time does not have other shark properties. The characteristics of “shark” that are attributed to “my lawyer” would include aggressive or malicious, but not characteristics such as having fins or being able to breathe under water. Since these properties constitute the basis of the metaphor, they can be called metaphor relevant (MR). Metaphor-irrelevant (MI) properties, on the other hand, are those that are associated with literal sharks but are not attributed to the source domain. When people understand metaphors, metaphor-relevant (MR) properties become activated, whereas MI properties are usually inhibited. According to Gernsbacher’s (1991) structure-building model of language comprehension, the material which is relevant for discourse comprehension is enhanced while the irrelevant material is actively inhibited. Now, his model could be applied to metaphor comprehension to see whether MR and MI properties are actively enhanced or inhibited during metaphor interpretation. To answer this question, Gernsbacher, Keysar, and Robertson (1995) conducted an experiment in which participants, ranging from college students to senior citizens, were supposed to read sentences, one at a time, and to decide whether each statement made sense. The list of sentences contained figurative sentences such as “My lawyer is a shark” and literal counterpart sentences such as “The hammerhead is a shark.” The metaphors and their literal counterparts served as primes for MR (“Sharks are vicious”) and MI (“Sharks are good swimmers”) probe sentences. As expected, MR sentences were evaluated more quickly when they followed metaphors than when they followed literal sentences suggesting that MR properties become salient during metaphor comprehension. Logically, MI probe sentences were responded to more slowly following metaphors than

literal sentences. The obtained results confirmed Gernsbacher's suggestion that MI properties are not only inactive, but also actively inhibited during metaphor comprehension and participants could make use of them to perform the sensibility judgment task.

Some recent research appears to contradict the three-stage model's indirect processing approach. For example, metaphorical sentences can be read as quickly as literal sentences if the metaphors are introduced after a long supporting context. However, when they are presented with the sentences after a short context (usually consisting of one-sentence only), the interpretation of metaphors may take longer than the interpretation of literal sentences (Gildea and Glucksberg 1983). Gildea and Glucksberg demonstrated in a series of studies that judgments whether literal sentences were true or not were slowed when the false sentences were metaphors. For example, it took longer to say that a metaphor (e.g. Some surgeons are butchers) was false than it did to judge normally false sentences (e.g. Some apples are oranges). They also suggested that the metaphor interference effect occurred only when the metaphors had been rated as highly apt (good). This naturally leads to saying that a number of factors have been shown to contribute to recognizing metaphors in a faster and easier way, one of them being metaphor aptness. For example, "a highly apt metaphor is the one in which the domains of the topic and vehicle are relatively distant but the within-domain features are relatively close in semantic space" (Blasko and Connine 296).

Kintsch and Bowles (2002) conducted a research which focuses on differences in the way people interpret easy and difficult metaphors. The obtained results suggested that metaphors which are considered to be easy to understand are interpreted in similar ways by most people, whereas a much wider range of interpretations exists for metaphors that are difficult to comprehend. However, even in cases where the metaphors that the participants were asked to interpret were completely nonsensical, their answers were consistent to some extent. Even though the task of interpreting such metaphors seemed impossible, the participants did not give up and failed to respond in only 7% of the cases. Even for those metaphors that did not make any sense, the participants offered some universal suggestions which do not reflect their correct interpretation of difficult metaphors but the fact that they operate within word-based constraints. Gregory and Mergler (1990) dealt with the differences in response times for metaphors, similes and literal sentences via a yes-no or true-false verification task. Namely, the participants were presented with those three types of sentences on a computer and asked to make yes-no judgments about metaphors and similes. The obtained results suggested that the participants took more time to read metaphor sentences although simile sentences had exactly one more word than metaphor sentences.



### Present Research Instrument

The psycholinguistic experiment conducted in this research is composed of 28 metaphorical and non-metaphorical sentences in Serbian and English taken from online corpuses of these languages, respectively. There were 14 pairs of sentences where each sentence contained a keyword that is commonly used both literally and figuratively in everyday language. This means that each metaphorical sentence had its non-metaphorical counterpart containing the same word that could be used metaphorically and non-metaphorically in both Serbian and English. The keywords in question are the following: *branch* (English) – *grana* (Serbian), *heart* (English) – *srce* (Serbian), *steal* (English) – *ukrasti* (Serbian), *inflamm* (English) – *raspaliti* (Serbian), *rollercoaster* (English) – *vrteška* (Serbian), *seed* (English) – *seme* (Serbian), *roadmap* (English) – *putokaz* (Serbian). As we can see in the list, most of the terms had high frequency scores in both languages (e.g., *heart/srce*, *steal/ukrasti* or *branch/grana*), and even in those cases where the terms were not that frequent (*rollercoaster/vrteška* or *roadmap/putokaz*), their frequency was comparable in the two languages. Sentences containing the keywords were taken from online corpuses of Serbian and English, respectively – *Korpus savremenog srpskog jezika na Matematičkom fakultetu Univerziteta u Beogradu* and *The Corpus of Contemporary American English (COCA)*. The keywords were typed in the search fields of the corpuses, and then the lists of sentences containing the words were examined to select those most suitable for the experiment. After the sentences were taken from the corpuses, they were modified in terms of length, in order for each to be in the span of 10–12 words, and in terms of content, so that each could be relatively comprehensible for both grammar school and EFL students. The sentences in question are the following:

- 1) I think we need improvement in this branch of government.
- 2) A knot is a place where a branch meets the trunk.
- 3) Allie had broken his heart pretty badly, but that was ages before.
- 4) Dr. Denton Cooley performed the nation's first successful heart transplant.
- 5) His extraordinary male beauty was enough to steal her breath.
- 6) While off duty, I encountered two subjects attempting to steal a car.
- 7) You would do well not to inflame public passions with sensationalism.
- 8) You can easily inflame this book because of its dry pages.
- 9) The past year has been an emotional rollercoaster for Kate and Gerry.
- 10) The world famous rollercoaster is now in its 80<sup>th</sup> year.
- 11) He knew he had planted the seed of self-doubt in the boy.
- 12) I had planted the seed of potato that would rapidly grow.

- 13) Benedict will offer a roadmap for the Catholic spiritual future.
  - 14) The girl bought a folding roadmap of America, and found California.
- 
- 1) Ova visoko razvijena grana industrije pokriva veliki deo ukupnog izvoza.
  - 2) Jedna grana klatila se više njene glave, teška od nevidljivog ploda.
  - 3) Sada nisam u ozbiljnoj vezi, ali i meni je srce bilo slomljeno.
  - 4) U Insitutu je do sada sedmorici pacijenata urađena transplantacija srca.
  - 5) Mislim da nju treba neko da prati, i tako krade bogu dane.
  - 6) Priča se da neko krade dobrovoljne priloge za crkveni parking.
  - 7) Razne provokacije će vremenom sigurno raspaliti strah među lokalnim Srbima.
  - 8) Podjednaki, neki od krupnih komadića uglja moraju se potpuno raspaliti.
  - 9) Od ovoga zavisi opstanak svakoga od njih na toj elitnoj vrteški.
  - 10) U novoizgrađenom dečjem parku mogu se naći vrteške i tobogani.
  - 11) Pokušavali su da unesu seme razdora između Srba i Hrvata.
  - 12) Za setvu se upotrebljavaju seme i rasad visokorodnih sorti žitarica.
  - 13) Uspeli smo da napravimo prilično dobar putokaz budućeg razvoja Srbije.
  - 14) Liniju prati staza koja je jedini putokaz na sedam stotina kilometara.

### **Participants**

All the participants were Serbian grammar school and EFL students belonging to two major age groups – I and II year of grammar school, and III and IV year at the Department of English. There were 80 participants in total, among whom were 1<sup>st</sup>-grade grammar school students aged 14–15; 2<sup>nd</sup>-grade grammar school students aged 15–16; 3<sup>rd</sup>-year EFL students aged 20–23; and, 4<sup>th</sup>-year EFL students aged 21–22. The research included two experimental groups: (i) the first experimental group included 40 students of English from the Department of English, Faculty of Philosophy, University of Niš (25 females, 15 males, average age 21.35 years-old, SD=0.77); (ii) the second experimental group included 40 grammar school students (20 females, 20 males, average age 15.58 years-old, SD=0.64). Prior to doing the experiment, each participant was asked about the age, grade/year of studies and the number of years spent studying English. We used these pieces of information to attribute them to possible answers offered by the subjects and to see how various factors in which the subjects differed could influence the obtained results. The reason why there is the largest age gap possible between the grammar school and EFL students is that this research aims to prove that the duration of learning a language and its figures of speech has an influence on metaphor identification capabilities.

## Procedure

The experiment was conducted by presenting the participants with equal stimuli (14 metaphorical and 14 non-metaphorical sentences in Serbian and English one at a time on the Dell 17" computer screen), where they were supposed to determine whether there is metaphorical content present in the sentences or not. The sentences were shown in a randomized order for each participant and there were no time restrictions for providing the response. The participants were supposed to click the left button if they thought that the sentence in question was metaphorical or the right button if they thought that there was no metaphorical content present in a particular sentence. The experiment was programmed and run in a corresponding program called *OpenSesame* (Mathôt, Schreij & Theeuwes, 2012). The relevant data collected in the procedure were statistically processed.

### Within-group Analysis

#### Experimental Group 1 –Reaction Times for Pairs of Metaphorical and Literal Uses of Target Words

Paired-samples t-tests were used to explore differences in reaction times between the pairs of metaphorically and non-metaphorically used target words in the first experimental group. Statistically significant differences in reaction times were identified in nine pairs of target words – four pairs in English and five pairs in Serbian: (i) HEART ( $M_M^{70}=5747.38$ ,  $SD_M=2466.48$ ,  $M_L=4499.49$ ,  $SD_L=1529.63$ )  $t(36)=3.07$ ,  $p<.01$ ,  $\eta^2=.21$  indicating a very large effect size<sup>71</sup>; (ii) STEAL ( $M_M=4756.74$ ,  $SD_M=2010.47$ ,  $M_L=6184.74$ ,  $SD_L=2781.43$ ),  $t(34)=-3.08$ ,  $p<.01$ ,  $\eta^2=.22$ ; (iii) INFLAME( $M_M=6514.78$ ,  $SD_M=2603.99$ ,  $M_L=4728.03$ ,  $SD_L=1780.17$ ),  $t(36)=3.92$ ,  $p<.001$ ,  $\eta^2=.30$ ; (iv) ROLLERCOASTER( $M_M=3911.03$ ,  $SD_M=1675.62$ ,  $M_L=5059.72$ ,  $SD_L=2315.81$ ),  $t(35)=-2.68$ ,  $p=.01$ ,  $\eta^2=.17$  also indicating a very large effect size like in previous cases; (v) GRANA( $M_M=5021.18$ ,  $SD_M=1806.51$ ,  $M_L=8170.74$ ,  $SD_L=4329.02$ ),  $t(33)=-4.06$ ,  $p<.001$ ,  $\eta^2=.33$ ; (vi) UKRASTI( $M_M=6563.79$ ,  $SD_M=3047.33$ ,  $M_L=5246.82$ ,  $SD_L=2197.10$ ),  $t(37)=-2.25$ ,  $p=.03$ ,  $\eta^2=.12$  indicating a moderate-to-large effect size; (vii) VRTEŠKA( $M_M=5954.06$ ,  $SD_M=3187.38$ ,  $M_L=4308.92$ ,  $SD_L=1575.78$ ),  $t(35)=3.14$ ,  $p<.01$ ,  $\eta^2=.22$ ; (viii) SEME( $M_M=3619.44$ ,  $SD_M=1340.15$ ,  $M_L=5145.33$ ,  $SD_L=2272.88$ ),  $t(35)=-3.70$ ,  $p<.01$ ,  $\eta^2=.28$ ; (ix) PUTOKAZ( $M_M=4994.15$ ,  $SD_M=1898.11$ ,  $M_L=7078.62$ ,  $SD_L=4069.64$ ),  $t(38)=-3.32$ ,  $p<.01$ ,  $\eta^2=.22$ .

<sup>70</sup> Indexes “M” and “L” stand for metaphorically and literally (non-metaphorically) used words, respectively.

<sup>71</sup> Based on the guidelines proposed by Cohen (1988, 284–287), .01=small effect, .06=moderate effect, .14=large effect.

It is obvious that in cases of HEART, INFLAME, UKRASTI, and VRTEŠKA reaction times were faster to literal compared to metaphorical instances, whereas in cases of STEAL, ROLLERCOASTER, GRANA, SEME, and PUTOKAZ, reaction times were faster to metaphorical compared to literal instances. The fact that there was a greater number of words in Serbian with significant differences in reaction times than in English may arise from the fact that the first group of participants consists of EFL students who are constantly exposed to English and its linguistic patterns on a daily basis, therefore making it possibly difficult to make fast and accurate judgments of Serbian sentences. This might suggest that they have paid more attention to the sentences written in Serbian, examining them in greater detail because their decision-making process for Serbian sentences was not as smooth as for English sentences. In other words, we may assume that a high proficiency in English somehow inhibits making judgments in the mother tongue as a result of the constant and effective exposure to English. Also, the results suggesting that certain words had faster reaction times in literal instances compared to metaphorical, and vice versa, may stem from the predominant use of those words in everyday language where their meanings are mostly literal or metaphorical, respectively.

Additional paired-samples t-tests were also conducted to compare reaction times between pairs of target words in English and their Serbian translation equivalents, in both metaphorical and literal conditions. The analysis revealed statistically significant differences in eight cases: four metaphorical and four literal conditions. These included the following: (i) BRANCH<sub>L</sub> vs. GRANA<sub>L</sub> ( $M_E = 4274.69$ ,  $SD_E = 1303.78$ ;  $M_S = 8170.74$ ,  $SD_S = 4329.02$ ),  $t(35) = -5.26$ ,  $p < .001$ ,  $\eta^2 = .44$ ; (ii) HEART<sub>M</sub> vs. SRCE<sub>M</sub> ( $M_E = 5747.38$ ,  $SD_E = 2466.48$ ;  $M_S = 4092.77$ ,  $SD_S = 2048.91$ ),  $t(35) = 2.56$ ,  $p = .02$ ,  $\eta^2 = .16$ ; (iii) STEAL<sub>M</sub> vs. UKRASTI<sub>M</sub> ( $M_E = 4756.74$ ,  $SD_E = 2010.47$ ;  $M_S = 6563.79$ ,  $SD_S = 3047.33$ ),  $t(38) = -2.85$ ,  $p = .01$ ,  $\eta^2 = .18$ ; (iv) INFLAME<sub>L</sub> vs. RASPALITI<sub>L</sub> ( $M_E = 4728.03$ ,  $SD_E = 1780.17$ ;  $M_S = 5961.86$ ,  $SD_S = 2059.796$ ),  $t(35) = -3.45$ ,  $p < .01$ ,  $\eta^2 = .25$ ; (v) ROLLERCOASTER<sub>M</sub> vs. VRTEŠKA<sub>M</sub> ( $M_E = 3911.03$ ,  $SD_E = 1675.62$ ;  $M_S = 5954.06$ ,  $SD_S = 3187.38$ ),  $t(37) = -3.48$ ,  $p < .01$ ,  $\eta^2 = .25$ ; (vi) SEED<sub>L</sub> vs. SEME<sub>L</sub> ( $M_E = 3828.34$ ,  $SD_E = 1718.10$ ;  $M_S = 5145.33$ ,  $SD_S = 2272.88$ ),  $t(34) = 2.76$ ,  $p = .01$ ,  $\eta^2 = .18$ ; (vii) ROADMAP<sub>M</sub> vs. PUTOKAZ<sub>M</sub> ( $M_E = 5952.18$ ,  $SD_E = 2431.14$ ;  $M_S = 4994.15$ ,  $SD_S = 1898.11$ ),  $t(37) = 2.32$ ,  $p = .03$ ,  $\eta^2 = .13$ ; and (viii) ROADMAP<sub>L</sub> vs. PUTOKAZ<sub>L</sub> ( $M_E = 5614.53$ ,  $SD_E = 2231.31$ ;  $M_S = 7078.62$ ,  $SD_S = 7078.62$ ),  $t(34) = -2.32$ ,  $p = .03$ ,  $\eta^2 = .14$ .

In the majority of cases, reaction times were faster to target words in English (BRANCH<sub>L</sub>, STEAL<sub>M</sub>, INFLAME<sub>L</sub>, ROLLERCOASTER<sub>M</sub>, SEED<sub>L</sub>, and ROADMAP<sub>L</sub>). These results are completely consistent with the main hypothesis of this research paper; namely, language proficiency, the amount of time during which a learner is exposed to L2 and direct formal instruction in various aspects of L2 greatly

<sup>72</sup> Indexes “E” and “S” stand for target words in English and their Serbian equivalents, respectively.

facilitate metaphor identification in that language. Simply put, the longer learners are exposed to a language, the easier it will be for them to identify metaphorical meanings. On the other hand, reaction times were faster to target words in Serbian only in two cases (SRCE<sub>M</sub> and PUTOKAZ<sub>M</sub>).

### **Experimental Group 2 – Reaction Times for Pairs of Metaphorical and Literal Uses of Target Words**

Paired-samples t-tests were also used to explore differences in reaction times between the pairs of metaphorically and non-metaphorically used target words in the second experimental group. Statistically significant differences in reaction times were identified in six pairs of target words – three pairs in English, and three pairs in Serbian: (i) STEAL ( $M_M=5897.16$ ,  $SD_M=2660.44$ ,  $M_L = 7887.92$ ,  $SD_L=4220.12$ ),  $t(36)=-2.90$ ,  $p=.01$ ,  $\eta^2=.19$ , indicating a large effect size; (ii) INFLAME ( $M_M= 8999.24$ ,  $SD_M=4960.90$ ,  $M_L=6777.92$ ,  $SD_L=3263.68$ ),  $t(36)=2.91$ ,  $p=.01$ ,  $\eta^2=.19$ ; (iii) SEED ( $M_M=7176.80$ ,  $SD_M=4531.90$ ,  $M_L=5102.60$ ,  $SD_L=2118.89$ ),  $t(34)=2.46$ ,  $p=.02$ ,  $\eta^2 = .15$ ; (iv) GRANA ( $M_M=6758.97$ ,  $SD_M=3169.07$ ,  $M_L=10228.74$ ,  $SD_L=6491.61$ ),  $t(34)=-3.29$ ,  $p<.01$ ,  $\eta^2=.31$ , indicating a very large effect size; (v) SEME ( $M_M=4504.44$ ,  $SD_M=1919.96$ ,  $M_L=5468.81$ ,  $SD_L=2085.65$ ),  $t(31)=-2.57$ ,  $p=.02$ ,  $\eta^2=.18$  indicating a large effect size; (vi) PUTOKAZ ( $M_M=5813.86$ ,  $SD_M=2151.01$ ,  $M_L=7713.09$ ,  $SD_L=4044.97$ ),  $t(34)=-2.66$ ,  $p=.01$ ,  $\eta^2=.17$ .

The fact that there was an equal number of words with significant differences in reaction times between Serbian and English may stem from the fact that the second group of participants consists of grammar school students who are not exposed to English more than they are exposed to Serbian, therefore making it equally challenging to make fast and accurate judgments of both Serbian and English sentences. Put differently, for grammar school students, English is just another subject at school to which they are not predominantly exposed in their daily life so that it could interfere with or aggravate the decision-making process when it comes to their mother tongue. Consequently, they do not examine the Serbian sentences more carefully than the English sentences, which could result in an asymmetrical number of words with different reaction times in these two languages, as it did with the first group of participants. Also, it is important to emphasize the fact that with all target words in Serbian that showed statistically significant differences in reaction times, participants from the second experimental group responded faster to metaphorically used instances compared to cases of literal use. This particular result may be explained through the occurrence and frequency of the words GRANA, SEME, and PUTOKAZ in everyday communication in Serbian where they predominantly have metaphorical meanings. Conversely, with target words in English, reaction time was faster for metaphorical use only in the case of STEAL,

while in the latter two cases (INFLAME and SEED), participants reacted faster to literal uses of the two target words.

Additional paired-samples t-tests were also conducted to compare reaction times between pairs of target words in English and their Serbian translation equivalents, in both metaphorical and literal conditions. The analysis revealed statistically significant differences in six cases: four metaphorical and two literal conditions. These included the following: (i) BRANCH<sub>L</sub>VS. GRANA<sub>L</sub>( $M_E=5915.06$ ,  $SD_E=2435.36$ ;  $M_S=10228.74$ ,  $SD_S=6491.61$ ),  $t(34)=-4.12$ ,  $p<.001$ ,  $\eta^2=.33$ ; (ii) HEART<sub>M</sub>VS. SRCE<sub>M</sub>( $M_E=7029.64$ ,  $SD_E=3336.64$ ;  $M_S=4536.41$ ,  $SD_S=2025.60$ ),  $t(34)=4.24$ ,  $p<.001$ ,  $\eta^2=.35$ ; (iii) INFLAME<sub>M</sub>VS. RASPALITI<sub>M</sub>( $M_E=8999.24$ ,  $SD_E=4960.90$ ;  $M_S=6846.92$ ,  $SD_S=3371.22$ ),  $t(37)=2.75$ ,  $p=.01$ ,  $\eta^2=.17$ ; (iv) ROLLERCOASTER<sub>L</sub>VS. VRTEŠKA<sub>L</sub>( $M_E=5536.67$ ,  $SD_E=2111.65$ ;  $M_S=4391.58$ ,  $SD_S=1664.59$ ),  $t(30)=3.48$ ,  $p<.01$ ,  $\eta^2=.29$ ; (v) SEED<sub>M</sub>VS. SEME<sub>M</sub>( $M_E=7176.80$ ,  $SD_E=4531.90$ ;  $M_S=4504.44$ ,  $SD_S=1919.96$ ),  $t(34)=3.31$ ,  $p<.01$ ,  $\eta^2=.24$ ; (vi) ROADMAP<sub>M</sub>VS. PUTOKAZ<sub>M</sub>( $M_E=7465.94$ ,  $SD_E=3231.67$ ;  $M_S=5813.86$ ,  $SD_S=2151.01$ ),  $t(35)=2.54$ ,  $p=.02$ ,  $\eta^2=.16$ .

Reaction times to these specific target words recorded in the second experimental group were significantly faster for Serbian words in all cases, with only one exception where the reaction time was faster for a target word in English (BRANCH<sub>L</sub>). Again, this is another confirmation of the main hypothesis of this paper that language proficiency, the amount of exposure to L2 and direct formal instruction in various aspects of L2 are significant factors for fast and successful metaphor identification. Unlike the EFL students who had faster reaction times for the English words, grammar school students took more time to successfully identify words in English due to their lack of proficiency and exposure to L2.

### Between-group Analysis

#### Reaction Times – Metaphorically Used Target Words

Independent samples t-tests revealed statistically significant differences in reaction times between the two experimental groups to seven metaphorically used words (5 in English and 2 in Serbian). These included the following: (i) BRANCH<sub>M</sub>( $M_1=4791.64$ ,  $SD_1=1470.78$ ;  $M_2=6586.61$ ,  $SD_2=3322.70$ ),  $t(47.38)=-2.98$ ,  $p=.01$ ,  $\eta^2=.11$ , indicating a moderate-to-large effect size; (ii) INFLAME<sub>M</sub>( $M_1=6579.05$ ,  $SD_1=2551.75$ ;  $M_2=8752.10$ ,  $SD_2=4870.98$ ),  $t(59.23)=-2.49$ ,  $p=.02$ ,  $\eta^2=.07$ , indicating a moderate effect size; (iii) ROLLERCOASTER<sub>M</sub>( $M_1=3943.39$ ,  $SD_1=1636.01$ ;  $M_2=5045.09$ ,  $SD_2=1794.46$ ),  $t(71)=-2.74$ ,  $p=.01$ ,  $\eta^2=.10$ ; (iv) SEED<sub>M</sub>( $M_1=4448.92$ ,  $SD_1=1826.28$ ;  $M_2=7241.92$ ,  $SD_2=4584.26$ ),  $t(48.72)=-3.48$ ,  $p<.01$ ,  $\eta^2=.14$ , indicating a large effect size; (v) ROADMAP<sub>M</sub>( $M_1=6011.61$ ,  $SD_1=2546.09$ ;  $M_2=7487.55$ ,  $SD_2=3152.60$ ),  $t(74)=-2.25$ ,  $p=.03$ ,  $\eta^2=.06$ , indicating a moderate effect size; (vi) GRANA<sub>M</sub>( $M_1=5123.06$ ,  $SD_1=1879.04$ ;  $M_2=6686.69$ ,

$SD_2=3153.43$ ),  $t(57.36)=-2.55$ ,  $p=.01$ ,  $\eta^2=.09$ , indicating a moderate-to-large effect size; (vii)  $SEM_{EM}(M_1=3619.44$ ,  $SD_1=1340.15$ ;  $M_2=4677.57$ ,  $SD_2=2064.90$ ),  $t(61.97)=-2.60$ ,  $p=.01$ ,  $\eta^2=.09$ .

It can be concluded that in all cases discussed above, reaction times recorded in the first experimental group were significantly shorter compared to the second experimental group. Furthermore, the effect size ranged from moderate to large. The fact that there are more metaphorically used words in English that grammar school students took time to successfully identify may suggest that they lack what is needed for fast identification, and what EFL students clearly have – a high proficiency in L2 and constant exposure to it. Not only do EFL students have an entire curriculum written in English, but they also have a direct formal instruction related to various aspects of the English language, literature and culture. The results here are yet another confirmation of the main hypothesis that the duration of language learning has a significant influence on metaphor identification.

### Reaction Times – Literally Used Target Words

Independent samples t-tests also revealed statistically significant differences in reaction times between the two experimental groups to seven literally used words (6 in English and only 1 in Serbian). These included the following: (i)  $BRANCH_L(M_1=4231.46$ ,  $SD_1=1312.17$ ;  $M_2=5897.83$ ,  $SD_2=2606.69$ ),  $t(51.35)=-3.44$ ,  $p<.01$ ,  $\eta^2=.14$ , indicating a large effect size; (ii)  $HEART_L(M_1=4586.71$ ,  $SD_1=1601.76$ ;  $M_2=6190.40$ ,  $SD_2=2598.22$ ),  $t(65.41)=-3.30$ ,  $p<.01$ ,  $\eta^2=.13$ , indicating a substantial effect size; (iii)  $STEAL_L(M_1=6132.97$ ,  $SD_1=2758.95$ ;  $M_2=7899.08$ ,  $SD_2=4230.53$ ),  $t(67.72)=-2.18$ ,  $p=.03$ ,  $\eta^2=.06$ , indicating a moderate effect size; (iv)  $INFLAME_L(M_1=4758.37$ ,  $SD_1=1765.89$ ;  $M_2=6777.92$ ,  $SD_2=3263.68$ ),  $t(55.09)=-3.32$ ,  $p<.01$ ,  $\eta^2=.13$ ; (v)  $SEED_L(M_1=3811.69$ ,  $SD_1=1702.13$ ;  $M_2=5134.76$ ,  $SD_2=2123.31$ ),  $t(70)=-2.91$ ,  $p=.01$ ,  $\eta^2=.11$ ; (vi)  $ROADMAP_L(M_1=5627.61$ ,  $SD_1=2170.93$ ;  $M_2=7128.32$ ,  $SD_2=2884.76$ ),  $t(68.56)=-2.54$ ,  $p=.01$ ,  $\eta^2=.08$ , indicating a moderate effect size; (vii)  $RASPALITI_L(M_1=6122.66$ ,  $SD_1=2245.61$ ;  $M_2=7976.14$ ,  $SD_2=4108.19$ ),  $t(55.43)=-2.42$ ,  $p=.02$ ,  $\eta^2=.07$ , indicating again a moderate effect size.

Like in the case of metaphorically used words, with the above discussed target words used in the literal condition reaction times recorded in the first experimental group were significantly faster compared to those recorded in the second experimental groups. Moreover, the effect size ranged from moderate to large. The obtained results concur with the main hypothesis of this research paper that the duration of language learning greatly contributes to metaphor awareness.

### Accuracy – Metaphorically Used Target Words

To explore the potential association between the achieved levels of accuracy and experimental group, *chi-square test for independence* was used. The analysis revealed a significant difference only in the case of BRANCH used in the metaphorical condition. Namely, in this case, the chi-square test for independence (with Yates Continuity Correction used to compensate for the overestimate of the chi-square value when used with a 2 by 2 table) showed a significant association between experimental groups and accuracy,  $\chi^2(1,80)=5.00$ ,  $p=.03$ ,  $\phi=.28$ , indicating a small effect<sup>73</sup>. With all other target words used in the metaphorical condition there were no significant associations between experimental groups and accuracy. In other words, the proportion of accurate and inaccurate solutions between the two experimental groups was similar.

An additional overview of the obtained results also showed that in the majority of cases there was a higher number of correct as opposed to incorrect answers. The instances where the number of correct answers was considerably higher than incorrect include ROLLERCOASTER<sub>M</sub> (*exp. group 1*: 39 correct, 1 incorrect; *exp. group 2*: 36 correct, 4 incorrect) and UKRASTI<sub>M</sub> (*exp. group 1*: 37 correct, 7 incorrect; *exp. group 2*: 39 correct, 1 incorrect) in both experimental groups suggesting that these two words are frequently used metaphorically in everyday language and, therefore, easy for the participants to identify. Also, the scores for the word VRTEŠKA<sub>M</sub> were identical between the two experimental groups (*exp. group 1*: 35 correct, 5 incorrect; *exp. group 2*: 35 correct, 5 incorrect) indicating that the frequency of a word is more important for metaphor identification than the difference between age groups. The only exceptions were recorded for BRANCH<sub>M</sub> in the first experimental group (*exp. group 1*: 15 correct, 25 incorrect; *exp. group 2*: 26 correct, 14 incorrect), and for GRANA<sub>M</sub> in both experimental groups (*exp. group 1*: 16 correct, 24 incorrect; *exp. group 2*: 15 correct, 25 incorrect). The fact that the only words where the number of incorrect answers was higher than correct are BRANCH<sub>M</sub> and its Serbian equivalent GRANA<sub>M</sub>, both used in the metaphorical sense, may simply suggest that the participants are not familiar with the usage of these words in meanings other than literal. Yet, surprisingly, in case of BRANCH<sub>M</sub>EFL students had more incorrect answers than grammar school students despite their proficiency, longer exposure and direct instruction in English.

<sup>73</sup>According to Cohen (1988), .10=small effect, .30=medium effect, .50=large effect.



### Accuracy – Literally Used Target Words

Like in the metaphorical condition, the only target word that showed a significant association between experimental groups and accuracy was  $BRANCH_L$ ,  $\chi^2(1,80)=6.30$ ,  $p=.01$ ,  $\phi=-.31$ , while with all other target words the proportion of accurate and inaccurate solutions between the two experimental groups was similar.

Besides this, there were only three cases where the number of incorrect answers was higher than the number of correct ones: (i) for  $BRANCH_L$  in the second experimental group (18 correct, 22 incorrect), (ii) for  $INFLAME_L$  also in the second experimental group (16 correct, 24 incorrect), and (iii) for  $GRANA_L$  in both experimental groups (*exp. group 1*: 14 correct, 26 incorrect; *exp. group 2*: 7 correct, 33 incorrect; please note that a similar tendency for  $GRANA_W$  was also recorded in the metaphorical condition). The fact that these three words were problematic for the majority of grammar school students may again be assigned to the words' rare occurrence in the literal condition, students' lacking linguistic proficiency or insufficient literal/figurative language teaching. However, since EFL students did not find it difficult to identify  $BRANCH_L$  and  $INFLAME_L$  in their target condition, this may mean that their proficiency, longer exposure and direct instruction in English were of great help in these examples.

### Combined Effects of Accuracy and Experimental Group

Two-way between-groups ANOVA without post-hoc tests was used to explore the combined effects of *accuracy* and *experimental group* on reaction times for each of the target words in both metaphorical and literal conditions.

The only two cases that showed significant interaction effects between accuracy and experimental group were (i)  $INFLAME_M$ ,  $F(1,75)=7.21$ ,  $p=.01$ ,  $\eta_p^2=.09$ , indicating a moderate effect size (there were no significant independent main effects of experimental groups and accuracy), and (ii)  $SRCE_M$ ,  $F(1,68)=8.57$ ,  $p=.01$ ,  $\eta_p^2=.11$ , indicating a moderate-to-large effect size (the main effect of experimental group was not significant, whereas the main effect of accuracy achieved significance,  $F(1,68)=6.15$ ,  $p=.02$ ,  $\eta_p^2=.08$ , indicating a moderate effect size).

What is more, it is worth noting that in the case of  $INFLAME_L$  both experimental group and accuracy achieved significant main effects, while their interaction effect did not reach significance (accuracy:  $F(1,71)=16.32$ ,  $p<.001$ ,  $\eta_p^2=.19$ , indicating a large effect size; *exp. group*:  $F(1,71)=6.80$ ,  $p=.01$ ,  $\eta_p^2=.09$ , indicating a medium effect size; *exp. group\*accuracy*:  $F(1,71)=2.90$ ,  $p=.09$ ,  $\eta_p^2=.04$ , indicating a small effect size). Also, in the case of  $SEME_M$ , there was a significant main effect of accuracy ( $F(1,69)=5.41$ ,  $p=.02$ ,  $\eta_p^2=.07$ ); however, the effect of experimental group and interaction effects did not reach significance.

Based on the obtained overall results, it can be concluded that the most important main effect was achieved by experimental group, whereas the additional effects of accuracy and interaction effects between experimental group and accuracy were not at all prominent. In turn, such findings corroborate the results of tests conducted in the previous subsections dealing with between-group analyses, where the most important and salient differences were identified in reaction times between the two experimental groups.

### **Combined Effects of Experimental Group and Metaphoricity**

Two-way repeated measures ANOVA was used to explore the effect of metaphoricity (metaphorical vs. literal condition), and the combined effect of metaphoricity and experimental group (metaphoricity\*exp. group) on within-subjects reaction times to pairs of metaphorically and literally used target words. Moreover, it is important to emphasize that the effect of experimental group on reaction times has already been explored separately in previous subsections (Reaction times – metaphorically used target words, and Reaction times – literally used target words), and will, therefore, not be addressed here again.

The analysis showed that all target words in English showed a significant main effect of metaphoricity and no significant interaction effects between metaphoricity and experimental group, with the exception of ROADMAP where there were no significant effects (metaphoricity:  $F(1,68)=0.04$ ,  $p=.31$ ,  $\eta_p^2=.02$ ; metaphoricity\* experimental group:  $F(1,68)=0.01$ ,  $p=.92$ ,  $\eta_p^2<.01$ ).

In the case of Serbian equivalents, SRCE (metaphoricity:  $F(1,65)=3.51$ ,  $p=.07$ ,  $\eta_p^2=.05$ ; metaphoricity\* experimental group:  $F(1,65)=0.35$ ,  $p=.56$ ,  $\eta_p^2<.01$ ) and RASPALITI (metaphoricity:  $F(1,69)=0.93$ ,  $p=.34$ ,  $\eta_p^2=.01$ ; metaphoricity\* experimental group:  $F(1,69)=1.85$ ,  $p=.18$ ,  $\eta_p^2=.03$ ) did not show any significant effects, while UKRASTI showed significant within-subjects interaction between metaphoricity and experimental group ( $F(1,70)=7.90$ ,  $p=.01$ ,  $\eta_p^2=.10$ ). The remaining Serbian equivalents showed the dominant main effect of metaphoricity, as was the case with the majority of target words in English. Furthermore, it is worth noting that in all cases where the within-subjects main effect of metaphoricity was significant, the recorded effect size, i.e. the values of multivariate *partial eta squared* ranged from moderate-to-large, to very large effect sizes.

Finally, it can be concluded that interaction effects between metaphoricity and experimental group were minimal (only with one target word in Serbian), while the main effect of metaphoricity was very salient (recorded in ten out of fourteen pairs of metaphorical/literal conditions). This suggests that the distinction between metaphorical and literal conditions in which the target words from the two languages appeared influenced participants' responses to a very high degree. Moreover, this effect of metaphoricity was slightly more

salient for words in English (in six out of seven cases) than for words in Serbian (in four out of seven cases).

### Discussion

In the light of what we have observed in this paper, investigating Serbian EFL and grammar school students' ability to identify Serbian and English metaphorical sentences has brought forth an extensive amount of results regarding the influence of different factors onto identification of native and foreign language figurative expressions. The analyses have given an insight into the degree of acquaintedness of Serbian EFL and grammar school students with Serbian and English metaphorical and non-metaphorical sentences. Also, we were able to observe the difference in proficiency between two different age groups, that is, the influence of longer exposure to metaphorical expressions onto achieving a deeper understanding of it. To support these findings we will now address each of our research questions.

As it was expected, the results showed that both grammar school and EFL students are generally capable of identifying metaphor to a certain extent. Naturally, there were differences between the performance of grammar school and EFL students stemming from several factors. Since EFL students have an entire curriculum written in English and a direct formal instruction related to various aspects of the English language, literature and culture, it was confirmed that they performed better in identifying metaphor written in English.

Another thought we called into question was whether relying on native language metaphors will influence the answers given by grammar school and EFL students to a certain extent. It was expected that the given answers will not concur with the expected/correct answers, especially in cases where they have not encountered a particular metaphor in English before. The results suggested that reaction times of grammar school students for the metaphorically used words were significantly faster for Serbian words in almost all cases. However, surprisingly, EFL students took more time to examine sentences written in Serbian, which means that the reverse process took place here – continuous contact with foreign language sentences influenced the answering time for the sentences in the mother tongue. EFL students' constant exposure to English and its linguistic patterns on a daily basis might account for their decision-making process for Serbian sentences being not as smooth as for English sentences. In other words, their higher proficiency in English somehow inhibited making fast and accurate judgments of the sentences written in the mother tongue, as a result of the effective exposure to English. Many examples showed that reaction times for both literal and metaphorical words recorded in the first experimental group were significantly shorter compared to the second experimental group. Again, the obtained results clearly show that EFL students' reaction times are

faster than that of grammar school students without any exception, thus confirming that proficiency, exposure and formal instruction in various aspects of English play a key role in both figurative and literal language identification.

The obtained results are in accord with the main hypothesis of this research paper that the duration of language learning has a considerable influence on metaphor identification. The results demonstrated a certain discrepancy in knowledge between the two age groups involved in the experiment. Once again, our premise was correct; namely, EFL students showed greater ability to handle metaphoricity as their knowledge of the foreign language has grown over time when compared to grammar school students. Such results clearly indicate that figurative language teaching is not as emphasized as other aspects of language teaching and that there is insufficient exposure to metaphorical expressions especially in the lower grades of Serbian education system. The overall performance of the subjects confirmed the main hypothesis of this paper that language proficiency, the amount of exposure to L2 and direct formal instruction in various aspects of L2 are significant factors for fast and successful metaphor identification.

### **Conclusion**

This study starts with the goal to explore Serbian grammar school and EFL students' ability to identify metaphorical content in Serbian and English sentences through a psycholinguistic approach. The method chosen for studying this capacity is a psycholinguistic experiment. The main theoretical findings that inspired the research are previous studies related to metaphor perception in different languages from the psycholinguistic point of view, as well as the leading views in the developing stages of metaphor comprehension, which form the basis of the theoretical framework of the paper. The analysis was carried out in order to determine the extent to which the students are guided by the mechanisms operating behind metaphor identification processes in the two languages and whether, in an attempt to offer satisfactory solutions, they resort to applying the mother tongue knowledge in case of not being able to interpret foreign language metaphors.

In summary, we have engaged in the task of studying Serbian students' capacity for metaphor identification in the light of the psycholinguistic theory. The data presented here seems to confirm that language proficiency, the amount of exposure to L2 and direct formal instruction in various aspects of L2 are significant factors for fast and successful metaphor identification. However, the presence of conceptual metaphors in the mind does not necessarily mean that learners would activate them in the process of foreign language learning. Teachers are the ones who should incorporate both linguistic and extralinguistic features into the teaching process, so that students are trained to think

metaphorically. Instead as a mere decoration to language, metaphor should be viewed as a tool for organizing human thought and pervading world perception.

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### ULOGA UČENJA STRANOG JEZIKA U PREPOZNAVANJU METAFORE: EKSPERIMENTALNO ISTRAŽIVANJE

Ovaj rad nastoji da istraži prepoznavanje pojmovne metafore kod populacije srpskih učenika gimnazije i studenata anglistike uz pomoć psiholingvističkog eksperimenta. Glavni ciljevi analize jesu da se utvrdi sposobnost učenika gimnazije i studenata anglistike da prepoznaju pojmovnu metaforu, kao i mera u kojoj su oni svesni razlika u procesima prepoznavanja metafore između dva jezika i da li, u slučaju neprepoznavanja istih, pribegavaju primeni znanja maternjeg jezika kako bi ponudili adekvatne odgovore. Psiholingvistički eksperiment sproveden u ovom istraživanju sastoji se od 28 metaforičkih i nemetaforičkih rečenica na srpskom i engleskom jeziku preuzetih iz dostupnih korpusa. Eksperiment je izveden tako što su ispitanicima prikazane ujednačene draži, gde su oni imali zadatak da odluče da li u datim rečenicama ima metaforičkog sadržaja ili ne. U poslednjem delu rada rezultati ove dve analize se upoređuju, pa se na taj način i potvrđuje većina pretpostavki sa početka rada. Dobijeni rezultati pokazali su da poznavanje jezika, stepen izloženosti stranom jeziku, kao i direktna formalna na-

stava različitih aspekata stranog jezika predstavljaju značajne faktore za brzo i uspešno prepoznavanje metafore.

**Ključne reči:** pojmovna metafora, prepoznavanje, metaforički, nemetaforički, psiholingvistika.

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