COGNITIVE LEARNING STRATEGIES IN CROATIAN YOUNG LEARNERS OF ENGLISH

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Studentica: Martina Žabčić

Mentorica: dr. sc. Renata Geld, docent

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University of Zagreb

Faculty of Humanities and Social Sciences

Department of English

TEFL Section

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Student: Martina Žabčić

Supervisor: Asst. Prof. Renata Geld

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Examining Committee:

Renata Geld, Assistant Professor

Stela Letica Krevelj, PhD, postdoc.

Anđel Starčević, PhD, postdoc.

Table of Contents

Abstract

The focus of this study was on language learning strategies (LLS), one of many individual factors affecting language acquisition. More precisely, the centre of attention were cognitive strategies pertaining to meaning construction of prepositions of time and space. The aim of the study was to find out which cognitive LLS Croatian young learners of English use when accessing the abstract domain of time through the concrete domain of space. Five prepositions used for both domains were selected for the study: *on*, *at*, *in*, *between* and *behind*. It was assumed that both fifth graders and sixth graders would use cognitive strategies to differentiate meaning between spatial and temporal prepositions. In addition to that, it was assumed that the sixth graders would use a wider range of cognitive strategies to explain the abstract domain of time. Since all the participants were at the early stages of language learning, it was also assumed that their drawings would reveal more about how young learners perceive time through space than their written answers.

As predicted, the participants in both grades used cognitive strategies to differentiate between temporal and spatial prepositions. Their drawings proved to be more informative than their written explanations. However, the sixth graders used the same range of cognitive strategies as the fifth graders did.

Key words: cognitive language learning strategies, prepositions, time, space, young learners

1. Introduction

In this paper the focus will be on cognitive learning strategies (LLS) in Croatian young learners of English. The study will investigate which cognitive strategies are activated in meaning construction of prepositions of time and space. When using a language that is not our first language (L1), many factors play an important role. It is the teacher's responsibility to provide as much help as possible since the learner has to grasp any "tool" that would help them learn and use a new language. One way of doing that is teaching the learners to become aware of their LLS, to recognize them and put them to good use. The first part of this paper is going to be focused on the theoretical background of LLS and meaning construction of space and time, and on previous research. The second part of the paper will be the study conducted on young learners of English. The results will be shown and the analysis and discussion will follow. In the last part of the paper we will draw some conclusions from the results and the discussion.

2. Language learning strategies

2.1. Theoretical background

Second language acquisition (SLA) is a complex process, and many factors contribute to the learner's attainment of language proficiency. SLA includes formal language learning, informal language learning and a combination of these two (Saville-Troike, 2005). Formal language learning happens when elementary or high school students in Croatia take classes in English, for example. Informal language learning occurs if a family with children moves from Croatia to France and children start gaining their knowledge of French through playing, communicating with their French peers and attending school, "without any specialized language instruction" (Saville-Troike, 2005, p. 2). Both formal and informal language learning happen, for example, when a foreigner comes to Croatia to learn Croatian by taking Croatian language classes. The foreigner learns Croatian not only in a formal setting, but also in everyday life when communicating with native Croatian speakers outside of class. In the 1970s and 1980s teacher-centered approaches to language learning were replaced by the student-centered ones (Rubin, 1987; Zhao, 2009). Interest in the learner began to grow, as well as interest in learner autonomy. The assumption was that students need to take responsibility for their own learning (Rubin, 1987; Zhao, 2009). According to Gürsoy (2010), the use of language learning strategies is one of the ways to enhance learner autonomy and create student-centered learning environment. Due to increasing attention put on student-centered instruction and the students themselves, learning strategies rapidly became important (Nyikos & Oxford, 1993). They are defined as "behaviours and thoughts that a learner engages in during learning that are intended to influence the learner's encoding process" (Weinstein & Mayer, 1986, p. 315). When learning a new language, all language learners use LLS (Gürsoy, 2010), but the frequency and choice vary among learners (Chamot & Küpper, 1989).

Even though there are several language learning taxonomies, for the purpose of this study two will be mentioned. According to Oxford (1990), LLS can be classified into two main categories, direct and indirect strategies. While direct strategies have influence on direct use of language, indirect strategies support language learning. Each of the two main categories can be further divided into smaller groups of strategies. Direct strategies consist of memory strategies,

cognitive strategies and compensation strategies, whereas indirect strategies include metacognitive, affective and social strategies.

O'Malley and Chamot (1990) suggest three categories of LLS: cognitive, metacognitive and social affective learning strategies. Metacognitive strategies are based on the knowledge about learning and control over it, and the strategies that fit into this group are planning, monitoring and evaluation. Social affective strategies involve "either interaction with another person or ideational control over affect" (1990, p. 45) and the strategies that belong to this group are questions for clarification, cooperation and self-talk. The last group, cognitive strategies, operates "directly on incoming information, manipulating it in ways that enhance learning" (1990, p. 44). The group includes fourteen strategies: resourcing, repetition, grouping, deduction, imagery, auditory representation, keyword method, elaboration, transfer, inferencing, note taking, summarizing, recombination, and translation. The list is evidently long and Geld (2006) claims that the strategies can be even further extended and developed based on language tasks we are dealing with in the process of language acquisition. According to O'Malley and Chamot (1990, p. 119-120), they can be classified and defined as follows:

1) Resourcing involves finding and using sources such as dictionaries and books.

2) Repetition means imitating a language model, including overt practice and silent rehearsal.

3) Grouping includes classifying words, terminology or concepts according to their attributes or meaning.

4) Deduction is applying rules to understand or produce the foreign language or making up rules based on language analysis.

5) Imagery refers to visual images, either mental or actual.

6) Auditory representation means playing back mentally information presented by the teacher.

7) Keyword method is used to remember a new word in a foreign language by identifying a familiar word in the first language that resembles the new word or by generating easily

recalled images of some relationship with the first language homonym and the new word in the foreign language.

8) Elaboration is relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations with the new information.

9) Transfer includes using previous linguistic knowledge or skills to assist comprehension or production.

10) Inferencing means using available information to guess meanings of new items, predict outcomes or fill in missing information.

11) Note taking is writing down key words or concepts in abbreviated verbal, graphic or numerical form while listening or reading.

12) Summarizing involves making a mental, oral or written summary of new information gained through listening or reading.

13) Recombination is constructing a meaningful sentence or larger language sequence by combining known elements in a new way.

14) Translation is using the first language as a base for understanding and producing the second language.

The study that is going to be presented in this paper investigated prepositions of space and time as they represent one of the greatest challenges in SLA, especially when learned in formal educational settings. When it comes to teaching prepositions, a parallel can be drawn between acquiring prepositions and English particle verbs. Learners are presented with forms and meanings that are often learnt through memorization. However, when discussing English particle verbs, Geld and Maldonado (2011) indicate there may be an easier way to learn them other than by rote or by heart. More precisely, they suggest that the second language user (L2 user) applies LLS in SLA when constructing meaning. Since both particle verbs and prepositions are often perceived as a part of language that needs to be memorized, the same question can be applied to learning prepositions. Thus, if there is a way for learners to understand and learn

English particle verbs through their own experience, the same principle may be applied to prepositions of time and space in order to enhance the learners' encoding process.

2.2. Young learners and language learning strategies

It was already mentioned that the frequency and choice of LLS vary among learners and one of the reasons for that lies in the age of language users. Being psychologically and socially different than adults and adolescents, children have different approaches to language learning (Purdie & Oliver, 1999). Either in a classroom or outside of it "children can learn a language other than their mother tongue in various situations depending on the amount and type of exposure to the target language" (Gürsoy, 2010, p. 165). According to Gürsoy (2010), it is the teachers' responsibility, when in EFL (English as a foreign language) environments, to provide learning opportunities as well as exposure for their students and to help them facilitate their learning process.

Both children and adults may be highly motivated to learn. Children are more talkative and enthusiastic but they lose concentration easily and have limited world knowledge and experience (Moon, 2000). Unlike adults, children are both eager to learn and open to new language experiences. Whenever they experience something new in extralinguistic reality, they are bound to learn new words and meanings. If they want to describe a phenomenon in a language, they should know how to use metalanguage. However, children do not have access to metalanguage in the way adolescents or older learners do since they are still at the earlier stages of their cognitive development (Moon, 2000).

According to Piaget's cognition hypothesis (1960), language is a cognitive process and its development happens in a four stage sequence. To reach a particular stage, the child must have passed all the previous stages of development. Up to the second year of life, children are in the sensorimotor period where they interact with environment by manipulating objects. It is followed by the pre-operational stage that lasts until the age of 7. Language development occurs, but thinking is still dominated by perception. The period from the age of 7 to the ages of 11 or 12 is known as the concrete operations period. Children are able to think logically, but logical thinking occurs only when objects are real or can be seen. The last stage is the formal

operations period where children can think logically about abstract ideas, phenomena or potential events. It is reasonable to assume that children at different developmental stages would use different LLS. However, Gürsoy (2010) points out the borders of cognitive stages are flexible, which can provide an explanation for using the same LLS at different stages.

When the student-centered approaches to language learning replaced the teacher-centered ones, it became clear that some students were better than others so the first step was to investigate LLS of good learners. Rubin attributed their success to the particular cognitive and metacognitive processes (Rubin, 1975). Gürsoy (2010) stresses that research on LLS has been focused on adolescents and adults, whereas much more information is yet to be found out about the young learners' strategies. Moreover, he points out that much research has been conducted in the USA, Canada and Australia where there are a lot of bilingual children, children in immersion classrooms and children in ESL contexts, thus excluding the strategies of students in EFL contexts (Gürsoy, 2010). Nikolov (2002) researched cognitive strategies in Hungarian young learners of English as a foreign language. The participants were Hungarian children between the ages of 6 and 14 learning EFL. The original aim of the study was to create an EFL syllabus for children, and during the study several important factors affecting formal learning of English became evident, LLS being one of them. The author claims that the younger the learners are, the less LLS they use. As they become older, their use of LLS increases. On one hand, children guessed new meanings by translating them into their first language. On the other hand, children also used their previous linguistic and general knowledge, applying the cognitive strategies of transfer and inferencing. According to Nikolov's findings, the cognitive strategy of repetition turned out to be more important for younger learners who enjoyed repeating rhymes, songs and games. However, learners around the age of 9-10 did not consider repetition a useful cognitive strategy anymore. As for children's metaphorical abilities, Vosniadou (1987) claims those develop gradually to encompass a variety of conceptual domains. In other words, even young children are capable of understanding certain metaphors. School children acquire a wide range of words bearing either literal or metaphorical meaning, yet until the age of 11 their logical reasoning can be applied to objects that are real or can be seen. Finally, at the age of 11 or 12, children are able to reason abstractly and logically. Stites and Özçalışkan (2013) suggest that metaphor plays a very important role in children's cognitive development by structuring abstract concepts and leading to conceptual changes. Metaphorical abilities occur at the early

stages of life, resulting in five-year olds understanding and explaining metaphors that involve cross-domain comparisons such as SPACE to TIME. The authors investigated the role of cognitive and linguistic factors in children's metaphorical abilities. According to the findings, children who had better language skills were the ones who expressed themselves better in the explanation tasks.

When it comes to research in Croatia, Jelena Mihaljević Djigunović (2015) did research on LLS in vocabulary learning. The participants were Croatian young EFL learners between the ages of 6 and 9. They had to explain how they would teach their doll or Dalmatian dog certain words, whereas some of the participants were also asked about how they learned English words themselves. According to the author, it is logical to guess that the children's suggestions for teaching reflect the ways they would like to be taught. In the analysis none of the already established categorizations of strategies was applied. The strategies identified were grouped into seven different groups of strategies and the one most frequently reported was the group of formal strategies. The formal LLS refer to the typical classroom activities such as writing, reading and writing, drawing and writing, etc. The use of formal LLS showed a tendency to increase with age. As indicated by Mihaljević Djigunović's results, LLS awareness in young learners does exist and the strategies the learners use mostly reflect the strategies they have been exposed to or taught to use.

The field of cognitive learning strategies in young learners is yet to be studied in more detail. Geld (2006) conducted research on the activation of strategies with particular language tasks, and found out that one can predict many construal strategies based on general cognitive processes coded in the target language. In other words, cognitive learning strategies were found to reflect general cognitive processes. Research done by Geld was the inspiration for shaping and conducting the study on young learners presented in this paper.

3. Domains of space and time

3.1. Meaning construction

Radden and Dirven (2007, p. 3) believe that "human thought and its expression in language are intimately interrelated". They add that "cognitive processes mediate between the world of

concepts and their linguistic crystallization in the lexicon and grammar of a language" (2007, p. 3). Language is a cognitive process closely intertwined with other cognitive processes and it cannot develop on its own. Cognitive linguistic approach to language is based on three premises: knowledge of language emerges from language use, language is not an autonomous cognitive faculty, and grammar is conceptualization (Croft & Cruse, 2004; Croft & Wood, 2000, as cited in Geld, 2006).

To acquire a language, one has to experience it, as well as use it. Language experience is at the basis of the speaker's interaction with others, and language development is affected by the speaker's cognitive and affective characteristics together with social and cultural surroundings (Geld, 2006). People are able to perceive and experience the same situation in different ways. To express human ability to portray the same situation in a different way, Langacker (1987) introduced the term *construal.*

Language and experience, being inseparable, have a reciprocal influence. Geld (2006) reminds us that a child, when acquiring the first language, develops other cognitive abilities that always interact with language, such as *structural schematization* that is connected to constitution or Gestalt, a general cognitive ability. A subtype of structural schematization is topological schematization (Geld, 2006), and if it were not for it, we would not be able to perceive for example the sea as a container or as a surface. Since we have the cognitive ability to select only a certain aspect of a scene, in addition to our previous experience and knowledge about the world, we profile either only the surface of the sea or the sea as a container. In order to construct a meaning, speakers have to "reach" for certain aspects of knowledge inside their cognitive domains. Cognitive domains are frames of knowledge that we use as a background in the profiling process, and they can be basic or abstract (Geld, 2006). The experience of our bodies and our interaction with space and objects in it form some of the most basic experiences (Radden & Dirven, 2007). Moreover, Radden (2011) suggests that many of the world's languages use spatial expressions to express temporal meaning due to our common experience of space and time. We start experiencing from the entity closest to us, meaning we actually start from ourselves. The next closest thing for us to experience is space that surrounds us. Bearing that in mind, it is not difficult to understand why the domain of space is the first step in construing meaning of abstract domains such as time.

3.2. Expressing space

In the words of Radden and Dirven (2007, p. 303), "space is one of the most basic and tangible domains of experience (…) and by metaphorically extending the sense of spatial prepositions, the domain of time and other abstract domains are conceived of and expressed in a variety of space-like ways". Space needs to be organized to make our lives and communication easier. To organize space in language, we often use prepositions that denote spatial relations. The meanings of these prepositions, when used to denote spatial relations, are their basic and historically primary meanings, while their uses in abstract domains are metaphorical extensions of spatial meanings (Radden & Dirven, 2007).

According to Radden and Dirven (2007), to determine and describe the location of objects and situations, stable frames of reference are needed. There are absolute reference frames and relative reference frames. The first "make use of unchanging locations such as prominent landmarks like islands and mountains, of universal anchoring points such as the rising or setting sun, or of the system of coordinates or postal addresses" (2007, p. 304). The authors also claim that "in using relative reference frames, physical space and objects in space are specified relative to one or more reference objects" (2007, p. 304). If we want to refer strictly to the physical space surrounding the speaker and the hearer, we use a deictic reference frame. In a non-deictic reference frame, we specify the location of a thing relative to one or more things the speaker expects are well-known to the speaker.

The authors also describe the concept of the trajector – the thing that needs to be located. On the other hand, the thing that serves as the reference point is known as the landmark. These correspond to the notions of figure and ground where a trajector can be explained as a spatial figure and a landmark as a spatial ground. To express spatial relations between a trajector and a landmark, various languages use various means such as verbs, case suffixes, body part terms and prepositions. Trajectors are generally smaller than landmarks and, when motion occurs, trajectors are those that move. Moreover, trajectors and landmarks are typically seen in a particular relation within frames or domains (Radden & Dirven, 2007).

As Radden and Dirven claim (2007, p. 305), "the spatial area where a trajector is located relative to a landmark is known as a region or a search domain". To determine the spatial region where an entity is to be found, we have to specify the dimension of a landmark. Spatial dimension in English is expressed by topological or dimensional prepositions like *at, on, in* or *between.* The dimension of the landmark is important, whereas the dimension of the trajector is irrelevant. The authors suggest that physical objects can often come in a clearly distinguishable shape, yet sometimes we have to give them a shape in our mind. Keeping in mind that meaning construction is subjective and dynamic, it is easier to understand that "the geometric dimensions we assign to the object are purely mental constructs" (2007, p. 309).

The authors proceed by stating that basic dimensional prepositions of English include zero-dimensionality, one-dimensionality, two-dimensionality and three-dimensionality. The preposition *at* is used to express zero-dimensionality, since a zero-dimensional space is a point and has no shape of its own. However, points are useful as points of recognition and they allow a wide array of reference points to locate the trajector, as in *at the bus stop*. When it comes to zero-dimensionality, it only applies to points that are prototypically referred to by the preposition *at* and they cannot be human landmarks (Radden & Dirven, 2007). In both one-dimensional and two-dimensional spaces the trajectors are in contact with the landmarks. On one hand, in one-dimensional space, the trajector is in a sideways contact with the landmark, as in *on the edge*. On the other hand, in two-dimensional space, the trajector is in vertical contact with the landmark, as in *on the table*. Finally, three-dimensional spaces characterize containers, where the interior of a physical object is relevant to the meaning because it establishes a container. If we say *in a bottle*, the preposition *in* does not refer to the dimensional shape of the landmark but to its interior. A container has the function of holding objects, so containment may involve total enclosure of the trajector or partial enclosure, as stated by Radden and Dirven. Furthermore, the authors stress that the notion of containment presumes boundaries and say that "boundedness" may override dimensionality. In the given examples, *the car in the driveway* or *the players in the field*, it is noticeable that the surfaces with well-established boundaries are perceived as containers.

When there are two landmarks, we form a mental picture where these two landmarks are connected. In other words, they form "a line of orientation" (Radden & Dirven, 2007, p. 313), as

in the sentence *The table is between you and me*. Projective or orientational prepositions, for example *behind* or *below*, are used to express spatial orientation. The two landmarks can be explicitly mentioned, as it is in the sentence *A man stood behind the curtain from the balcony*. The line of orientation in this sentence is established by two landmarks, *the curtain* and *the balcony*. The region where the trajector, *a man*, is to be located is found by tracing an orientational line from the balcony as the viewpoint through the curtain into the room. However, this sentence sounds marked or very unusual because the English language explicitly mentions only one landmark, whereas the other one remains implicit, as in *A man stood behind the curtain.* This sentence includes a deictic or contextually given viewpoint: the man is to be found by tracing a line from that viewpoint through the curtain to a region behind it.

When discussing our spatial orientation, it is important to know there are three coordinates we make use of: verticality, horizontality and left-right. The most significant one is verticality because it makes the basis of the UP-DOWN image schema. Horizontality follows and it is at the basis of the FRONT-BACK image schema. Assuming that we construct meanings based on our experiences, it is not surprising that "our canonical way of motion is facing forwards" (2007, p. 314). As our eyes are located at the front of our head, we see what is in front of us or we deal with visible obstacles. By doing so, we make the front more important than the back. Lastly, there is the least important left-right coordinate. The lack of importance is obvious if we take a look at the fact that many people have difficulties with 'left' and 'right', yet nobody is confused by 'up', 'down', 'front' or 'back' (Radden & Dirven, 2007).

3.3. Expressing time

The notion of time comes to mind as something quite natural, as it happens with the notion of space. Both space and time are closely intertwined and they occupy an enormous amount of our lives, and yet, we do not even notice this until our attention is specifically drawn to the fact. Since language tends to be economical, existing words take on new meanings. Moreover, to save space in language, one domain can be accessed through another one, as it happens with space and time. As indicated by Radden and Dirven (2007, p. 317), "notions of time are probably universally conceptualized in terms of space".

In Radden's and Dirven's view (2007), to grasp the motivation for metaphorical extensions of meanings from physical space to temporal space, connections between the topologies of space

and time have to be made. Whereas physical space is three-dimensional and has three coordinates of orientation, temporal space is seen "as a one-dimensional time-axis with a horizontal front-back orientation" (2007, p. 317). When it comes to trajectors, a spatial trajector may be an object or an event, while a typical temporal trajector is an event. A typical spatial landmark is an object and a typical temporal landmark is a period or a situation. The spatial trajector is searched for in a spatial region determined relative to the landmark, whereas the search domain for the temporal trajector or an event is a time sphere determined relative to a period. According to the authors, the spatial trajector occupies a fixed location in a static spatial relation, while in a static temporal situation, "a situation occurs at a fixed location in time" (2007, p. 318). When dynamic relations are involved, the spatial trajector moves along a path in a clear direction. In temporal space, "a situation is mentally scanned through its duration in a certain direction" (2007, p. 318).

People are used to specifying notions of time with respect to situations. If we want to inform the hearer about a specific time, we may give them information using lexical or grammatical specifications of time. In explaining the difference between the two specifications, Radden and Dirven provide the following example: *The next Olympic Games will take place in Beijing in 2008* (2007, p. 318). The grammatical specification of time is given by the tense form *will* and it is a sign of the future time sphere, whereas the lexical specification *in 2008* makes the hearer more informed, since they are able to picture the Games on a calendar. Specifications used to locate a situation at a point in time or in a period are known as location time and are asked about by when-questions.

According to Radden and Dirven, as the spatial preposition *at* specifies a point in space, the same temporal preposition specifies a point in time that can be pinpointed on the timeline. Fixed times include not only points but also time spheres that tend to include the time of the event. Whereas *at* is used for points, the preposition *on* is primarily used for days. Days are seen as calendrical units fit for our activities to be organized on. As the spatial preposition *on* shows contact of the trajector with a landmark, the temporal *on* indicates "contact of our activities with the most prominent units of time" (2007, p. 321). In physical space there are bounded spaces or containers, whereas in temporal space bounded time units or time spans can be found. Time spans correspond to containers and are expressed by the preposition *in.* Weeks,

months, years or centuries, that is units larger than days, are conceptualized as time spans. However, even units smaller than days, such as mornings, nights, minutes or seconds, are conceptualized in this way. As well as to separate two spatial landmarks, the preposition *between* is used to separate two time points. The spatial preposition *behind* is used to express spatial orientation. Our canonical way of motion is facing forwards. Thus, we believe the past is backwards and the future is forward. For this reason, when *behind* is used in a temporal sense, it indicates that the trajector is placed before the landmark on the timeline. The authors suggest that non-fixed location times, specified by dimensional prepositions, may be located in time by specifying a period or a period combined with a point in time.

4. The study

4.1. Aim

The aim of this study was to explore cognitive LLS Croatian young learners use when constructing the meaning of spatial and temporal prepositions in English. The participants were young learners from 11 to 13 years of age. While choosing the appropriate age for the study, Piaget's cognition hypothesis was taken into account. According to his four stages of cognitive development, the ages of 11 and 12 are crucial for the perception of extralinguistic reality. Three hypotheses were made:

1) Both fifth graders and sixth graders use cognitive strategies to differentiate between spatial and temporal meanings of prepositions.

2) Sixth graders use a wider range of cognitive strategies to explain the abstract domain of time.

3) Drawings are more informative than written answers in terms of providing details about young learners' perception of the abstract domain of time.

4.2. Sample

All of the participants were native speakers of Croatian and English was their L2. Thirty three fifth graders and 37 sixth graders participated in the study, making a total of 70. At the beginning of the questionnaire they were asked to write their age, how long they had been

studying English and what other languages they spoke. When it comes to other languages, German is their elective subject from the fourth grade, thus the fifth graders had been studying German for two years and the sixth graders for three years. However, the questionnaire did not include the question related to how long they had been studying other languages or self-assessment of their competence in those languages. As a result, some participants claimed they also spoke Serbian, Bosnian, Slovenian, Russian, Italian, Latin, some Swedish, some German, some Italian and some French. We may assume that they mentioned Serbian, Bosnian and Slovenian languages as the languages they spoke only due to a great similarity between the Croatian language and the languages in question.

In the fifth grade 25 participants were 11 years old, while 8 of them were 12. Twenty nine fifth graders studied German, 2 of them spoke Slovenian, 1 student claimed to speak Bosnian, 1 to know some Swedish and 1 to know some German. Three fifth graders did not mention any other language apart from English. Twenty of them had been studying English for 5 years, 5 for 6 years, 5 for 7 years, 2 for 8 years and 1 for 9 years.

Among the sixth graders 1 participant was 11 years old, 23 were 12 and 13 were 13. There were 28 learners of German. Two students claimed to speak Serbian, 2 Bosnian, 2 Slovenian, 2 Italian and 2 Latin. There was 1 student who claimed to speak Russian, whereas 1 claimed to know some French and 1 claiming to know some Italian. Six sixth graders did not mention any other language besides English. Thirty two had been studying English for 6 years, 1 for 7 years, 3 for 8 years and 1 for 9 years.

4.3. Procedure

The study was conducted at Braća Seljan Elementary School in Karlovac at the beginning of June 2016, which was also the end of the school year 2015/2016. The participants took the test in two groups, the fifth graders being one group and the sixth graders the other. As the learners were younger than 14, their parents had to sign consent forms so the learners could participate in the study. Since there were two fifth grades and two sixth grades, the study had to be carried out in accordance with their schedule. The time needed for taking the test was 45 minutes for each grade.

The instrument used was a questionnaire that consisted of 5 pairs of sentences put into 5 tasks (see Appendix I). Each pair shared the same preposition, *on*, *at*, *in*, *between* or *behind*. Sentences 1a, 2a, 3a, 4a and 5a had temporal meaning, whereas sentences 1b, 2b, 3b, 4b and 5b had spatial meaning. The participants were supposed to explain the difference between the two meanings in their own words. In addition to that, they had to draw a picture of each sentence to show how they saw the sentence in their mind. Instructions were given in Croatian at the very beginning of the lesson. Although the language used in the questionnaire was comprehensible, the instructions had to be repeated several times during the lesson due to the task complexity. It was explained that the prepositions had the same form, but different meanings. The participants were supposed to take a look at the pairs of sentences and try to explain how they differed. They were also instructed to accompany each sentence by drawings. Even though they had been told that they would not be graded for this task, they felt anxious, so they were repeatedly reassured there were no wrong answers.

The analysis conducted was qualitative due to the nature of the study. The numbers we are going to present show how many participants used cognitive LLS in explaining meaningful and motivated differences between spatial and temporal prepositions, and how many participants paraphrased the sentences or provided answers that were not related to their task.

4.4. Results and discussion

It was clear that it was difficult for our participants to explain the differences between the examples in the questionnaire. The number of written answers informative about their strategic thinking is low. However, their drawings provided meaningful insight into the cognitive strategies used for distinguishing between space and time.

All the participants gave some sort of a written explanation. However, not all of them were included in the analysis. Paraphrases, answers unrelated to the task or tasks with no answers were left out since they did not reveal any relevant information. Keeping in mind the participants were young learners, it was not surprising that their drawings proved to be more informative than their written answers. This was the case with all five tasks. The results for the fifth graders are shown in Table 1 and the results for the sixth graders in Table 2.

16

Table 1. The fifth graders' results

5TH GRADE (33 LEARNERS)	written answers				pictures
	informative answers	paraphrases	answers unrelated to the task	tasks with no answers	
1a School starts **on** Monday.	6	26	1	0	33
1b The book is **on** the table.					33
2a School starts **at** five o'clock.	1	28	3	1	33
2b The bus is **at** the station.					33
3a It is very hot **in** summer.	3	27	3	0	33
3b Mary is **in** the kitchen.					32
4a How many months are there **between** May and August?	4	29	0	0	33
4b The table is **between** you and me.					30
5a The problems are **behind** me.	3	24	5	1	31
5b Who is sitting **behind** you?					31

Table 2. The sixth graders' results

6TH GRADE (37 LEARNERS)	written answers				pictures
	informative answers	paraphrases	answers unrelated to the task	tasks with no answers	
1a School starts **on** Monday.	9	25	3	0	36
1b The book is **on** the table.					37
2a School starts **at** five o'clock.	4	30	2	1	36
2b The bus is **at** the station.					36
3a It is very hot **in** summer.	4	26	5	2	35
3b Mary is **in** the kitchen.					34

4a How many months are there **between** May and August?	5	28	1	3	34
4b The table is **between** you and me.					32
5a The problems are **behind** me.	8	25	1	3	31
5b Who is sitting **behind** you?					32

Let us now consider each task individually. The first task was to describe the difference between the following two sentences:

1a School starts **on** Monday.

1b The book is **on** the table.

The spatial preposition *on* indicates contact of the trajector with the landmark, as in sentence 1b. The temporal *on* indicates contact of people's activities with the most prominent units of time, for example days, as in sentence 1a. Fifteen answers provided some insight into meaning construal strategies activated to explain the difference between prepositions denoting time and space. According to the results in the study, previous experience, both linguistic and extralinguistic, plays an important role in meaning construction. The participants differentiate time from space on the basis of human senses of touch and sight. As shown through the cognitive strategy of elaboration, the participants see time as an entity one cannot touch or see, whereas space or anything in it can be touched or seen.

Even though elaboration was the most common cognitive strategy used to indicate the difference between spatial and temporal *on*, transfer and translation also appeared. One of the participants distinguishes time from space in the following way:

> 1) *Prvi a zadatak označava vrijeme kada nešto počinje. Prvi b zadatak je u materijalnom smislu i govori da se knjiga nalazi NA stolu. Razlika je u tome što škola nije NA ponedjeljku a knjiga je zaista na stolu.*

The participant sees the first part as having a temporal meaning, while they connect the words *materijalno* (eng.'material') and *zaista* (eng. 'really', 'for real') with physical space. As was

already mentioned, all the participants are native speakers of Croatian. Croatian speakers make great use of grammatical cases when conveying meaning. The locative case is the prime case for expressing the notion of place, whereas genitive and accusative cases are used to express time. However, the participant uses the locative form *ponedjeljku* and makes Monday "spatial" based on previous linguistic knowledge of their first language. Strategies used to construct the meaning are transfer and translation. It is important to mention this is the only example of transfer among the fifth graders' answers to the task being discussed.

Let us now discuss the examples of transfer given by three sixth graders:

2) *To se odnosi na vremensko značenje npr. kada se nešto događa. Vrijeme je relativno.*

3) *Škola počinje na ponedjeljak ali nije doslovno na ponedjeljak a knjigu možemo vidjeti na stolu da je tamo.*

4) *Škola počinje na ponedjeljak. Ne misli se doslovno na ponedjeljak. Knjiga na stolu. To se misli da je stvarno.*

In example 2 the participant uses the term *relativno* (eng. 'relative') to speak about the domain of time. It is safe to assume the participant used the expression they had heard before instead of saying time was abstract. Their prior linguistic knowledge is used to fill in missing information. In other words, they knew time was not a concrete domain, but they lacked the right word to describe it. However, they were familiar with the expression *time is relative.* Due to transfer, they used the word *relativno* (eng. 'relative') in need of a better word to describe time as an abstract domain. Examples 3 and 4 share the word *doslovno* (eng. 'literal' or 'literally') and the participants feel it is closely connected to the domain of space. Example 4 also points out the word *stvarno* (eng. 'really' or 'for real') as connected to the same domain.

Even though some students provided informative answers pointing to meaning construal strategies, most of the participants only paraphrased the given sentences, stressing that 1a example had temporal meaning and 1b had spatial meaning and translating them into Croatian. This was the case with all five tasks. A lot of students emphasized that *on* is a preposition, whereas *Monday* and *table* are nouns. To put emphasis on prepositions, the students circled them, underlined or wrote them in upper case. There were a few students who wrote that the

sentences share the same preposition and a few who claimed that *Monday* meant time, whereas *table* was an object.

When it comes to the participants' drawings, the fifth graders provided 66 drawings and the sixth graders provided 73. They drew actual visual images to show how they understood the given pair of sentences. In cognitive linguistics, the spatial preposition *on* indicates a trajector vertically resting upon a landmark, as was the case in the sentence *The book is on the table.* The participants recognized *book* as the trajector and *table* as the landmark. Almost all the participants drew a picture where the book is in contact with the table. There were three unclear drawings, two empty fields and one drawing containing a floating book.

The temporal trajector was an event (*School starts*) that needed to be located on the timeline (*on Monday*). The participants tried to find ways to illustrate the contact of given activities, such as starting school, with days as the most salient units of time. Thirty drawings were visual paraphrases of the given sentences. Most of the fifth graders drew pictures where some sort of contact of the event and the day can be recognized, making the contact prominent by drawing calendars or writing Monday directly on the school (Figure 1-4). Two participants drew the building literally placed on Monday (Figure 5 and 6), making Monday an object in this way.
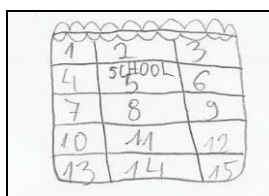
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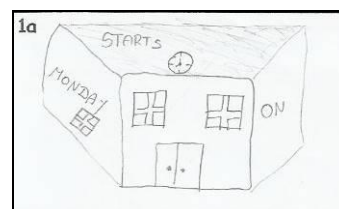
Figure 2
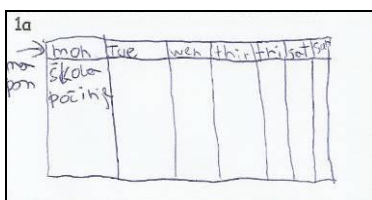
Figure 3
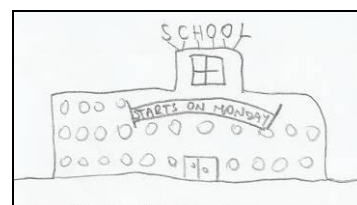
Figure 4

Figure 5
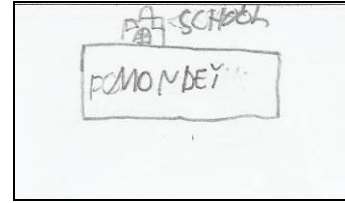
Figure 6

In the sixth grade, there were 10 drawings containing only calendars, meaning ten sixth graders saw Monday as salient in sentence 1a (Figure 7). Nine drawings contained some sort of contact involving calendar, school or Monday (Figures 8, 9 and 10). Two drawings were not connected to the task and one field was left empty.
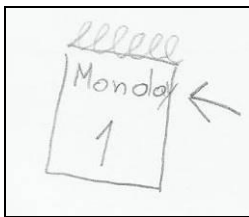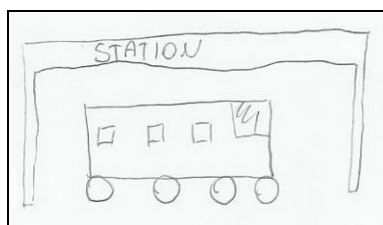

Figure 7

Figure 8
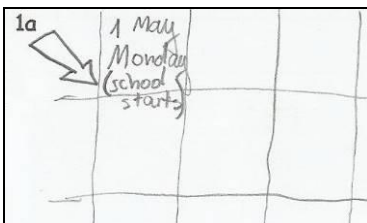
Figure 9
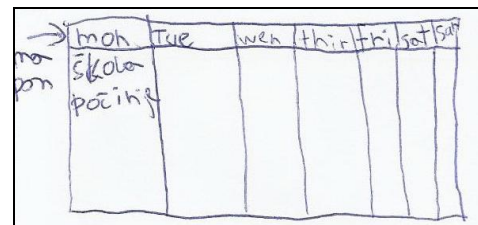
Figure 10

The second task was to describe the difference between the following two sentences:

2a School starts **at** five o'clock.

2b The bus is **at** the station.

The preposition *at* is used for points in the domain of space, as in sentence 2b. If used in the domain of time, *at* indicates a point in time, a punctual event that can be pinpointed on the timeline, such as *at five o'clock.* According to the results this was the most difficult task for both the fifth graders and the sixth graders. One informative written answer came from the fifth grade and four can be found among the sixth graders, making a total of five informative answers. The fifth grade participant explained the similarities and difficulties by elaborating. Once again there is a proof that students form meanings based on their own experience of touch and the answer is brought in the original form:

> 5) *Zato jer obje imaju at. U prvoj jer vrijeme u drugoj mjesto, vrijeme ne možemo dotaknuti a mjesto možemo.*

Two examples of elaboration were found in the sixth grade, too. However, the sixth graders took a step further in using meaning construal strategies to describe the differences. Besides elaboration, transfer and inferencing were noticed. For the participants the word *doslovno* (eng. 'literal' or 'literally') belongs with space, and so does the word s*tvarno* (eng. 'really' or 'for real'). The word *doslovno* (eng. 'literal' or 'literally') is negated in the domain of time. They had probably come across those words, learnt the meanings and remembered them. When lacking the right word to denote the abstract, the participants used their previous linguistic knowledge to show how they distinguished time from space. Let us now consider the explanation of one sixth grader:

> 6) *Slične su po tome što imaju at, ali su različite. At 5 o'clock je nešto na što ne možemo "stati" ili doći. At the station je nešto na što možemo doći ili stati.*

The participant felt the verb *stati* (eng. 'to stand') belonged to the domain of space and claimed you could stand at the bus station or come to one, but you could not stand at 5 o'clock. However, in the same way the station is perceived as a point in space, 5 o'clock is perceived as a point in time. Points are typically connected with the preposition *at*. This participant also felt there was a difference between the domains and wanted to point that out by using quotation marks when discussing the temporal *at*. Although those are not grammatically or semantically necessary, they prove the participant's thinking and explanation were based on the cognitive strategy of transfer. Quotation marks are often used when we want to show that we do not use

the basic or usual meaning of a word or a phrase. The participant relied on previous linguistic knowledge to assist comprehension. This is also a clear proof that the participants' abstract thinking was developing at the time.

There were 66 drawings in the fifth grade and 72 in the sixth grade. The fifth and the sixth graders made very similar drawings for both sentences in the given task. The participants recognized *bus* was the spatial trajector and *station* was the spatial landmark. Although there were not many revealing written answers for the task in question, the drawings tell a different story. Many participants tried to put the bus at one point in space by drawing lines around the vehicle, thus making boundaries (Figure 11-15). This is in accordance with cognitive linguistic theory where the preposition *at* belongs to points.

Figure 11
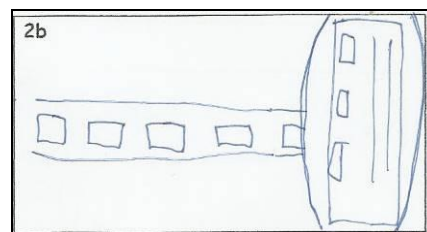
Figure 12
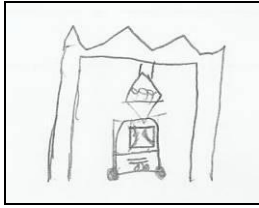
Figure 13
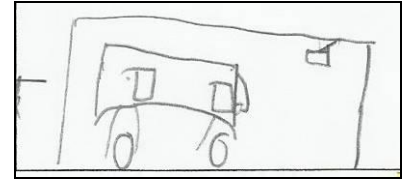
Figure 14
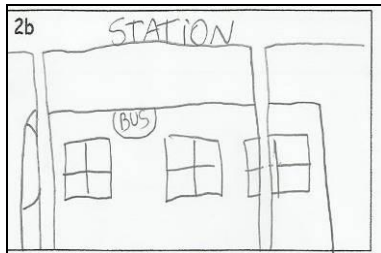
Figure 15

Even though sentence 2b has spatial meaning, and thus is easier to imagine, it was difficult for the participants to draw how they saw the bus exactly at one point, resulting in 40 visual paraphrases. There were 2 drawings not connected to the task, one was unclear and one field was left empty.

The participants recognized the temporal trajector was an event (*School starts*), whereas the temporal landmark was *at five o'clock*. Many of the participants saw five o'clock as salient, which resulted in many drawings containing a clock without the school (Figure 16-18). They pointed out this was a punctual event and often connected the time with the word school by an arrow (Figure 19). There were participants who tried to fit the building to the number five on the clock (Figure 20), one who tried to make a sort of an equals sign between time and the school (Figure 21) and one participant who drew 2 clocks in the field (Figure 22). There were 25 visual paraphrases, one drawing was not connected to the task and one field was left empty.
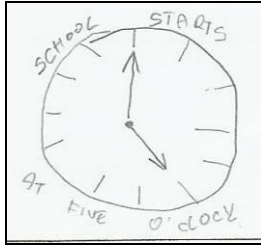
Figure 16
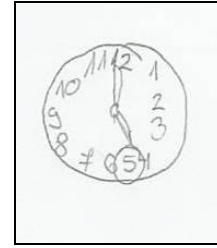
Figure 17
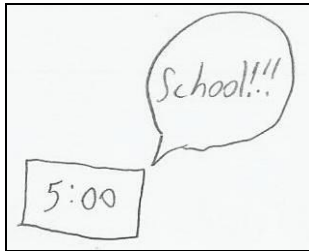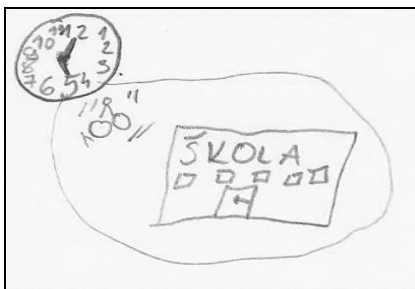

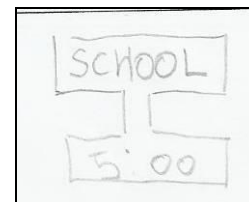**Figure 18**
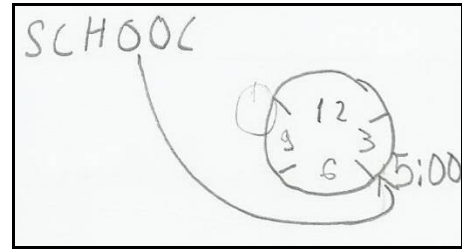
Figure 19
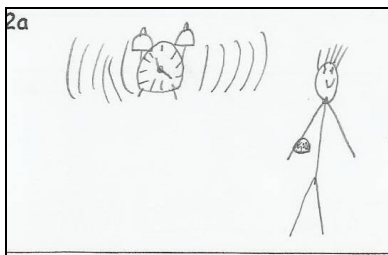

Figure 20

Figure 21

Figure 22

The third task was to describe the difference between the following sentences:

3a It is very hot **in** summer.

3b Mary is **in** the kitchen.

In physical space there are bounded spaces or containers expressed by the preposition *in*, as in sentence 3b. In sentence 3a the temporal *in* is used for a bounded time unit, summer, since seasons are perceived as containers. Seven informative answers were given in this task, three by the fifth graders and four by the sixth graders. The same pattern as in the previous two tasks is present. Elaboration is an omnipresent cognitive strategy used for explaining the difference between temporal and spatial prepositions. Space is closely connected to the senses of touch and sight, whereas time is repeatedly considered a domain that cannot be touched or seen. A fifth grader used a combination of transfer, inferencing and elaboration in their explanation. His/her explanation is as follows:

> 7) *3a zadatak ne označava da se nalazimo u ljeti (baš unutra) već da je vruće kada dođe ljeto. Mary je zaista u kuhinji za razliku od nas koji nismo u ljeti (doslovno).*

It is evident from the words in brackets that the participant used wider elaboration. As seen in the previous tasks, the participants connect the words *doslovno* (eng. 'literal' or 'literally') and *zaista* (eng. 'really' or 'for real') with the domain of space. This participant claims we are not literally in summer, and yet we are. Since the participant is missing a word to describe the abstract, they try to guess the right prepositional meaning based on previous linguistic knowledge and information available in the example.

A fifth grade participant claims that kitchen is not a "phenomenon as summer":

> 8) *3a objašnjava da je u godišnjem dobu ljeti jako vruće, a 3b da je Mary u kuhinji što nije nikakva pojava kao ljeto.*

Even though the explanation does not give much information on prepositional meanings, it draws the attention to the word choice. The word *pojava* (eng. 'phenomenon') is an abstract noun, which might be the reason why the participant chose it to explain the abstract domain.

According to the drawings, this was the most difficult task for the participants to draw. Even though there were 65 drawings in the fifth grade and 69 among the sixth graders, 43 are visual paraphrases of the spatial sentence and 64 are visual paraphrases of the temporal one.

The participants recognized *Mary* as the spatial trajector and *in the kitchen* as the spatial landmark. A few participants drew a three dimensional kitchen (Figure 23-25) and some made a

step further trying to indicate that the kitchen is actually a container (Figure 26 and 27). Two drawings were not connected to the task, one was not clear enough and four fields were left empty.
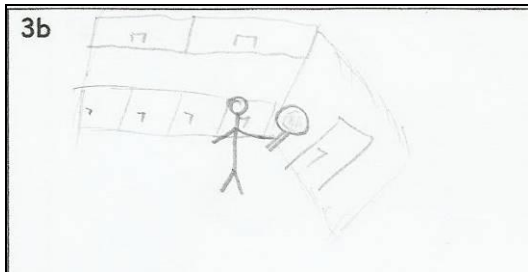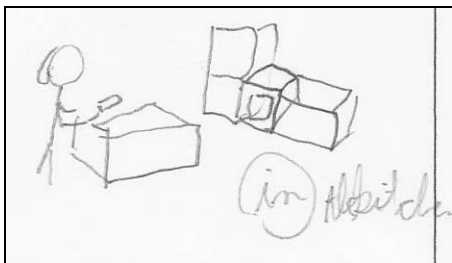

Figure 23

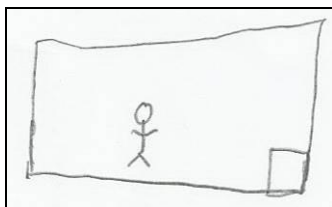

Figure 24

Figure 25

Figure 26

Figure 27

When it comes to the temporal meaning, the fifth graders provided only visual paraphrases, whereas two revealing drawings were found among the sixth graders' images. Due to a high number of paraphrases, it is difficult to tell whether they recognized what was the temporal trajector and what was the landmark. One participant drew a three dimensional summer (Figure 28), while the other one made it clear it was a bounded time unit or a container (Figure 29). There were 2 unclear drawings and two empty fields.
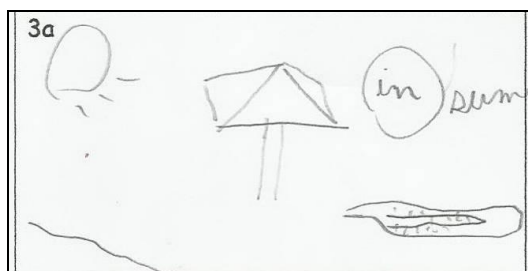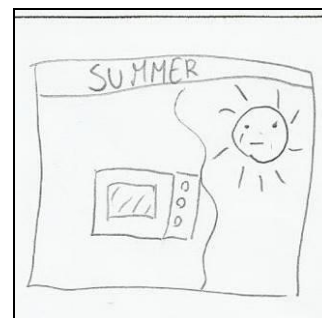
Figure 28

Figure 29

The fourth task was to describe the difference between the following two sentences:

4a How many months are there **between** May and August?

4b The table is **between** you and me.

The spatial *between* in sentence 4b indicates intermediate space between the two spatial landmarks, *you* and *me.* When used in a temporal sense, *between* indicates an interval separating two temporal landmarks, as in sentence 4a. In task 4 there were 9 informative answers, while the rest were paraphrases or explanations unconnected with the task. The fifth graders provided 4 written explanations, while 5 of them came from the sixth graders. Elaboration was again the most common meaning construal strategy used, but the experience of sight or touch was not prevalent. It occurred twice in the answers. However, the ability to change, move or move something played an important role in distinguishing the temporal *between* from the spatial one. Let us consider one of the answers given by one of our sixth graders:

> 9) *Slično je zbog 'between'. Različito je zato što mjesece ne možemo dotaknut, oni se sami mjenjaju, a stol možemo dotaknut.*

The sense of touch is closely related to the domain of space, as was the case in the previous tasks. Apart from the experience of touch, the participant noticed the months changed on their own, without human intervention.

The influence of History and Geography as school subjects is also noticeable in the participants' answers. One fifth grader shares their opinion on the topic in the following way:

10) *4a zadatak označava vremensku razliku a zadatak b da je nešto materijalno između nekog i nije u vremenskom smislu.*

The expression *vremenska razlika* (eng. 'time difference') is often found in the above mentioned school subjects. Inferencing was possible because the participants had some experiences in those fields and were able to use the acquired knowledge when explaining their own opinion. One sixth grader also used their previous knowledge of terms from History classes:

11) *Slično je zato je između May i August neko vremensko razdoblje a stol je između osoba i njega možemo pomaknuti a mjesece ne možemo.*

As can be seen, the term *vremensko razdoblje* (eng. 'time period') served very well to describe the temporal *between*. In addition to that, the participant noticed the table was movable, whereas months were not, as discussed earlier.

The fifth graders provided 63 drawings, the sixth graders 66 and there were no visual paraphrases either for the temporal or the spatial sentence. The participants recognized *table* as the spatial trajector occupying space between two landmarks, *you* and *me*, which can be clearly seen in every successful drawing (Figure 30). There were 8 empty fields, one drawing was not connected to the task and one was unclear.

The temporal relation was drawn on the calendar, which is a conventional way of showing this relation. However, people invented the calendar to measure time and make their organization easier. It works as a guide to us, but there is nothing in it that truly represents time as an abstract domain. The participants recognized this exercise as easy to draw because they had learnt this convention. The calendar served as a "perfect tool" to show the meaning of the temporal *between*. While the spatial *between* indicates intermediate space separating two landmarks, the temporal *between* indicates the time span separating two time points. There were four unclear drawings, two were not connected to the task and three fields were left empty. In the temporal sentence *May* and *August* were recognized as two time points being temporal landmarks, whereas *how many months* was the interval, or the temporal trajector, separating those time points. The drawings show cognitive motivation because they prove the participants recognized the idea of two end points in time and the amount of time separating them. Months between May and August were emphasized on the calendar, circled, underlined,

29

indicated by words, arrows, dots, lines or question marks (Figure 31-37). There were often gaps or calendar pages between May and August to indicate the time separating them (Figure 38). As can be seen in Figure 38, two calendar pages occupy space between May and August in the same way the table occupies space between two people. Moreover, the participant drew separate calendar pages, thus making them objects separating two objects. Images like this prove that the participants see the interval of two months as separating two time points, May and August. There are examples of May and August pinpointed on the timeline (Figure 39). Although both the calendar and the timeline can be used to show temporal relations, the timeline shows the past and the future at the same time, but on the opposite sides. Since the past is backwards and the future is forward, earlier events are placed before later events on the timeline. As can be seen in Figure 38, the participant located May before August on the timeline and indicated there was an interval of a few months separating May and August.
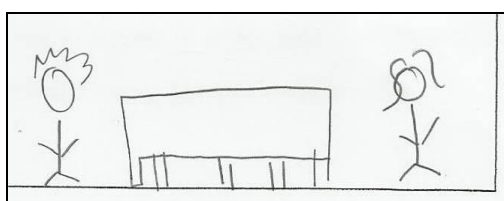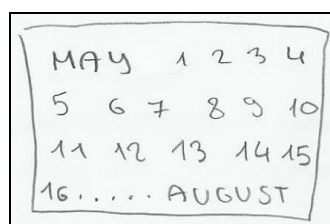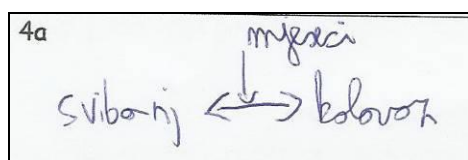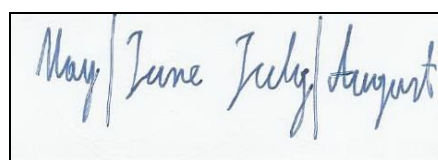

Figure 30

Figure 31

Figure 32

Figure 33
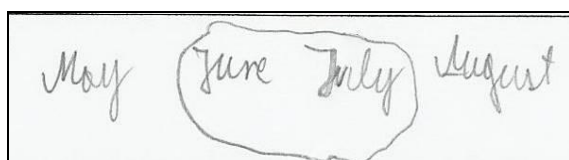
Figure 34
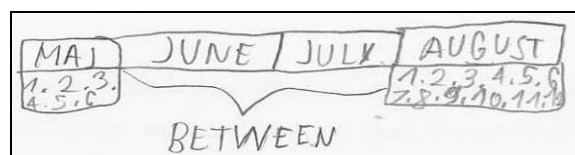
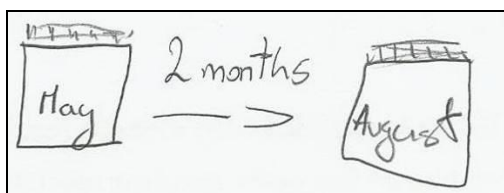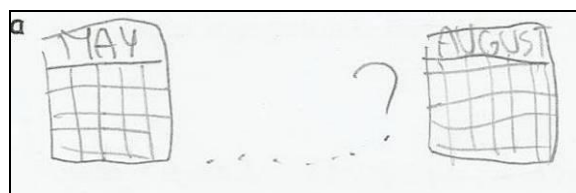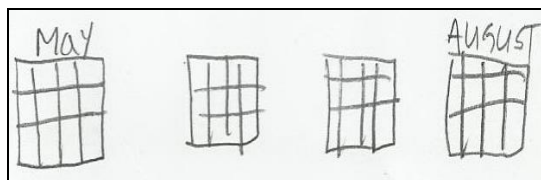**Figure 35**

Figure 36

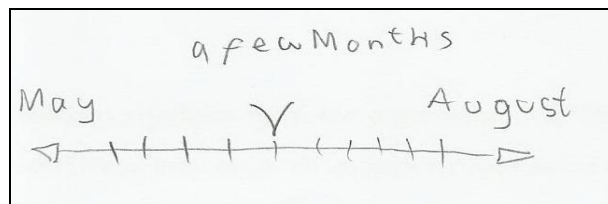**Figure 37**

Figure 38

Figure 39

The last task was to describe the difference between these two sentences:

5a The problems are **behind** me.

5b Who is sitting **behind** you?

In sentence 5b the spatial preposition *behind* is used to express spatial orientation. When *behind* is used in a temporal sense, as in 5a, it indicates that the trajector (*problems*) is placed before the landmark (*me*) on the timeline. In the fifth task there were 11 answers that provided some insight into meaning construal strategies. While the fifth graders provided 3 written explanations, the sixth graders came up with 8 of them. A kind of elaboration was present in every one of the informative answers, but some other cognitive strategies were also used in combination with elaboration. This task proved the importance of previous experience in a similar way the fourth task did. When discussing the fourth task, it was stressed that the participants' knowledge of History as a school subject influenced their word choice. One of the fifth graders explained how they saw the difference between time and space and their answer is given in the original form:

> 12) *Problem se ne nalazi iza mene već u dužem vremenskom razdoblju PROŠLOSTI. 5b označava mjesto tko se nalazi iza mene.*

31

Due to previous experience and knowledge acquired in History lessons, the participant noticed the problem was not physically behind them. Moreover, they used terms from History classes such as *vremensko razdoblje* (eng. 'time period') or *prošlost* (eng. 'past') to say the problem was to be found in the time before the speech time. Capital letters were used to put the emphasis on the word *prošlost* (eng. 'past'). The participant made a big step further in explaining the difference between time and space through transfer and elaboration.

Another fifth grader distinguished between time and space in following words:

13) *5a označava nešto što se dogodilo i više ne postoji, a 5b označava nešto što još uvjek postoji i iza nekog je.*

While the former participant used previous lexical knowledge to do the task in question, this participant constructed the meaning relying on previous grammatical knowledge. By using the Croatian past tense *dogodilo se* (eng. 'it happened'), they put the problems in the time before the speech time.

Out of a total of 8 sixth grade answers, 5 provided insight into meaning construal strategies activated to explain the difference between prepositions denoting time and space:

14) *5a To je metafora. Odnosi se na to da smo se riješili problema i da smo ih ostavili iza sebe. 5b Odnosi se na to da nekoga zanima tko sjedi iza njega.*

15) *Slični su po tome što imaju behind. Ako su problemi iza tebe, to nemožeš vidjeti, to je metafora, a sitting behind me je nešto što možemo vidjeti.*

16) *U reč. 5a behind označava metaforu (netko je rješio problem koji su ga mučili i sad je zadovoljan), a u reč. 5b označava tko sjedi iza subjekta.*

17) *Problemi ne mogu biti iza nas, to je metafora, a drugo je doslovno jer stvarno netko može sjediti iza nas.*

18) *5a To se misli da se nećemo kao okretati u prošlost. To je metafora. 5b To se misli pod normalno pitanje. To je stvarnost.*

The sixth graders were more eloquent than the fifth graders and the idea of metaphor is present only in their explanations. The notion of metaphor is mentioned in each of the given examples. Even young children at the age of five can understand and explain some metaphorical meanings that involve cross-domain comparisons such as SPACE to TIME. Due to their gradual cognitive development, they continue to acquire words with their literal or metaphorical meanings and use metaphors in everyday speech without even knowing that. They use the word noga (eng. 'leg') for both the part of the body and a chair leg, and yet they have no idea this is actually a metaphor. Although we can further discuss metaphor as a cognitive process, it is highly unlikely that kind of metaphor the participants thought of while explaining the task in question. The sixth graders were familiar with metaphor as a figure of speech that functions as shortened comparison and its meaning is not literal but allegorical. According to the elementary school program, differences in meanings are not introduced to students until the eighth grade. Moreover, they learn about the differences in language classes, while they learn about figures of speech in literature classes. Therefore, it is safe to assume the participants thought of metaphor as a figure of speech when doing the fifth task. However, the reason for recognizing the difference in meaning may be the fact that the sixth graders were entering the last Piaget's stage of cognitive development.

As was already noticed, the participants often connected the concrete domain of space with words such as *literally*, *for real*, *really* or *reality*. Furthermore, if problems were solved, the participants put them behind the speech time since they were familiar with the notion of timeline due to History lessons. If we imagined a timeline, the problems would be earlier on the timeline than the person's moment of speaking. The participants put the problems before *me* by saying *they solved their problems and put them behind*, *they solved the problem bothering them and they are satisfied* and *they will not look back in the past*.

Sixty two fifth graders and 63 sixth graders provided visual images for the task in question. There were not any visual paraphrases. The participants recognized the spatial trajector *who* as well as the spatial landmark *you*. Most of the participants drew the person sitting behind another person horizontally (Figure 40), yet there were some who gave more importance to verticality (Figure 41). Whichever coordinate they made use of, the participants showed they

perceived our canonical way of motion as facing forwards. There were 7 empty fields and 4 unclear drawings.

As for the temporal sentence, the participants recognized *problems* as the temporal trajector and *me* as the temporal landmark. Most of the participants put the problems behind a person
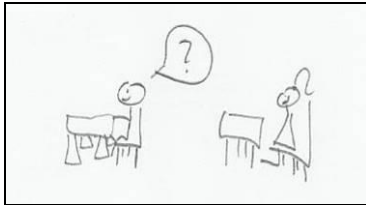
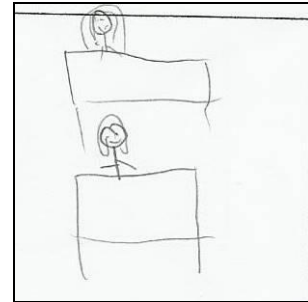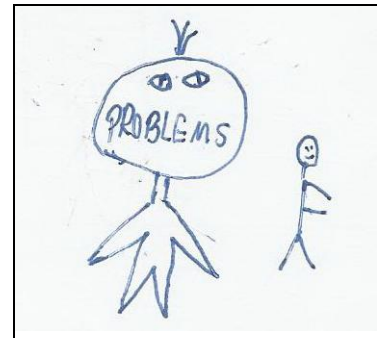

Figure 40

Figure 41
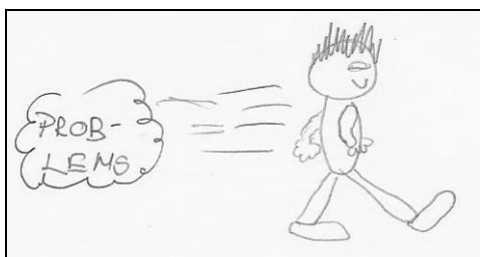

Figure 42

Figure 43

Figure 44

who was facing forward. Since they saw our canonical way of motion as moving forward, their drawings revealed that the participants perceived the past as being backwards, behind the person in question, whereas the future was forward (Figure 42-44). There were 11 unclear drawings, while 8 fields were left empty.

4.5. Conclusion

As evident from the results, two of three formulated hypotheses were confirmed. Both fifth graders and sixth graders used cognitive strategies to distinguish between spatial and temporal prepositions. When it comes to written explanations, the cognitive strategies used were elaboration, transfer, inferencing and translation. Many of the participants who provided informative answers separated time from space based on words that can or cannot go with a certain domain. It could be said they classified them, thus using the cognitive strategy of grouping. Since the participants were supposed to draw images to show how they see the sentences in their minds, they used the cognitive strategy of imagery. Most of their drawings were schematic.

The drawings proved to be more revealing than the written answers and there were less visual paraphrases than lexical ones. The participants' age might be the reason for these results. On one hand, they had been in school for 5 or 6 years, yet their abstract thinking was developing when the study was conducted. On the other hand, they had been in the world much longer and had had many opportunities to experience the extralinguistic reality. Their experience strongly influenced both their drawings and written explanations.

Although they were a year older, the sixth graders did not use a wider range of cognitive strategies to explain time. According to Piaget's concrete operations period, children at the age of 11 or 12 think logically about objects that are real and can be seen. That would put most of the participants at the same stage of cognitive development, explaining the results. However, there are some indications that the sixth graders were entering the last Piaget's phase. They were more eloquent than the fifth graders and the word metaphor was found only in their answers.

This study is only a small tribute to researching cognitive strategies among young learners of English. Nevertheless, it showed prepositions of time and space do not necessarily have to be learnt by heart, but their meanings can be understood and accessed through cognitive strategies. Experience and knowledge gained from the world have a strong influence on language, which was also proven by the study.

To make SLA easier and less painful for non-native speakers, a teacher should teach their learners to become aware of their LLS, to recognize them and put them to good use. Talking and learning about abstract domains such as time or any other abstract notions are excellent opportunities for practicing not only cognitive strategies but also any other strategies that would make SLA easier and more successful.

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6. Abstract in the Croatian language

Tema ovoga rada bile su kognitivne strategije u hrvatskih mlađih učenika engleskoga jezika. Naglasak je bio na kognitivnim strategijama koje učenici petih i šestih razreda primjenjuju u razlikovanju značenja vremenskih od mjesnih prijedloga. Smatralo se da će učenici obaju razreda koristiti kognitivne strategije kako bi objasnili razliku između vremenske i mjesne rečenice s istim prijedlogom, a dobiveni rezultati ukazuju na to. Druga je postavljena pretpostavka bila da će učenici šestih razreda koristiti širi spektar strategija, što nije potvrđeno. Konačno, smatralo se da će njihovi crteži otkriti više od pisanih odgovora, a dobiveni to rezultati potvrđuju.

Ključne riječi: kognitive strategije učenja jezika, prijedlozi, vrijeme, mjesto, mlađi učenici

Appendix I

Dob:

Razred:

Koliko godina učiš engleski:

Drugi jezici koje govoriš:

Pogledaj sljedeće rečenice u parovima 1-5. Obrati pozornost na podebljane riječi. Podebljane su riječi različitoga značenja, ali su ipak na neki način slične. Nacrtaj i objasni kako su slične.

1a School starts **on Monday.**	1b The book is **on the table.**

_____

_____

_____

_____

1a	1b

2a School starts **at five o'clock.**	2b The bus is **at the station.**

_____

_____

_____

_____

2a	2b

3a It is very hot **in summer.**	3b Mary is **in the kitchen.**

_____

_____

_____

_____

3a	3b

4a How many months are there **between May and August?**	4b The table is **between you and me.**

_____

_____

_____

_____

4a	4b

5a The problems are **behind me.**	5b Who is sitting **behind you?**

_____

_____

_____

_____

5a	5b