Interpretation of Czech Subject Pronouns in Croatian-Czech Simultaneous Bilinguals

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INTERPRETATION OF CZECH SUBJECT PRONOUNS IN CROATIAN-CZECH SIMULTANEOUS BILINGUALS

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ABSTRACT

This thesis reports the findings of an experimental study into the interpretation of subject pronouns in ambiguous intra-sentential forward anaphora in the Czech and Croatian language. Both Czech and Croatian are null subject languages, which means that they allow the subject pronoun to be either expressed (*overt*) or omitted (*null*). The expression or the omission of the subject pronoun is governed by syntactic and discourse-pragmatic conditions, which means that the speaker must know in which syntactic position the omission of the pronoun is possible, and in which contexts it is appropriate to omit or express the pronoun.

In the study we tested three groups of adults: monolingual speakers of Croatian and Czech, and Croatian-Czech simultaneous bilinguals. The task used to test their interpretation of anaphora was a picture selection task. The participants heard a sentence and were shown two pictures. They had to choose a picture which corresponded to the meaning of the sentence. The sentences were complex; the subordinate clause, which contained the null or the overt pronoun, followed the main clause. The main clause contained the subject and an object, expressed by nouns denoting animals. Nouns were matched in gender, number and animacy and were both possible antecedents for the pronoun. There were also some control sentences in the task, without pronouns, which were used as fillers and to check the participants' concentration level.

The results showed that the Croatian monolingual group differed from the Czech monolingual and the bilingual group in the null pronoun condition. The Croatian monolinguals predominantly chose the subject as the antecedent of the pronoun, while the Czech monolinguals and the bilinguals preferred the object. In the overt pronoun condition, all three groups chose the object as the antecedent of the pronoun. In the control condition they all chose the (only) appropriate, subject referent, showing that they understood the task.

Overall, the results suggest that the interpretation of null pronouns in Czech, and Croatian may be governed by different discourse-pragmatic conditions.

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1. INTRODUCTION

Over the past decade numerous researchers have investigated linguistic phenomena that require integration of different types of knowledge. One of these phenomena is the interpretation of pronominal subjects in null subject languages, which requires both syntactic and discourse-pragmatic knowledge. Null subject languages, such as Croatian, Italian, and Spanish, allow for the subject to be omitted (*null*) and expressed (*overt*). The omission or expression of the subject pronoun is not just at free will of the speaker but it is syntactically licensed and pragmatically determined. For mastering pronominal subjects in null subject languages one is required to know that null and overt subject pronouns prefer antecedents in different syntactic positions: the null subject pronoun usually refers to the subject, while the overt subject pronoun usually refers to a non-subject. The violation of this principle does not lead to ungrammatical sentences but to pragmatically inappropriate sentences.

So far, several studies looked at the interpretation of Croatian pronominal subjects in different populations. Kraš (2008b) tested monolingual adults, Stipeć (2012) people with Down syndrome, Kraš & Stipeć (2013) monolingual children, and Kraš, Stipeć & Rubčić (in press) Croatian-Italian bilingual children. To the best of our knowledge, there are no previous studies investigating the interpretation of subject pronouns in Czech, another null-subject language. The present study aims to examine this phenomenon in Czech, comparing in the interpretation of Czech subject pronouns in Croatian-Czech adult bilinguals and adult Czech monolinguals.

Studies testing bilinguals and their interpretation of subject pronouns in null subject languages have come to the conclusion that the interpretation of subject pronouns is a demanding task for bilinguals. For example, Serratrice (2007), whose participants were English-Italian bilingual children, found that the bilinguals tended to use Italian overt subject pronouns in pragmatically inappropriate contexts, i.e. in contexts in which null subject

pronouns are required. Such use of overt subject pronouns is explained by the influence of English, a non-null-subject language, on Italian. The use of Italian overt pronouns in contexts in which null pronouns would be more appropriate was also noticed in Sorace, Serratrice, Filiaci & Baldo (2009), a study in which bilingual children speaking two null-subject languages, Italian and Spanish, were tested. These results are consistent with those of Sorace & Filiaci (2006), where near-native speakers of Italian, whose first language (L1) was English were tested. On the other hand, Kraš (2008a), testing L1 Croatian near-native speakers of Italian, and Kraš et al. (in press), testing Croatian-Italian simultaneous bilinguals, found that the bilinguals used overt pronouns in appropriate contexts in Italian and Croatian respectively.

The studies that have detected inappropriate use of overt pronouns results have provided a basis for the Interface Hypothesis (IH), proposed by Sorace & Filiaci (2006). This hypothesis states that interface properties involving syntax and another cognitive domain, such as discourse-pragmatics, may not be fully acquirable, in contrast to narrow syntactic properties, which are fully acquirable. The IH makes predictions for three domains of bilingualism: bilingual L1 acquisition, adult second language (L2) acquisition and L1 attrition. With respect to simultaneous bilinguals, the IH predicts that interface structures might be acquired late in bilingual L1 acquisition, whereas purely syntactic structures are acquired early.

In this study, we are interested in the performance of simultaneous bilinguals at the syntax-discourse interface and in the interpretation of subject pronouns in Czech and Croatian. The main objective of the study is to determine if there are differences in the interpretation of pronominal subjects between Croatian-Czech simultaneous bilinguals and Czech monolinguals in Czech, and between Czech monolinguals and Croatian monolinguals in their native languages.

The structure of this thesis is as follows: in Section 2 we provide some more information on the linguistic phenomenon investigated in the study; Section 3 informs the reader of the previous relevant studies looking at the interpretation of subject pronouns in bilinguals; the present study and its elements (aims and predictions, participants, materials, procedure, and results) are presented in Section 4 and discussed in Section 5; the thesis ends with a conclusion in Section 6.

2. INTERPRETATION OF SUBJECT PRONOUNS IN NULL SUBJECT LANGUAGES

When observing different languages one can notice that they have similarities, but also characteristics that are specific for a particular language. According to the theory of Universal Grammar, proposed by Noam Chomsky (1981), language consists of a set of abstract *principles* that characterize core grammars of all natural languages and are invariable across them, and a set of *parameters*, which capture linguistic features that vary across languages and are specific for a particular language (Gass & Selinker, 2008, pp. 161). Parameters have dual values (positive and negative), and are set to a certain value in the process of language acquisition, the process called *parameter setting* (Gass & Selinker, 2008). The crucial parameter for this study is a *pro*-drop parameter.

The *pro*-drop parameter encompasses several properties, including the omission of the pronoun which functions as the sentence subject (Gass & Selinker, 2008). If the parameter is set to the positive value, the language allows the omission of the subject pronoun, and is called a null subject language or a *pro*-drop language. If the *pro*-drop parameter is set to the negative value, the language does not allow the omission of the subject pronoun and is called a non-null-subject language. In *pro*-drop languages the sentence remains grammatically correct and understandable despite the omission of the subject because the structure and inflectional paradigm of these languages uniquely distinguish all person/number combinations. Therefore, the morphological properties of a null subject can be recovered through verbal inflection (Tsimpli et al., 2004). However, in cases of non-null subject languages the omission is not possible, i.e. the subject needs to be expressed to construct a grammatically correct sentence, because non-null-subject languages usually have no such richness in the inflectional domain as null subject languages and the meaning of the subject cannot be recovered through verbal inflection (Tsimpli et al., 2004)

Examples from null and non-null-subject languages are given below. Sentences in Croatian and Czech are given in (1) and (2) respectively; in (1a) and (2a) the subject is dropped and in (1b) and (2) the subject is expressed. Sentences in (3) are in English; in (3a) the subject is null, and in (3b) the subject is overt; the sentence in (3a) is not grammatical.

(1) a. Sretna sam.

happy am.

b. Ja sam sretna

I am happy

'I am happy.'

(2) a. Jsem šťasná.

am happy

b. Ja jsem šťasná.

I am happy

'I am happy.'

(3) a. *Am happy.

b. I am happy.

One of the central concerns of the "principles and parameters" model has been to determine positions in which overt and phonologically empty manifestations or subject pronouns can occur (Lidseth, 1998). The two options of expressing or omitting subject pronouns are not a random choice of a speaker. These options serve different functions in discourse. The use of the overt pronoun is generally reserved for contrast, emphasis or a

change in discourse topic (Lidseth, 1998). If the discourse topic remains the same, the null subject pronoun is used; on the other hand, if the discourse topic is to be changed or new information introduced, the overt subject pronoun is used. This condition is expressed by Sorace (2000) by means of the Topic Shift feature. Topic Shift can be set to either a positive or a negative value, i.e. [+/- TopicShift]. It is set to the positive value in the case of overt subject pronouns (i.e. [+TopicShift]), and to the negative value in the case of null subject pronouns (i.e. [-TopicShift]). This is illustrated in (4a) and (4b) for Croatian and (5a) and (5b) for Czech.

(4) a. Ivana je sretna. *pro* Dobila je poklon.

Ivana is happy *pro* received is gift

'Ivana is happy. She received a gift. '

b. Ivana je sretna. Ona je dobila poklon.

Ivana is happy she is received gift

'Ivana is happy. She received a gift. '

(5) a. Ivana je šťasná. *pro* Dostala dárek.

Ivana is happy *pro* received gift

'Ivana is happy. She received a gift. '

b. Ivana je šťasná. Ona dostala dárek.

Ivana is happy she received gift

'Ivana is happy. She received a gift. '

In sentences (4a) and (5a) the null pronoun refers to the subject of the first sentence. The meaning of the sentences is that Ivana is happy because she herself received a gift. In

sentences (4b) and (5b) the overt pronoun refers to another referent not mentioned in the text. So the meaning of the sentences is that Ivana is happy because someone else received the gift.

Focusing on intrasentential two-referent contexts, Carminati (2002) has argued that null pronouns are typically assigned to the subject antecedent, whereas overt pronouns are typically assigned to a non-subject antecedent. This is called the Position of Antecedent Strategy (PAS). The PAS has initially been proposed for Italian but Kraš (2008b) has shown that it also applies to Croatian.[1]The PAS is illustrated in (6) in Croatian. The subordinate clause in (6a) contains a null pronoun, whereas in (6b) it contains an overt pronoun.

(6) a. Marta je nazvala Vanesu dok je *pro* bila kod kuće.
Marta is called Vanesa while is *pro* was at home.
'Marta called Vanesa while she was at home.'

b. Marta je nazvala Vanesu dok je ona bila kod kuće.
Marta is called Vanesa while is she was at home.
'Marta called Vanesa while she was at home.'

The sentences in (6) are ambiguous because the two NP referents in the main clause (Marta and Vanesa) are of the same gender (female) and are both possible antecedents of the null and the overt pronoun. According to the PAS, the null pronoun in (6a) is more likely to refer to the matrix subject (Marta) than to the matrix object (Vanesa), whereas the overt pronoun in (6b) prefers the object of the main clause (Vanesa) rather than the subject (Marta).

In the example above, the pronoun is used after the antecedent and this type of sentence is called *forward anaphora* or simply *anaphora*. In cases where the pronoun is encountered

[1] In addition to Carminati (2002) the following studies have provided psycholinguistic evidence for the PAS in Italian: Belleti, Benati & Sorace (2007); Serratrice (2007); Sorace & Filiaci (2006); Sorace et al. (2009); Tsimpli, Sorace, Heycock & Filiaci (2004).

prior to the mention of its antecedents, the sentence is called *backward anaphora* or *cataphora* (Sorace & Filiaci, 2006). The PAS has been shown to hold for both cases, in both Italian and Croatian. It is important to stress that violations of the PAS do not lead to an ungrammatical or incorrect sentence, but to an inappropriate sentence, which in turn may lead to misunderstanding between interlocutors. For this reason, Sorace & Filiaci (2006) have placed the PAS at the interface between syntax and pragmatics, and not within narrow syntax. One of the goals of this study is to check if the PAS applies to Czech as it does to Italian and Croatian.

3. PREVIOUS STUDIES

As mentioned earlier, I am not aware of any studies investigating the interpretation of null and overt subject pronouns in the Czech language. Several studies, however, have investigated this phenomenon in Croatian, Italian, Spanish, Greek, Japanese and some other languages. All of these studies have provided valuable insights into this phenomenon and have inspired me for expanding this line of research to Czech. In this section, I will review the studies into the interpretation of Italian and Croatian null and overt subject pronouns by monolingual and bilingual native speakers.

Starting with Croatian, Kraš (2008b) tested adult native speakers of Croatian, by means of a task, which was a translation to Croatian of the picture selection task in Italian, used in Kraš (2008a)[2]. Participants had to read the sentence and choose one picture in a set of three that corresponded to the meaning of the sentence. The sentences were all complex (consisting of a main and a subordinate clause) and ambiguous (there was more than one possible interpretation of the pronoun). The two ambiguous conditions with forward anaphora are illustrated in (7) and the two ambiguous conditions with backward anaphora in (8). In both cases, the null pronoun is present in sentence (a) and the overt pronoun in sentence (b).

(7) a. Svjedok pokazuje optuženog dok *pro* ulazi u sudnicu
witness points accused while *pro* enters in courtroom
'The witness points to the accused as he enters the courtroom.'

b. Svjedok pokazuje optuženog dok on ulazi u sudnicu.
witness points accused while he enters in courtroom
'The witness points to the accused as he enters the courtroom.'

[2] Kraš (2008a) used a modified version of the task from Tsimpli et al. (2004).

(8) a. Dok *pro* ulazi u sudnicu, svjedok pokazuje optuženog.

while *pro* enters in courtroom, witness points accused

'As he enters the courtroom, the witness points to the accused.'

b. Dok on ulazi u sudnicu, svjedok pokazuje optuženog.

while he enters in courtroom, witness points accused

'As he enters the courtroom. The witness points to the accused.'

Kraš (2008b) showed that the interpretation of null and overt subject pronouns in Croatian is similar to the interpretation of null and overt subject pronouns in Italian. In both forward and backward anaphora the participants interpreted the null pronoun as coreferential with the matrix subject. In forward anaphora participants mostly opted for the matrix object as the antecedent of the overt pronoun, whereas in backward anaphora they chose both the matrix object and the extralinguistic referent. This was consistent with the results of Kraš (2008a), for Italian.

Kraš & Stipeć (2013b) investigated the interpretation of Croatian null and overt subject pronouns in forward anaphora by Croatian monolingual children. The study employed a picture selection task which consisted of 16 experimental and 16 control sentences. The task was first used in Stipeć (2012) and Kraš & Stipeć (2013a). Examples of experimental items are given in (9), (9a) illustrating a sentence with a null subject pronoun and (9b) a sentence with an overt subject pronoun.

(9) a. Puž je pozdravio mrava dok je *pro* čitao novine.

snail is greeted ant while is *pro* reading newspaper

'The snail greeted the ant while it was reading the newspaper.'

b. Puž je pozdravio mrava dok je on čitao novine.

snail is greeted ant while is he reading newspapaer

'The snail greeted the ant while it was reading the newspaper.'

Four groups of participants were included in the study: one group of monolingual adults and six groups of children, aged 7, 8, 9, 10, 11, and 12. The results showed that the children interpreted null subject pronouns in an adult-like manner, even the 7-year-olds. All groups of children and the adults interpreted the null pronoun as coreferential with either the subject or the object However, there were some differences between the adults and children in the interpretation of overt pronouns: the adults opted for the matrix object as the antecedent more strongly than the children, even the 12-year-olds.

Kraš et al. (in press) tested Croatian monolinguals and Croatian-Italian simultaneous bilinguals by means of the same task as Kraš & Stipeć (2013b). There were three groups of participants in the study: a group of 11-year-old Croatian monolinguals, a group of 11-year-old Croatian-Italian bilinguals and a group of adult Croatian monolinguals. The results revealed no statistical difference between the two groups of children in both the null and the overt pronoun condition. However, both groups differed from the adults in the latter condition. The children selected the subject antecedent for the overt pronoun more often than the adults, who had a preference for the object. Since there was no significant difference between the monolinguals and the bilinguals, no delay in the bilinguals' acquisition of the discourse-pragmatic conditions for the subject pronoun interpretation in Croatian was observed.

I will now present the results of the Italian studies. Serratrice (2007) used a picture selection task from Tsimpli et al (2004) to investigate the interpretation of forward and backward anaphora in English-Italian bilingual children, age-matched Italian monolingual

children and Italian monolingual adults. The participants heard sentences, which were read to them aloud, and for each sentence, they were shown three pictures. Two pictures from the set showed two gender-matched characters, while the third picture contained an additional gender-matched character. The participants' task was to point to the picture that matched the sentence in meaning. The results showed that in the case of the null subject pronoun, there were no significant differences between the three groups; all groups selected the subject as the preferred antecedent of the null pronoun in both forward and backward anaphora. However, there were some differences between groups concerning overt subject pronouns. In forward anaphora, the bilingual children opted for the subject antecedent more often than the monolingual children and monolingual adults. In backward anaphora, there was a significant difference between the adults and the two groups of children. The adults chose the object antecedent more often than the two groups of children.

Sorace et al. (2009) investigated how English-Italian bilingual children interpret null and overt subject prononus in the [+/- TopicShift] conditions. Other participants in the study were monolingual Italian and English children matched in age to the bilinguals, as well as monolingual Italian and English adults. The materials in the study were both in Italian and English. Bilinguals were tested in the two languages on different occasions. The study consisted of an acceptability judgement task that followed a story based on short animations. Each item in the task was accompanied by a short video clip showing four characters (Miney and Mickey Mouse, Donald Duck and Daisy). The children heard the sentences in the video and they had to decide which one of the two characters spoke ″better″ or more correct Italian/English. They were told that the characters were just learning the language. The examples of the items in Italian illustrating the [+TS] and [-TS] conditions are given in (10a) and (10b) respectively.

(10) a. (Minnie and Daisy in the foreground; Mickey and Donald in the background)

Minnie: Daisy è caduta!

'Daisy has fallen! '

Donald: Minnie ha detto che è caduta!

'Minnie has said that (she) has fallen.'

Mickey: Minnie ha detto che lei è caduta!

'Minnie has said that she has fallen.'

b. (Minnie and Daisy in the foreground; Mickey and Donald in the background)

Minnie: Sono caduta!

'I have fallen!'

Donald: Minnie ha detto che è caduta!

'Minnie has said that (she) has fallen.'

Mickey: Minnie ha detto che lei è caduta!

'Minnie has said that she has fallen.'

In (10a), one character performed the action and the other character commented on the action but was not involved in it. In this condition, the sentence uttered by Mickey is more appropriate because the antecedent of the overt pronoun is typically not the subject. In (10b), the character performed and commeneted the action. Here, the appropriate sentence is the one by Donald because the antecedent of the null pronoun is the subject (Minnie).

In Italian, the bilingual children chose inappropriate overt pronouns more often than the monolingual children in the [-TS] condition. There was also a difference between Italian monolingual children and the adults in the same condition, as the children used more overt subject pronouns than the adults. In the [+TS] condition the bilingual children accepted more

null subject pronouns than the monolingual children. The bilingual children thus showed difficulties with the interpretation of both null and overt subject pronouns.

In sum, the results of the studies presented above suggest that in the null pronoun condition in both Italian and Croatian all participants selected more target-like antecedents than in the overt pronoun condition, even though there some non-target-like preferences were observed. In the overt pronoun condition, monolingual and bilingual children have a tendency to choose the inappropriate subject antecedent more often than the adults. This suggests that discourse-pragmatic conditions for the use of overt subject pronouns are acquired later than those for the use of null subject pronouns in simultaneous bilinguals as well as monolingual children.

4. THE STUDY

4.1. Aims and predictions

The first aim of this study is to determine whether Croatian-Czech simultaneous bilinguals interpret Czech null and overt subject pronouns in forward anaphora in the same way as monolingual speakers of Czech. The second aim is to determine whether monolingual speakers of Czech and monolingual speakers of Croatian interpret null and overt subject pronouns in forward anaphora in their native language in the same way. In other words, this study addresses the following research questions:

1. Do Czech-Croatian simultaneous bilinguals interpret Czech null and overt subject pronouns in forward anaphora in the same way as monolingual speakers of Czech?

2. Do monolingual speakers of Czech and monolingual speakers of Croatian interpret null and overt subject pronouns in forward anaphora in their native language in the same way?

Since there are no previous studies concerning Czech-Croatian bilinguals or Czech monolinguals, my predictions are based on the previous studies into Italian (Kraš, 2008a, Serratrice, 2007, Sorace et al., 2009) and Croatian (Kraš 2008b, Kraš & Stipeć 2013b, Kraš et al., in press) which tested monolingual and bilingual native speakers in this domain. Recal that Kraš (2008b) yielded results showing that Croatian monolinguals interpret null and overt subject pronouns in the same way as Italian monolinguals. Kraš & Stipeć (2013b) and Kraš et al. (in press), showed that Croatian monolinguals and age-matched Croatian-Italian simultaneous bilinguals interpreted Croatian null and overt subject prononuns in the same way, which was consistent with the PAS. On the other hand, Serratrice (2007) and Sorace et al. (2009) showed that English-Italian bilinguals had some difficulties interpreting overt

subject pronouns in Italian, which may be due to the fact that the other language of the bilinguals was a non-null-subject language.

The above findings seem to suggest that there is no difference in the interpretation of null and overt subject pronouns in Croatian and Italian. Because Czech is another null subject language, I predict that there will also be no difference in the interpretation of Czech and Croatian null and overt subject pronouns in forward anaphora, i.e. I predict that Czech and Croatian monolinguals will interpret null and overt subject pronouns in forward anahora in a similar way. Based on the assumption that Croatian and Czech do not differ in this domain and on the findings of Kraš et al. (in press), I predict that Croatian-Czech simultaneous bilingulas will interpret Czech null and overt subject pronouns in the same way as Czech monolinguals.

4.2. Participants

The data for this study were collected from 48 participants, who were divided into three groups, each containing 16 participants. All participants were adults. The first group consisted of Croatian-Czech simultaneous bilinguals, the second of Czech monolinguals and the third group of Croatian monolinguals.

Croatian-Czech simultaneous bilinguals were recruited in Zagreb and Daruvar. Those from Zagreb (*n*=10) were all active members of *Česka beseda*[3] in Zagreb, who used the Czech language while participating in the association's cultural and educational activities. Participants from Daruvar (*n*=6) were teachers at the Czech-medium Jana Amosa Komenskog Elemetary School, in which all the classes were taught in Czech. Both the participants from Zagreb and Daruvar preferred to use Czech over Croatian for their mutual communication. However, if a non-Czech speaking person was involved in communication, they would switch

[3] Česka beseda is an association that gathers memebers of the Czech national minority in Croatia to nurture the Czech language and culture

to Croatian. The bilinguals' level of general proficiency in Czech was assessed using a C-test[4], designed specifically for the purposes of this study. The bilinguals' general proficiency in Croatian was assessed impressionistically in oral interviews. The bilingual group consists of 12 female and 4 male participants.

The two monolingual groups, served as control groups for the bilingual group. The participants in these groups were matched in age with the bilinguals.

The native speakers of Czech were recruited in Prague (the Czech Republic). Data were collected from 10 female and 6 male participants. Most of the participants in this group did not speak any foreign language (*n*=10). Those who did, mainly spoke English or German.

The native speakers of Croatian were all recruited in Križevci. There were 11 female and 5 male participants. Most of the participants (*n*=10) spoke at least one foreign language, mainly English or German.

More information on the participants is given in Table 1.

Participant group	Age at the time of testing		Proficiency in Czech	
	Range	Mean	C-test score (%)	Mean
Bilinguals	33-79	58	66-95	84
Czech monolinguals	31-75	56	88-98	94
Croatian monolinguals	30-75	57	N/A	N/A

Table 1. Information on the participants

[4] The C-test is an instrument used to measure general language proficiency. It typically includes five short texts. In each text the first sentence is complete, i.e. there are no gaps. It serves as an introduction to the text. In the other sentences, the second half of every second word is missing. In the test with five texts there is typically a total of 100 gaps, 20 gaps per each text.

4.3. Materials and procedure

Three types of materials were used in the experiment: a questionnaire, a C-test and a picture selection task. The questionnaire consisted of personal questions and of questions about the use of the Czech language for the bilinguals, and questions concerneding their knowledge of foreign languages for the monolinguals. The purpose of the questionnaire was to gain relevant information about potential participants, so as to enable the selection of suitable participants. Bilingual participants needed to be adult and exposed to both languages from birth. The monolinguals were matched in age and education level to the bilinguals. The C-test included five short texts of different styles and they were presented from the easiest to the most difficult. The purpose of the test was to assess the participants' level of proficiency in the Czech language. The test was designed specifically for the purposes of this study.

The task used to test the participants' interpretation of null and overt subject pronouns in Czech was a picture selection task designed by Stipeć (2012) to test comprehension skills in the domain of anaphora resolution in children with Down syndrome and used in several other studies (Kraš & Stipeć, 2013b, Kraš et al., in press, Rubčić, 2014). In the present study the bilinguals and the Czech monolinguals were tested in the Czech translation of the task, while the Croatian monolinguals were administered the original, Croatian version of the task.

The task consisted of 32 test items: 16 experimental and 16 control. Experimental sentences were ambiguous sentences with forward anaphora, while control sentences were unambiguous. Control sentences were used as fillers and to check the participants' concentration level. Both sets of sentences consisted of a main and a subordinate clause. The subordinate clause followed the main clause. Control and experimental sentences differed in the structure of the subordinate clause. The subordinate clause in experimental sentences contained an ambiguous null or overt subject pronoun, and the main clause in both control and experimental sentences contained two referents. The pronoun could refer to both referents

(subject or object) in the main sentence. The subordinate clause in control sentences did not contain any pronouns; rather, it denoted atmospheric conditions. Referents in both control and experimental sentences were nouns denoting animals. The pronoun and the nouns in experimental sentences were matched in gender, number and animacy. All the verbs used in the main clauses were transitive. An example of experimental sentences with null and overt subject pronouns is given in (11a) and (11b) respectively for Croatian, and in (12a) and (12b) for Czech.

(11) a. Lav je ogrebao tigra dok je žvakao plijen.

lion is scratched tiger while is chewed catch

'The lion scratched the tiger while (it) was chewing on the catch'

b. Lav je ogrebao tigra dok je on žvakao plijen.

lion is scratched tiger while is he chewed catch

'The lion scratched the tiger while it was chewing on the catch.'

(12) a. Lev škrábnul tygra, když žvýkal úlovek.

lion scratched tiger when chewed catch

'The lion scratched the tiger when (it) was chewing the catch.'

b. Lev škrábnul tygra, když on žvýkal úlovek

lion scratched tiger when it chewed catch

'The lion scratched the tiger when it was chewing the catch.'

Control sentences are illustrated in (13) for Croatian and (14) for Czech.

(13) Psić je slijedio tvora dok je bio pun mjesec.

puppy is followed skunk when it was full moon.

'The puppy followed the skunk when it was full moon.'

(14) Pejsek sledoval skunka, když byl úplněk.

puppy followed skunk when was full moon

'The puppy followed the skunk when it was full moon.'

Not all participants were presented with the same sentences; two presentation lists were created: List A and List B. Eight participants in each group were given List A and eight participants were given List B. The difference between the two lists was in the type of the subject pronoun used in the subordinate clause of each of the experimental sentences. More precisely, the sentence that contained a null subject pronoun in List A, contained an overt subject pronoun in List B, and vice versa. Control sentences were the same in both lists. The sentences were presented in a fixed random order, which was the same in both lists.

Each sentence was accompanied by two pictures. Examples of pictures for both experimental and control sentences are given in Figure 1 and Figure 2 respectively. Figure 1 corresponds to the sentences in (11) and (12) and Figure 2 to the sentences in (13) and (14). In the case of experimental sentences one picture depicted the subject of the main clause as the performer of the action in the subordinate clause, while the other picture depicted the object of the main clause as the performer of the action in this clause. In the control sentences the pictures depicted the action of the main clause. The position of the pictures was systematically varied in such a way to ensure that there is the same number of pictures representing the expected choice (in the case of experimental sentences) or the correct choice (in the case of control sentences) on both the right and the left position.

Figure 1. Example of a picture set for experimental sentences

Figure 2. Example of a picture set for control sentences

The procedure of testing the three groups differed somewhat from group to group. All three groups were first given the questionnaire. This part lasted 10 minutes. After the questionnaire, the C-test was administered to the bilingual and the Czech monolingual group. The participants were given 25 minutes to complete the test. The C-test was not administered to the Croatian monolingual group. Only the participants who scored above 65% in the test took part in the main task. On the basis of this, three potential bilingual participants were excluded. The picture selection task was administered last. This task was conducted individually in all three groups. For each sentence the appropriate set of pictures was shown

to the participant and the participant was given a few moments to observe the pictures. Then the sentence was pronounced by the experimenter and the participant had to point to the picture which corresponded to the meaning of the sentence. There was no time limit for the response. The approximate duration of the task was 10 minutes per participant. The bilingual participants from Zagreb were tested on the premises of *Česka beseda Zagreb* and the bilingual participants from Daruvar were tested on the premises of Jan Amos Komensky Daruvar Elementary School. The Croatian monolinguals were tested on different locations in Križevci and the Czech monolinguals on different locations in Prague.

4.4. Results

In this section I present the results of the experiment, first the results pertaining to the two experimental conditions (null and overt) and then the results pertaining to the control condition. I examine the distribution of the two possible antecedent choices (subject and object) in the three groups of participants. The number of subject/object responses was counted for each participant in each condition (null, overt and control) and then the proportion of chosen interpretations in each condition was calculated, for each participant and each group.

The distribution of responses in the null pronoun condition is presented in Figure 3. It can be seen that the bilingual and the Czech monolingual group predominately chose the matrix object while the Croatian monolingual group predominately chose the matrix subject as the antecedent of the null pronoun. The bilinguals and the Czech monolinguals interpreted the null pronoun condition in the similar way, while the Croatian and Czech monolinguals differed in their responses, which suggests that only one of the predictions was met. More precisely, I predicted that there will be no difference in the interpretation of null and overt

subject pronouns between the Croatian-Czech simultaneous bilinguals and the Czech monolinguals and between the Croatian monolinguals and the Czech monolinguals.

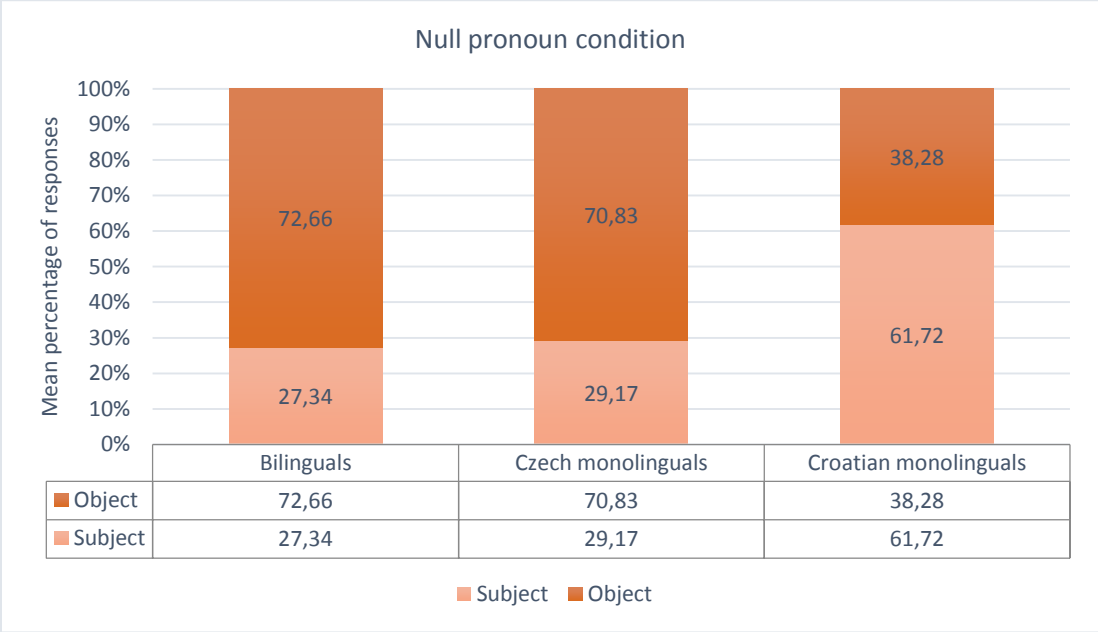

Figure 3. Mean responses in the null pronoun condition

Figure 4 shows the distribution of responses in the overt pronoun condition. As can be seen, all three participant groups showed a preference for the matrix object as the antecedent of the pronoun in this condition. The participants rarely opted for the matrix subject, especially the bilingual ones. The distribution of responses is consistent with both our predictions, i.e. that the bilinguals will not differ from the monolinguals in the interpretation of overt subject pronouns, and that neither will the two groups of monolinguals.

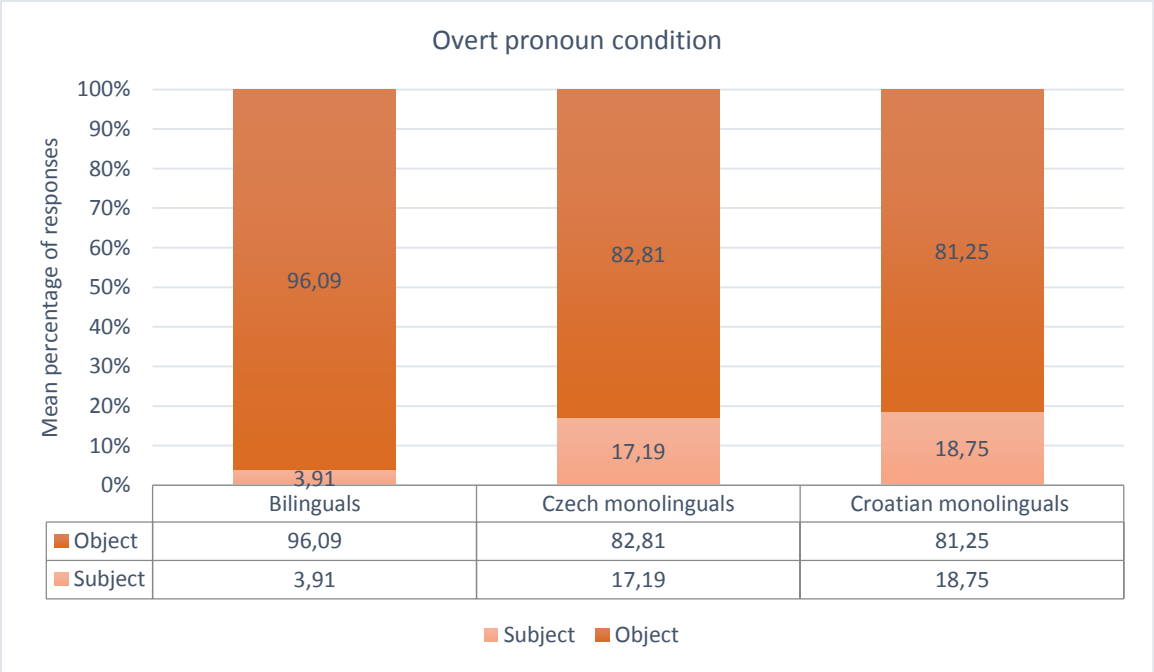

Figure 4. Mean responses in the overt pronoun condition

We used logistic regression modeling to assess the significance of the trends presented above. Two regression analyses were performed using the statistical software R, one analysis compared the bilingual and the Czech monolingual group, and the other the two monolingual groups, Czech and Croatian. In both analyses the Czech monolingual group was used as a baseline. The outcome variable was the choice of antecedent (subject, object). Predictor variables were participant group and pronoun type, and their interaction was examined as well.

Table 2 lists the model estimates for the model comparing the bilingual group with the Czech monolingual group. The Intercept line contains values pertaining to the aggregate default values of the predictor variables, in our case the bilinguals' subject selection in the null pronoun condition. Values <1 indicate that the chance of the subject being selected is decreased, while those >1 indicate that the chance of the subject selection is increased; asterisks signal predictors that contribute significantly to the subject selection. What the results show is that the two groups (bilingual and Czech monolingual) did not differ in their

overall selection of the subject as the antecedent of the pronoun. However, there is a significant interaction between the group and the pronoun type indicating that the bilinguals selected the matrix subject significantly less often than the Czech monolinguals in the overt pronoun condition. Overall, the subject was selected significantly less often than the object in this condition.

Predictor variable	Estimate	SE	Z	Pr (> |z|)
Intercept	-0.93827	0.19659	-4.773	0.00000182***
Group (bilinguals)	-0.03898	0.27923	-0.140	0.88897
Pronoun type (overt)	-0.63413	0.30584	-2.073	0.03813 *
Group(bilinguals) x Pronoun type(overt)	-1.59137	0.58383	-2.726	0.00642 **

Table 2. Logistic regression model comparing the bilingual group with the Czech monolingual group in the experimental conditions

Table 3 presents the model estimates for the model comparing the Czech monolingual group with the Croatian monolingual group. The results show that the two groups do statistically differ in the overall selection of the subject as the antecedent of the pronoun, i.e. the Croatian monolingual group chose the subject significantly more often than the Czech monolingual group. However, the significant interaction between the group and the pronoun type indicates that the Croatian monolingual group selected the subject as the antecedent of the overt pronoun significantly less frequently than the Czech monolingual group, which does not seem to be suggested by the mean responses in the two groups in the overt pronoun condition (see Figure 4). The discrepancy between the results of the statistical analysis and the

mean percentages of group responses may derive from individual differences within groups. The results also show that, overall, the subject was chosen as the antecedent of the overt pronoun significantly less often than the object.

Predictor variable	Estimate	SE	Z	Pr (>|z|)
Intercept	-0.9383	0.1966	-4.773	0.00000182***
Group (Croatian)	1.4159	0.2678	5.287	0.000000124***
Pronoun type(overt)	-0.6341	0.3058	-2.073	0.0381 *
Group (Croatian): Pronoun type (overt)	-1.3098	0.4218	-3.106	0.0019 **

Table 3. Logistic regression model comparing Czech monolingual group with the Croatian monolingual group in the experimental conditions

Finally, the distribution of responses in the control condition is presented in Figure 5. It is evident that the participants in all three groups almost exclusively selected the subject interpretation which is the only appropriate response in this condition. This suggests that the participants had no difficulty understanding the task.

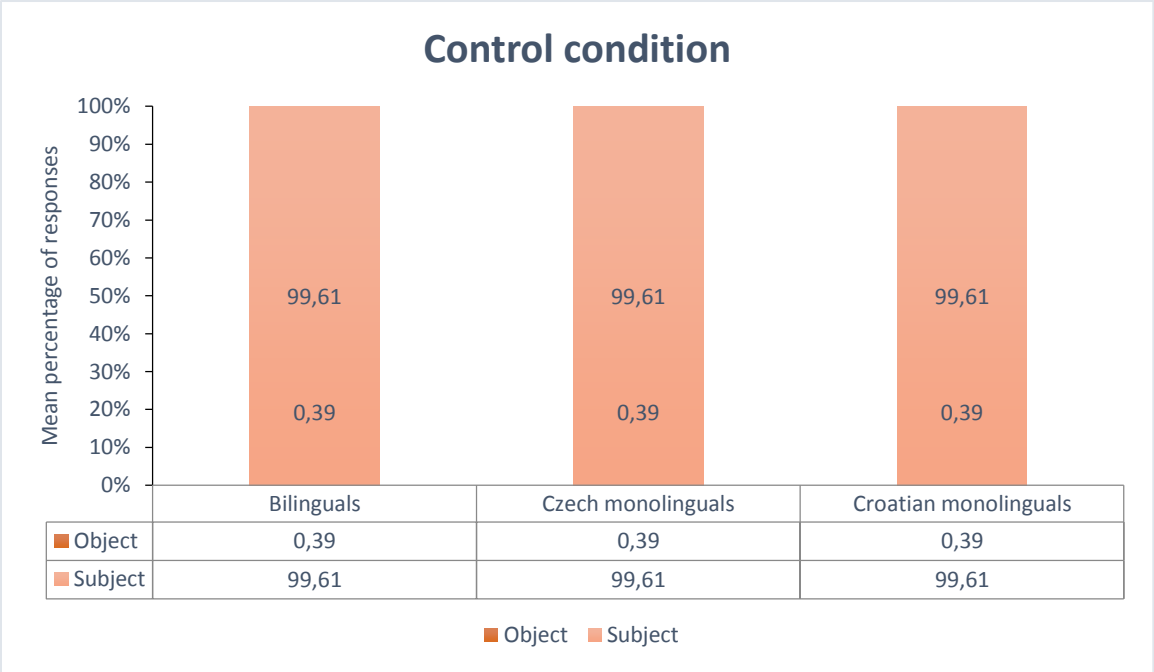

Figure 5. Mean responses in the control condition

Statistical analysis used to analyse the data in the control condition was logistic regression modeling as in the two experimental conditions. Two regression analyses were performed, in both of which the Czech monolingual group acted as a baseline, one comparing the bilingual and the Czech monolingual group, and the other comparing the Czech and the Croatian monolingual group. Tables 4 and 5 present the estimates of the two models respectively. The statistical analyses showed that there were no statistically significant differences between the compared groups.

Predictor variable	Estimate	SE	Z	Pr (>|z|)
Intercept	5.541	1.002	5.53	0.0000000319 ***
Group (bilingual)	0.0000000000000001287	1.417	0.00	1

Table 4. Logistic regression model comparing the bilingual group with the Czech monolingual group in the control condition

Predictor variable	Estimate	SE	Z	Pr (>|z|)
Intercept	5.541	1.002	5.53	0.0000000319***
Group (Croatian)	0.0000000000000001287	1.417	0.00	1

Table 5. Logistic regression model comparing the Czech monolingual group with the Croatian monolingual group in the control condition

In the next section we will discuss the findings in some more detail.

5. DISCUSSION

The aims of the present study were to determine whether Croatian-Czech simultaneous bilinguals interpret Czech null and overt subject pronouns in forward anaphora in the same way as monolingual native speakers of Czech, and to determine whether the native speakers of Czech and the native speakers of Croatian interpret null and overt subject pronouns in forward anaphora in their native language in the same way. My predictions were that there would be no differences in the interpretation of both null and overt subject pronouns between the bilinguals and the Czech monolinguals, and that there would be no differences between the two monolingual groups. These predictions were based on the findings of the previous studies with monolingual and bilingual speakers of Croatian and Italian.

The first prediction was partially confirmed by the data. More specifically, I have found that there was no difference in the overall selection of the subject antecedent in both pronoun conditions between the bilinguals and the Czech monolinguals. These results are in line with Kraš et al. (in press), whose results show that there are no differences in the interpretation of both null and overt subject pronouns between the two groups of children (monolingual and bilingual). Even though the responses in the overt pronoun condition were not expected (the two groups of children opted for the matrix subject more often than the adults), there was no statistical difference between the monolingual and the bilingual group in Kraš et al. (in press). This is similar to the results in the present study, where the bilingual and the Czech monolingual group have mostly opted for the matrix object as the antecedent for the null pronoun, which was an unexpected interpretation. Serratrice (2007) has yielded similar results in her study with some differences from the current study. The bilingual and the monolingual group did not differ in responses in the null subject condition, as they predominately chose the (appropriate) subject as the antecedent of the null pronoun. This is in line with the results in the current study, meaning that there are no differences in the interpretation of the null

pronoun between the bilinguals and the Czech monolinguals. The difference, however, is in the response: the participants in the present study opted for the object as the antecedent for the null pronoun. In the overt pronoun condition, Serratrice (2007) observed differences in antecedent selection between the bilinguals and the monolinguals. The bilingual children chose the subject as the antecedent of the overt pronoun condition significantly more often that the monolingual children. This may be due to the fact that her study was conducted on English-Italian bilinguals, English not being a null subject language. In the present study there was also a difference noted between the monolinguals and the bilinguals in the overt pronoun condition. However, in the current study the monolinguals chose the matrix subject significantly less often than the bilinguals, even though in this condition, the subject was selected less frequently by both groups. The bilinguals might have chosen the matrix subject in the overt condition less frequently than the monolinguals because of the influence of the Croatian language. In Croatian the appropriate antecedent of the overt pronoun is the non-subject, meaning that the bilinguals might have chosen the matrix subject less frequently because of cross-linguistic influence. In other words, Croatian might have influenced Czech while the bilinguals were choosing the antecedent for the overt pronoun. Since overall results confirm the first prediction, it can be concluded that interface structures are fully acquired and that unexpected responses in the null pronoun context may indicate that the Czech language does not follow the same discourse-pragmatic rules in the use of pronominal subjects as Croatian and Italian, for example, even though it is a null subject language.

The second prediction was also only partially borne out by the data. The mean percentages of responses suggest that the two groups differ in the antecedent choices in the null pronoun condition. However, statistical analysis indicates that differences are present in both conditions (null and overt), but the differences in the overt pronoun condition may be due to individual differences within groups. Even though the two monolingual groups differ

in the proportion of the subject selection in the overt pronoun condition, both groups still have a preference for the matrix object. In the null pronoun condition the Czech monolingual group predominately chose the matrix object as the antecedent of the pronoun, while the Croatian monolingual group predominately chose the matrix subject. The results from the Croatian monolingual group are in line with the results from Kraš & Stipeć (2013b) and Kraš (2008b). The monolinguals in these studies chose the matrix subject as an antecedent in the null pronoun condition and they mostly opted for the matrix object in the overt pronoun condition. This study again confirms that the PAS can be applied to the Croatian language. What this study also shows is that the Czech language differs from Croatian (and Italian) in the interpretation of subject pronouns in forward anaphora. Since the interpretations of the null pronoun by the Czech and Croatian monolinguals are different, we may conclude that Carminati's PAS does not apply to Czech as far as the null pronouns is concerned and that the use of pronominal subjects in the Czech language is governed by a different principle. It seems that the use of null and overt pronoun in Czech may have little with topic shift or the identification of the action performers in the sentence. The reason might be that null pronouns are used quite often in Czech because the use of overt pronouns is reserved for the emphasis of certain actions or action performers. In other words, null pronouns are used to maintain the regular tone of the interaction, i.e. without any emphasis. However, more studies should be conducted, with more participants to provide stronger conclusions on the use of null and overt subject pronouns in the Czech language.

6. CONCLUSION

This thesis was set out to test if Croatian-Czech simultaneous bilinguals interpret null and overt subject pronouns in forward anaphora in the same way as Czech monolinguals, and to test if Czech and Croatian monolinguals interpret null and overt subject pronouns in forward anaphora in their native languages in the same way.

The results showed that the bilinguals and the Czech monolinguals did not differ in the overall interpretation of null and overt pronouns, thus confirming the first prediction. However, contrary to our second prediction, there were differences in the interpretation of null subject pronouns between the Czech and the Croatian monolinguals, which leads to the conclusion that there is a difference in the use of null subject pronouns in Czech and Croatian. In the overt pronoun condition the two monolingual groups provided similar interpretations. Even though the mean percentage and statistical analysis showed certain differences in their answers, which may be attributed to individual differences within the groups, both groups predominately chose the object as the antecedent of the overt pronoun. The results relating to our first research question are not consistent with the IH. This might mean that the IH should be revised and further extended, at least with regard to simultaneous bilinguals.

Since there was no significant difference in the interpretation of the null and the overt subject pronoun between the Czech monolingual group and the Croatian-Czech bilinguals we can conclude that interface structures are not acquired late but only that their use in Czech differs from that in Croatian and Italian, even though all three languages are null subject languages. Based on this finding it may seem that making a distinction between languages only on the basis of the *pro* drop parameter is not sufficient. Further research should be conducted among different language combinations, with both similar and different distribution of pronominal subjects in bilingual L1 acquisition to shed more light on this phenomenon.

Considering different interpretations of null subject pronouns by the Czech monolinguals and the Croatian-Czech bilinguals from the Croatian monolinguals, there is a need to do additional research on the Czech language to check whether the discourse-pragmatic rules for the interpretation of pronominal subjects in this language indeed differ from those that apply to Croatian and Italian. In further research it would be useful to include backward anaphora to gain full insight in the interpretation of null and overt subject pronouns and to see if in this type of sentences the interpretation would also differ from Croatian and Italian.

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APPENDIX

Section 1: *C-test*

V následujících pěti odstavcích části některých slov chybí. Váš úkol je doplnit chybějící slova. Máte 25 minut na zpracování celého úkolu. P*rosím pište čitelně. Jestli budete vícekrát opravovat vaší odpověď ať je jasně vidět váše finální odpověď.*

1. Před mnoha lety žil jeden starý mlynář, který měl tři syny. Když s_____ přiblížil ko_____ jeho d_____, povolal sy_____ k so_____, a to_____ nejstaršímu odk_____ mlýn, prostř_____ osla a n_____ třetího a nejml_____ syna zb_____ už je_____ starý koc_____. Oba sta_____ synově by_____ se sv_____ dědictvím n_____ výsost spok_____, avšak nejm_____ se tvá_____ rozmrzele.

2. Anglický jazyk se neomezil pouze na Evropský kontinent, britské výboje se dostaly až do relativně nově objeveného kontinentu – Ameriky, kde se jazyk uchytil. Obrovská ze_____ s obro_____ množstvím li_____ a s obro_____ potenciálem. Br_____ se st_____ velmocí a angli_____ se šíř_____ ještě rych_____. Dnes j_____ to nejvyhle_____ jazyk, přek_____ jsou te_____ velmi ča_____, lidé s_____ jej u_____, protože b_____ něho b_____ se v pr_____ neprosadili. Vš_____ se požaduje minimálně znalost na komunikativní úrovni (schopnost domluvit se).

3. Karlův most je v naší zemi, a nejen v ní, bezesporu jednou z nejznámějších mostních staveb. Jeho kam_____ konstrukce v so_____ po sta_____ nese taje_____ starých ča_____ a j_____ předmětem mn_____ bádání, náv_____, projektů a ta_____ různých sp_____.Pojďme s_____ na te_____ krásný mo_____ podívat o_____ jeho poč_____ až p_____ současnost. Je_____ se o nejs_____ dochovaný mo_____ v Praze a zár_____ pro mnohé z nás nejkrásnější na světě.

4. Svátek svaté Barbory, který připadá na 4. prosince, býval spojen s řadou lidových zvyků. Nejznámějším z ni_____ je řez_____ tzv. Barborčiných větv_____ neboli barb_____. Podle lid_____tradice s_____ 4. prosince s prv_____ slunečním papr_____ uřízla větv_____ z tře_____ staré nej_____ deset l_____ a odn_____ se d_____ domu, k_____ žila nepro_____ dívka. Po_____ větvička o Štědrém d_____rozkvetla, znam_____ to, ž_____ si dívka v nadcházejícím roce najde ženicha .

5.Internet se stává prostředkem pohodlného nakupování vánočních dárků. Vnímá j_____ tak 99 pro_____účastníků pravid_____ předvánočního průz_____ realizovaného př_____ Seznam.cz Výzkumník. Výsl_____ také uka_____ vzrůstající

obl_____ nakupování v_____ virtuálním pros_____. V ro_____2011 s_____ internet p_____ hledání a ná_____ vánočních dá_____ zvolily t_____ čtvrtiny dotáz_____, letos s_____ na ván_____ nákupy p_____ internetu chystá 87 procent respondent.

Section 2: *Questionnaires*

2.1.Questionnaire for the Croatian-Czech bilinguals

Datum: _____

UPITNIK

1. DIO: Opći podaci

1. Ime i prezime: _____
2. Spol: M Ž
3. Godina rođenja:_____
4. Mjesto rođenja: _____
5. Gdje ste odrasli?_____
6. Zanimanje:_____
7. Koju ste školu ili fakultet završili?_____
8. Studirate li trenutno? DA NE

   Ako da, što i na kojem fakultetu? _____

2. DIO: Informacije o poznavanju češkog jezika

1. Koji Vam je materinski jezik, tj. kojem ste jeziku bili izloženi od rođenja? Ako imate dva materinska jezika, navedite oba._____
2. Koristite li se svakodnevno češkim jezikom? DA NE

   Ako da, u kojim situacijama? (npr. *kod kuće, za potrebe posla,za potrebe fakulteta*)

   _____
3. S koliko ste godina počeli učiti češki jezik? _____
4. Kako ste učili češki jezik?

   a) U školi stranih jezika

b) Na fakultetu

c) Kod kuće od članova obitelji

d) Ostalo _____

5. Jeste li ikad živjeli u Republici Češkoj? DA NE

a) Ako da, gdje i koliko dugo?_____

b) Koja je bila svrha Vašeg boravka u Republici Češkoj?_____

6. Govorite li još koji jezik pored hrvatskog i češkog? DA NE

Ako da, navedite koji i s koliko ste ga godina počeli učiti.

JEZIK	_____	_____	_____	_____
DOB				

2.2. Questionnaire for the Czech monolinguals

Datum: _____

DOTAZNÍK

1. Část: Základní údaje

1. Jméno a přijmení:_____
2. Pohlaví: M Ž
3. Rok narození: _____
4. Místo narození:_____
5. Kde jste vyrůstali?_____
6. Vaše povolání:_____
7. Jakou školu nebo vysokou školu jeste absolvovali?_____
8. Studujete v současné době? ANO NE

   Pokud ano, co, a na které vysoké škole?_____

2. Část: Informace o jazykové dovednosti

1. Jaký je váš mateřský jazyk, tj. kterým jazykem mluvite od narození? Pokud mate dva mateřské jazyky, uveďte oba._____
2. Mluvíte nejakým jiným jazykem kromě čestiny? ANO NE
3. Pro každý jazyk, kterým mluvíte, odpovězte na otázky v tabulce.

JAZYK				
Kolik vám bylo let, když jste se začali učit tento jazyk?				

Jak jste se učili tento jazyk (např. *ve škole, na vysoké škole, doma*)?				
Požíváte každý den tento jazyk? Pokud ano, v jakých situacích? (např. *V práci, ve škole, doma*)				
Už jste někdy bydleli déle než měsic v zemi, kde se tímto jazykem mluví? Pokud ano, jak dlouho, a s jakým účelem?				

2.3. Questionnaire for the Croatian monolinguals

Datum: _____

UPITNIK

3. DIO: Opći podaci

9. Ime i prezime: _____

10. Spol: M Ž

11. Godina rođenja:_____

12. Mjesto rođenja: _____

13. Gdje ste odrasli?_____

14. Zanimanje:_____

15. Koju ste školu ili fakultet završili?_____

16. Studirate li trenutno? DA NE

    Ako da, što i na kojem fakultetu?_____

4. DIO: Informacije o poznavanju jezika

7. Koji Vam je materinski jezik, tj. kojem ste jeziku bili izloženi od rođenja? Ako imate dva materinska jezika, navedite oba._____

8. Govorite li još koji jezik pored hrvatskog? DA NE

9. Za svaki jezi koji poznajete, odgovorite na pitanja navedena u tablici.

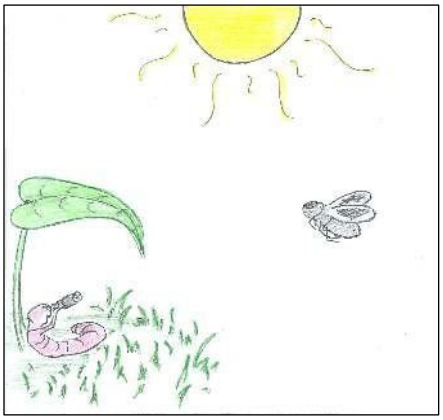
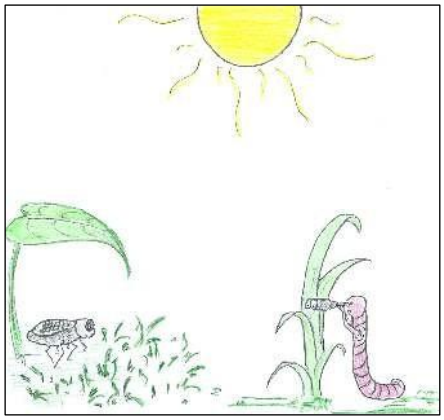
JEZIK				
Dob u kojoj ste počeli učiti ovaj jezik?				
Kako ste učili				

ovaj jezik (npr. *u školi, na fakultetu, kod kuće*)?				
Koristite li svakodnevno ovaj jezik? Ako da, u kojim situacijama? (npr. *na poslu, na fakultetu, kod kuće*)				
Jeste li ikad živjeli dulje od mjesec dana u zemlji u kojoj se ovaj jezik govori? Ako da, koliko dugo i s kojom svrhom?				

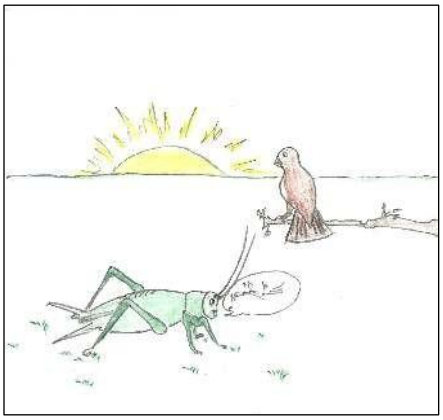
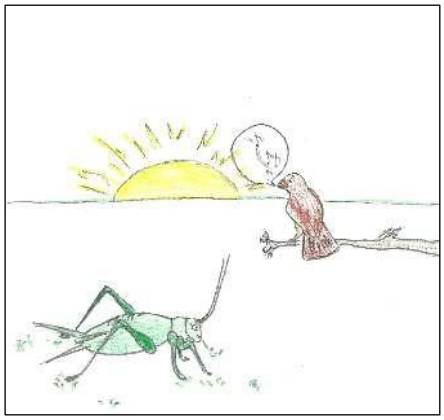
Section 3: *List of sentences and the corresponding pictures*

Practice sentences

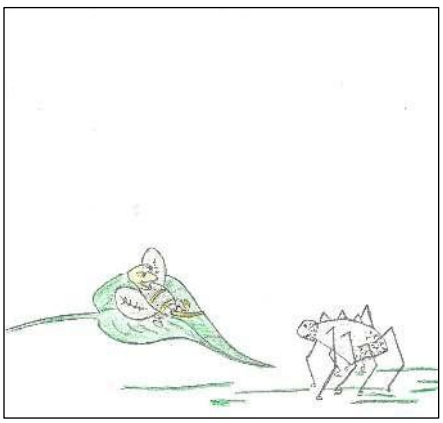
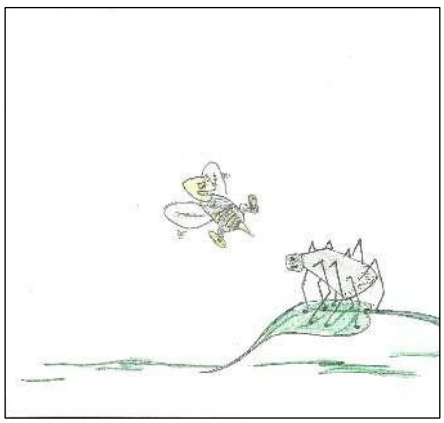
1. Glista je špijunirala muhu dok se odmarala u hladu.

2. Cvrčak je slušao slavuja dok je izlazilo sunce.

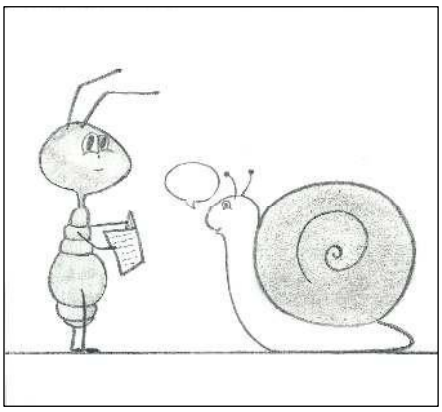
3. Bumbar je izazivao pauka dok je on stajao na listu.

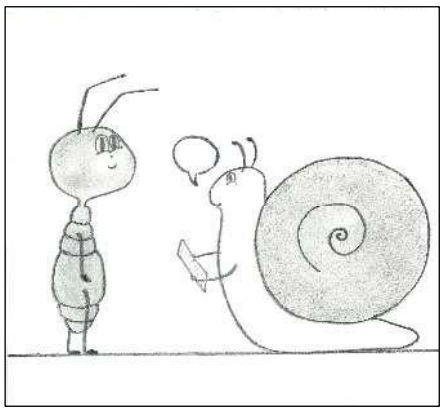



Experimental sentences

1.a Puž je pozdravio mrava dok je čitao novine.

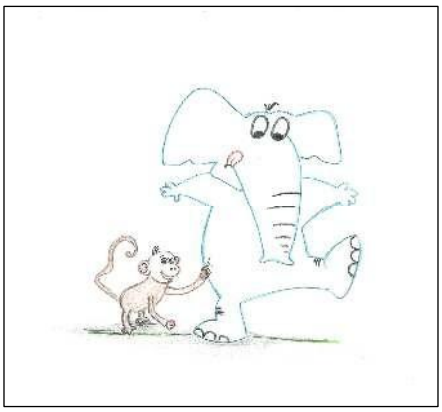
1.b Puž je pozdravio mrava dok je on čitao novine.

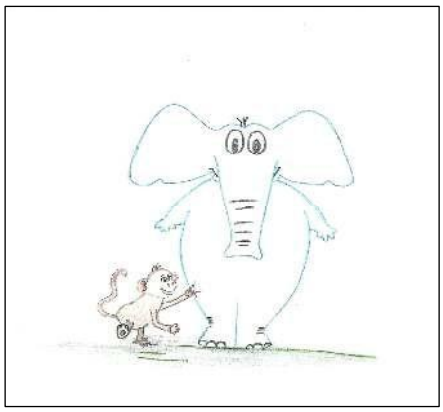




2.a Majmun je uštipnuo slona dok je stajao na jednoj nozi.

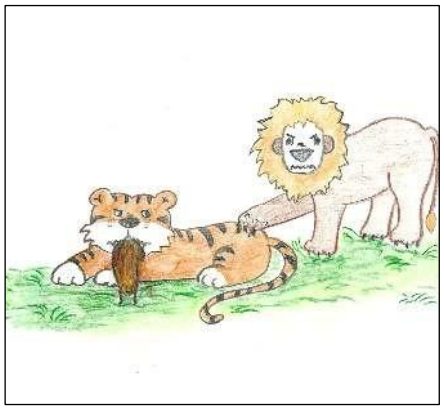
2.b Majmun je uštipnuo slona dok je on stajao na jednoj nozi.





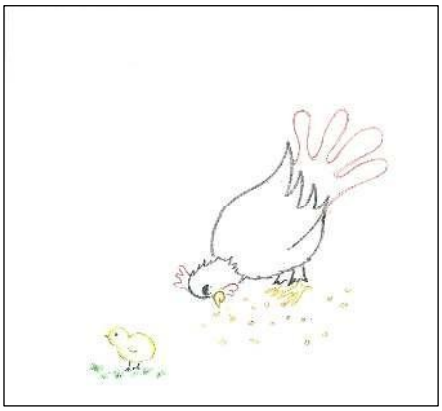
3.a Lav je ogrebao tigra dok je žvakao plijen.

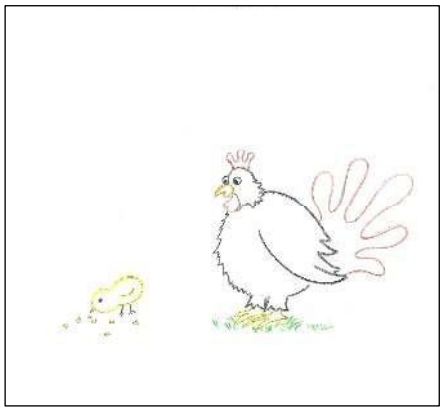
3.b Lav je ogrebao tigra dok je on žvakao plijen.



4.a Pijetao je čuvao pilića dok je kljucao po dvorištu.

4.b Pijetao je čuvao pilića dok je on kljucao po dvorištu.



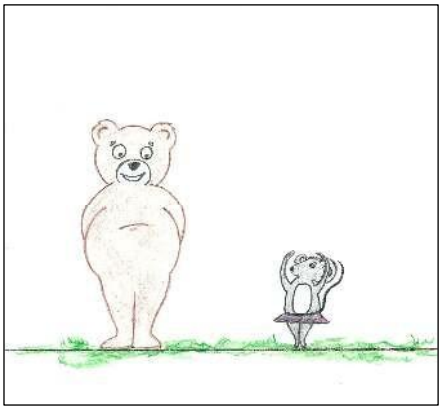


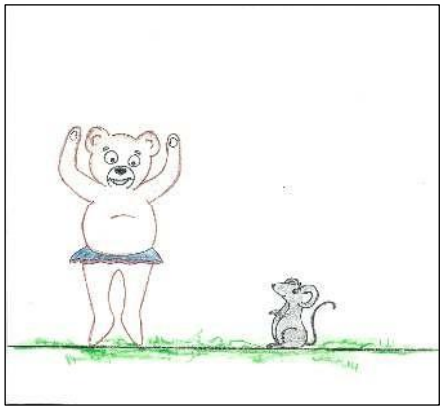
5.a Jež je mahao crvu dok je išao putem.

5.b Jež je mahao crvu dok je on išao putem.

6.a Medo se nasmijao mišu dok je plesao balet.

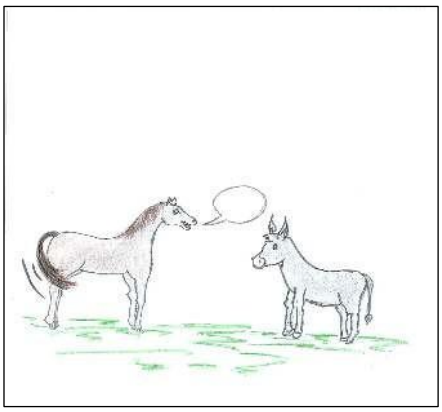
6.b Medo se nasmijao mišu dok je on plesao balet.

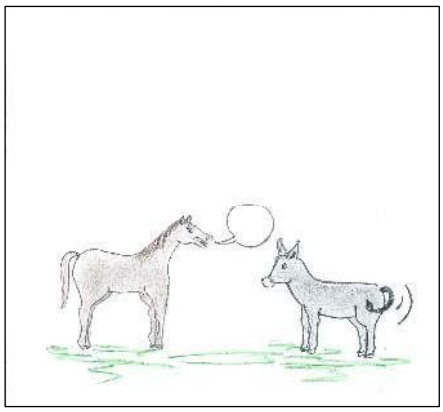




7.a Konj je prigovarao magarcu dok je mahao repom.

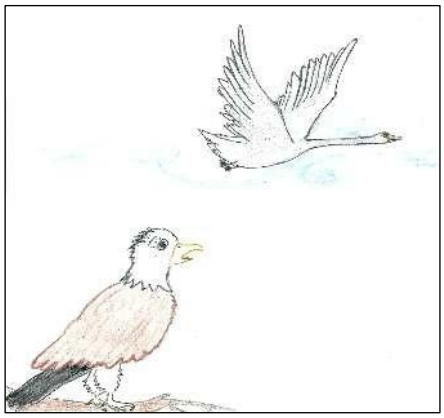
7.b Konj je prigovarao magarcu dok je on mahao repom.





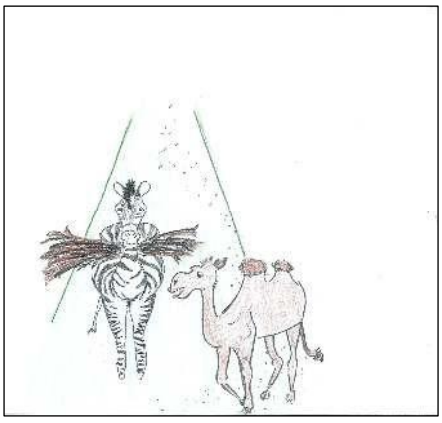
8.a Orao se divio labudu dok je letio nebom.

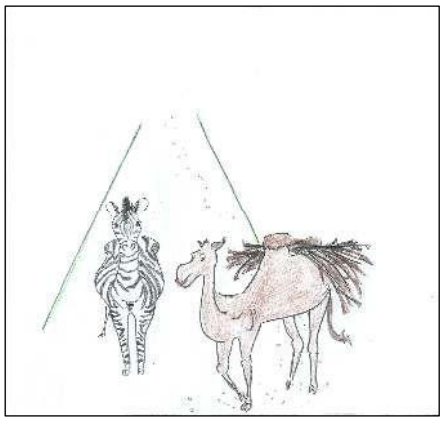
8.b Orao se divio labudu dok je on letio nebom.



9.a Deva je zaobišla zebru dok je nosila grane.

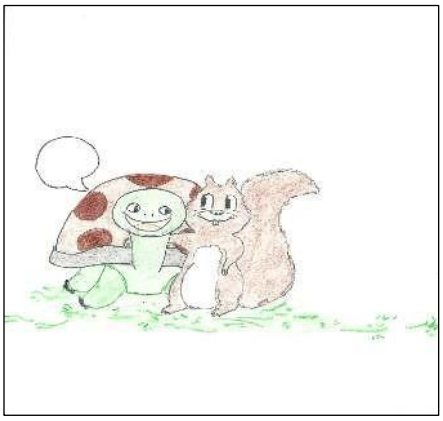
9.b Deva je zaobišla zebru dok je ona nosila grane.

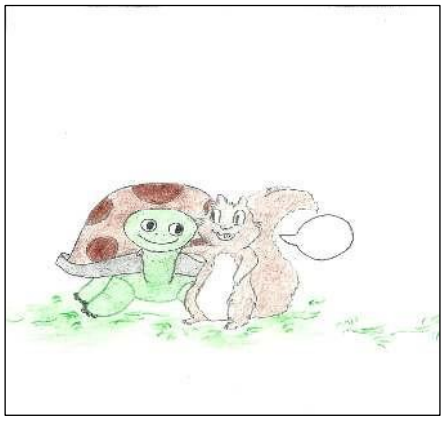




10.a Vjeverica je zagrlila kornjaču dok je pričala priču.

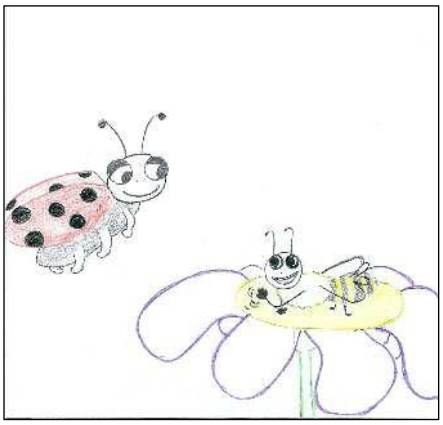
10.b Vjeverica je zagrlila kornjaču dok je ona pričala priču.

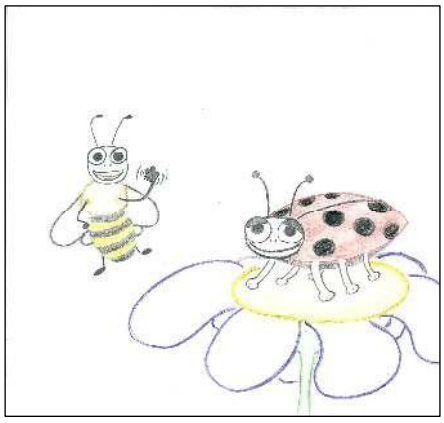




11.a Pčela je pozvala bubamaru dok je bila na cvijetu.

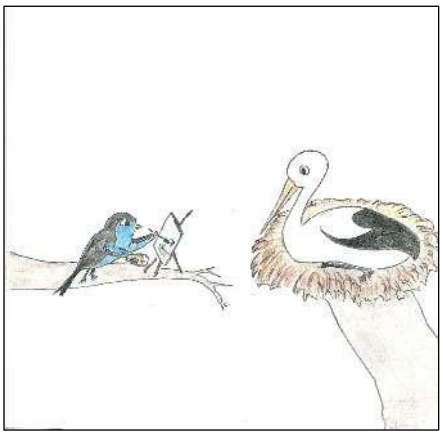
11.b Pčela je pozvala bubamaru dok je ona bila na cvijetu.

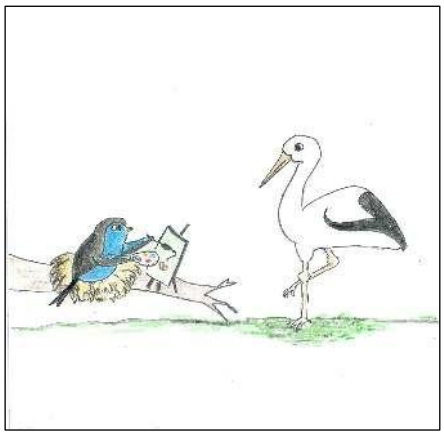




12.a Lastavica je slikala rodu dok je sjedila u gnijezdu.

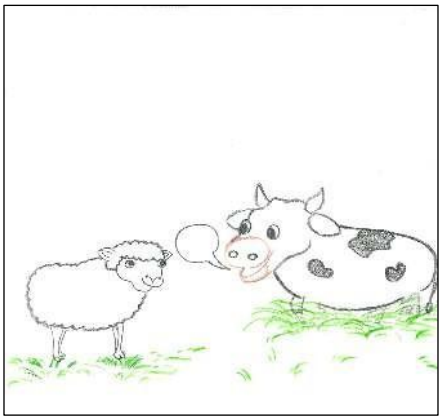
12.b Lastavica je slikala rodu dok je ona sjedila u gnijezdu.

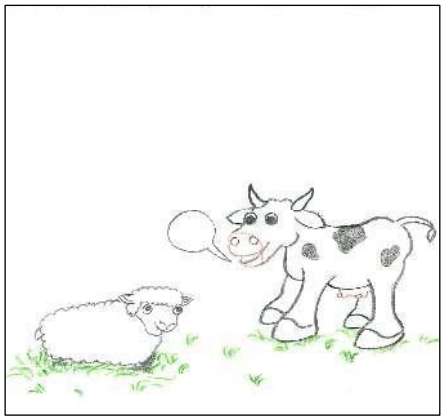




13.a Krava je govorila ovci dok je ležala na travi.

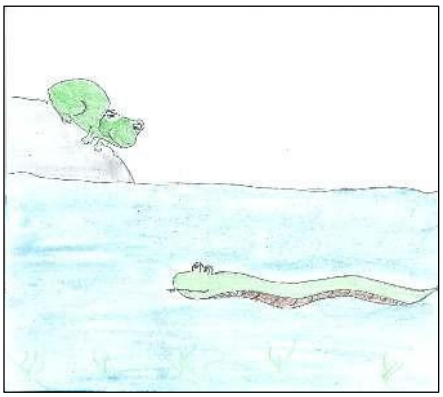
13.b Krava je govorila ovci dok je ona ležala na travi.

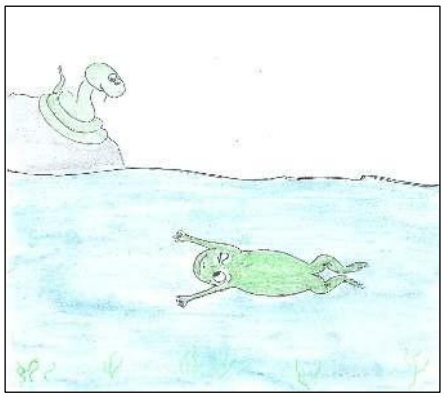




14.a Žaba je namignula zmiji dok je plivala pod vodom.

14.b Žaba je namignula zmiji dok je ona plivala pod vodom.



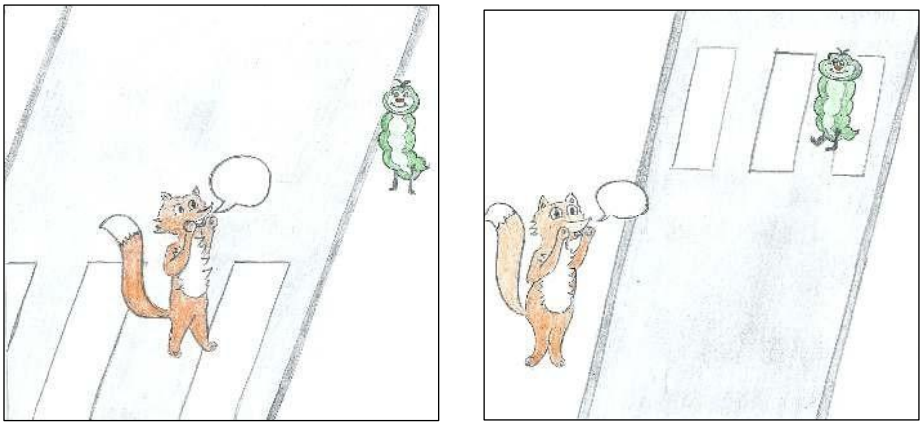


15.a Sova je pjevala srni dok je promatrala nebo.

15.b Sova je pjevala srni dok je ona promatrala nebo.

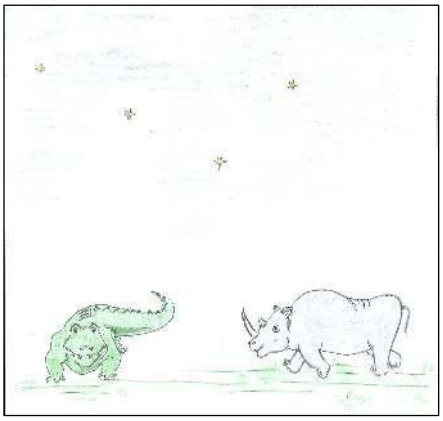
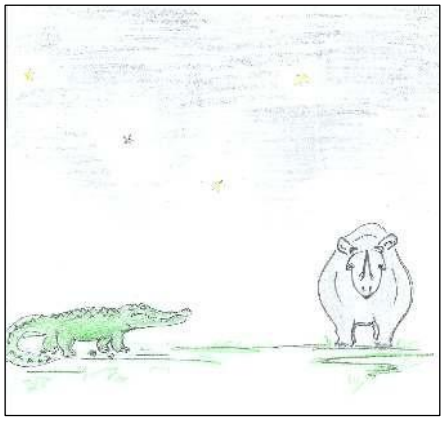
16.a Lisica je dovikivala gusjenici dok je prelazila cestu.

16.b Lisica je dovikivala gusjenici dok je ona prelazila cestu.

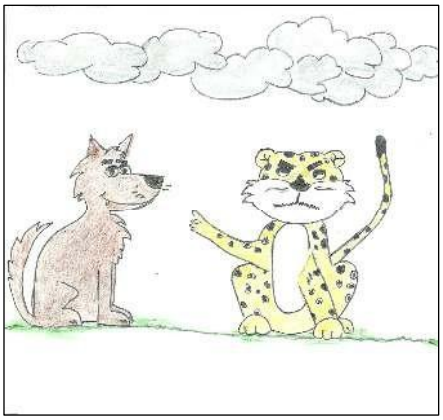
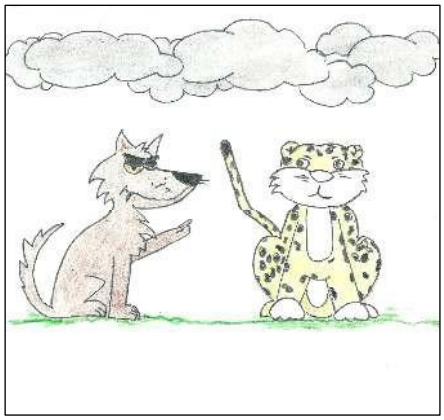


Control sentences

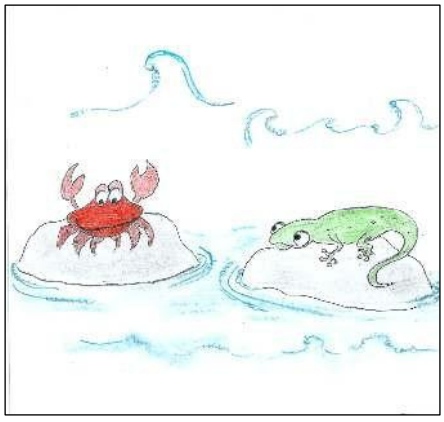
1. Krokodil se približavao nosorogu dok je padao mrak.

2. Vuk je prijetio leopardu dok je bilo blačno.

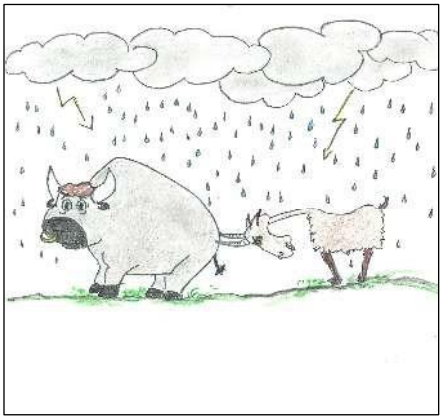
3. Rak je promatrao guštera dok se pjenilo more.

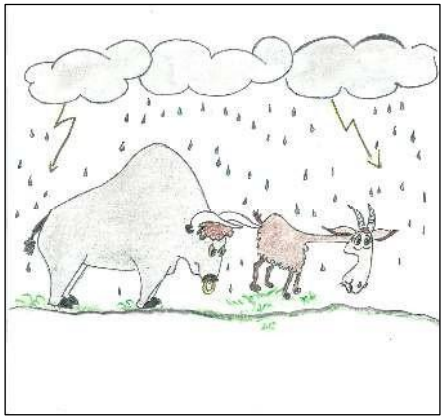



4. Dabar je otjerao goluba dok je padao snijeg.

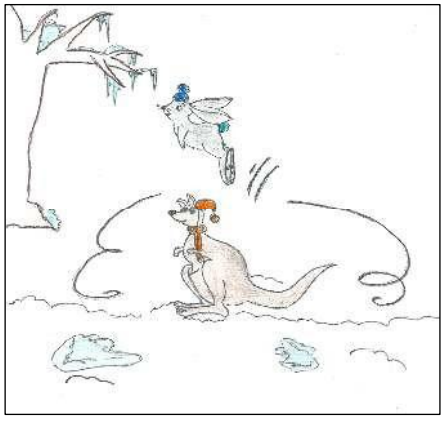
5. Jelen je pretekao ovna dok je puhao vjetar.

6. Bik je uboo jarca dok je bilo nevrijeme.



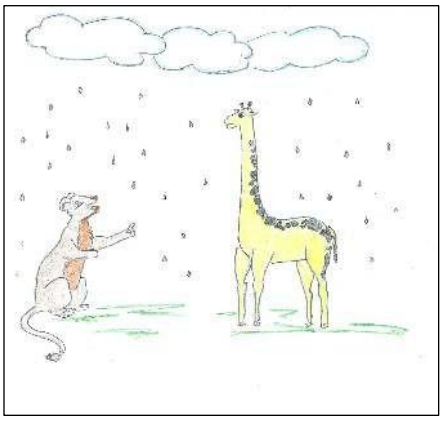


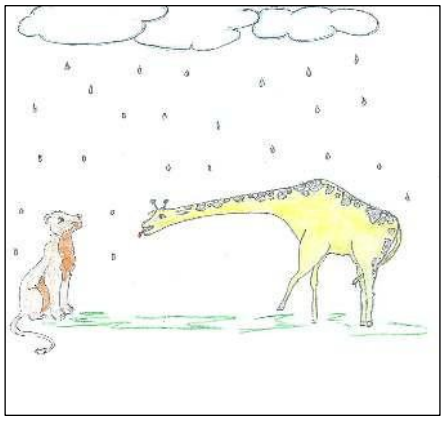
7. Klokan je preskočio zeca dok je bilo hladno.



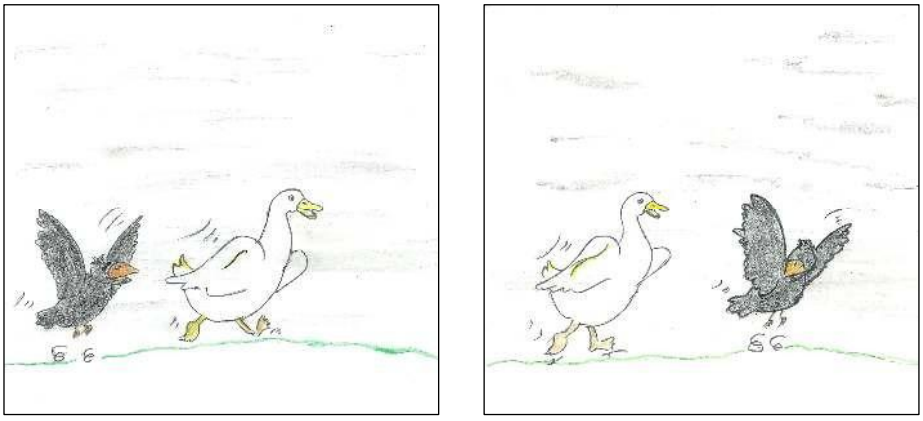
8. Psić je slijedio tvora dok je bio pun mjesec.

9. Lavica se rugala žirafi dok je padala kiša.

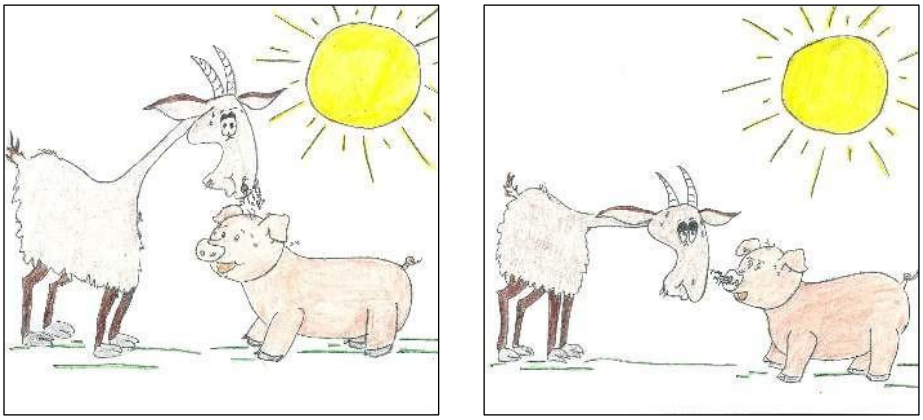




10. Guska je lovila vranu dok je bila magla.

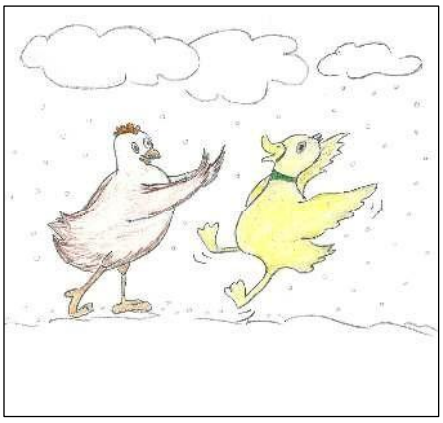


11. Koza je njušila svinju dok je bilo vruće.

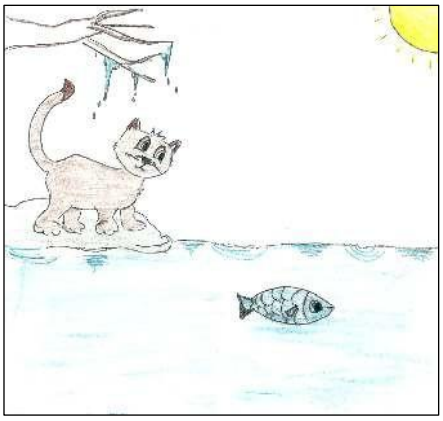
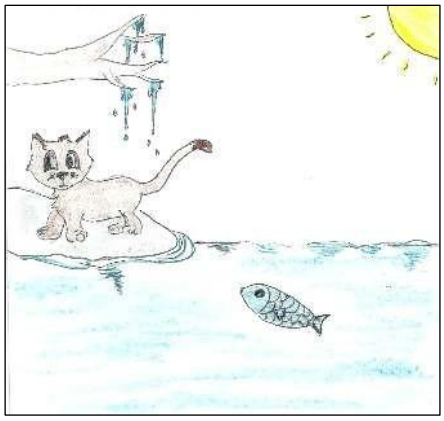


12. Panda je podragala gorilu dok su sijevale munje.

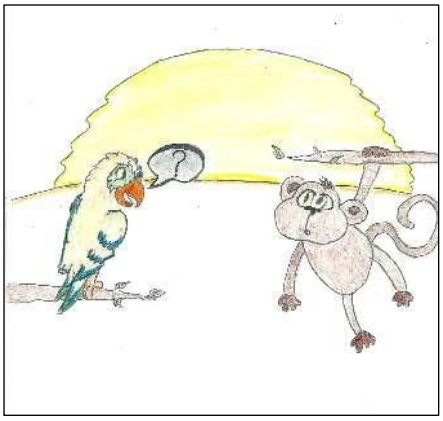
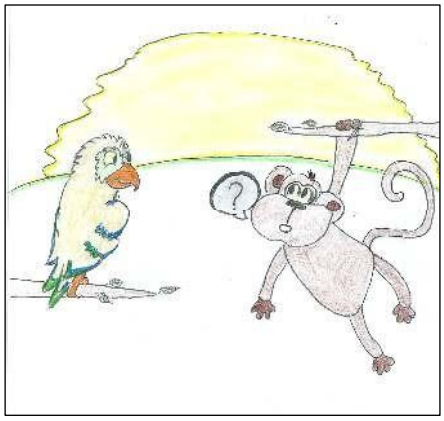
13. Kokoš je gurnula patku dok je padala tuča.




14. Mačka je ugledala ribu dok se topio led.

15. Papiga je zapitkivala majmunicu dok je zalazilo sunce.

16. Osa je napala pticu dok je sijalo sunce.