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University of Zagreb

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**Understanding negative sentences: a comparison between English and
Croatian preschool children**

Master's Thesis

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Zagreb, May 2022

Sveučilište u Zagrebu

Filozofski fakultet

Odsjek za anglistiku

**Razumijevanje negacije: usporedba djece predškolske dobi govornika
engleskog i hrvatskog jezika**

Diplomski rad

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Zagreb, svibanj 2022.

Abstract

“No” is one of the first and most important words children learn to say and yet, little is known about their ability to comprehend and produce negative sentences even though negation is one of the fundamental features of human language structure. Therefore, the aim of this thesis is to explore English and Croatian preschool children’s ability to understand simple, as well as complex negative sentences. In order to study this, an experiment was conducted with ten Croatian preschool children between the ages of 3 and 6;5 as participants. They were divided into two groups of five: in the first group are the children aged 3 and 4 and in the second group are the children aged 4;5 and 6;5. They were presented with an array of different negative sentences, some grammatically correct and some incorrect. The children in the second group showed significant progress in the comprehension of complex negative sentences. They also needed less time to understand the meaning of sentences and provide an answer regardless of the fact that they were sometimes wrong. On the other hand, the children in the first group effortlessly understood simple negative sentences however, complex structures were almost completely incomprehensible to them. The experiment was then compared to the research by Thornton et al. (2016) involving 24 English preschool children in the same age group. The comparison between these two languages is intriguing because they have diametrically opposite systems of negation. English is a Double Negation language which means that multiple negative markers in a single sentence cancel each other out and result in affirmative meaning, while Croatian is a Negative Concord language, which means that multiple negative markers in a single sentence result in a single logical negation. Nevertheless, the data show that, even though there are fundamental differences between these two negative systems, the children’s responses were quite similar in nature. Both English and Croatian children struggled to understand negative sentences in which there were multiple negative markers and they often assigned wrong interpretations to them. Our findings suggest that children start acquiring negation in a similar fashion, regardless of their linguistic background, and it is only after being exposed to the language-specific negative forms that they start understanding and implementing them in their speech.

Key words: *negation, preschool children, Croatian, English, experiment*

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1. Introduction

Negation is one of the fundamental properties of human language. No animal language possesses the capacity to produce negative sentences because their purpose of communication is to transmit informative and vital signals about their immediate surroundings, which renders negative structures futile in their communication. Negation is a complex form of language structure which was first explored in philosophy and logic. Thus, negation is not just a grammatical feature of a language system but rather a reflection of advanced human cognition, as well as a philosophical concept which has been thoroughly analyzed by some of the most influential philosophers of all time including, Aristotle, Plato and the Stoics. As Horn puts it: “In many ways, negation is what makes us human, imbuing us with the capacity to deny, to contradict, to misinterpret, to lie and to convey irony” (2010: 1). The reason why negation is such an interesting phenomenon both in linguistics and philosophy is the fact that it expresses something which is not. Because of this reason alone, negation has been regarded as less valuable and even undesirable linguistic form compared to its positive counterpart. It has been characterized as imprecise and futile, providing less information and specificity around the subject. This is a rather narrow-minded way of deconstructing and approaching negation since language, as well as the human need to communicate, would be incomplete without the possibility to negate. Plato saw this hidden aspect of negation and he argued that things which are not, nevertheless still are (Horn 2001: 1). As Plato’s spokesman Stranger in *Sophist* says: “When we say not-being, we speak, I think, not of something that is the opposite of being, but only of something different” (*Sophist* 257B). In other words, negative sentences are not polar opposites to their positive counterparts. Rather, they can signify something completely different, independent of the positive statement. Saying “This is not black.” does not signify that it is white. It can be any other color on the spectrum. Therefore, a negative statement is not a mere counterpart to an affirmative sentence as it had been perceived for centuries.

Even though the importance of negation in our language systems is irrefutable, it hasn’t been thoroughly studied in many languages. This has only recently started changing in the Croatian language where negation has become a topic of interest for the linguists in the last decade. However, negation in children’s language remains a rather unexplored territory. On the other hand, the English language has a fairly rich literature concerning negation. Nevertheless, negation in

children's language could also be studied further. In the remainder of this thesis there will be a further analysis of the history of negation in philosophy and linguistics and its role in grammatical structures of the English and Croatian language. We will present systems of negation in both languages, their rules, differences and similarities (if any). Moreover, we will briefly discuss and present four stages of children's language acquisition. One of the last stages of language acquisition is the acquisition of negation and so, we will explore the principles by which children learn to understand and use negative sentences in their daily speech. We will present and analyze the experiment with ten Croatian preschool children which will then be compared to the experiment with English children in the same age group. Finally, we will present the similarities as well as the differences we noticed between the results and conclude our thesis.

2. What is negation?

In order to answer this question properly, it is necessary to approach negation from both linguistic and philosophical standpoint. Negation is a property of human language which was first explored in philosophy and logic, therefore for the purpose of understanding negation, it is important to understand its history first.

2.1. Negation in philosophical tradition

Negation was first studied as a philosophical concept back in Ancient Greece as Plato, Aristotle and the Stoics all tried to understand the concept of negative polarity. At first, negation was considered as something opposite of the truth. If it is stated that somebody is not well, it would imply that they are ill. Or, if the truth is that it is not day, this would mean that it is night. This is called an asymmetrical approach. Because the asymmetricalists' understanding of negation was rather restrictive and exclusive in the sense that every negative statement presupposes the existence of its positive counterpart (but not vice versa) so consequently, "negative statements, for the asymmetricalists, are less primitive, less informative, less objective, less godly, and/or less valuable than their affirmative counterparts" (Horn 2001: 3). However, Plato argued that negation is not necessarily an opposition to a truth, but rather an expression of a different truth. For example, if it is not day, it does not necessarily mean it is night, it could be dawn or twilight. As he was analyzing Stranger's monologue in *Sophist*, Horn (2001: 5) concludes that "negation cannot in

general be read as, opposition or contrariety: when we speak of the 'not great' (me mega), we do not pick out 'what is small any more than what is of middle size', rather we refer simply to what is different from the great". Therefore, one of negation's functions is to affirm not only an opposite truth, but also a different, less precise truth.

Aristotle, on the other hand, shifted from ontology to the domain of logic and language in order to get a better understanding of negation. In his *Organon* he raised the questions of "contradictory vs. contrary negation, the effect of negation on quantified and modal expressions, the truth conditions for negative propositions with vacuous subject terms (and those exhibiting category mistakes), the law of excluded middle and its application to future contingent proposition" (Horn 2001: 6), which remain just as important and intriguing today as they were when Aristotle first studied them. His main idea was that negation is based on the system of oppositions between pairs. He proposed four distinct classes of opposition in his *Categories* which are: correlation¹, contrariety², privation³ and contradiction⁴. Out of these four oppositions, only contradiction refers to statements, while other three categories refer to the difference between terms⁵. Thus:

"In the *Categories*, then, the property that the corresponding affirmative and negative members of a given pair of statements 'divide truth and falsity between them', as the medievals were to put it, represented a distinguishing characteristic of contradictory opposites. The defining criterion of contradiction, however, seems to be syntactic, depending on the fact that members of such typical pairs as (2a)-(2c) or *He sits* / *He does not sit* are formally identical except for the negation. In Aristotelian terms, a predicate is AFFIRMED of the subject in one case and DENIED of the same subject in the other" (Horn 2001: 9).

However, just because one predicate is affirmed and the other one is denied does not mean that either of these statements is factually correct. For example, Aristotle gave an example of two

¹ It refers to interdependence of reference: e.g., *half* vs. *double*

² A subject must contain either one or the other contrariety, never both: e.g., *good* vs. *bad*, *healthy* vs. *sick*

³ It refers to a property that should be naturally present however, it is not: e.g., *blind* vs. *sighted*, *hairy* vs. *bald*

⁴ It refers to statements which are in complete contradiction, e.g., *He is sitting* vs. *He is not sitting*.

⁵ For Aristotle, terms are subjects and predicates of assertions. A term can be either individual, e.g. *Socrates*, *Plato* or universal, e.g. *horse*, *human*. Subjects can be either individual or universal while predicates can only be universal, e.g. *Socrates is human* (and not *Human is Socrates*).

contradictory statements: *Socrates is ill.* / *Socrates is well.*⁶ And even though these two statements are contradictory - therefore, one of them must be true and the other false, - if Socrates does not exist, both of these statements are undeniably false. The entire premise of Aristotelian negation resides in the fact that negation, in its essence, is divided between contradictory and contrary oppositions, both based on two laws: the Law of Contradiction, which states that something cannot simultaneously exist and not exist, and the Law of Excluded middle, which states that two contradictories are diametric opposites and there is no middle possibility (unlike two contraries which allow gradation) (cf. Zovko Dinković 2007). In this sense, there is no concept of external or propositional negation, only two types of semantic and syntactic internal negation. External negation is a concept which has been introduced by the Stoics.

The Stoics proposed external negation, or the predicate denial, thus challenging the concept of Aristotelian internal negation. They made a distinction between three types of negation: denial, privation and negation. Negation is an external element which can be repetitively added in a sentence. Multiple negative markers will indeed cancel each other out and result in a positive sentence. This is something thought to be impossible by Aristotle because each sentence can have only one predicate and, therefore, only one negative constituent. The Stoics “developed the first propositional logic, employing logical constants and propositional variables in the style of modern formal logic and allowing both hypothetical (if *p* then *q*) and disjunctive (*p* or *q*) propositions” (Horn 2001: 21). Consequently, the law of double negation is thought to originate from the Stoics’ logic and not from Aristotelian teachings. To this day there are numerous supporters of Aristotle’s internal negation system but it is the Stoics’ notion of external negation that prevailed and became the main basis of modern-day conceptualization of negation.

2.2. Linguistic negation

2.2.1. Negation in the English language

Present-day Standard English is considered to be a double negation language, which means that two negative markers in a single clause cancel each other out and the sentence carries a semantically positive meaning. For example, saying *Bob did not see nobody.* in Standard English

⁶ This example, as well as the explanation, are taken from Horn (2001: 7).

follows the principle of double negation and means that Bob, in fact, did see somebody. However, double negation has not always been the norm in English grammar. From Old English up until late Middle English, it was the so-called Negative Concord that was the norm for all west Germanic languages (Anderwald 2005: 113). Negative concord is a linguistic structure in which two or more negative constituents appear alongside in a sentence and result in a single negative meaning. We can find examples of this in many Old English and Middle English texts. Here is an example from the latter period (Anderwald 2005: 113):

‘He **nevere** yet **no** vileynye **ne** sayde / In al his lyf unto **no** maner wight

(Chaucer, *Canterbury Tales*, "General Prologue", A.70-71)

‘He never said anything rude / in all his life to any sort of person.’

Even though there are a lot of examples of negative concord in the early stages of the English language all the way to Early Modern English, it is not quite certain as to when exactly its use started to decline. Anderwald writes that:

“Negative concord seems to have started to decline earlier than was generally assumed. Much new evidence points to the fact that the decline in negative concord predates the rise of prescriptive grammars. In other words, prescriptive grammar was not the reason for the sharp decline in negative concord, but this process must have already been under way "naturally" beforehand” (p. 114).

The reason behind this theory is the fact that a noticeable restriction in the use of double negative markers was noticed back in the early sixteenth century. And even though the use of negative concord was already diminishing, the introduction of prescriptive Latin grammar in the English language does seem to be the final push towards its eradication. Since Latin does not permit negative concord, English also quickly became reluctant to use it and adopted the double negation principle instead. Negative concord became illogical and unwanted and was banned from Standard English. Therefore, even though it is not entirely certain when exactly negative concord disappeared from English grammar, the general agreement is that it happened around the first half of the seventeenth century (Ukaji 1999, Anderwald 2005). Nevertheless, “it seems that it has some root in the linguistic knowledge of native speakers, because after it had disappeared completely from Standard English, it survived both in non-standard varieties of English and in children’s

language” (Horn 2001: 285). We can find examples of this phenomenon in the black-American English and southern English dialects.

In Bernini and Ramat’s study (1996) of thirty-one languages under investigation, eighteen languages allowed negative concord while seven did not. The remaining languages did not have the category of negative quantifiers so they were not counted. This points to an obvious discrepancy between the majority of European languages and English. However, the fact that other six languages that also do not permit negative concord are all Germanic languages makes English a typical Germanic, but an atypical European language. Because of its past as a negative concord language, as well as the fact that it is an atypical European language, one could wonder whether the standard variety of English was not actually a divergence from the more natural form, given that many dialects (especially in the southern part of the British island) still use negative concord, as well as the fact that children tend to gravitate towards negative concord interpretations (Thornton et al. 2016).

When it comes to grammatical features of negation, English most frequently uses *not* and *no* to negate sentences and sentence parts respectively. However, there are many other words which may signal negation in the English language such as *never*, *neither*, *none*, *no one*, *nor*, *nothing*, *nobody* etc. All of the words which are used to negate are commonly called n-words or specific negative markers (Laka 2017 [1994]: 80). These words are considered to be primary negative constituents and they can furthermore be classified into particular verbal quantifier classes. Quantifiers are words which express quantity. There are two categories of quantifiers: universal and existential. A quantifier is described as universal if it encompasses the entirety of the matter e.g., *all*, *every*, *always*, *everybody*, *everything* and *everywhere*. On the other hand, an existential quantifier is a quantifier that is valid for at least one object in question e.g., *some*, *a/an*. Once a universal quantifier is negated it becomes a non-universal quantifier ‘not every X is Y’. Negating an existential quantifier gives a null quantifier ‘every X is not Y’. (Zovko Dinković 2013: 215). There are also secondary negative words in English which denote a semi-negative sentence and they include words like *few*, *hardly*, *little*, *rarely*, *scarcely* and *seldom* (Cambridge Grammar of English 2006: 729).

Given that English is a double negation language, simple negative declarative clauses are formed by using *not* after a modal or auxiliary verb, or after the copular verb *be* (e.g., *I was not*

happy with my grade). If there are no modal or auxiliary verbs or copular verb *be*, the auxiliary verb *do* is used with *not* to form a negative sentence (e.g., *I did not see that coming*). Negative quantifiers and other words which may signify negation (*hardly, few, scarcely*, etc.) are only used in sentences with a positive predicate. For example, a negative sentence in Standard English is: *I saw nobody*. In this sentence, the positive predicate *I saw* is followed by a negative quantifier *nobody*, as the double negation principle demands. Therefore, to say *I did not see nobody* is false⁷ since the negated predicate *did not* cannot be followed by a negative quantifier (in this case *nobody*). This is because the principle of double negation entails that two negative markers in a single clause cancel each other out and the sentence gains affirmative meaning. Therefore, a clause with a negated predicate entails the use of positive pronouns and quantifiers, and an affirmative predicate entails the use of negative constituents. Using negative words after a negated predicate gives a negative concord sentence which is grammatically incorrect in the Standard English language.

2.2.2. Negation in the Croatian language

The commonest way to negate sentences in the Croatian language is by placing the negative particle *ne* in front of a finite lexical verb or on the auxiliary. For example, *Ne želim izaći van*. ('I don't want to go outside'). When a verb is negated in a sentence, the indefinite pronouns and adverbs take on a negative form (Barić et al. 1997: 445). For example, *Nisam ništa čuo*. ('I didn't hear anything'). Sentences can also be negated by the use of the negative particle *ni*, the prefixes *ne-* and *ni-* and the conjunction *niti* however, this classification is not compatible with traditional grammars and language manuals (cf. Zovko Dinković 2013: 146). Here are some examples: *Naš auto nije ni brz ni jeftin*. ('Our car is neither fast nor cheap'). *Nisam to tražio niti sam to htio*. ('I wasn't looking for it nor did I want it'). *Sretan - nesretan* ('happy – unhappy'). *Tko – nitko* ('who – nobody'). This type of negation is called explicit negation because it contains an explicit negative marker (for example, the particle *ne*) and it carries semantically negative meaning. Given that the Croatian language is a negative concord language, the number of negative markers in a sentence can be unlimited. For example, *Nitko ništa nije ni čuo ni vidio*. ('Nobody neither saw nor heard anything'). There is also implicit negation, which does not contain explicit

⁷ It is false if we want to convey the message that we didn't see anybody however, this sentence can also be interpreted as an emphatic statement meaning we did see somebody contrary to someone's expectation.

negative markers but nonetheless carries negative meaning. For example, *Malo poslova je dobro plaćeno*. ('Few jobs are well-paid'). The implicit negative meaning of this sentence is that most jobs are not well-paid.

There are three linguistic levels on which negation can appear. Firstly, there is negation on the lexical level. This negation manifests itself through words which carry negative meaning: those that are formed by adding a negative affix, such as *nesretan*, *neozbiljan*, *neobojan* ('unhappy, immature, uncolored') and those which carry inherent negative meaning, such as *sumnjati*, *zabraniti* ('doubt', 'forbid') in Croatian, and *hardly* and *scarcely* in English. For example, *Sumnjam da će stići na vrijeme*. ('I doubt that he will come on time'). Negation on the syntactic level comprises constituent negation, where a particular constituent is being negated using a negative marker, e.g. *Teško je ne dijeliti njezino mišljenje*. ('It's hard not to agree with her'), and sentential negation, where the negation of the predicate negates the entire proposition: *Iris nije zaspala*. ('Iris did not fall asleep'). And finally, negation can appear on the textual level. For example, A: *Je li zaspala?* B: *Nije*. ('A: Did she fall asleep? B: No.'). (Zovko Dinković 2007).

Negative forms of adverbs and adjectives can also express different levels of gradation and they depict the truth which is situated somewhere between the two polarities (not bad = neither good nor bad). For example, *Kako ste se proveli sinoć? – Nije bilo loše*. ('Did you have a good time last night? – It wasn't bad'). This type of scalarity can be expressed in the form of a double negation sentence. For example, *Julija nije nesretna što se seli*. ('Julija is not unhappy about moving house.') carries a semantically positive meaning which is not synonymous with the sentence *Julija je sretna što se seli*. ('Julija is happy about moving house') because not being unhappy can signify any other emotion other than unhappy. Therefore, double negation is not completely prohibited in Croatian. It is usually used to emphasize the meaning of the sentence (e.g., *Obećala sam mu, ne mogu sada ne doći. = Moram doći*. ('I promised him, I cannot not come now. = I have to come.'). (Ćoso and Bogunović [year unknown]: 3). Nevertheless, sentences which carry multiple negative markers are more complex to understand and process. Ćoso (2015) found in her experiment with 32 Croatian psychology students that, on average, it took students significantly longer to process and correctly interpret negative sentences compared to the affirmative sentences. Moreover, it took them additional time to understand a double negation sentence compared to a negative concord sentence. We will explore this phenomenon in our

experiment with ten children who were also presented with negative concord and double negation sentences which will reveal to us whether children possess the capacity to comprehend and dissect the meaning of negative phrases with multiple negations.

3. Children's language acquisition

“Language is clearly a species-specific attribute of humans, who are born with dedicated neural architecture for developing linguistic abilities and learn the language that they encounter in their environment, not a generic human communication system that is identical world-wide. Clearly, both nature – the genetic predisposition to learn and use language – and nurture – the linguistic, social, cultural and emotional input that feeds acquisition – are crucial to learning a first language” (Herschensohn 2007: 27).

Language is a rather complex system of symbols and sounds. It contains many grammatical rules as well as a possibility to generate an infinite number of sentences with a finite vocabulary. Children are usually exposed to their native language as soon as they are born which is when the very first stage of their language acquisition process starts. In the first six months they do not comprehend any words. At six months old, they start to understand their names and at 8-10 months they start to understand first few generic words, probably those which have been repeated the most. On average, it is at the age of 1 that they first start to produce speech (Hoff 2014: 5). Their speech production is very simple at the beginning with sentences consisting usually of one or two words accompanied with gesticulation. Gradually, they start to produce more complex sentences and their vocabulary range dramatically widens. At the final stage, which is around the age of 3 and 4, children learn to correctly produce simple negative sentences as well as ask very simple questions. They are capable of differentiating between diverse syntactic elements, understanding them correctly and using them in their speech. The progression between the stages happens in a relatively quick and effortless manner. It is believed that the language acquisition is completed by the age of four (Hoff 2014: 7). However, language competence continues to develop on every linguistic level after the age of four. This includes articulation, sentence structure (learning negative and interrogative forms), vocabulary etc. Children at first make a lot of mistakes however, they are quick to learn correct form and use it in their further language production. They understand and easily follow language rules without ever being exposed to complex grammatical elements.

Therefore, it is not unusual that many scientists, linguists and psychologists have been trying to uncover and understand children's capability to learn such a complex symbolic system as language. The attempt to discover children's ability to acquire a language has driven scientists in many different directions and consequently, there are many completely opposing theories which explain the mechanism of language acquisition.

In 1950s, two of the most prominent theories about language acquisition were behaviorism and cognitivism. Behaviorism held the belief that any change in behavior was a consequence of external elements. It was, therefore, considered unnecessary to explore the mind because all human behavior was dependent on circumstances and experiences outside it. Cognitivism, on the other hand, promoted the idea that it was in fact the human mind which was responsible for all human behavior. (Ertmer and Newby 2013, Hoff 2014) We cannot separate human existence from the mind. The mind is responsible for our actions. In fact, one of the strongest cognitivist arguments is the fact that children are capable of learning a language to which they are exposed perfectly and without ever needing to go through rigorous teachings of grammatical rules. Nevertheless, even though cognitive scientists agree that the mind is responsible for human behavior, they do not agree on how the mind works. Consequently, many of them are divided when it comes to the mind's ability to absorb and then produce language at the early human stage. In 1960s, Noam Chomsky offered a truly revolutionary viewpoint on language acquisition. Linguists at this time tried to find patterns in linguistic production of the speakers in order to describe the regularities of language. However, Chomsky believed that to be the wrong approach since he thought that speakers' production was the result of the underlying mental grammar which every human possesses. In an interview with Wiktor Osiatynski, Chomsky (1984) suggests that:

“The assumption is that physical structures are genetically inherited and intellectual structures are learned. I think that this assumption is wrong. None of these structures is learned. They all grow; they grow in comparable ways; their ultimate forms are heavily dependent on genetic predispositions... I have little doubt that we would find structures in the brain for social interactions, or language, or analysis of personality — a whole variety of systems developed on the basis of a specific biological endowment” (p. 96).

His theory is that the human mind has innate faculties which allow it to understand and produce language. He believed that every human is born with a set of atomic grammatical

categories which are similar in all languages and which make up the building blocks of every language. This theory is called the Universal Grammar and it presupposes “a system of principles and structures that are the prerequisites for acquisition of language, and to which every language necessarily conforms” (Chomsky in Osiatynski 1984: 97). This means that the human brain is equipped with a device which allows it to transform the input, which it receives, into the output, which is a comprehensive and correct language production. Chomsky named this ability the *Language Acquisition Device (LAD)* (Hoff 2014: 12). However, not everyone was quick to accept this theory. The Social Interactionist approach, which is advocated by linguists and professors such as Alison Gopnik, Andrew Meltzoff and Anat Ninio, as well as the Dynamical system theory, proposed by Kees de Bot, both reject the innateness premise and suggest that language is a social construct or rather that it is “a result of the continuous interaction of the components of the system and the environment” (Hoff 2014:13). There are also many other theories which try to understand human capacity to produce language however, the main discrepancy between all these theories is the never-ending debate whether language is a social construct and it simply reflects a human need and desire to communicate and to connect to others, or whether language stems from an innate mental language-learning equipment which is activated upon being exposed to it. The debate between these two opposing views continues to this day. Nevertheless,

“the consensus holds, however, that prelinguistic communication and extralinguistic knowledge (acquired, naturally, through experience) play crucially important roles in acquisition, but that perhaps the most critical role of all is that of the interaction, paralinguistic as well as linguistic, which takes place between the child and the mother (or other caregiver). The mother, it is claimed, models language for the child, adapting her outputs to his linguistic level at every stage” (Bickerton 2016: 124).

This proposition is obviously not entirely correct because many children who speak fluently their mother tongue did not learn it from their mothers. However, this idea underlines an incredible importance for children to be exposed to language as soon as possible, before or at least during an active language learning period. This period is more commonly known as critical period for language acquisition (Lenneberg 1967, Herschensohn 2007) and it follows maturational scheduling, which suggests that all children across the world show similar starting and finishing ages of language development. Herschensohn underlines that “for first language, evidence shows

a clear effect of age on acquisition, for L1 phonology (sound system), grammar and stylistic mastery are not thoroughly acquired if age of onset passes five to seven years, and L1 is acquired with major deficits if age of onset passes twelve years” (3). This means that if children are not exposed to language during the critical period for language acquisition, they will not acquire language proficiently. Nonetheless, learning a language later in life is definitely possible but achieving fluency proved to be much more difficult. The examples of this phenomenon are feral children and child abuse cases. The best documented case is that of “Genie”. She spent her childhood confined in a small room with almost no human contact (except for feeding) and an insignificant amount of language directed at her. She was 13;7 years old when found with a physiognomy of a child half her age and no language skills. Nevertheless, Genie showed rapid language learning skills through normal and natural learning sequences but this rapid development stopped in the domains of morphology and syntax, which she was never able to master completely. Long (1988) writes that “she was always better at vocabulary and semantics than syntax, and at comprehension than production” (11). This is a clear example that language acquisition is possible long after the critical period for language acquisition even though this learning is irregular and incomplete.

3.1. Children’s acquisition of negation

One of the very first words that children learn and therefore use is “no”. Negation is an incredibly important linguistic phenomenon, which children use frequently from the very start. Yet, negation in children’s language acquisition is a rather unexplored territory. Still, there are some important findings which explain children’s ability to acquire such a complex linguistic phenomenon as negation. Vaidyanathan (1991) gives a brief overview of the four stages of development of negative sentence structure proposed by Klima & Bellugi (1966). She writes:

“Klima & Bellugi (1966) and Bellugi (1967) identified four distinct stages reflecting the linguistic derivation of negative sentences in a standard transformational grammar. In stage I the negation was considered external to the sentence, that is, the negatives were simple propositions preceded by no or not. Stage II was characterized by intrasentential negation where the negative element preceded the VP. Auxiliary inversion and do support were not used in that stage. In stages III and IV children affixed the negative marker to the appropriate

auxiliary verb and began using a range of auxiliaries with their corresponding negative forms” (52, 53).

This categorization implies that at the initial stage of negation production, a negative morpheme *no* (sometimes also *not*) is most often used at the beginning or at the end of a sentence. For example, *No daddy home* or *Cookie no*. This form continues well into the second stage and negation is positioned sentence-internally in combination with a verb (e.g., *I no want milk*). Negative auxiliary forms are restricted to *don't* and *can't* and the rest of auxiliaries were largely absent. So, instead of saying *Daddy isn't here*, very young children would usually say *Daddy not here*. Or instead of *I don't like it*, they would say *I no like it*. This stage is at around 18 months to two years of age (Hoff 2014). It is in the third stage that children begin using a whole variety of auxiliary verbs, both in their positive and their negative forms. Children reach the first and second stage at a similar time, but some children reach the third stage sooner than other children (Eve 2;2, Adam 3;2 and Sarah 3;8)⁸ (Thornton and Tesan 2016: 369).

Moreover, children use negation to express many different concepts. Nordmeyer and Frank (2013) suggest three primary categories of negation in children's early negative sentences and those are: *nonexistence*, *rejection*, and *denial/truth-functional* as well as “*self-prohibition*, used when the child is about to engage in a forbidden action, and *unfulfilled expectations*, used when an expected action/object is not present” (1). They write that “the acquisition of linguistic negation follows a long developmental trajectory. As early as 12 months old, children produce negation in the form of the word “no”, typically to express non-existence and rejection (Bloom, 1970, 1993; Pea, 1980). Denial doesn't emerge until almost a year later, between 19 and 23 months (Pea, 1980)” (3). Between the ages of 2 and 3, comprehension of negative sentences dramatically increases and this is proven by the experiment done by Nordmeyer and Frank (2013) on 91 children between the ages of 2 and 4. They created two between-subjects conditions in order to study the comprehension of different types of negative sentences. The first condition was *something* which means that the negative sentences referred to boys who carried particular items (e.g., a boy holding presents and a boy holding apples). The second condition was *nothing* which means that negative sentences referred to boys who carried no object (a boy was empty-handed). The data from their

⁸ Eve is an exception due to her extremely advanced language learning abilities, Adam and Sarah are more representative of typical language production stage

experiment show that 3-year-olds have a higher accuracy rate of processing negative sentences as well as a lower reaction time compared to 2-year-olds. Moreover, children of both age groups struggled to identify the referent of *nothing* condition (therefore, struggling to identify nonexistence) compared to the referent of *something* condition. In addition, children showed a surprising tendency to focus on a negated noun in a *something* condition but only 3-year-olds were able to focus on the correct referent in the end.

This study showed that children's acquisition and comprehension of negation develops rather quickly. The improvement they obtain in only one year is very significant and crucial, and it is indispensable for further development of their language skills. It is also evident that learning negation is not a straightforward process but that there exists a certain pattern which seems to be universal. In order to provide further support for this, we compare the results of two similar experiments: one conducted on English preschool children by Thornton et al. (2016) and the other conducted for the purpose of this thesis on Croatian preschool children between the ages of 3 and 6;5. The aim was to obtain information about children's development in comprehension of negative sentences.

4. Experiment

The experiment was conducted on ten Croatian preschool children between the ages of 3 and 6;5 in the kindergarten "Dugi Rat" in Dugi Rat. The children were divided into two groups of five: the first group were children between the ages of 3 and 4 and the second group between the ages of 4;5 and 6;5. It is important to mention that in both groups additional children wanted to join in on the discussion therefore, there were usually around 8 to 10 children answering the questions. However, only the answers of children who were assigned to participate in their respective groups were recorded. The experiment was conducted on two separate days. On May 27th the first group of children was tested. It was the group of children between the ages of 3 and 4 and the experiment lasted for 1 hour 10 minutes. The second group was tested on May 31st. It was the group of children between the ages of 4;5 and 6;5. The experiment was completed after 52 minutes and 27 seconds. Both groups were shown the same materials and asked the same questions. This experiment heavily relied on study by Thornton et al. (2016). Also, we took certain ideas and parameters from Čoso's experiment (2015), which were simplified and modified so that children would understand

them. However, results from the experiment will only be compared to the results which Thornton et al. (2016) obtained from their experiment. The negative sentences used in the experiment had different levels of complexity. Some contained only one negative word and it was expected that even the youngest children would understand them correctly. On the other hand, there were also some negative sentences with two or more negative words which required multiple steps in order to process their meaning.

The experiment was divided into two sections. During the first part, the children were shown five photographs appropriate for their age followed by four statements (see Appendix B). The order of statements was the same for all five photos. The first statement was an affirmative sentence. The second statement contained sentential negation, i.e. one negative marker which was used to negate the verb. The third statement contained a constituent negation, i.e. the sentence was affirmative but contained an adjective in its negative form. The final statement was an example of a true double negation sentence, with two negative markers which canceled each other out, resulting in a positive sentence. The second part of the experiment consisted of four short stories (see Appendix C). There were three questions per story with a multiple-choice type of answer. Every answer was a negative statement with one or more negative words. Sometimes the answers were correct and sometimes they were not. All negative statements were divided into three categories: the first category were target sentences which contained multiple negation. Even though the Croatian language supports multiple negative words in a single negative clause, target sentences use the double negation and not the negative concord principle which is normally used in Croatian grammar. The second category were control sentences which contained multiple negative words in a true negative concord relation. The final category contained filler sentences which were simple and easily understood affirmative or negative sentences (see Appendix C).⁹ Therefore, the aim of this comparative analysis is to analyze and understand whether there exists a natural inclination towards one type of negation over the other in both languages as well as to see how children of the same age and completely different linguistic background understand double negation and negative concord sentences.

4.1. Methodology

⁹ These categories are taken from the experiment done by Thornton et al. (2016) but because English and Croatian use different negative systems, different types of sentences were used for the same category.

The experiment was conducted in children's playrooms during the morning shift. Both groups were sat down at a round table in order for the interaction to be as natural and effortless as possible. Both tests were recorded with a voice recorder on a smartphone, which was placed at the center of the table. The first part of the experiment consisted of presenting five photographs on a tablet so that all the children could see them clearly. They were encouraged to talk about all the elements they recognized on the photograph so as to get them relaxed and ready for an open conversation. After a brief general discussion about the theme of the photo, I read them four statements and they were then instructed to either agree or disagree with a statement based on their understanding. When the first part of the experiment was over, the children were given a short break due to the fact that it was evident that their concentration was waning¹⁰. The second part consisted of retelling four very short stories with as little detail as possible so that even the youngest children would understand the plotline. Retelling the stories was accompanied by a toy we all picked together. In the first group, we picked a cat and named it Maša, and in the second group we picked a Barbie doll and named it Luna. These toys served as characters from the stories in order to offer children a visual stimulus for the sake of facilitating their comprehension and the retention of the story. At the end of each story, one child was asked to briefly retell the story in order to underline the main theme and the main details of the tale to make sure everyone was capable of answering the questions. Thereafter, "Maša" and "Luna" were asked three questions and they would offer answers and the children were again asked to either agree or disagree with their answers. Each answer given by Maša and Luna was articulated with neutral prosody so as not to give any hints or inclinations whether the response is correct or not. Throughout the experiment the children were changing opinions and their answers. Nevertheless, only their first spontaneous reactions were recorded, while any change of mind because of the peer pressure was not noted.

4.2. Results

The first part of the experiment tested the children's basic understanding of negative sentences. The first category which will be analyzed are simple affirmative sentences. The examples used in the experiment were:

1. *Cesta je ravna.* (netočno)

'The road is straight.' (incorrect)

¹⁰ This is especially true for the first group of children (aged 3 to 4;5) who took 15 minutes to rest, play with their toys and eat a snack before the second part of the experiment could begin.

2. <i>Pas je nasmijan.</i> (točno)	‘The dog is happy.’ (correct)
3. <i>Zeko je obojan.</i> (netočno)	‘The bunny is colored.’ (incorrect)
4. <i>Kruh je namazan.</i> (točno)	‘The toast is spread.’ (correct)
5. <i>Dijete je mirno.</i> (netočno)	‘The child is calm.’ (incorrect)

Children from both groups effortlessly recognized and correctly estimated the truth value of the first four statements. There were no hesitations and they very confidently agreed and disagreed with the statements. However, the final statement *Dijete je mirno.* – ‘The child is calm.’ caused issues for children from the first group. Upon discussing the picture, the children correctly described the photo and they clearly saw a boy jumping high with his arms outstretched and a big smile on his face. Nevertheless, upon being asked whether the boy is calm, they all offered an affirmative answer. However, no child was able to explain why they agreed with the statement. On the contrary, the second group of children had no issue understanding the sentence and they immediately disagreed with the statement.

The second category consisted of statements containing sentential negation. These include:

1. <i>Cesta nije ravna.</i> (točno)	‘The road is not straight.’ (correct)
2. <i>Pas nije nasmijan.</i> (netočno)	‘The dog is not happy.’ (incorrect)
3. <i>Zeko nije obojan.</i> (točno)	‘The bunny is not colored.’ (correct)
4. <i>Kruh nije namazan.</i> (netočno)	‘The toast is not spread.’ (incorrect)
5. <i>Dijete nije mirno.</i> (točno)	‘The child is not calm.’ (correct)

There were no major issues with this category either and the children successfully recognized their negative meaning and appropriately agreed and disagreed with the statements. Nevertheless, for the first group, the fourth and fifth statement caused slight problems. When it comes to the fourth statement, *Kruh nije namazan.* – ‘The toast is not spread.’ only one child disagreed while the rest of the group agreed even though they all previously recognized and confirmed the fact that the little boy on the photo was putting honey and bananas on his toast. Moreover, they unanimously disagreed with the final statement but were again unable to provide an explanation for their choice. On the other hand, the second group provided correct and confident answers for all five statements.

The third category were sentences containing constituent negation. These include:

- | | |
|----------------------------------------|-------------------------------------------------|
| 1. <i>Cesta je neravna.</i> (točno) | ‘The road is unstraight*.’ (correct) |
| 2. <i>Pas je nenasmijan.</i> (netočno) | ‘The dog is unhappy.’ (incorrect) |
| 3. <i>Zeko je nebojan.</i> (točno) | ‘The bunny is uncolored.’ (correct) |
| 4. <i>Kruh je nenamazan.</i> (netočno) | ‘The toast is unspread*.’ (incorrect) |
| 5. <i>Dijete je nemirno.</i> (točno) | ‘The child is uncalm*.’ ¹¹ (correct) |

These sentences caused a bit more problems for the first group compared to the statements from the previous two categories. They answered correctly for the first two statements however, one child disagreed with the third statement while others agreed. Moreover, two children disagreed with the fourth statement while two agreed and one child did not answer. Finally, they all disagreed with the final statement. Given that children unanimously disagreed with both sentential negation *Dijete nije mirno*. ‘The child is not calm.’ and constituent negation *Dijete je nemirno*. ‘The child is restless. (lit. the child is uncalm)’, I asked them to explain to me the meaning of the word “restless”. No child was willing to offer an explanation of this adjective. With a little bit of encouragement, one boy offered a definition. In his words, being restless means “jumping on a trampoline without taking your shoes off”. The rest of the children immediately agreed and started commenting how wearing your shoes in the playroom or while jumping on a trampoline is prohibited in kindergartens. From this we can conclude that children from the first group lacked semantic knowledge and could not properly agree or disagree with the statements from the last photo. Their understanding of the adjective “restless” resembles more to that of “disobedient”. It is possible that because children did not know the meaning of the adjective, they drew the best and most plausible conclusion from the picture that was presented to them. Therefore, mistakes made for the set of statements for the final photo can largely be attributed to their semantic miscomprehension and unfamiliarity with the given word, which further complicated their understanding of the sentences. On the other hand, children from the second group had no issue with understanding constituent negation and offered correct answers to all five statements.

The final set of statements were double negation sentences and it was expected that children from both groups would encounter most problems with this type of negation. The examples from the experiment are the following:

¹¹ Sentences in English contain lexical errors in order to show how the sentence looks in Croatian because in this case, a correct translation would mean losing the morphological link to the initial (positive) form of the adjective

- | | |
|------------------------------------------|-------------------------------------------|
| 1. <i>Cesta nije neravna.</i> (netočno) | ‘The road is not unstraight.’ (incorrect) |
| 2. <i>Pas nije nenasmijan.</i> (tačno) | ‘The dog is not unhappy.’ (correct) |
| 3. <i>Zeko nije nebojan.</i> (netočno) | ‘The bunny is not uncolored.’ (incorrect) |
| 4. <i>Kruh nije nenamazan.</i> (tačno) | ‘The toast is not unspread.’ (correct) |
| 5. <i>Dijete nije nemirno.</i> (netočno) | ‘The child is not uncalm.’ (incorrect) |

The children from the first group evidently struggled with the structure and the meaning of these sentences. They took more time to think about the meaning of double negation sentences than for any other negative structure. They were reluctant to answer and would usually agree with the child who first offered their answer. Four children agreed with the first sentence while one disagreed. However, when asked the reason for their agreement, they were unable to provide an explanation. In the words of one boy, the sentence *Cesta nije neravna*. ‘The road is not unstraight.’ is correct because “there are some sheep on the road so the boy will have to use breaks”. Moreover, they all agreed with the second statement except for one girl who disagreed and said: “But look, he is smiling.” which means she misinterpreted its meaning. Furthermore, four children unconvincingly disagreed with the third statement. One child agreed because they thought it meant that the bunny was colored. Other children explained the correct meaning and rightfully disagreed. Moreover, they all agreed with the fourth statement even though they interpreted it as the toast not being spread. Therefore, even though they technically correctly answered, they assigned a wrong meaning to the statement. Finally, four children agreed with the last statement and one disagreed without any further explanation. When it comes to the second group, the children were also visibly confused by such sentence form. They struggled most with the first sentence. They repeated the phrase “not unstraight*” until it started making sense to them. After a couple of repetitions and around ten seconds, four of them concluded that the sentence means that the road is straight while one child thought it meant it was not straight. The same ratio follows in the second sentence with four children interpreting it as an affirmative sentence and one child as a negative sentence. For the rest of the sentences, they were unanimous in agreement that the third sentence was incorrect, the fourth was correct and the final sentence was again incorrect. The children took significantly less time to comprehend and react to the last double negation sentence compared to the first double negation sentence. This could imply that children from the second group “learned” from the first

two examples of double negation sentences that such sentences carry a positive meaning and applied the same logic for the other three sentences given that they all answered them correctly (unlike children in the first group who were equally confused by all five double negation sentences).

In the second part, both groups were told the same four stories (see Appendix C). Each story had three questions with several answers that were offered. These answers were grouped into three different categories: target, control and filler sentences. It was expected that children would have no trouble answering filler sentences, that control sentences would produce a little bit of confusion and that they would encounter most difficulties with the target sentences. Before any questions were asked, it was first made sure that all children understood the story and remembered the crucial details. Filler sentences were simple sentences which contained either sentential or constituent negation. The examples used in the experiment are:

- | | |
|---------------------------------------------------------|-----------------------------------------------------------|
| 1. <i>Irena nije bila sretna.</i> (točno) | ‘Irena was not happy.’ (correct) |
| 2. <i>Toma nije pozvao svu djecu.</i> (točno) | ‘Toma did not invite all children.’ (correct) |
| 3. <i>Martin nije prespavao svoj doručak.</i> (netočno) | ‘Martin did not sleep through his breakfast.’ (incorrect) |
| 4. <i>Kristina se ne boji pjevati sama.</i> (netočno) | ‘Kristina is not afraid to sing alone.’ (incorrect) |

Children from the first group provided correct answers for the first two filler sentences. For the first sentence, they simply stated that Irena was sad and for the second sentence, they agreed and confirmed that Toma only invited a few friends. However, there were mixed reactions to the third sentence. Three children disagreed with the statement while two agreed. Upon my encouragement to elaborate why they agree with the statement, they explained that in the story, Martin slept through his breakfast and that this sentence meant that he did not sleep through it. Therefore, even though they are correct to assume that the sentence means that Martin did not sleep through his breakfast, they still agreed with the sentence despite the fact that they know he did. Nevertheless, they all confidently disagreed with the final statement even though it has the same form as the sentence from the previous story.

On the contrary, the children from the second group successfully assessed the filler sentences from the first two stories even though they never explicitly stated whether they agreed with the statement or not. Instead of explicitly answering the question, they explained and offered their own solution. For example, when asked if they agreed with the statement *Toma nije pozvao svu djecu*. ‘Toma did not invite all the children.’, they did not answer *yes* or *no*, they said: “He only invited a few of them.”. This allows us to conclude that they did recognize that the sentence was wrong but instead of disagreeing with it, they rather offered a correct interpretation. On the other hand, the filler sentence from the third story about the piggy Martin caused problems. They agreed with the statement that Martin did not sleep through his breakfast even though we had repeated multiple times that he did. Moreover, the same mistake happened in the final filler sentence. Upon hearing the question *Boji li se Kristina pjevati sama?* ‘Is Kristina afraid to sing alone?’, all children immediately exclaimed *yes*. However, when given the claim *Kristina se ne boji pjevati sama*. ‘Kristina is not afraid to sing alone.’, they all agreed with it.

The second category were control sentences which were negative concord phrases. The sentences from the experiment are:

1. *Jurica nije dobio nijedan poklon.* (netočno) ‘Jurica didn’t receive any gifts.’ (incorrect)
2. *Nijedan Tomin prijatelj nije došao.* (točno) ‘Not a single friend of Toma’s showed up.’
(correct)
3. *Nitko se nije glasno nasmijao.* (netočno) ‘Nobody laughed out loud.’ (incorrect)
4. *Nitko neće pjevati s Kristinom.* (netočno) ‘Nobody will sing with Kristina.’ (incorrect)

In the first group, the children generally struggled with control sentences and offered different answers. Four children disagreed with the first sentence while one agreed. They started discussing the meaning of the sentence between themselves and they came to the conclusion that it meant that Jurica did receive gifts and so they all eventually agreed with the statement. In other words, they attributed a double negation interpretation to a negative concord sentence. They disagreed with the second statement as well because they again attributed a double negation meaning to a negative concord sentence. Moreover, three children agreed with the third statement while two disagreed. The children who disagreed said that the statement was incorrect because everybody laughed in

the end. This confirms that they understood the story correctly and properly interpreted the negative concord sentence. Three children who agreed with the statement said that the sentence meant that everybody laughed in the end and that is why they agreed. Therefore, the majority of them misinterpreted the meaning of the statement. When it comes to the final control sentence, two children disagreed with it and three agreed. The children who disagreed explained that the sentence meant that nobody would sing with Kristina, which was not true, and thus their answer turned out to be correct. From these examples we can see that children from the first group often attributed a wrong interpretation to a negative concord sentence.

The children from the second group were much more unanimous in their answers. Four children agreed and only one disagreed with the first sentence. They disagreed with the second sentence because they thought it meant that some friends came and they knew nobody came. They were most likely confused by a negative quantifier *nijedan*. The same thing happened with the first group, - they assigned a double negation interpretation to a negative concord sentence. However, they attributed correct meaning to the third sentence and they all disagreed with it. They all agreed with the final control sentence even though it is incorrect. However, right after hearing the question *Hoće li svi zajedno pjevati s Kristinom?* ‘Will everyone sing together with Kristina?’ they immediately answered *yes* and then proceeded to agree with the incorrect negative statement.

The sentences which were predicted to cause most problems in comprehension were target sentences which were true double negation sentences. Even though this type of negation exists in Croatian, it is not as prominent as negative concord. The final semantic meaning of double negation phrase is positive and not negative. Target sentences which were presented to children were:

1. *Jurica nije bio nesretan.* (točno) ‘Jurica was not unhappy.’ (correct)
2. *Toma se neće nikada ne vidjeti sa svojim prijateljima.* (točno) ‘Toma will never not see his friends again.’ (correct)
3. *Martin nije bio neveseo kada je vidio da nema hrane.* (netočno) ‘Martin was not discontent when he saw there was no more food.’ (incorr.)

4. *Kristina nikada nije ne otpjevala neku pjesmu sama.* ‘Kristina had never not sung a song

(netočno)

alone.’ (incorrect)

The children from the first group struggled significantly more with the target sentences than children from the second group. They visibly did not understand them and were offering answers because they were asked to do so. Nevertheless, there were still mixed answers and they were not as unanimous in their understanding of target sentences as the children from the second group. Four out of five children agreed with the first sentence and they were correct. Three out of five children agreed with the second sentence while two disagreed. All children were asked to elaborate why they agreed or disagreed with the statement but nobody was able to offer an answer. Moreover, they all agreed with the third statement and three out of five agreed with the last sentence while two disagreed without being able to explain why.

The children from the second group also struggled to understand the meaning of the target sentences but they showcased a much better level of comprehension. They were unanimous in agreement that the first sentence was correct and that the second one was incorrect, and they were right. In both examples they were successful in recognizing the double negation meaning. However, four out of five children agreed with the third target sentence because its meaning was that Martin was not happy. Only one child was correct to disagree but when asked why she disagreed, she said: “Because piggy Martin did not sleep through his breakfast.” which was not true. They all agreed with the final target sentence, which was correct, but nobody was able to explain why they agreed. Two children changed their answer after they thought about the sentence a little bit but were also unable to explain why they agreed.

4.3. Discussion

There may be numerous reasons as to why the children made certain errors throughout the experiment. As the results show, some mistakes were made even with affirmative sentences or when they perfectly understood the picture or the story. When it comes to the first group, the main issue was incomplete language development hence, misinterpretations and miscomprehensions occurred. The children were still in an active language learning process which ends at the age of

four but children continue learning and perfecting their language for quite some time after that age (Hoff 2014). This means that they still lack grammatical and lexical knowledge which is crucial in order to understand complex negative sentences. At this age, the children still mostly use simple sentence structure and easy vocabulary. Adults usually use imperatives with children or also simple, affirmative sentences or questions. Therefore, the children from the first group are not well-habituated to negative sentences especially if they contain multiple negations. All children dealt well with sentences containing constituent and sentential negation because their meaning was quite clear and straightforward. However, they struggled the most with negative concord and double negation sentences. These types of sentences require a multiple-step process of interpretation which is still quite challenging for children their age. The second part of the experiment showed that children were capable of understanding stories and they answered the questions correctly before any answers were presented to them. However, even when they knew the right answer, they still sometimes agreed with an incorrect or disagreed with the correct statement. There are many potential reasons behind this error type, one of which is the inability to fully understand a negative constituent in a sentence, which results in misunderstanding the meaning. For children, as well as adults, it is much more natural to describe a situation using affirmation rather than negation. Instead of saying “Kristina is not afraid.”, children prefer and understand better “Kristina is confident.”.

Furthermore, it is important to keep in mind that participants in this experiment were children so a lack of concentration, significantly shorter focus range as well as many distractions were also major factors for certain mistakes. Each story had to be retold three times with the exception of the third story which had to be retold five times because they were not able to focus very well and did not pay attention so it was impossible to answer the questions properly. Moreover, children often did not know how to react to a given statement and would just comply with the first child who would answer a question. When confronted with a sentence they did not understand, children usually agreed with the first person who offered an answer or would simply answer “yes”. This is also known as the Principle of Charity, which means that “people exhibit a “Yes” bias in many psychological tasks (...) because [they] make an effort to come up with an interpretation that makes the sentence comport with reality, whenever possible” (Thornton et al. 2016: 22). And even though there were mixed answers in every sentence category, the largest number of mistakes were made for double negation sentences, which were also target sentences in the second part of the

experiment as well as control sentences which were negative concord sentences. And even though the latter is a standard negative structure in the Croatian language, it contains multiple negative words, which children from the first group found difficult to interpret.

The children from the second group showed a significantly better level of semantic comprehension and grammatical knowledge. They also made the largest number of mistakes with the sentences containing multiple negative words. However, their number was notably smaller. The majority of children from the second group understood the logic behind double negation sentences and understood them correctly. It is important to highlight that in the second group, once the children learned the concept of interpreting the double negation sentences, they applied that same logic throughout the experiment. For example, when they first encountered the double negation sentence, it took them around twelve seconds to understand its meaning. However, it took them significantly less time to understand the second double negation sentence and when presented with the third example, they immediately offered a correct interpretation. What is interesting is that at the beginning of the experiment, the children put a lot of thought into understanding double negation sentences. Because they are quick learners, once they understood that such sentences have a positive meaning, they continued using that same logic with negative concord sentences as well. This caused them to misinterpret negative concord sentences because they applied the double negation principle on both types of negative sentences. This shows that they do not inherently understand which type of negation is a property of the Croatian language, they simply heard multiple negations in a sentence and directly applied the double negation principle which they have just learned. It is very possible that had they not been exposed to double negation sentences, they would correctly interpret negative concord negation. Nonetheless, children aged 4;5 to 6;5 showed a tremendous improvement and susceptibility to learning new concepts as well as grammatical and linguistic structures compared to the children from the first group.

4.5. Similarities and differences between English and Croatian preschool children

In a similar experiment involving 24 English preschool children, Thornton et al. (2016) found that “the adult participants produced double negation responses to the test sentences 82% of the time, whereas children produced double negation responses only 25% of the time” (18). They found that 15 children exhibited a preference for the negative concord interpretation, 3 preferred

the double negation interpretation, and 2 children had no preference (20). This means that even though double negation sentences are the norm in the English language, the children had the tendency to assign the negative concord meaning due to their inability to process double negation meaning. Thornton et al. claim that “young English-speaking children appear to go through a stage of language development at which their grammars generate negative concord interpretations, even in the absence of evidence that these interpretations are permitted in the local language” (23). Therefore, children could not assign the correct meaning to the double negation sentences simply because they lack grammatical and linguistic knowledge to do so. They are in the language-learning phase where negative concord interpretation seems more logical and accessible. They have learned that children did not assign a negative meaning to the negative head *-n't*. Therefore, when presented with the sentence “The girl who skipped didn’t buy nothing” they applied the negative concord system of interpretation. Thornton and Tesan (2013) propose that “English is exceptional in having both an adverb and a head form of negation, [so] children must also add a negative head (i.e. *-n't*) to their grammar. This takes considerable time as the positive input that triggers syntactic negation and negative concord is absent in the input for standard English, and children must find alternative evidence” (367).

A similar pattern was shown in Croatian children as well. Croatian children also showed a greater tendency for a negative concord interpretation than double negation, especially in the first group. The children from the second group learned the correct interpretation of double negation sentences and applied the same principle to negative concord sentences. However, the children from the first group showed a strong inclination towards negative concord interpretation in all negative sentences. There were only a few cases in which they interpreted double negation sentences correctly however, this was due to misinterpretation of the story. Therefore, both English and Croatian children find negative concord sentences more accessible and easier to interpret than double negation. This means that children do not yet fully understand the meaning and function of each grammatical constituent and lack linguistic knowledge to interpret and understand when exactly two negative markers cancel each other out and when they can stand together. We can see this in both languages respectively as English and Croatian children mostly rely on *n*-words for negation. Hence, when they are presented with both a negated verb (i.e. *-n't* in English and *ne-*, *ni-* or any other morpheme which signals negation in Croatian) and an *n*-word, they simply lack the ability to interpret such sentence as an affirmative sentence. This is especially true for younger

children. That is why the first group of children interpreted the sentence “Martin wasn’t discontent” as “Martin is discontent”. They focused on the more prominent negative marker, in this case *discontent*, while the negative head *wasn’t*, even though they are familiar with it and know its meaning, was transformed into a positive head *is* because that was possibly the only interpretation they could have accessed. They were simply unable to grammatically deconstruct such sentences and opted for the easiest and most accessible interpretation which is negative concord. The same goes for English children and Thornton and Tesan (2013) explain that “there is little doubt that children’s non-adult productions of sentential negation are intertwined with their acquisition of the auxiliary verb system; clearly children cannot use *doesn’t*, for example, until they have mastered *do-support*” (371). Consequently, children cannot correctly understand and use negative structures until they first learn and successfully incorporate basic grammatical concepts in their speech. Once that is done, they will have all the tools to understand and correctly use sentences with one or more negations.

5. Conclusion

Although “no” is among the first words children learn to use, negation as a whole remains as quite a difficult grammatical system to grasp. It is more natural for all humans to describe the world around us in affirmative rather than negative statements. Nevertheless, our language would be incomplete without the possibility to negate. Despite its incredible importance in every language, the fact remains that negation requires more effort and time to understand. That is why children tend to struggle with negation, as well as some other categories -e.g., alternative questions, relative sentences etc., even when many other categories of speech are well developed. The aim of this experiment was to see, analyze and understand children’s process of interpretation of negative sentences with one and more negative constituents. Through a comparison between this study and that by Thornton et al. (2016), we were able to see that children who have a completely different linguistic background have similar linguistic tendencies. In this case, both English and Croatian children demonstrated difficulty in interpreting double negation sentences and they all largely preferred negative concord interpretations. This finding is even more significant for the English language due to the fact that double negation is the grammatical rule. And even though Croatian

is a negative concord language, adult speakers are still able to correctly interpret double negation sentences because they possess linguistic and grammatical knowledge in order to deconstruct a sentence and understand its meaning. On the other hand, younger children do not yet show that capacity and they struggle with fully understanding sentences containing multiple negations. However, older children showed a much greater knowledge and ability to understand complex negative sentences. They were able to reflect on the sentences and find correct meaning (although not every time) and their reaction time was notably shorter compared to younger children. This can point to the fact that learning to interpret and use complex negative sentences in everyday speech is one of the last steps in language learning period. This thesis is a small contribution to understanding children's perspective on the negative statement. Still, more research can and should be done on this topic as negation is a crucial part of children's linguistic as well as cognitive development.

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7. Appendix

A

Poštovani roditelji!

Za potrebe diplomskog rada **Helene Lukin**, studentice na Odsjeku za anglistiku Filozofskog fakulteta Sveučilišta u Zagrebu provodi se istraživanje na temu "*Understanding negation: a comparison between English and Croatian preschool children*" („Razumijevanje negacije: usporedba djece predškolske dobi govornika engleskog i hrvatskog jezika“). Cilj je ovog istraživanja provjeriti kako djeca razumiju različite nječne strukture u rečenici u hrvatskom jeziku i koji tip negacije prirodno i instinktivno biraju.

Podaci dobiveni u ovom istraživanju bit će strogo anonimizirani, povjerljivi i čuvani. Svi izvještaji nastali na temelju ovog istraživanja koristit će rezultate koji govore o grupi djece ove dobi općenito (nigdje se neće navoditi rezultati pojedinačnog sudionika), a rezultati će se koristiti isključivo za potrebe izrade navedenog diplomskog rada te se neće javno distribuirati niti davati trećim stranama.

Prije samog istraživanja željeli smo vas roditelje obavijestiti o istraživanju i zatražiti vašu suglasnost

Vašoj djeci ćemo pobliže objasniti svrhu ispitivanja, odgovoriti na njihova pitanja te ih zamoliti i za njihov pristanak za sudjelovanje u istraživanju. Nakon toga, ispitivanje će se obaviti samo s onom djecom koja su pristala sudjelovati. Ispitivanje se provodi kroz igru i spontani razgovor o kratkim pričama te uz nadzor odgajateljice skupine.

Ukoliko imate ikakvih pitanja, možete kontaktirati diplomanticu Helenu Lukin na sljedeći telefonski broj: 097 673 1929. Aktivnosti predviđene planom istraživanja odobrilo je Etičko povjerenstvo Odsjeka za psihologiju Filozofskog fakulteta u Zagrebu. Ukoliko imate neke pritužbe na provedeni postupak, molimo da se obratite na anglistika@ffzg.hr

SUGLASNOST

Suglasan sam da moje dijete _____
(ime i prezime, vrtićka skupina)

sudjeluje u istraživanju, uz pridržavanje Etičkog kodeksa i uz zaštitu tajnosti podataka (molim, zaokružite DA ukoliko ste suglasni da dijete sudjeluje u istraživanju, a NE ukoliko to ne želite).

DA NE

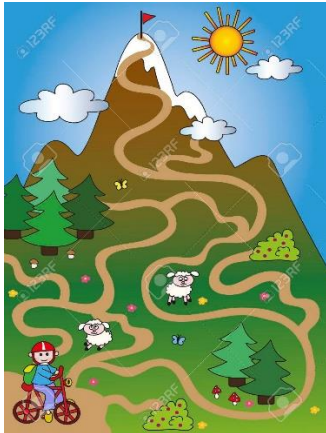
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U Dugom Ratu, 25. 5. 2021.

(potpis diplomantice)

B

Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



C

Story 1

Rođendan

Jurica je slavio peti rođendan. Došli su gosti i donijeli mu poklone. Petar je donio olovke u boji. Nataša je donijela knjigu sa slikama, a Marija čokoladu.

Mala Irena je zaboravila poklon kod kuće i zaplakala. Jurica se nasmijao i rekao: “Nemoj plakati! Ja sam tebe očekivao, a ne poklon”.

Pitanja:

1. Je li Jurica dobio poklone za svoj rođendan?
Jurica nije dobio nijedan poklon.
2. Je li Irena bila zadovoljna što nije donijela poklon Jurici?
Irena nije bila zadovoljna.
3. Je li Jurica bio nesretan što nije dobio poklon od Irene ?
Jurica nije bio nesretan.

Story 2

Jednog sunčanog dana, mali puž Toma odlučio je pozvati svoje prijatelje kod sebe da se malo igraju. Pozvao je nekoliko djece iz vrtića i par djece iz kvarta. Ali, ubrzo se sunce sakrilo iza oblaka i jaka kiša je počela padati. Strpljivi Toma čekao je svoje prijatelje da se pojave, ali nitko nije došao. Toma je bio jako tužan što se nitko nije pojavio, ali je i znao da će se nekada drugi put opet vidjeti.

Pitanja

1. Je li Toma pozvao svu djecu iz vrtića i kvarta ?
Toma nije pozvao svu djecu.
2. Koliko je Tominih prijatelja došlo kod njega?
Nijedan Tomin prijatelj nije došao.
3. Kada će se Toma opet vidjeti sa svojim prijateljima?
Toma se neće nikada ne vidjeti sa svojim prijateljima.

Story 3

Prašćić Martin je prava spavalica. Jednog jutra toliko je dugo spavao da je prespavao i doručak i ručak. Zato su se njegova starija braća odlučila našaliti na njegov račun. Uzeli su Martinov doručak i ručak i skrili ih u kuhinju. Kada se mali Martin napokon probudio, odmah je primjetio da mu nedostaje njegova omiljena hrana. Stoga upita braću: „Gdje mi je nestala hrana? Jeste li je, molim vas, negdje vidjeli?“. Braća odgovore: „Mi smo ti ju pojeli jer smo bili gladni.“ Martin brizne u plač, pa kako će preživjeti bez svog doručka i ručka. Majka se sažali i donese mu hranu, a mali Martin usklikne od sreće i navali jesti i svi su se glasno nasmijali.

Pitanja :

1. Je li Martin prespavao svoj doručak i ručak?
Martin nije prespavao svoj doručak i ručak.
2. Je li Martin bio veseo kada je vidio da nema hrane ?
Martin nije bio neveseo kada je vidio da nema hrane.
3. Jesu li se svi glasno nasmijali kada je Martin navalio jesti?
Nitko se nije glasno nasmijao.

Story 4

Danas je poseban dan! Slavi se dan vrtića i malena Kristina nastupit će na pozornici. Otpjevat će pjesmicu koju ih je teta naučila. Ali, Kristina ima veliki problem. Boji se pjevati sama. Na dan priredbe kaže mami: „Mama, jako se bojim jer nisam nikada ništa otpjevala. Što ako pogriješim?“. Mama ju zagrlj i kaže: „Nemoj se bojati! Svi koji smo u publici te volimo i pjevat ćemo skupa s tobom.“ Malena Kristina odmah vrati osmijeh na lice i s nestrpljenjem je iščekivala otpjevati svoju prvu pjesmu.

Pitanja:

1. Boji li se Kristina pjevati sama?
Kristina se ne boji pjevati sama.
2. Je li Kristina ikada otpjevala neku pjesmu?
Kristina nikada nije ne otpjevala neku pjesmu.
3. Hoće li svi u publici pjevati skupa s Kristinom?
Nitko neće pjevati s Kristinom.

