

A PSYCHOLINGUISTIC STUDY OF THE “THEORY OF MIND” OF TURKISH BILINGUAL CHILDREN



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ANNOTATION

This article **presents** the results of a study with Turkish preschool bilingual children living in Berlin, Germany. This article aims to examine the influence between the level of proficiency in the mother tongue (first language L1) and the official language (second language L2) on the one hand and the “theory of mind” on the other, or more precisely, how the lexical knowledge of L1 and L2 and the understanding of interrogative sentences used with a verb indicating mental states helps to understand the ToM.

Research methods and techniques. The study included 18 Turkish-German bilingual children attending a kindergarten in Berlin, Germany. The children were divided into two age groups: 1 g of 4–5 year-olds (8 children) and 2 gr. of 5-6 year-olds (10 children) and were tested in their native Turkish and then in German. The testing was performed in the kindergarten in a separate room, where only the experimenter and the examined child were present. The children are offered the classical tests for “theory of mind”, as well as language tests related to the comprehension of interrogative sentences, containing a verb showing a mental state and comprehension and production of vocabulary in native Turkish and German as a second language for them.

The **results** show that vocabulary is not an important factor, and mastery of interrogative sentences is the factor that helps to understand the “theory of mind”. The results obtained were analyzed statistically by means of the *t*-test. Children with German-Turkish bilingualism understand the vocabulary of their mother tongue well and it is obviously in their passive vocabulary, but this knowledge has not yet passed into their active vocabulary. German vocabulary predominates in the children's active vocabulary. With regard to the level of mastery of interrogative sentences, children are equally good at interrogative sentences in both languages.

Key words: theory of mind, Turkish language, bilingualism, psycholinguistics.

Introduction

Turkish children living in Germany are monolingual entering the Kindergarten. German Turks are third- or fourth- generation migrants from Turkey. They grow up in a bilingual environment – at home they speak Turkish or variants of the Turkish language, and in kindergarten and school they learn German as a second language. Very often, from an early age in kindergarten, they start learning another language, such as English, and thus they grow up as multilinguals, not as bilinguals. Bilingualism is the subject of research by sociolinguistics and psycholinguistics. In this article we will look at bilingualism from a psycholinguistic point of view. We are interested in the psychological processes that accompany the children from an early age, when they learn two languages simultaneously – mother tongue and official, and how this helps to understand the “theory of mind” (ToM). The “theory of mind” is the child's ability to understand the intentions of the speaker, including when the speaker is telling the truth, when (s)he is joking or lying. In the English language psycholinguistic literature, this problem has been discussed many times, considering different types of bilingualism (i.e. different languages in contact) and their relation to the “theory of mind”. In the Bulgarian psycholinguistic literature, this problem is almost never considered and there is no research on how bilingualism and the “theory of mind” are related. F. Grosjean (Grosjean, 2013) says that for many scholars, “language use” is the determining factor in bilinguals: bilingualism is the use of two or more languages in everyday communication. This definition includes the use of both dialects and languages. According to them, bilingualism presupposes a balanced command of both languages. In the view of A. de Groot (De Groot, 2011: 3), the study of bilingualism can be divided into three main areas, which are directly compared to the three main lines of study within traditional psycholinguistics. “The first looks at how speakers understand the language; the second examines how language is produced. The main difference between traditional psycholinguists and bilingual research is that they test bilingualism and question how the fact that they speak more than one language affects the way they proceed with the language. The third main line of training is language acquisition and can be divided into two subzones. The first examines the simultaneous acquisition of two languages from birth and compares with the acquisition of only one language. The second is related to the acquisition of a second language, since the first has already been partially or completely mastered”.

For F. Grosjean (Grosjean, 2008: 10–12), the partial consideration of bilingualism has a number of consequences, which he summarizes as follows: (a) bilinguals shall be described and evaluated in relation to the fluency in both languages. (b) the language skills of bilinguals almost always match the standards for monolinguals. (c) the effect of bilingualism has been carefully studied. (d) the contact of the two languages in bilinguals is considered unusual. (e) the study of bilingualism has for the most part been carried out in relation to the individual and different languages spoken by bilinguals. (f) bilinguals rarely assess their language competence as adequate.

P. Goetz (Goetz, 2003) examines whether an individual’s linguistic knowledge, either as a speaker of a particular language or as a bilingual, influences ToM development. Three- and four-year-old English monolinguals, Mandarin Chinese monolinguals, and Mandarin-English bilinguals are given appearance-reality, level 2 perspective-taking, and false-belief tasks. All children are tested twice, a week apart; the bilinguals are tested in each of their languages.

The 4-year-olds in each group performed significantly better than the corresponding 3-year-olds. Both monolingual groups perform similarly on the tasks, and the bilinguals performed significantly better than the monolingual groups, although when the two testing times are examined separately, they had only a near-significant tendency to perform better at the second testing time. Possible explanations for this evidence of a bilingual advantage are greater inhibitory control, greater meta-linguistic understanding, and a greater sensitivity to sociolinguistic interactions with interlocutors.

B. Yagmurlu, S. Berumen, and S. Celimli (Yagmurlu, Berumen & Celimli, 2005) investigated the role of early context in theory of mind development. Study with institutionalized children living in a boarding home ($n = 34$) in Turkey are compared to home-reared children coming from low ($n = 32$) and middle socioeconomic backgrounds ($n = 44$). Theory of mind is assessed with one deception and three false belief tasks; Peabody PVT and Raven CPM are administered to control for language and nonverbal intelligence. Results indicated that the context effects the home-reared children to perform better than institution-reared children on theory of mind tasks. Hierarchical regression analysis reveals that the institution rearing/adult-child ratio predicts theory of mind performance even after age, socioeconomic background, language and nonverbal intelligence are accounted for. Findings suggest the significance of adult-child interaction for ToM development.

Another study by B. Kaysili and F. Acarlar (Kaysili & Acarlar, 2011) examined the role of age in the false belief understanding in typically developing Turkish children and to determine if the different type of false belief tasks affects performance on false belief. False belief understanding was measured in 72 children between the ages of 3.00 to 5.11 years old. The sample consisted of 12 children in each age group, and age groups were divided into six-month periods. Four false belief tasks were conducted. The findings of this study indicate that the false belief understanding of Turkish-speaking children between the ages of 3.0 to 5.11 years old had some similarities as well as differences to children speaking languages other than Turkish. Three-year-old children seemed to have developed an understanding of their own false belief before they developed a clear understanding of others' false belief. It was clear that the rapid change of understanding false belief seemed to have appeared at 4.6 years old.

B. Selcuk, K. Brink, M. Ekerim, and H. Wellman (Selcuk, Brink, Ekerim & H. Wellman, 2018) examined the sequence of theory of mind (ToM) acquisition in 260 Turkish children. Children involved in the study were from five different cities in Turkey. Their ToM skills were measured using a ToM Scale, which probes various mental state understandings from diverse desires to hidden emotions. The children demonstrated the traditional, collectivist ToM acquisition pattern with earlier understanding of knowledge access than diverse beliefs, not the more Western, individualist pattern evident in the United States, Australian, and German children. Gender, socioeconomic status (SES), and the number of adults living in the home influenced the pace of children's ToM acquisition. The results contribute to a fuller sociocultural understanding of ToM development, including examination of variations within a single heterogeneous developing country. They also further suggest the importance of exposure to different ideas and beliefs in large households for earlier understanding of varying belief states.

The studies mentioned above were conducted mainly with monolingual Turkish children, speakers solely of Turkish. However, in Europe there are large communities of Turkish bilinguals and the studies and research with bilingual Turkish-speaking children are

limited. H. Kyuchukov (Kyuchukov, 2006) did a study also with Turkish-Bulgarian bilingual children and the influence of the evidentiality on the understanding of ToM tasks. The influence of the understanding of the L1 false belief task on L2 false belief tasks was observed.

This article aims to examine the influence between the level of proficiency in the mother tongue (first language L1) and the official language (second language L2) on the one hand and the “theory of mind” on the other, or more precisely, how the lexical knowledge of L1 and L2 and the understanding of interrogative sentences used with a verb indicating mental states helps to understand the ToM.

Our working hypothesis was that mastering a certain vocabulary and interrogative sentences with a mental verb of L1 or L2 will also help to understand the tasks of the “theory of mind” of L1 or L2, respectively.

Research methods and techniques

The study included 18 Turkish-German bilingual children attending a kindergarten in Berlin, Germany. The children were divided into two age groups: 1 g of 4–5 year-olds (8 children) and 2 gr. of 5-6 year-olds (10 children) and were tested in their native Turkish and then in German. The testing was performed in the kindergarten in a separate room, where only the experimenter and the examined child were present.

Tests

Two types of tests were used. The first type of tests is the classic ToM tests. The first test is related to the so-called “unexpected content”. The child is shown a box of chocolates and asked what is in it. Once the answer is received, the box is opened and it is seen that there is a pencil in the box, for example. The child wonders what (s)he thought when he saw the box at the beginning and what (s)he thought after seeing what was inside the box.

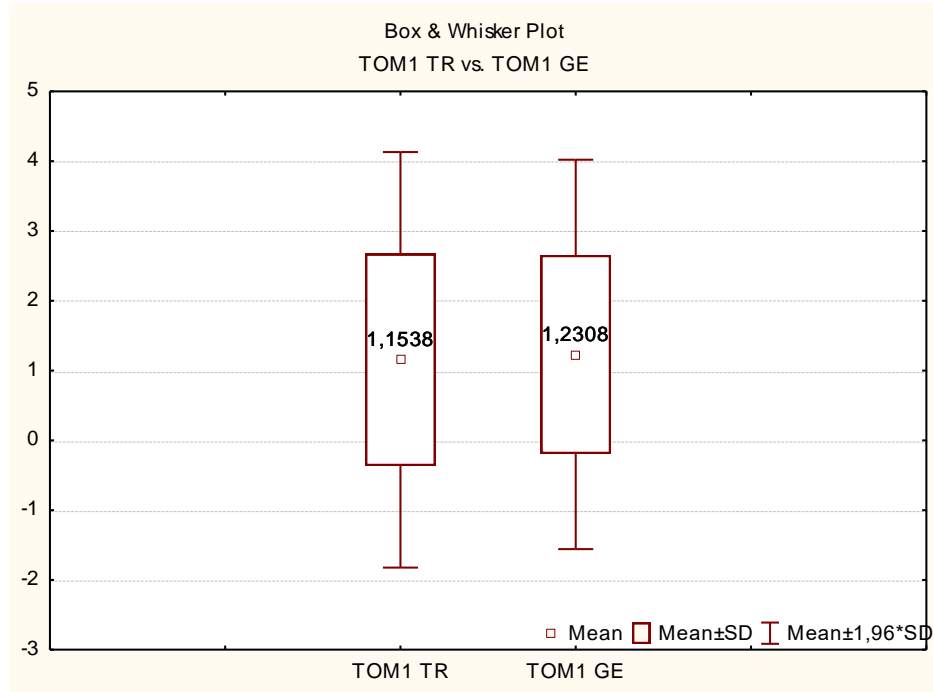
The second test of the ToM is related to the change of place of an object. Two toys are placed as an object in a container, after which one of them leaves the place where the second toy moves the object from the container where they put it together to another place. When the first character returns to the stage where the action takes place, the child is asked where the first toy will look for the object.

The second type of tests are language tests, which measure children's knowledge of Turkish and German. These tests include knowledge of a particular vocabulary and knowledge of interrogative sentences with the verb “I say” indicating mental states.

Results and discussion

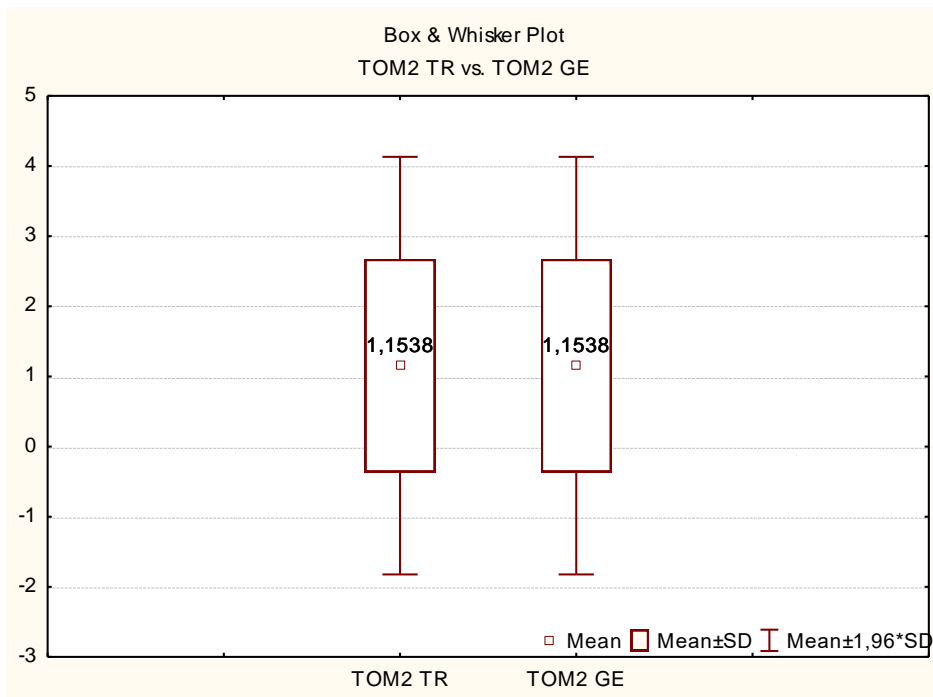
The t-criterion was used for the analysis of the obtained data when comparing the test results in Turkish and German. Figure 1 shows the results of the first ToM test. The test was for unexpected content. As can be seen from Fig/ 1, children do equally well with this test in both native Turkish and German. The differences were not statistically significant ($t = -0.162578$; $p > 0.05$).

Figure 1. Results of the first ToM test for unexpected content



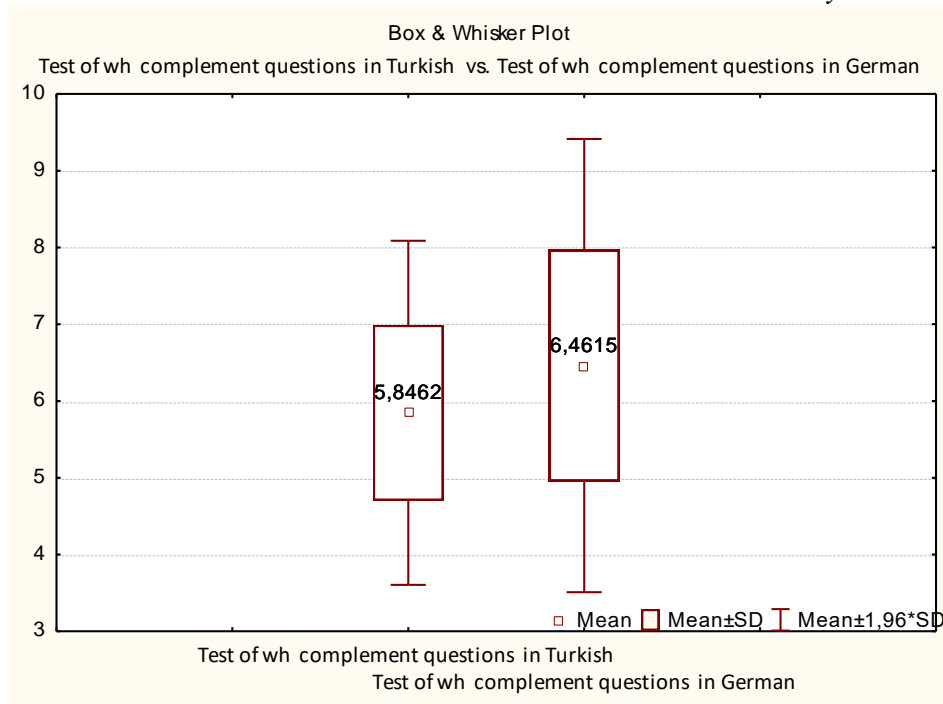
The second test for ToM, in which the characters change the location of the object, also shows that the differences are not statistically significant in the two languages ($t = 00$; $p > 0.05$). The children understand this test equally well in both Turkish and German, and this is shown in Figure 2.

Figure 2. Results of the second test of ToM for changing the location of the object



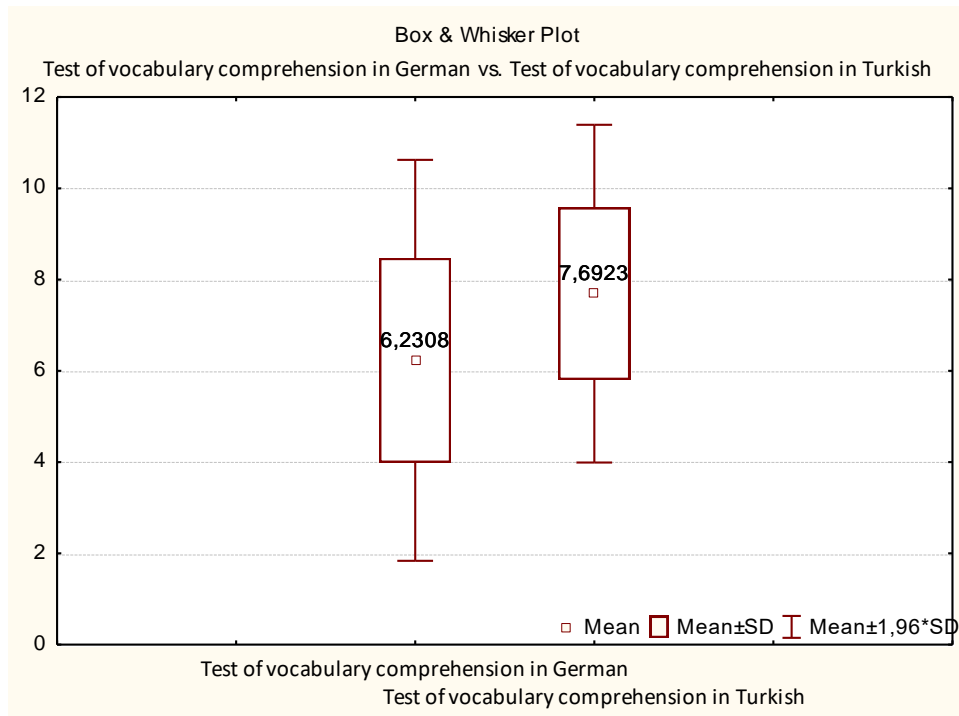
Let us look at how children cope with language tasks. Figure 3 shows the results of the execution of the interrogative sentences used with the verb “to say”.

Figure 3. Results of the test for interrogative sentences in Turkish and German used with the mental verb “to say”



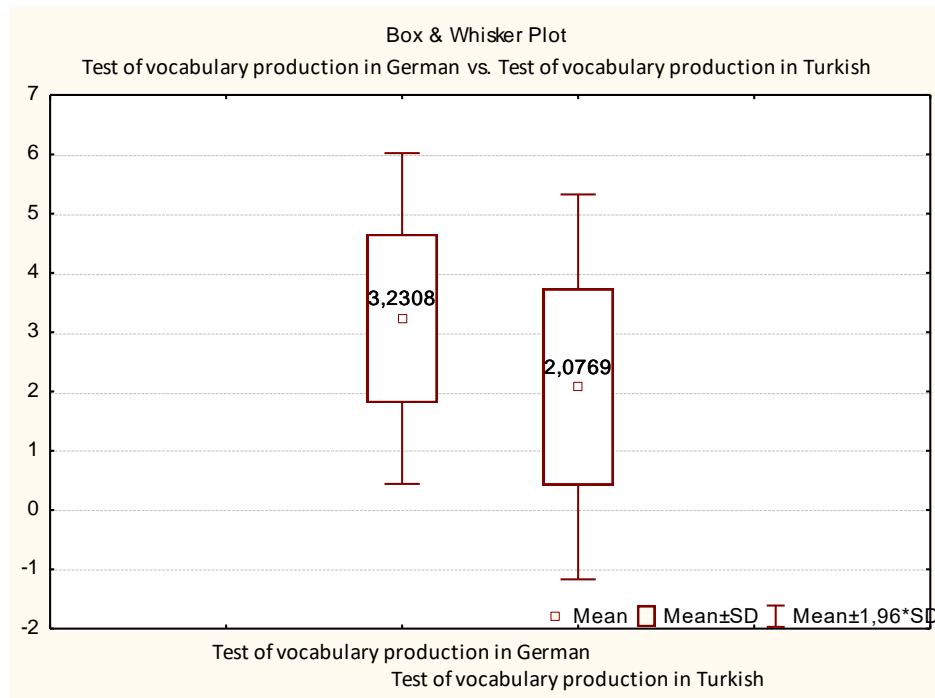
As can be seen from the figure, the difference between the mean values for the two samples is not statistically significant ($t = -1.75977$; $p > 0.05$). This shows that the children are equally good at the test in both languages. In the next test the picture is different - in the test for understanding the vocabulary of E1 (Turkish) and E2 (German), the children understood the vocabulary included in the test in Turkish better than the vocabulary in German. This is shown in Figure 4.

Figure 4. Results of the vocabulary comprehension test of L1 (Turkish) and L2 (German)



As can be seen from the figure, the difference between the mean values for the two samples is statistically significant ($t = -2.60168$; $p < 0.05$), in favour of the Turkish language. What is the situation in regard to production of vocabulary in both languages? As can be seen from Figure 5, children show better results in German L2. The differences obtained between the mean values for the two samples were statistically significant ($t = 2.960783$; $p < 0.01$). German vocabulary predominates in the children's active vocabulary.

Figure 5. Results of the vocabulary production test of L1 (Turkish) and L2 (German)



Discussion

The present study, conducted with two groups of bilingual Turkish children in Berlin, Germany, between 4-6 years old aimed to examine the influence of the mother tongue (L1) and the second language (L2) on the understanding the “theory of mind” (ToM). The children were offered the classical tests for “theory of mind”, as well as language tests related to the comprehension of interrogative sentences, containing a verb showing a mental state and comprehension and production of vocabulary in native Turkish and German as a second language for them. The results show that vocabulary is not an important factor, and mastery of interrogative sentences is the factor that helps to understand the “theory of mind”.

Conclusions

The study, although limited due to the small number of participants involved, gives rise to important reflections.

1. Children with German-Turkish bilingualism understand the vocabulary of their mother tongue well and it is obviously in their passive vocabulary, but this knowledge has not yet passed into their active vocabulary.

2. German vocabulary predominates in the children's active vocabulary.

3. With regard to the level of mastery of interrogative sentences, children are equally good at interrogative sentences in both languages.

4. The children also do well with the tasks for the theory of mind. If we return to the hypothesis formulated at the beginning of the article, it turns out that understanding and producing vocabulary in the mother tongue and in German does not affect the understanding of the tasks related to the theory of mind. It turns out that the degree of mastery of the interrogative sentences of L1 or L2 is the factor that helps to understand the problems of the ToM of both L1 and L2. In earlier studies by M. Stefanova (Stefanova, 1999; Stefanova,

2001), as well as in newer studies by H. Kyuchukov (Kyuchukov, 2019; Kyuchukov, 2020a, b) with Roma-Bulgarian and Turkish-Bulgarian bilingual children, the role of the mother tongue in the process of learning the second (official) language of the country and in the process of understanding the theory of mind is shown. The present study, although on a small scale, provides further evidence that in order to understand and acquire the ToM, interrogative sentences containing a verb indicating mental states must be understood and assimilated.

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ПСИХОЛІНГВІСТИЧНЕ ВИВЧЕННЯ «ТЕОРІЇ РОЗУМУ» ТУРЕЦЬКИХ ДВОМОВНИХ ДІТЕЙ

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АНОТАЦІЯ

У статті **представлені** результати дослідження за участю турецьких двомовних дітей дошкільного віку, які проживають у Берліні, Німеччина. Стаття спрямована на вивчення впливу, що фіксується між рівнем володіння рідною мовою (перша мова L1) і офіційною мовою (друга мова L2), з одного боку, і «теорією розуму» (ТоМ), з іншого, або, точніше, яким чином лексичне знання L1 і L2 і розуміння питальних речень, використовуваних із дієсловом, що вказує на психічні стани, допомагає зрозуміти ТоМ.

Методи й прийоми дослідження. У дослідження були включені 18 турецько-німецьких двомовних дітей, які відвідують дитячий садок у Берліні, Німеччина. Діти були розділені на дві вікові групи: від 4 до 5 років по 1 гр. (8 дітей) та по 2 гр. дітей 5–6 років (10 дітей) і пройшли тестування на рідному турецькому, а потім на німецькій мові. Тестування проводилося в дитячому саду в окремій кімнаті, де були присутні тільки експериментатор й обстежувана дитина. Дітям пропонувалися класичні тести з «теорії розуму», а також мовні тести, пов'язані з розумінням питальних речень, що містять дієслово, яке означає психічний стан, розуміння й вироблення словникового запасу на рідному турецькому та німецькою мовами в якості їх другої мови.

Результати показують, що словниковий запас не є важливим фактором, а володіння питальними реченнями є фактором, який допомагає зрозуміти «теорію розуму». Отримані результати були проаналізовані статистично за допомогою *t*-критерію. Діти з німецько-турецьким двомовністю добре розуміють лексику своєї рідної мови, і вона присутня в їх пасивному словниковому запасі, але ці знання ще не увійшли в їх активний словниковий запас. Німецька лексика переважає в активній лексичній дітей. Що стосується рівня володіння питальними реченнями, діти однаково добре розбираються в питальних пропозиціях на обох мовах.

Ключові слова: теорія розуму, турецьку мову, двомовність, психолінгвістика.

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