



THE ROLE OF ORAL LANGUAGE PROFICIENCY IN PHONOLOGICAL AWARENESS OF EARLY BILINGUALS

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Abstract: The nature of a specific spoken language as well as its orthography and the close relation between these two characteristics may influence phonemic awareness development (Durgunoğlu & Öney, 1999). In this respect, oral language proficiency of bilingual and monolingual children appears to have an influence on enhancing their phonological awareness. One major aim of the present research is therefore to explore the link between the level of oral language development and that of phonological awareness of two Turkish-English bilingual children and one monolingual child with an average age of 3.5. The data for phonological awareness came from an initial phoneme identification, rhyme-detection, and phoneme detection task; for language proficiency, from a picture description or storytelling task. All tasks were performed in the children's dominant language, which is the community language, Turkish. Results showed that oral proficiency level is not a good predictor of the development of phonological awareness.

Keywords: Oral language proficiency, phonological awareness, mean length of utterance, phonological awareness tasks

Özet: Belirli bir dilin doğası ve onun imlası ve bu ikili arasındaki yakın ilişki sesbirimsel farkındalık gelişimini etkileyebilir (Durgunoğlu & Öney, 1999). Bu bağlamda, tek dilli ve iki dilli çocukların sözlü dil yeterliğinin onların fonolojik farkındalıklarının gelişiminde etkisi olduğu ortaya çıkmaktadır. Bu yüzden, bu çalışmanın başlıca amaçlarından bir tanesi ortalama yaşları 3.5 olan iki tane Türkçe ve İngilizceyi konuşan iki dilli çocuğun ve bir tane tek dilli çocuğun sözlü dil gelişimleri ve fonolojik farkındalıkları arasındaki ilişkiyi incelemektir. Fonolojik farkındalık için veri önses tanılama, kafiye algılama ve sesbirim algılama çalışmalarından; dil yeterliği için veri ise bir resim tanıma veya hikaye anlatma çalışmasından gelmektedir. Bütün çalışmalar çocukların daha fazla hakim oldukları dilde, yani Türkçe olarak gerçekleştirilmiştir ki bu aynı zamanda topluluk dilidir. Sonuçlar göstermektedir ki sözlü dil yeterliği seviyesi fonolojik farkındalık gelişiminin iyi bir öngörücüsü değildir.

Anahtar sözcükler: Sözlü dil yeterliği, fonolojik farkındalık, ortalama sözce uzunluğu, fonolojik farkındalık çalışmaları

1. Introduction

Whether a bilingual has more cognitive benefits over a monolingual in terms of cognitive and metalinguistic abilities has already received interest over the last decades (e.g. Genesee, Paradis & Crago, 2004; Baker, 2006; Goldstein & McLeod, 2012; Hambly, Wren, McLeod & Roulstone, 2013). Baker (2006) stated that bilinguals have a large variety of cognitive benefits, although these benefits depend on the level or threshold of language competence (Cummins, 1979). In the same vein, Baker (2006) claimed that bilinguals have more divergent and creative thinking than monolinguals in "additive conditions". Therefore, knowing whether and in what areas bilinguals gain major advantages over monolinguals is a matter of importance for research. Given the languages that children speak are taken into account, bilingualism more recently has been found to have both an advantage and a disadvantage for their speech and language proficiency (Hambly et al., 2013). This situation in which bilinguals are better at developing compared to monolinguals is known as positive transfer (Goldstein & McLeod, 2012).

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Metalinguistic awareness is defined as an ability to employ one's implicit structural knowledge and functions of language (Karmiloff-Smith, 1997; cited in Verhoeven, 2007) or to put another way, it is described as an explicit representation of 'the abstract structure that organizes sets of linguistic rules without being directly instantiated in any of them' (Bialystok, 2001: 123). The effects of bilingualism on metalinguistic awareness and cognitive benefits have also been discussed in earlier research, in over seven dozen papers (Reynolds, 1991).

When compared to monolingual children, bilinguals have been found to go through a greater development of both cognitive and metalinguistic capabilities (Diaz & Klingler, 1991; Hakuta & Diaz, 1985; Wren, Hambly & Roulstone, 2012). Similar findings about the supportive effects of bilingualism on cognitive and metalinguistic development have already been discovered in some earlier studies (Ben-zeev, 1977; Bialystok, 1986, 1988; Cummins, 1978). However, conditions and patterns of bilingual development and its relation to metalinguistic awareness remain unclear (Hakuta & Diaz, 1985; Verhoeven, 1994). If bilingualism has a facilitative effect on the development of metalinguistic ability (Carlisle, Beeman, Davis, & Spharim, 1999; Wren et al., 2012), then bilingual children are naturally expected to have higher levels of metalinguistic awareness in comparison to monolingual children (Bialystok, 1997). In a similar vein, Wren et al. (2012) conducted a meta analysis of nine studies in the last 50 years and found that monolinguals in those studies did not have better performance than bilinguals in phonemic awareness tasks. Still, more theoretical and empirical studies are needed.

Phonological awareness, one aspect of metalinguistic awareness, is believed to be of central importance not only for gaining literacy but also for oral language ability. Considering that bilingual children are exposed to two sets of languages, they are predicted to have increased phonological awareness, which allows them to reflect on and manipulate phonological segments of spoken words systematically (Verhoeven, 2007; Wren et al., 2012). In addition, gaining awareness of the ability to reflect on and manipulate the units of speech, such as phonemes, onset-rime units, and syllables is also a precursor of second language (L2) reading performance (Comeau, Cormier, Grandmaison, & Lacroix, 1999; Durgunoğlu, 2002; Durgunoğlu, Nagy, & Hancin-Bhatt, 1993).

Yet, literacy or L2 reading is not a direct goal of the present study. Rather, this study investigates the extent to which Turkish-English bilingual and Turkish monolingual children differ in their phonological awareness. Additionally, this study aims to identify the relationship between oral language proficiency and phonological awareness. As a result, it may be clearer to us whether oral language proficiency plays a role in the phonological awareness of both bilingual and monolingual children and whether bilingualism provides any cognitive benefits over monolingualism with respect to one component of metalinguistic awareness.

However, this relation is not without some external factors. Specifically, an orthographic comparison or letter-sound correspondence as either transparent (Turkish) or deep (English) is necessary when comparing bilingual and monolingual children's phonological development. If the language has one to one grapheme-phoneme correspondence (as in Turkish), children speaking that language are expected to have higher levels of phonological awareness compared to the children speaking a less transparent alphabetic language (Geva & Siegel, 2000; Geva & Wade-Woolley, 1998). Hence, it is necessary to consider the orthographies of Turkish and English.

Despite being alphabetic languages, both Turkish and English have different orthographies. In their research on cross-linguistic influences for Turkish and English monolinguals, Durgunoğlu & Öney (1999) state that English is thought to have a deep orthography, whereas Turkish orthography is characterized as shallow. Furthermore, while exact syllabic boundaries are hard to identify in English, breaking words into syllables is easier in Turkish. In contrast to English, in which differentiating and perceiving phonological sounds is difficult (Nagy & Scott, 2000), vowel harmony in Turkish makes it considerably easier for Turkish learners to manipulate the phonological units of words. Finally, Durgunoğlu & Öney (1999) state that Turkish is an agglutinative language with its post-inflections or suffixes; therefore, Turkish learners are good at the manipulation of the final phoneme. In English, however, initial phonemes are manipulated easily. This may help English speaking children to spell initial phonemes more accurately.

The role of oral language proficiency and its relationship with phonological awareness is the major issue that the present study seeks to address. Initially, Moll & Diaz (1985) and Saville-Troike (1984) had shown that oral proficiency by itself does not reliably predict reading abilities. In addition, Durgunoğlu et al. (1993) also investigated the relationship between the oral language proficiency and phonological awareness of native Spanish speaking children in transitional bilingual education programs, the instruction language of which was mostly Spanish in the first grade but subsequently changed to English. The children in the study had an average age of 7. While Durgunoğlu et al. (1993) measured children's proficiency levels in both Spanish and English, they measured their phonological awareness only in Spanish because home experience and school literacy instructions were mostly in Spanish. Durgunoğlu et al. (1993) showed that their oral language proficiency did not significantly correlate with phonological awareness and that proficiency alone was not a good predictor.

Recently, Yeung & Chan (2012) investigated L1 and L2 phonological awareness and oral language proficiency as the predictors of English reading among children with Chinese L1. The results showed the important role of phonological awareness at the sub-syllabic levels, in other words rime and phoneme, and of oral language proficiency during the development of L2 reading for Chinese ESL learners. This result concludes that phonological sensitivity is a general competence that ESL children have to acquire in their early years of literacy. However, more research is needed to clarify the role of oral language proficiency specifically in earlier ages than seven.

In short, we do not know much about whether the oral language proficiency of bilingual and monolingual children, especially under the age of four, plays a role in the development of phonological awareness. The present research thus aims to investigate the relationship between the oral language proficiency and phonological awareness of both Turkish-English bilingual and Turkish monolingual children.

2. The study

2. 1. The Participants

A background questionnaire, collated information about the degree and variety of languages spoken in each of the children's homes. Bilingual children had at least one parent who spoke English as their L2, while Turkish was their L1 and community language. In addition, the overall socioeconomic status of the participants was similar.

2. 1. 1. The monolingual child

The monolingual child, AK, is a 3 year-old Turkish speaking child born in Istanbul, Turkey. His parents are native speakers of Turkish and do not speak any other language than Turkish at home. AK has been attending a nursery school for three months in Istanbul - like the other two bilingual children in the study. On weekdays, AK receives Turkish-only input for five hours.

2. 1. 2. Bilingual child 1

The first bilingual child, OK, is a 3; 9 year-old child born in Istanbul, Turkey as the first and only child of the English-Turkish bilingual family. The family have adopted a ‘one person-one language’ strategy for their child since he was born: while his mother speaks to him in Turkish; his father does so in English. Thus, he has experienced Bilingual First Language Acquisition (hereon BFLA) since birth. Like the other children in this study, he attends nursery school where has Turkish-only input for 8 hours a day. When with his mother’s family, he prefers to use Turkish, however, when he went to the USA, he used English with his father’s family. Therefore, he had continuous exposure to both languages on an everyday basis, although Turkish was more dominant. According to his parents’ report, he is competent enough in both languages with regard to oral production and comprehension.

2. 1. 3. Bilingual child 2

The second bilingual child, ANK, is a 3; 8 year-old (?) English-Turkish bilingual child, who was born in London, England. Her parents have also adopted a ‘one person-one language’ strategy since ANK’s birth. Her mother speaks to her in English; however, her father speaks to her in Turkish. Therefore, like the first bilingual child, she can also be considered as experiencing BFLA. Yet, this should be taken cautiously, because contrary to the first bilingual child, ANK receives much input from her mother, whose native language is English. This idiosyncrasy in the input is expected to have an impact on the difference between the first bilingual child, OK, and the second, ANK. ANK has been attending to nursery school for three months. However, the instruction time delivered for in both English and Turkish is less than the first bilingual child. She receives 4 hours of Turkish input and 1 hour of English input a day. According to the parent’s report, even though she is very competent in both speaking and comprehension in English, she does not show the same competence in Turkish and tends to code-mix whenever she is in a Turkish speaking community.

Table 1

Linguistic background of participants

<i>Participants</i>	<i>Languages of the parents</i>	<i>Age of first exposure to Turkish</i>	<i>Amount of exposure to languages known</i>	<i>Age</i>
<i>Monolingual</i>	Turkish only (Both parents)	at birth	Turkish (Daily)	3; 3
<i>Bilingual 1</i>	Turkish (mother) English (father)	at birth	Turkish (Daily) English (Daily)	3; 9
<i>Bilingual 2</i>	Turkish (father) English (mother)	at birth	Turkish (Daily) English (Daily)	3; 8

3. Data Collection Procedure and Analysis

After CDI reports were completed and after the words to be used in the study were collaboratively determined by the parents and the researchers, data was collected from each child at the children’s homes. Throughout the process, the researchers used Turkish only to prevent bilingual children from switching to English, because all the tasks were in Turkish.

As soon as the children took practice trials and feedback respectively, which was also in their instruction and home language, Turkish, the research started. Children's mothers also joined and helped the researchers during the data collection procedure, which lasted almost 40 minutes for each child.

In this study, a storytelling task was used to measure language proficiency. For phonological awareness there were three different tasks: a) initial phoneme identification task, b) rhyme detection task, and c) phoneme detection task.

3. 1. Language Proficiency Measure

The data to measure the Turkish language proficiency of both bilingual and monolingual children came from storytelling. Data was collected by various storybooks which the children were familiar with because in the piloting session, it appeared that they could get bored easily talking about only one story. Each child described pictures in the storybooks and their utterances were recorded for ten minutes. During this process, while the first bilingual child and monolingual child's mothers helped the researchers guide the children, the mother of the second bilingual child did not help as she did not address the child in Turkish. After transcribing the data, the mean length of the utterances of each child was calculated.

3. 1. 1. The importance of MLU for measuring language proficiency

Mean length of utterance (MLU) is a measure that shows linguistic productivity in children. It is calculated by dividing the number of morphemes by the number of utterances produced orally by children. A high score of MLU indicates a high level of language proficiency. As asserted by Slobin & Bever (1982), a comparison of children's oral language performance in a specific L1 can be conducted in a more meaningful fashion if it is done according to the MLU parameter of that language rather than age since such young children show great variability in their linguistic skills.

To calculate the MLU score, in an engagement of natural communication with the experimenter, at least 100 utterances were recorded and then transcribed. The number of words in each utterance was counted with the assumption that an increase in children's linguistic development should be reflected in the number of words they can produce in an utterance in a natural speech event (Slobin & Bever, 1982). After that, the total number of words in the data was divided by the number of utterances produced by children in the picture description or storytelling task. The formulation for MLU can be summarized as (Sarıkaya, 2011): 'The number of words/morphemes in the data / the number of utterances in the spoken data'.

While counting the number of words or/and morphemes in the spoken data, a strenuous effort was executed to avoid the inclusion of gap fillers (such as *hmm*, *uh* etc.) and dysfluencies (such as stammering) in the analysis. However, case markings, plural markers, and possessive markers are all counted as separate morphemes (Ege, Acarlar & Güleriyüz, 1998, cited in Sarıkaya, 2011).

Table 2

An example of Turkish utterances and their number of morphemes

<i>Utterances</i>	<i>Number of morphemes</i>
Vapur hareket etmiş.	4
Bak.	1
Düdüğünü de öttürmüş.	7

3. 2. Phonological Awareness Tasks

The main concern of the tasks in the following sections was to measure the initial and final phoneme identification abilities of the children in Turkish.

3. 2. 1. Initial Phoneme Identification Task

The children were provided with six sets, each of which included four different objects, twenty-four in total. All the objects in the task were chosen from amongst the Turkish words reported by the parents in the CDI test as the children can ‘understand and say’. The children were asked to show which object started with the specific sound uttered by the researcher. For each set, different sounds were chosen. Before the actual task, the children were trained with sample objects until the researchers were sure that the children understood what they should do. Finally, feedback was given.

3. 2. 2. Rhyme Detection Task

Phonological awareness at the onset-rime level was measured by using a rhyme detection task in Turkish (adapted from Lafrance & Gottardo, 2005). The children were shown three sets of practice stimuli at first and then they were presented with 6 sets of test stimuli. The stimuli involved three words, each of which was accompanied by related pictures to reduce the memory load. They were asked to find the word ending with a different sound. For example, the researcher said “bir-kum-kar”, and asked which one ended differently. The researcher did not use the term ‘which sound’ and ‘which rhyme’ in asking the experimental stimuli, because the children in the piloting session had had difficulty in understanding what ‘sound’ or ‘rhyme’ meant. Every set was repeated twice for each child to enable internal validity. When the children showed the correct picture which was related to the target rhyme, one point was given, and as the task included six sets of stimuli, the highest possible score for each child was six.

3. 3. 3. Phoneme Detection Task

The final part of the data collection procedure was adapted from Lafrance & Gottardo (2005). In this task, the children were asked to find the word which started with a different sound. The children were demonstrated with three sets of practice stimuli at first and then they were presented with 6 sets. Each involved three words and was presented together with their pictures to reduce the memory load. The stimuli asked the children to identify the word starting with a different sound. For example, the researcher said, “göl-yaz-yol”. Again, the highest possible score for each child was 6.

A statistical analysis was carried out to explore the relation between the children’s mean length of utterances as a proficiency measure and their scores in phonological awareness tasks. The results are given below.

4. Results

The data on Turkish language proficiency levels and phonological awareness of monolingual and bilingual children were analyzed using the percentages obtained by calculating their MLU and phonological awareness scores (see table 3).

Table 3

Turkish language proficiency results (MLU)

<i>Participants</i>	<i>Number of utterances</i>	<i>Number of morphemes</i>	<i>MLU</i>
<i>Monolingual (AK)</i>	122	373	3,05
<i>Bilingual 1 (OK)</i>	55	204	3,70
<i>Bilingual 2 (ANK)</i>	125	296	2,36

Generally speaking, the MLU score of the first bilingual child (OK) was higher than the monolingual child (AK), who outperformed the second bilingual child (ANK). As summarized in Table 3, MLU score of the second bilingual child (3, 70) shows that he had decidedly higher oral language proficiency than the monolingual and second bilingual children respectively.

Table 4 summarizes the data collected from three phonological awareness tasks. As shown in the table, both bilingual children performed equally on the initial phoneme identification (83%) and initial phoneme detection tasks (33%). When compared to the monolingual child, the bilingual children performed better on the previous task than the monolingual child (50%) but not on the latter. Put simply, the monolingual child outscored the bilingual children only in the initial phoneme detection task (83%). As for the rhyming task, however, the performance of both the monolingual and bilingual children was equal.

Table 4

Phonological awareness tasks in percentages

<i>Participants</i>	<i>Initial Phoneme Identification (%)</i>	<i>Rhyming (%)</i>	<i>Initial Phoneme Detection (%)</i>
<i>Monolingual (AK)</i>	50	50	83
<i>Bilingual 1 (OK)</i>	83	50	33
<i>Bilingual 2 (ANK)</i>	83	50	33

Because a small number of the participants responded and because these responses could not be statistically analyzed and correlated, the overall percentages of phonological awareness tasks and MLU scores were analyzed (see table 5). As summarized in table 5, the first bilingual child (OK) had the highest oral language proficiency of all. However, his phonological awareness was less than that of the monolingual child (61%). Furthermore, ANK, the second bilingual child, scored lower than OK in MLU measures, but similarly ANK and OK were equal in phonological awareness tasks. These results may cast possible light on the relation between the oral language proficiency and phonological awareness of both monolingual and bilingual children under the age of 4.

Table 5

Overall percentages of phonological awareness tasks and MLU scores

<i>Participants</i>	<i>Phonological awareness (%)</i>	<i>MLU</i>
<i>Monolingual (AK)</i>	61	3, 05
<i>Bilingual 1 (OK)</i>	56	3, 70
<i>Bilingual 2 (ANK)</i>	56	2, 36

5. Discussion

The present study examined the relationship between the oral language proficiency scores of Turkish monolingual and Turkish-English monolingual children and their phonological awareness. Although this is a case study, the findings of the present research are nevertheless consistent with some previous studies (Bialystok, Majumder, & Martin, 2003; Durgunoğlu et al., 1993). More specifically, the study appears to support the claim that language proficiency is, by itself, not a good predictor of the development of the phonological awareness of both monolingual and bilingual children. In addition, as reviewed by Wren et al. (2012), the performance on phonemic awareness tasks was also influenced by the type of task as well as by the language proficiency level. Specifically, in this study bilingual children performed better on the former task than the monolingual child (50%). However, monolingual child

outperformed the bilinguals in the latter task. Bialystok et al. (2003) also argued that preschool children have no special access to sound structures in phonological awareness tasks and they attested this to the role of working memory, not to the bilingualism effect. Therefore, it may also be the age of our participants that may account for not finding a relationship between oral language proficiency and phonological awareness.

On the contrary to some findings in the field (Wren et al., 2012), in this study, the results of the proficiency task demonstrated that the monolingual child, AK, performed better than the second bilingual child, ANK, whereas he performed worse than the first bilingual child (OK). Although we can address this with the relation between oral language proficiency and phonological awareness, it is still not exactly clear what the reasons for the discrepancy between the groups are. de Houwer (2009) suggested that it might be of interest to investigate the actual input that the children receive in their home environment. In other words, the difference in the oral language proficiency of the bilingual children may be the result of the language of the mothers with whom they spend most of their time at home. Since the first bilingual child OK's mother was a native speaker of Turkish, he had more chance to practice Turkish compared to the second bilingual child, ANK, whose mother is a native speaker of English. This somewhat unique situation caused her to have less practice time in Turkish at home with her mother. This shows that the language of mothers is one of the significant predictors for the development of bilingual children's language proficiency in a specific language.

On the other hand, in the phonological awareness task, the monolingual child outperformed the bilingual group. This result is parallel to the findings of some studies in the literature (Geva & Siegel, 2000; Geva & Wade-Woolley, 1998). As they stated previously, if the language has one to one grapheme-phoneme correspondence (as in Turkish), children speaking that language are expected to have higher levels of phonological awareness compared to the children speaking a less transparent alphabetic language. In other words, Turkish, by having a vowel harmony, makes it easier for Turkish learners to manipulate the phonological units of words.

The results of the phonological awareness tasks revealed that the monolingual child, AK, had the lowest score (50%) in the initial phoneme identification task, while he had the best score (83%) in the initial phoneme detection task. The difference in the employment of the task could have been one of the reasons for this finding which was not discussed in the field previously. Although the children were provided with the sounds in the previous task, they were asked to identify the sound themselves in the latter. Therefore, by excluding the outsider effect, they might have pronounced and found the correct one themselves better. On the other hand, the scores of both bilingual children with regard to initial phoneme identification and initial phoneme detection appeared to be the same (see Table 4). It is also interesting to note that the final result regarding the phonological awareness tasks demonstrated that the monolingual child and the bilingual children scored similarly in the rhyming task (50%). This result is very much similar to the findings of Wren et al.'s (2012) meta analysis study in which they concluded that monolinguals do not have better performance than bilinguals in phonemic awareness tasks.

When the overall performances of participants in both phonological awareness tasks and the oral proficiency task are compared (see Table 5), the results suggest that there is no relation between these two variables. However, in their study Yeung & Chan (2012) investigated L1 and L2 phonological awareness and oral language proficiency as the predictors of English

reading among children with Chinese L1 and stated that there is a strong relation between children's language proficiency and phonological awareness for the predictors of English literacy.

6. Conclusion

This study examined the relationship between oral language proficiency and phonological awareness of both Turkish-English bilingual and Turkish monolingual children. Data revealed that the bilingual children did not differ from the monolingual child either in their oral language proficiency level or phonological awareness tasks. However, bilingual children differed from each other regarding oral proficiency possibly as a consequence of the difference in Turkish input they receive from their mothers. As a result, we cannot claim a certain superiority of bilingual children, especially under the age of four, over monolingual children of the same age.

In line with previous studies (e.g. Durgunoğlu et al., 1993; Yeung & Chan, 2012), oral language proficiency performance was found not to be a good predictor of phonological awareness. This result suggests that there can be other factors (e.g. type of task, language of task, age) affecting phonological awareness other than bilingualism. Our findings demonstrate that bilingualism does not facilitate or hinder oral proficiency, but the language of the mother might have a facilitative role in the language proficiency level of a bilingual child in that specific language. By employing children, particularly under the age of four, this study casts some light on children's bilingualism literature.

Finally, the small sample size of this study prevents us from making generalizations of the results to wider contexts in child bilingualism. Therefore, further research is needed to better clarify the issue examined in this study.

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