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The effect of family background and language exposure on the development of Turkish and Dutch in bilingual children in Flanders

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1. Introduction

Over the past decades, a paradigmatic shift has taken place in research on the assessment of bilingual children's language abilities. It is now commonly accepted that the evaluation of bilingual children's language skills in only one of their languages leads to incomplete language profiles of bilingual children (Armon-Lotem, de Jong & Meir, 2015). Testing bilinguals in both their languages using tests which have been developed for and normed with bilinguals are suggested as the ideal way to assess bilingual children (Thomas, Gathercole, & Hughes, 2013). However, at this moment, the practical implementation of this insight is made difficult by the scarcity of norm-referenced bilingual assessment tools and of trained bilingual test givers or clinicians. Moreover, even when bilingual assessment tools are administered, how the results should be interpreted is not very well known yet (Thordardottir, Rothenberg, Rivard, & Naves, 2006). Researchers in the field are now taking the first steps in implementing this paradigmatic shift into practice. Recent research on bilingual children's language abilities has revealed that the growing number of bilingual children from heterogeneous socio-economic backgrounds and with different language combinations are in need of further investigation. Bilingual language acquisition takes place in very diverse contexts, influencing the developmental sequences of languages (Thordardottir et al., 2006; Bedore & Pena, 2008). Variables such as socio-economic status (SES), the amount of language exposure to the two (or more) languages, and the child's personal family background have been shown to all have an influence on the child's language development. For example, Unsworth, Argyri, Cornips, Hulk, Sorace and Tsimpli (2014) conducted a study with bilingual English-Dutch and English-Greek children, grouping the children into three groups in terms of age of onset and language exposure. Their results revealed a complex interaction between input and age of onset and suggested that research on bilingual children should take into account the fact that bilingual children form a highly heterogeneous group and that there are hence different types of bilingual children. The same observation has been made in several recent collaborative projects aimed at disentangling Developmental Language Disorder (DLD) from speech or language patterns typical of bilingual language development. These projects have emphasized the importance of home language input and

language exposure patterns on bilingual children's language development (Bohnacker, Lindgren and Oztekin, 2016; Almeida, Ferre, Morin, Prevost, dos Santos, Tuller, Zebib and Barthez, 2017).

In this study, we aim to document how Turkish-Dutch bilingual children's scores in norm-referenced Dutch and Turkish language proficiency tests (CELF and TEDIL, respectively, see Method) are affected by family background and by amount of language use and exposure to the two languages. Following the suggestions by Thordartottir et al. (2006), we administer language tests which are developed for Turkish and Dutch monolinguals separately. In order to develop a broader perspective into the nature of bilingual language acquisition, it is important to examine what kind of trajectories children follow in the acquisition of their first language and second language or in the two languages simultaneously.

2. Language skills of young Turkish-Dutch bilinguals in their L1 and L2

Among all ethnic minority populations in many Western European countries, the Turkish community has been a major concern as it is one of the largest groups of people with a migration background across Europe and systematic academic failure of children and students with a Turkish background has been repeatedly reported in previous studies. For instance, Vanbuel, Boedere, Torfs and Jaspert (2016) conducted a study with six-year-old children of Moroccan and Turkish origin, and compared these two groups regarding novel vocabulary learning. Their results showed that children of Turkish origin were outperformed by their Moroccan peers in acquiring novel object labels and in understanding story lines. A recent study by D'haeseleer, Smet and Van Lierde (2016) compared six-year-old Turkish-Dutch bilingual children and their monolingual Dutch peers through CELF-4 (Kort, Schittekatte, & Compaan, 2008), a test for early language development. They found that the Turkish-Dutch sequential bilingual children in their study obtained lower scores than their Dutch-speaking monolingual peers and other non-Western immigrants. Regarding early grammatical development, Blom (2010) observed that 2- to 3- year-old Turkish-Dutch bilingual children had difficulties with the acquisition of Dutch in terms of finiteness and the target-like use of subjects. Similarly, Nap-Kolhof (2010) witnessed that Turkish-Dutch bilingual children between the ages of two and four show a slower pace of development in Dutch in some grammatical domains such as object-naming, pronominal possessive constructions, and finite and non-finite verb patterns.

While these previous studies on bilingual children use a variety of data collection methods, they share a focus on the children's proficiency in and development of the majority language, Dutch. Recently, there has been a growing interest in bilingual children's home language acquisition, since these children's language development can only be fairly mapped when both languages are taken into account. A recent study focusing on Turkish immigrant children's L1 development was

conducted by Akoğlu and Yağmur (2016) in the Netherlands. In their study with 30 bilingual Turkish-Dutch children and 30 monolingual Turkish children who were around 6 years old, they found that Turkish immigrant children were not as successful as their monolingual peers in terms of L1 skills. They suggested that these lower skills in their L1 may lead to lower skills in their L2. Similarly, it has been noted that socio-pragmatic skills of eight-year-old bilingual children of Turkish origin in their L1 are not at the same level as those of their age-matched Turkish monolingual peers (Backus & Yağmur, 2019). Pragmatics skills, such as using language in line with the social norms and conventions, complimenting and requesting, are in close interaction with general language competence. Backus and Yağmur (2019) suggest that a lower language proficiency in Turkish as their L1 lie at the basis of the children's low pragmatic skills. Bezciöğlu-Göktolga (2016) carried out a study with 24 Turkish-Dutch bilingual children between 5 and 8 years old in the Netherlands. Focusing on the children's home language skills in comparison to those of Turkish monolinguals, she observed that Turkish-Dutch children performed poorly on several Turkish language tasks such as word definition, word order repetition and grammaticality judgment. Accumulated findings on bilingual Dutch-Turkish children's language abilities thus indicate a low level of language competence in their home language skills when compared to Turkish monolingual children¹. These findings are interesting in light of recent descriptions of Turkish as a heritage language. As noted by Yağmur (in prep.), different terms have been used to refer to the status of Turkish in language contact situations, including the terms 'heritage language', 'family language', 'immigrant language' and 'diasporic language'. In the current paper, we will use the term 'heritage language' as defined by Rothman (2009: 156):

"A language qualifies as a heritage language if it's a language spoken at home or otherwise readily available to young children, and crucially this language is not a dominant language of the larger (national) society. (...) [T]he heritage language is acquired on the basis of an interaction with naturalistic input and whatever in-born linguistic mechanisms are at play in any instance of child language acquisition".

¹ An exception is the study by Marinis and Özge (2010), in which the receptive Turkish language skills of Turkish-English bilingual children and Turkish monolingual children were measured. They did not discover a significant difference between the bilingual and monolingual groups. They argue that this may be due to the fact that they only considered the children's receptive skills and not their productive skills, which had been taken into account in all other studies mentioned above.

In a similar vein, Montrul (2012) emphasizes that the term heritage language can only be used when it concerns a language that is used for daily interactions in the home environment. Recent research reveals that Turkish as a heritage language differs from Standard Turkish in a number of ways, including the frequent use of (lexical) code switching (Backus, 2011; Sevinc, 2014), dialect leveling (Schroeder & Stolting, 2005), the avoidance of syntactically complex structures, and deviant use of case morphology and verbal inflections (Backus, 2004; Chilla and Babur, 2010; Schroeder, 2016). An overview of research on the characteristics of this variety can be found in Backus, Jorgensen & Pfaff (2010). These patterns are typical characteristics of Turkish as a heritage language (San, 2018), rather than the result of an incomplete acquisition, something which must be taken into consideration in studies examining children's acquisition of Turkish in language contact situations. The emergence of specific characteristics of Turkish as a heritage language is, of course, not restricted to the Dutch-speaking area, but has also been documented for other countries (cf. Bayram, 2015; Bayram & Wright, 2016 for Germany).

According to Sevinc (2014), who conducted a study on the linguistic and social factors in Turkish-Dutch contact across generations in the Netherlands, the patterns in Turkish as a heritage language can be explained by specific types of cross-linguistic interaction between Dutch and Turkish, resulting from the large typological distance between the two languages, and the limited extent to which heritage language speakers are exposed to (Standard) Turkish. Sevinc (2014) concludes that the unconventional use of Turkish has been emerging among third generation immigrants, as a result of the speakers' intensive contact with the Dutch language and culture. With respect to the social implications, she argues that speakers who are aware of the differences between their own usage of Turkish and Standard Turkish, sometimes suffer from 'heritage language anxiety', defined as the feeling of being unable to speak the heritage language well, which again leads to a lower usage of the language.

Children's language development or proficiency in their home language—Turkish—and in the majority language—Dutch—have not been extensively considered together in previous research. The present study contributes to the existing research by examining and comparing young bilingual children's language skills both in the home language, Turkish, and in the majority language, Dutch, taking into account the effect of the family background and the amount of language exposure and use in both languages. Previous studies have shown that different patterns of exposure to bilinguals' two languages have an effect on various aspects of children's language development (e.g. Gathercole & Thomas, 2009; Paradis, 2010; Unsworth, 2013). In this study, we will complement a discussion of the effect of children's relative exposure to Dutch and Turkish with a discussion of some individual children's home situation, revealing the complex reality of bilingual family life (cf. also Carroll, 2017).

The study is set in Flanders, the Dutch-speaking part of Belgium. In Belgium, education is not within the competence of the federal state, but of the communities (the Flemish and Walloon communities and Brussels). In the Flemish community, children can attend preschool from the age of 2;6 onwards (they can start after every school holiday during the school year in which they turn 2;6). Preschool attendance rates in Flanders are very high despite the fact that attendance is not compulsory. There is, however, a regulation stipulating that in the last year preceding the child's sixth birthday, the child needs to attend an officially recognized Dutch-speaking preschool for at least 250 half days in order to be allowed to start primary education in a Flemish school. After having attended three full school years in preschool or in the school year they turn 6, the children start primary education, which comprises 6 years (grades 1 to 6). Once they have obtained their primary school degree, they can attend a secondary school, which also comprises 6 years (grades 1-6, with children aged 12 to 18).

3. Research questions

The current study addresses the following two main research questions:

- RQ 1. What is the effect of the family background and family language context (the amount of exposure to Dutch and Turkish) on the bilingual children's Dutch CELF and Turkish TEDIL scores?
- RQ 2. How do the language abilities of bilingual Turkish-Dutch children in Dutch and Turkish compare to one another?

Based on the literature reviewed in Sections 1 and 2 above, we hypothesize that the children's Dutch and Turkish language abilities will be strongly dependent on the children's family context, including the linguistic and socio-educational background of the parents and the amount of language use and exposure to the two languages. Since Turkish as a heritage language has been reported to differ to some extent from Standard Turkish, which may be needed to complete the Turkish language test TEDIL, we further hypothesize that some children will receive low scores on the test, despite their frequent use of Turkish at home.

4. Methodology

4.1. Participants

In total, 35 children participated in the study. All children were raised in a bilingual environment but with different degrees of use of and exposure to these two languages, in line with their family background. Even in families with two Turkish-speaking parents, the child is exposed to some Dutch, from siblings or from living in a community in which Dutch is the majority language. In our study, the children's families could be divided into two types according to the linguistic background of the

parents. We will refer to these two types as ‘Type 1’ and ‘Type 2’ families: in Type 1 ‘L1 Turkish’ families, at least one partner was born in Turkey and came to Flanders as a first generation immigrant. The other partner was either also born in Turkey or born in Flanders, with Turkish as a heritage language. We use the term ‘heritage language’ for the language used at home when the speakers were children, living in a (national) society in which this language is not the dominant language (see Section 2 for a discussion and definition of the term). In this sense, all parents who were born in Belgium and learnt Turkish from their family (but not at school) are considered heritage speakers of Turkish. How and where the parents learnt Turkish was established during the interviews with the parents.

In these Type 1 families, Turkish is the native language (L1) of either one or both parents and Dutch was learnt as a second language by at least one of the parents. In our study, 14 child participants were raised in ‘Type 1’ families. In Type 2 ‘Turkish heritage’ families both parents were born in Flanders. The parents either both have Turkish as a heritage language, or one parent has Turkish as a heritage language and the other partner is an L1 Dutch speaker who learnt Turkish as a second language. In our study, 21 children were raised in ‘Type 2’ families. The crucial difference between the two types is thus that in Type 1 families, Turkish is the L1 of one or both of the child’s parents and Dutch is a second language for at least one of the parents, while in Type 2 families, Turkish is the heritage language of at least one of the parents, and the L1 of neither of the parents. Table 1 summarizes the two types.

	Partner 1	Partner 2
Type 1 (N=14)	Born in Turkey: Turkish is the L1; Dutch is the L2	Born in Turkey; Turkish is the L1; Dutch is the L2 OR Born in Flanders: Turkish is a heritage language; Dutch is acquired in early childhood

Type 2 (N=21)	Born in Flanders Turkish is a heritage language; Dutch is acquired in early childhood	Born in Flanders; Turkish is a heritage language; Dutch is acquired in early childhood OR Born in Flanders; Dutch is the L1; Turkish is an L2
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Table 1. Characterization of child participant's family background.

The children's amount of language exposure and use in Dutch and Turkish was measured through a parental questionnaire, as explained in 4.2 below and discussed further in 5.1.3. The results showed that there was great variability between the children, with some being mostly exposed to Dutch and others to Turkish at home. The children's ages ranged between 3;1 and 6;11, with a mean age of 5;1. Children were divided into four age groups: (1) three-year-olds (3;0-3;11, N=7), (2) four-year-olds (4;0-4;11, N=8), (3) five-year-olds (5;0-5;11, N=11), and (4) six-year-olds (6;0-6;11, N=9). The mother's educational background (the highest degree obtained by the mother) was used as a parameter for socio-educational background as this is a widely used measure in research involving family socio-demographics (Akoğlu & Yağmur, 2016; Duncan & Paradis, 2018). Table 2 presents the number of participants with a mother whose highest degree obtained is that of primary, secondary or tertiary education. Results are presented according to family background (Type 1 'L1 Turkish' and Type 2 'Turkish heritage' families). Percentages are presented between brackets, but given the limited number of children in each group, they should of course be treated with caution.

	Highest degree obtained by the mother		
	Primary edu.	Secondary edu.	Tertiary edu.
Type 1 ('L1 Turkish'; N=14)	3 (21%)	8 (57%)	3 (21%)
Type 2 ('Turkish heritage'; N=21)	1 (5%)	9 (43%)	11 (52%)
Total (N=35)	4 (11%)	17 (49%)	14 (40%)

Table 2. Highest degree obtained by the mothers of the child participants according to family background.

As shown in Table 2, 4 children had a mother who had only completed primary education, 17 had a mother who had completed secondary education and the mothers of the remaining 14 children had obtained a degree in tertiary education. The numbers also show that in Type 2 families, relatively

more mothers had a degree of tertiary education than in Type 1 families, in which most mothers had a degree in secondary education.

4.2. Materials

Four data collection tools were used in the study. First, information on the children's language use was obtained through a questionnaire largely based on the Language and Social Background Questionnaire (LSBQ) (Anderson, Hawrylewicz, and Bialystok, 2018). Secondly, background information on family characteristics was obtained through the Family Information Form. Lastly, children's language proficiency in Dutch and Turkish was measured through two standardized tests, CELF and TEDiL. Detailed information about the data collection tools is provided below:

(a) Language and Social Background Questionnaire (LSBQ) Child Version (Anderson et al., 2018) : This is a questionnaire completed by parents about their child's dynamic language use in bilingual contexts. It measures the child's language use and exposure at home and in interactions with family members in different daily activities in 31 contexts, such as watching television or talking to the neighbours. In our adaptation, we used 27 contexts. For each of these contexts, parents are asked to grade the child's language exposure to language x (in our case Dutch) and language y (in our case Turkish) on a scale from 1 to 7. As suggested by the developers, the questionnaire was completed together with the parents in an interview format.²

(b) Family Information Form: The form, developed by the authors, includes questions about the family's socio-demographics, such as the number of children in the family, parents' language background, their professions and their education. (c) CELF Preschool-2 Dutch: CELF-Preschool 2 (Clinical Evaluation of Language Fundamentals Preschool-2; Wiig, Secor, Semel, 2004) is a standardized test, developed in the United States as an extension of CELF-4 (Kort et al., 2008), but aimed at younger children, aged between 3;0 and 6;11. CELF Preschool-2^{NL} is the Dutch adaption of the English original version of CELF-Preschool-2, developed by de Jong (in collaboration with Pearson Assessment and Information B.V., 2012). CELF Preschool-2^{NL} contains 9 subtests and 2 questionnaires for parents, testing both perceptive and productive language skills. For the current study, a Core score was calculated. This score (Dutch 'Kernscore') is the total score on three subtests: 'Understanding sentences' (pointing at the picture that presents the sentence produced by the test

² As Carroll (2017) points out, there are a number of limitations to the use of parental reports to determine children's use of and exposure to different languages, such as the difficulty parents may have reporting which language the child uses most, or distinguishing between languages in cases where there is much code-switching. By presenting parents with 27 different contexts and a 7-point Likert scale which allows for more than a binary decision between the two languages, we nevertheless aim to characterize the relative use of the two languages by the child.

giver, maximum score: 20), 'Word structure' (completing a sentence produced by the test giver with the intended word form; maximum score: 23) and 'Active vocabulary' (naming an object, person or activity shown in a picture; maximum score: 40). The test was scored in line with the CELF-Preschool 2 manual (e.g. after an indicated number of incorrect answers, the subtest was ended and the test giver moved on to the next subtest). Raw scores were converted to scaled subtest scores and the Core score, following the instructions in the manual. The norm scores are based on Dutch and Flemish children, and as the current study was conducted in Flanders, the Flemish data were used to calculate the scores of the children tested in this study.

(d) TEDİL: The TEDİL test is an adaptation of the Test of Early Language (TELD)-3 into Turkish. TELD-3 is a test developed by Hresko, Reid and Hammill (1999) and commonly used in the field of speech and language therapy. The Turkish adaptation study of the TELD-3 was completed by Topbaş and Güven (2011). The norm data are based on 1627 children from 7 different geographical regions of Turkey (Topbaş & Güven, 2011). TEDİL targets children between the ages of 2;0 and 7;11 and assesses children's receptive and productive language abilities. The receptive and productive language parts contain, respectively, 37 and 39 items, covering semantic, morphological and syntactic components of Turkish. The test contains a set of pictures in which the child is supposed to respond in line with the test giver's instruction. The TEDİL scoring system presents standard scores, combined spoken language standard scores, separate receptive and productive subtest scores and percentile scores. In this study, combined spoken language standard scores of TEDİL are used.

CELF-Preschool 2 and TEDİL measure children's general language proficiency in terms of receptive and productive skills. Both are standardized tests to map children's language abilities in Dutch and Turkish and are widely used for diagnostic purposes. It is therefore possible to compare bilingual children's scores on these two tests to one another, though any comparison should of course be made with caution, as the two tests are not identical and may slightly differ in terms of exactly which features are tested and in level of difficulty.³

4.3. Procedure

³ At present, there are no widely used bilingual tests to map the general language abilities of Dutch-Turkish children in these two languages. MAIN (Gagarina, Klop, Kunnari, Tantele, Välimaa, Balciuniene, Bohnacker, Walters, 2012) is a multilingual assessment tool, but focuses on narrative abilities. Hamann, Luniewska, & Pomiechowska, (2015) developed cross-linguistic lexical tasks (CLTs), and thus only take into account lexical development. De 'Toets Tweektaligheid' ('Test Bilingualism') (Verhoeven, Narain, Extra, Konak, Zerrouk, 1995) is a bilingual test that was developed for 4- to 6-year-old children with Turkish or Arabic as their home language and Dutch as the majority language. There are, however, no test norms for the Turkish component of the test, which is why, for this study, we opted for widely recognized, standardized tests in both Dutch and Turkish.

Before the start of the study, ethical approval was obtained from the Ethical Committee of the Faculty of Arts and Humanities at Ghent University. All parents received information sheets and oral explanations on the study and completed an informed consent form.

The LSBQ and Family Information Form were completed by the first author in interviews with the parents. Interviews were conducted in the families' homes and lasted about one hour. The interviewer completed the questionnaires during the interviews and took notes of any additional relevant comments made by the parents.

The language tests were administered in a school setting on Wednesday afternoons and Saturday mornings, when there are no classes and the atmosphere was relaxed. Each child was individually tested in a quiet, separate classroom in the school. The Dutch and Turkish tests were administered by a native speaker researcher of the respective language and scored in line with the procedures explained in the manuals (see Section 4.4 below).

Children were tested in the two languages with an interval of about one week. Each session lasted approximately 20 to 30 minutes. Children were rewarded with some stickers after completion of the test.

4.4. Analysis

The LSBQ provided us with parents' responses to 27 seven-point Likert scales on the child's language use. The data from the LSBQ enabled us to analyse the average amount of language use of and exposure to Dutch and Turkish of the children, by calculating the mean of these 27 responses for each child. The Family Information form contained a question on the educational background of the mother, which was included in the interview. The mother's highest degree obtained was used as a measure of socio-educational background. The degree was categorized into one of three groups: (1) primary education degree, (2) secondary education degree, and (3) tertiary education degree.

Both CELF-Preschool-2^{NL} and TEDÍL scores were converted from raw scores to age-based scaled scores and percentile scores, following the instructions in the respective manuals. For CELF, this means that participants' raw scores on each of the three subtests were converted to scaled scores for Flemish children within the same age range of two months. For instance, if the raw score of a child participant aged 5;1 on the subtest 'Comprehending Sentences' was 15/20, it was converted to a scaled subtest score of 9 based on norm scores from 1 to 19 for Flemish children aged 5;0 to 5;1. The sum of the scaled subtest scores (the raw Core score) was then converted to a scaled score for children within the same age range of 12 months (e.g. children aged 5;0 to 5;11). Norm scores run

from 55 (percentile 0.1) to 145 (percentile 99.9). For TEDİL, the procedure was similar. The participants' raw scores for the receptive and productive ('expressive') tasks were calculated and converted into scaled test scores based on norm scores for Turkish children within the same age range of two months for children aged between 2;0 and 5;6 and of five months for children between 5;6 and 8;0. Norm scores for TEDİL range from 50 (percentile 1) to > 150 (percentile 99). The statistical analysis was conducted with SPSS-22. FAMILY BACKGROUND, LANGUAGE EXPOSURE AND USE and SOCIO-EDUCATIONAL BACKGROUND of the mother were used as variables.

5. Results

In this section, we first present the results of the analysis of the effect of family background (5.1), amount of language exposure (5.2) and socio-educational background (5.3) on the children's Dutch and Turkish proficiency. We then turn to a comparison between the Dutch and Turkish scores of individual children (5.4).

5.1. Effect of family background on Dutch and Turkish proficiency

Table 3 presents the CELF and TEDİL (verbal language performance) scores and percentiles of the Turkish-Dutch bilingual children⁴.

	N	Min.	Max.	Mean	SD
CELF Score	35	55	118	82.1	20.2
CELF Percentile	35	0.1	88.5	24.6	31.9
TEDİL score	35	51	108	76.8	15.3
TEDİL Percentile	35	1	70	14.1	18.5

Table 3. CELF and TEDİL scores and percentiles of bilingual children (N=35).

The mean CELF score of the bilingual children is 82.1, corresponding to a percentile score of 24.6. The results show a wide range, with a minimum score of 55 (0.1 percentile) and a maximum score of 118 (88.5 percentile) and a large standard deviation, pointing at substantial differences between individual children. The participants' TEDİL scores ranged from 51 to 108, with a mean value of 76.8 (SD = 15.3). Taken together, the children have a mean percentile score of 14.1.

In order to analyse the data in terms of the variable FAMILY BACKGROUND, we classified the families into two types. When Turkish is the L1 of one or both of the child's parents and Dutch is a second language for at least one of the parents, the family is classified as an 'L1 Turkish' (Type 1) family.

⁴ Norm scores for (monolingual) Flemish children range from 55 to 145. TEDİL norm scores for (monolingual) Turkish children range from 50 to > 150.

When Turkish is the heritage language of at least one of the parents, and Dutch is the native language or one of the native languages of the parents, the family is classified as ‘Turkish heritage’ (Type 2) (see Section 4.1).

Figure 1 presents a boxplot showing the CELF scores for the two family types.

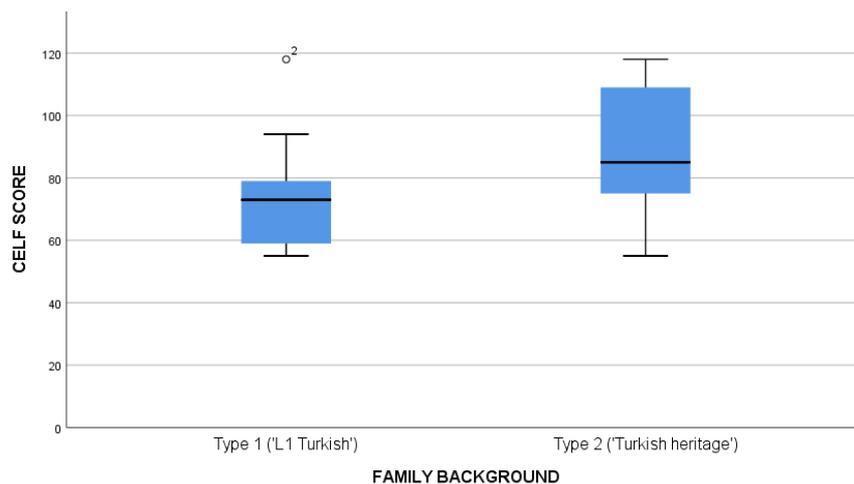


Figure 1. CELF scores for children from Type 1 ('L1 Turkish') and Type 2 ('Turkish heritage') families.

An independent Mann-Whitney U-test showed that the difference between the two groups was significant ($U = 210$, $z = 2.124$, $p < .05$), meaning that children who had at least one parent who was born in Flanders and raised with Turkish as a heritage language (Type 2, $Mdn = 85$) outperformed children with two Turkish-speaking parents who had learnt Dutch as a second language or with one parent who had Turkish as a heritage language (Type 1, $Mdn = 73$) on the CELF test. Further scrutiny of individual children's results shows that some of the Type 1 children obtained high scores on the CELF test. For instance, participant 2 (shown as an outlier in Figure 1) has one parent who was born in Turkey and one parent who was born in Flanders with Turkish as a heritage language, but obtained a high CELF score of 114. In the next section (5.2), we examine the results according to the extent to which the children are exposed to and use Dutch and Turkish.

Figure 2 presents the TEDiL scores for children coming from Type 1 and Type 2 families.

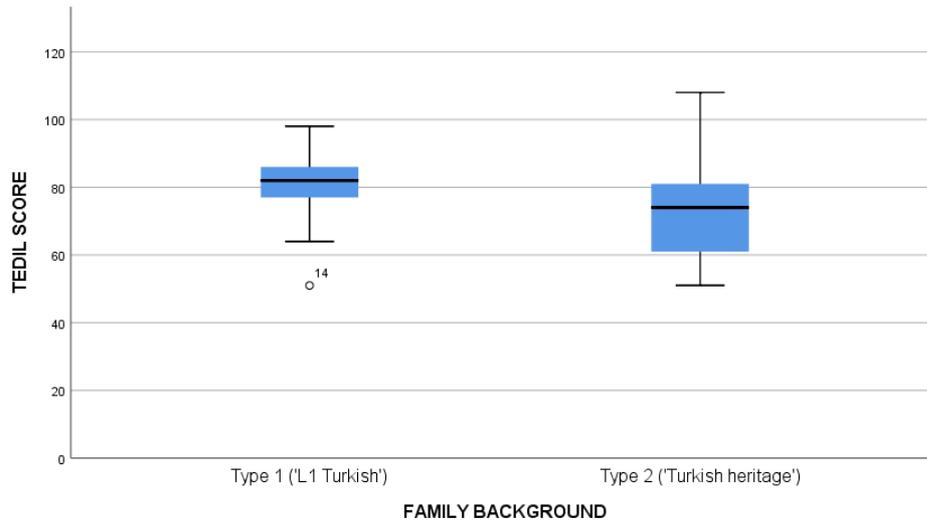


Figure 2. TEDiL scores for children from Type 1 (L1 Turkish) and Type 2 (Turkish heritage) families.

Figure 2 shows that children who have at least one parent who was born in Turkey and has Turkish as a native language have a higher median score (Mdn = 82) than children who have at least one parent born in Flanders with Turkish as a heritage language and no parents with Turkish as a native language (Mdn = 74). However, an independent samples Mann-Whitney U-test revealed that the distribution of TEDiL scores is not significantly different for Type 1 and Type 2 children ($U = 106.5$, $z = -1.364$, $p = .175 < .05$).

5.2. *Effect of amount of language exposure and use on Dutch and Turkish proficiency*

Interviews with parents on children's background and language exposure and use provided us with parents' responses to 27 seven-point Likert scales on the child's language use (see Method, Section 3.2.). The scales ranged from 1 (only Turkish) to 7 (only Dutch). In order to calculate the amount of language exposure and use, the mean of these 27 responses was calculated for each child. Figure 3 presents a scatter plot of language exposure and use against CELF scores for all children.

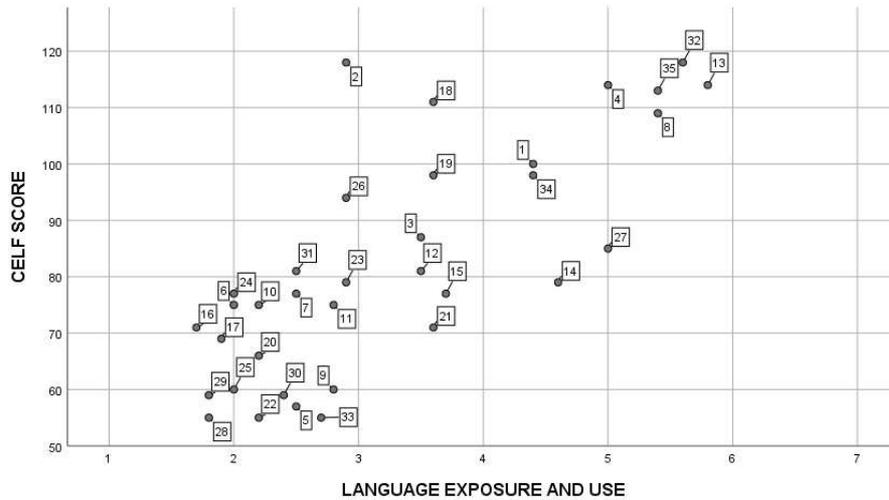


Figure 3. Language exposure and use (1 = only Turkish, 7 = only Dutch) against CELF scores.

The results show that the children form a heterogeneous group in terms of language exposure and use: some children (e.g. numbers 16, 29, 28) exclusively use and are exposed to Turkish in most contexts, while others (e.g. 35, 32, 13) are mostly exposed to Dutch. Overall, the majority of children are more exposed to and use more Turkish compared to Dutch. Figure 3 also shows that the amount of language exposure and use, as reported by the parents, was significantly related to children’s CELF scores: the more the child uses and is exposed to Dutch in various contexts, the higher the child’s scores on the CELF test ($r_s = .77$, p (one-tailed) $< .001$).

Figure 4 presents the children’s language exposure and use scores (on a scale from 1 ‘only Turkish’ to 7 ‘only Dutch’) against their TEDiL scores.

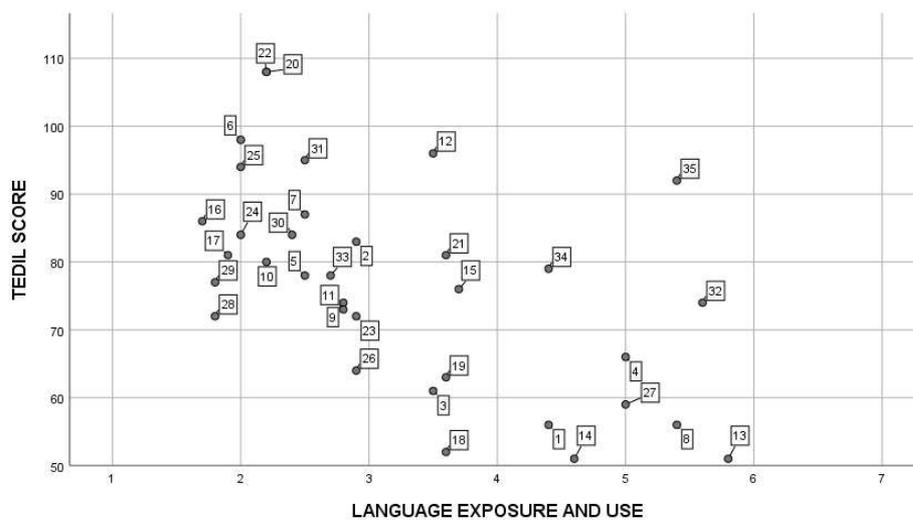


Figure 4. Language exposure and use (1 = only Turkish, 7 = only Dutch) against TEDiL scores.

As seen in Figure 4, the amount of language exposure and use, as reported by the parents, was significantly related to children's TEDiL scores: the more the child was exposed to and used Dutch, the lower the child's scores on the TEDiL test ($r_s = -.58$, p (one-tailed) $< .001$).

5.3. Effect of socio-educational background on Dutch and Turkish proficiency

In previous studies, the educational background of the child's mother has been shown to provide a good indication of the child's general socio-economic background (see Sections 1 and 4.1). As noted in Section 4.4., a question on the educational background of the mother was included in the interview, and the mother's degree was categorized into one of three groups: (1) primary education degree, (2) secondary education degree, and (3) tertiary education degree. Figure 5 presents the CELF scores for each of these three groups.

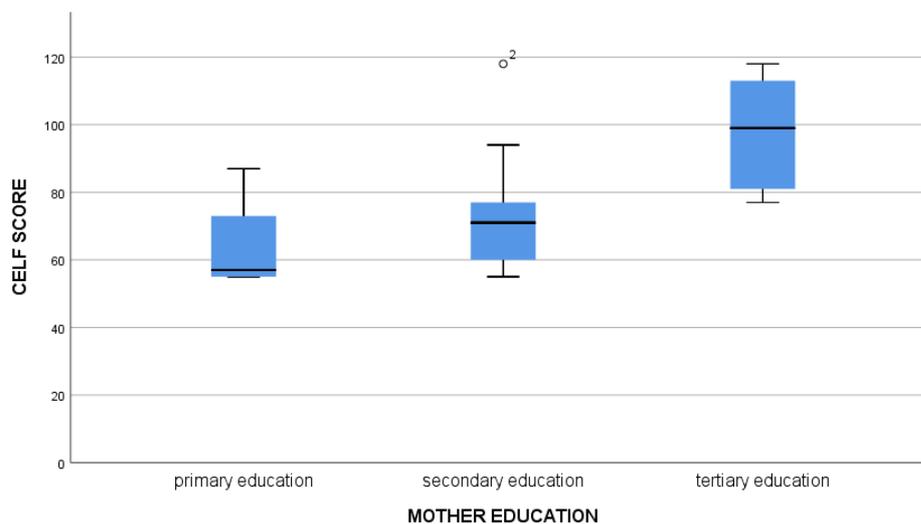


Figure 5. CELF scores according to educational background of the mother.

Figure 5 shows that the children's CELF scores increase with the educational background of the mother: children's performance on the Dutch test is lowest when the mother has a primary education degree ($N = 4$, $Mdn = 57$, $s.d. = 15$), in the middle when the mother has a secondary education degree ($N = 17$, $Mdn = 71$, $s.d. = 15$) and highest when the mother has successfully completed tertiary education ($N = 14$, $Mdn = 99$, $s.d. = 15$). An independent samples Kruskal-Wallis test confirmed that the distribution of CELF scores is significantly different between the three groups ($H(2) = 17.351$, $p < .001$). Bonferroni-corrected pairwise comparisons showed that the difference in CELF scores was significant between the primary and tertiary education groups ($Z = -18.268$, $p = .005$) and between the secondary and tertiary education groups ($Z = -13.496$, $p = .001$), but not between

the primary and secondary education groups ($Z = -4.772$, $p > .05$). It should here be pointed out that there were only four children whose mother had only completed primary education.

Figure 6 presents the TEDiL scores according to the educational background of the mother.

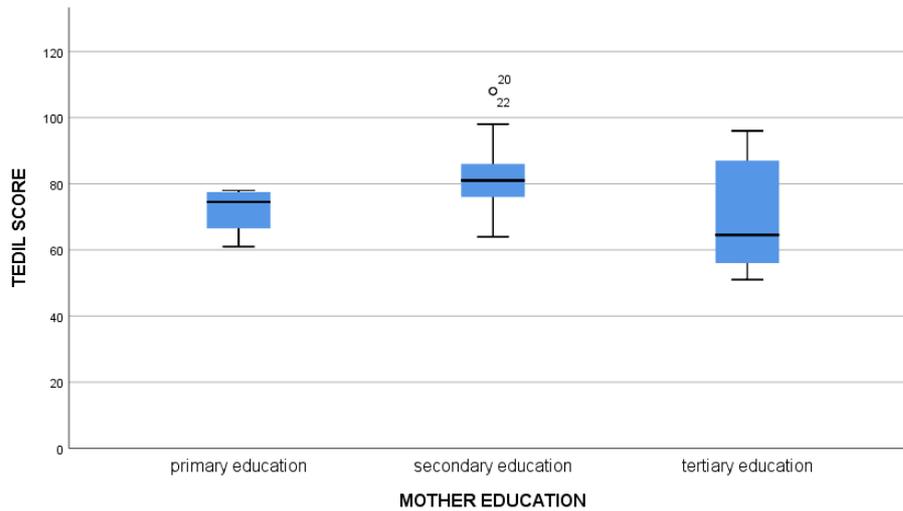


Figure 6. TEDiL scores according to educational background of the mother.

The median TEDiL score was lowest for children whose mother has a tertiary education degree ($N = 14$, $Mdn = 65$, $s.d. = 17$), in the middle for children whose mother has only a primary education degree ($N = 4$, $Mdn = 75$, $s.d. = 8$) and highest for children whose mother has successfully completed secondary education ($N = 17$, $Mdn = 81$, $s.d. = 12$). The difference between the groups proved to be significant (Kruskal-Wallis: $H(2) = 6.385$, $p = .041 < .05$). Bonferroni-corrected pairwise comparisons showed that the difference in TEDiL scores only reached near-significance between the secondary and tertiary education groups ($Z = 8.679$, $p = .057$). Differences between primary and secondary and primary and tertiary were not significant ($p > .05$). The low median score and higher standard deviation in the group of children whose mother has obtained a degree in tertiary education may be related to the fact that 8 of the 14 children in this group were raised in families in which one of the parents is Dutch-speaking.

5.4. Comparison between Dutch (CELF) and Turkish (TEDiL) test scores

After having discussed the CELF and TEDiL results separately and in relation to monolingual norm scores, we turn to the comparison between the CELF and TEDiL results. Figure 7 presents the CELF percentile scores against the TEDiL percentile scores for individual children.

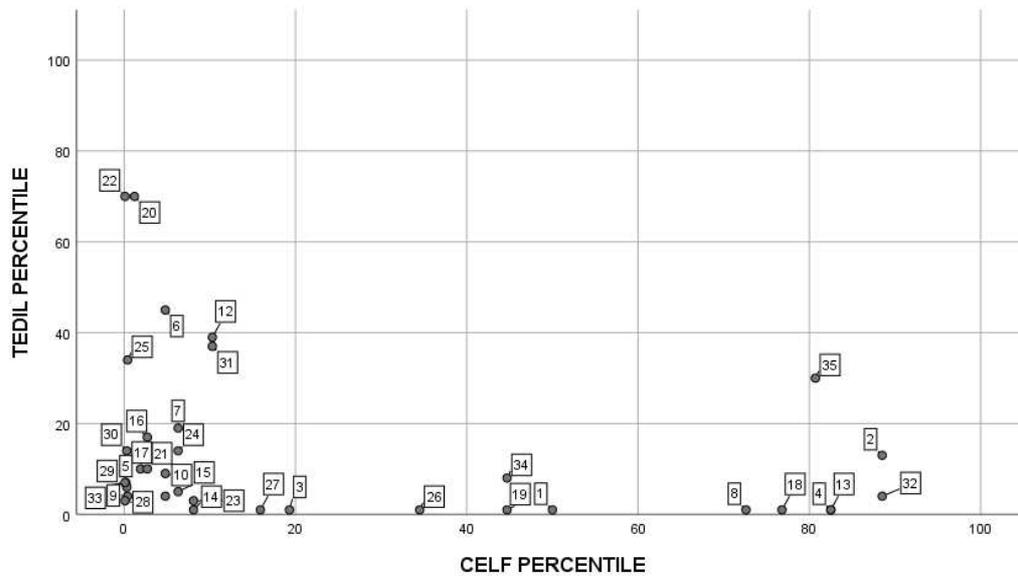


Figure 7. CELF percentile scores against TEDiL percentile scores.

The scatterplot in Figure 7 reveals four main findings: first, no children have high percentile scores on both the TEDiL and the CELF tests, i.e. the upper right hand corner of the scatterplot is empty. (Child 35, who will be discussed further below, has a reasonable mid score for Turkish).

Secondly, a number of children (e.g. nos. 2, 4, 13, 32) have high scores on CELF, but very low scores on TEDiL and fewer children (nos. 20 and 22) have average scores on TEDiL, but very low scores on CELF. Note that none of the children actually have very high scores on TEDiL. Although the level of difficulty of the two tests should be comparable (see Section 4.2) and there was no indication that either of the tests was in itself more difficult than the other, it cannot be ruled out that there was a slight difference in the level of difficulty between the two tests. However, a more plausible explanation for the absence of high scores on the Turkish test may lie in the children’s lack of familiarity with the academic register in Turkish, a topic which will be further discussed in Section 5.3.

Thirdly, 17 children (nos. 3, 5, 7, 9, 10, 14, 15, 16, 17, 21, 23, 24, 27, 28, 29, 30, 33) have scores below 20 on both CELF and TEDiL. The group (N = 17) contains one three-year old child, five four-year old, nine five-year old and two six-year old children.

Fourthly, and finally, the scores reveal considerable interchild variation, but more so in Type 2 than in Type 1 families. In fact, 10 of the 14 children raised in Type 1 families (nos. 5, 7, 14, 16, 17, 24, 29, 30, 33) belong to the group of children who score low on both tests. The four remaining Type 1 children (nos. 2, 6, 26, 31) obtained mixed results. In the group of Type 2 children (nos. 1, 3, 4, 8, 9, 10, 11, 12, 13, 15, 18, 19, 20, 21, 22, 23, 25, 27, 32, 34, 35) there is much individual variation in the scores. An explanation for this observation may be that in these families, in which Turkish is used as a heritage language, there is more variability in the extent to which different languages are used at home and

the Turkish used at home may to a greater or lesser extent converge with Standard Turkish. Indeed, intra-community variation has been named as one of the specific characteristics of Turkish immigrant communities (see Backus, Jorgensen & Pfaff, 2010).

Detailed background information on the individual children was obtained through interviews with the children's mothers (see Section 4.2). This information allows us to interpret the children's scores further against the background of their home and family context. The limited number of the children in our study gave us the opportunity to analyze the children in detail, relating the Dutch and Turkish scores to the child's family characteristics. Since we cannot include a discussion of all individual children, we selected a number of children with different profiles.

We start with the specific profile of Child 35 (aged 3;3), who is the only child with a high score in CELF and a reasonable mid score in TEDiL. Child 35 comes from a Type 2 ('Turkish heritage') family. Both parents are highly educated with stable occupations (social worker and academic). During the interview with the mother, who is a Turkish heritage speaker, she highlighted the effort she made to improve her child's Turkish language abilities, such as the child's participation in a Turkish play group once a week. Child 35's reasonably good score in TEDiL may result from high-quality interaction in Turkish with her mother and her participation in the play group.

A second profile is represented by Child 32 (aged 3;10) and Child 13 (aged 6;4). They too come from type 2 ('Turkish heritage') families, but while they also score high on CELF, they have low scores on TEDiL. These low scores may be explained by the observation that typically, and as shown in the present data (see Table 2), Type 2 ('Turkish heritage') families have, on average, a high SES and are more homogeneous in terms of SES than Type 1 ('L1 Turkish') families. As a result, the Turkish-heritage speaking partner in Type 2 families is typically also highly proficient in Dutch, so that parents often talk to each other in Dutch and children are exposed to Dutch more than Turkish in routine daily interactions at home. This limited exposure to Turkish may result in poor scores in TEDiL. In Type 1 families, there is more variation in terms of SES, which highlights the heterogeneity of the Turkish immigrant community.

A third interesting profile is presented by Child 22 (aged 6;8) and Child 20 (aged 3;6), who are brothers from a Type 2 ('Turkish heritage') family in which the parents are second generation immigrants with a mid SES. The two brothers, aged 6;8 and 3;6, have low CELF scores, but high TEDiL scores. In the interview with the mother before data collection, she elaborated on the fact that, after school time and in weekends, her children spend much time with their Turkish-speaking

grandparents, who are first generation immigrants. Except in school settings, her children are mostly exposed to Turkish and are growing up in a Turkish dominant environment.

Finally, the profiles of Child 2 (aged 6;9) and Child 4 (6;5) are interesting, because they highlight the complex reality of home language environment. Child 2 is from a Type 1 ('L1 Turkish') family. In the interview with Child 2's mother, a heritage speaker of Turkish, she explained that as she is a childcare practitioner in a Flemish daycare center, she always speaks Dutch to the children at work and transfers this habit to home, where she mostly speaks Dutch to her children. She also added that since her husband came from Turkey after their marriage, his Dutch is limited but his Turkish is advanced and he uses Turkish in interactions with the children. In this family, it seems that the parents try to use a kind of OPOL ('One Parent – One Language') strategy, in which the mother consistently speaks Dutch and the father consistently Turkish to the children. As for Child 4, who is raised in a Type 2 ('Turkish heritage') family, both parents are second generation immigrants and are highly proficient in Dutch. In the interview, the child's mother underlined that in their nucleus family, they speak Dutch most of the time but in their extended family (e.g. with grandparents, aunts and uncles), they speak Turkish and Dutch to an equal extent. The mother also mentioned the importance of the number of siblings in her family. Child 4 is the youngest of three in the family. As such, she spends much time with her elder brother and sister and in their interactions, they mostly speak Dutch. In this child's profile, we see that the parents' high level of Dutch proficiency and the child's birth order in the family are two important factors explaining the child's high Dutch proficiency compared to her Turkish language skills.

As noted, there is a substantial group of 17 children with low scores on both CELF and TEDiL. Looking more closely at the profiles of these children, we see that 10 of these children come from Type 1 ('L1 Turkish') families (nos. 5, 7, 14, 16, 17, 24, 28, 29, 30, 33) and 7 of them are from Type 2 ('Turkish heritage') families (nos. 3, 9, 10, 15, 21, 23, 27).

Since in Type 1 families one of the parents is an L1 speaker of Turkish, often with a low proficiency in Dutch, the main language of daily interaction at home is Turkish. This raises the question why the TEDiL scores of children in these families are so low, despite the fact that the main language used at home is Turkish. The explanation may lie in the Turkish register used in Type 1 families, which may be limited to the language used for basic interpersonal communication, which is different from Turkish needed for educational or academic purposes (cf. the well-known distinction between BICS and CALP, originally made by Cummins, 1979). As a result, these children may have struggled with the Turkish used during the administration of TEDiL. The instructions given in the tests are generally in the form of educational imperatives such as 'rank', 'differentiate' and 'order'. Although the tasks were explained to the children by the test administrator, it is possible that some children had

difficulty understanding some of the tasks in Turkish. In addition, the Turkish in the children's homes may show some of the characteristics typical of the Turkish variety emerging in immigrant settings, which may not always converge with the Standard Turkish expected in the test (e.g. deviant use of case morphology and verbal inflections) (see the Discussion in Section 6). As for the Dutch test, the low CELF scores of these children may be the result of the children's limited exposure to both daily and academic Dutch before they enter preschool.

A number of children with low CELF and TEDiL scores come from Type 2 ('Turkish heritage') families. In these families, both partners are Turkish heritage speakers or one partner is Dutch-speaking and the other parent is a Turkish heritage speaker. These children's low TEDiL scores may be understood in terms of new forms of Turkish which are emerging in immigrant communities all over Europe.

In sum, the findings are in accordance with the observation also made in previous studies that family background influences bilingual children's language development in terms of multiple factors (Williard, Agache, Jakel, Glück, & Leyendecker, 2015).

6. Discussion

The current study was set up to examine the effect of family background and family language context on bilingual Turkish-Dutch children's language proficiency in both Turkish, the children's heritage language, and Dutch, the majority language, and to compare their proficiency in Dutch with that in Turkish. To this end, we tested 35 bilingual children with TEDiL and CELF, and conducted interviews with the parents to map the children's home language environment.

Our first research question addressed the effect of language use and amount of exposure to Dutch and Turkish on the children's CELF and TEDiL scores. Results showed that children from 'Turkish heritage' (Type 2) families significantly outperformed children from 'L1 Turkish' (Type 1) families for Dutch. The reverse trend was observed for Turkish, but the difference did not reach significance. Children's scores also correlated with the amount of language exposure and use, as measured through a parental questionnaire. The second research question was how the language abilities of Turkish-Dutch bilingual children in Dutch compared to those in Turkish. We hypothesized that the relation between the Dutch and Turkish language abilities would depend on the children's family context, including the linguistic and socio-educational background of the parents and the amount of language exposure and use. We observed large interchild differences: some children scored high on the Dutch test, but low on the Turkish one, a few scored average to relatively high on Turkish, but

low on Dutch and a substantial number of the children scored extremely low on both Dutch and Turkish. Low scores on proficiency tests or lack of lexical richness in Turkish in bilingual children in families where Turkish is the main language used at home have been observed in previous studies as well (Aarts, Demir-Vegter, Kurvers and Henrichs 2016; Demir-Vegter, Aarts and Kurvers; Scheele, Leseman, and Mayo 2010). As discussed in the introduction (Section 2), these low scores have been connected to specific characteristics of Turkish as a heritage language emerging in migrant settings, which may not completely converge with the Standard Turkish expected for the Turkish proficiency test. This brings us to the question of what language proficiency actually is and which kind of language proficiency is needed to perform well on standardized Dutch language tests like CELF and Turkish language tests like TEDIL. Clearly, children who use Turkish on a daily basis at home and who are, typically, also frequently exposed to Turkish through Turkish radio and TV programmes (Backus, 1996) do not lack proficiency in Turkish to interact in daily conversations. They may, however, lack the specific type of academic language (AL) needed to perform well on tests which are geared towards a relatively formal register needed for academic achievement at school or, later in life, at work. Aarts et al. (2016) examined the presence of AL features (lexical diversity, syntactic complexity and abstractness) in the input provided by Dutch and Turkish mothers and teachers during shared book reading to monolingual Dutch and bilingual Dutch-Turkish 4- to 6-year-old children. As expected, teachers provided children with more AL input than mothers. A correlation was found between AL input and SES, in that Turkish mothers at higher SES levels provided the children with more lexically diverse input, compared to mothers with lower SES levels⁵. Leseman, Scheele, Mayo and Messer (2007) found that home literacy in a broad sense promoted the emergence of AL in 4-year-old Dutch children; they found a weak to moderate correlation with SES. Relating this to our study, it seems that the bilingual children may indeed receive little AL input in Turkish in the home environment, and even less so when they grow up in lower SES families. Language proficiency tests, such as TEDIL, may specifically target the type of AL that is little present in the Turkish input to the children, but which may even be necessary to understand the instructions needed to perform the tasks.

It should be observed that the lower levels of AL input in Turkish also make the learning task for children at school considerably harder, since, as noted by Aarts et al. (2016), bilingual Turkish-Dutch children are faced with a double challenge : they not only need to acquire AL, but they need to do so in a language that is not their native language. As a result, the children may also receive lower scores on the Dutch proficiency test CELF, for which the same type of AL is needed.

⁵ No correlation was found for syntactic complexity, which the authors surmise might be the result of the specific task of shared book reading.

When test scores are considered in relation to family characteristics, it is hence not surprising that some children scored high on CELF but low on TEDiL or low on CELF and average on TEDiL. Language exposure and use is influenced by family background in terms of various factors, such as parents' education, their occupation and the migration history of the family. In our study, we considered the effect of the family background on children's language abilities in their two languages, distinguishing between Type 1 ('L1 Turkish') and Type 2 ('Turkish heritage') families. In our data, seven of the 21 Type 2 families claimed that they follow an OPOL (One Parent-One Language) strategy, i.e. one parent consistently speaks Turkish to the children, the other partner consistently uses Dutch. However, in reality, this strategy may not be so systematically followed, as has been observed in pioneer work by Leopold (1939) (in Venables, Eisenclas, & Schalley, 2014). Although in principle the parents used an OPOL strategy with their children, they did not witness high language proficiency in the child's minority language, a pattern which our findings also supported. An explanation for this may be that the Type 2 'Turkish heritage' families in our study generally had a high socio-economic status, in which the mother had completed tertiary education. In these families, it is often the case that the minority language-speaking parent also has a very high proficiency in the majority language and often communicates with his/her partner in the majority language. As a result, many of these families, even though they try to use an OPOL strategy, instead use the majority language in most contexts, resulting in low input of the minority language to the children.

The language profiles of the children we observed in our study also draw attention to the role of input in language development. It is well-known that bilingual children are exposed to two languages to varying degrees and in different language environments (Hoff & Core, 2013). Language input is crucially important in child language acquisition but it becomes more fundamental in bilingual settings as the language acquisition patterns of two languages are shaped in line with two different types and amounts of language data (Paradis & Grüter, 2014; Duncan & Paradis, 2018). There are two important characteristics of the language input in monolingual as well as bilingual settings: quantity and quality. As for quantity, bilingual children's language interactions are not equally divided over the two languages. Depending on the circumstances, the child may favor one of the languages in the home environment and another language for use outside the home context. When it comes to quality, it is known that not all language input is advanced enough (e.g. lexically rich or syntactically complex) to trigger full language development in the child. Language input which supports children's language acquisition is more likely to be provided by parents who themselves are highly proficient in their language(s) (Hoff & Core, 2013). When parents of bilingual children have a low language proficiency in Turkish, it is probable that children do not receive input that is qualitatively and quantitatively supportive for full language development in that language. In

addition, however, we have pointed out two ways in which the Turkish needed to receive high scores on the test may differ from the Turkish used in the children's homes. First, children use and are exposed to Turkish in daily interactions at home, but this register may be different from the academic register used in language tests. Secondly, Turkish as a heritage language, used in migrant communities, does not always converge with Standard Turkish: Turkish as a heritage language is often characterized by a lot of code-switching with Dutch, but also by structural changes (e.g. the tendency to use more deictic temporal adverbs as opposed to one anchor tense in narratives; cf. Backus, Jorgenson & Pfaff, 2010 and Section 2 above.) It is crucial that these differences, which may importantly influence bilingual children's Turkish language test scores, are taken into account in the discussion of the language development of bilingual Turkish-Dutch children with Turkish as a heritage language.

7. Conclusion

Our investigation into Turkish-Dutch bilingual children's language abilities in both Turkish and Dutch through CELF and TEDiL, two tests designed for monolingual populations, has revealed large interchild differences in terms of test scores. These are in line with previous observations of a large intra-community variation in Turkish migrant communities in terms of the extent to which the members use Turkish in their everyday lives and in how they position themselves as members of an ethnic Turkish community in a Dutch-speaking society (Backus, Jorgensen & Pfaff (2010). The results can, however, be used as a starting point in research on language development, as they provide us with information on children's language development in their two languages. Most importantly, children's language performances should be evaluated in light of their family characteristics and daily language experiences, including the amount of exposure, but also the linguistic characteristics of the languages they are exposed to and the way in which these may differ from the registers required in language tests. The children's performance on general language tests can often be better explained when the family background of individual children is examined in detail. We agree with Carroll (2017) that group results on bilingual children should be followed by discussing individual children's profiles, as we aimed to do in the current study. The family background and home context are essential factors in determining language exposure, which directly affects bilingual children's language development and test scores (Thomas et al. 2013). Mapping bilingual children's language skills in their L1 and L2 should therefore not be done independently of children's family context.

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Declaration of Conflicting Interest

The Authors declare that there is no conflict of interest.

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