

A perspective into noun-before-verb bias: Evidence from Turkish-Dutch speaking bilingual children

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Abstract: Nouns and verbs are considered as fundamental categories of lexical development from both linguistic and cognitive perspectives (Kauschke et al., 2007). From a linguistic point of view, nouns and verbs are the lexical units which categorically highlight language-general and language-specific characteristics. Cognitive representations of nouns and verbs are also significant to consider in terms of acquisition of early lexicon. The aim of this research is, therefore, to investigate the Turkish-Flemish bilingual children's early language period especially in terms of two syntactic categories; namely, nouns and verbs. Besides, the differences of typological characteristics between Turkish and Flemish are striking in terms of nouns and verbs. In addition to the linguistic and typological motivations, methodologically, this research aims to utilize a very fruitful data collection tool, Communicative Development Inventory (CDI), which has become an acceptable tool to use in bilingual language acquisition studies (David & Wei, 2003; Xuan & Dollaghan, 2012; De Houwer et al., 2006; Marchman & Martinez-Sussman, 2002). In line with this background, this study addresses the nature of Turkish-Flemish bilingual children's early lexicon with respect to the noun bias phenomenon by means of data collected from 19 Turkish-Danish bilingual children living in Flanders. The results of this study, of which data analysis is still in progress, were evaluated regarding the early trajectories of bilingual children's lexical acquisition with respect to noun-before-verb pattern. Findings of this study have shown that both language-general and language-specific characteristics operate on acquisition.

Keywords: lexicon acquisition, noun bias, noun dominance, noun-before-verb pattern

Introduction

Early lexical development is characterized by the acquisition of nouns and verbs. The acquisition of these two fundamental word categories is accepted cross linguistically. In spite of this mutual agreement on word categories, there have been different views on the acquisition order of these categories. One claim is that early lexical development is characterized by nouns and, therefore, nouns precede verbs in acquisition. That is, children's first words are nouns. This view brings up the cognitive aspects, like conceptual readiness, focusing on the availability of perceptual-cognitive information and claims that children rely on perceptual categories to produce language. Gentner (1981, 1982, 2006) claimed that children acquire nouns before verbs because nouns have perceptual-cognitive dominance. That is nouns, especially concrete nouns, are "entities that can be individuated on the basis of perceptual dominance", and can be inferred cognitively with minimal linguistic experience (Gentner, 1982; Gentner & Boroditsky, 2001, p. 215). However, verbs follow linguistic dominance because they do not exist in the environment on their own, independent of language (Gentner, 1982, 2001). The linguistic distinction between nouns and verbs is based on "the pre-existing perceptual-conceptual distinction between concrete concepts, namely nouns and predicative concepts of activity, namely verbs" (Gentner, 1982, p. 324). Within this framework, Gentner (1982) proposed two strictly interwoven hypotheses; the natural partitions hypothesis and the relational relativity hypothesis. The natural partitions hypothesis claims that nouns are acquired early because the referents are readily available in the environment; the relational relativity hypothesis, on the other hand, claims that verb meanings do not naturally emerge from the structure of the word but by hearing the verbs in use.

Gentner's view on noun dominance has both been confirmed and challenged in a number of studies. Crosslinguistic evidence has been provided by studies on different languages such as Italian, Korean, Hebrew, French, Spanish, Dutch, as well as in English (Bornstein, Cote, Maital, Painter, Park, &

Pascual, 2004; Goldfield, 1993; Caselli, Bates, Casadio, Fenson, Fenson, Sanderl, & Weir, 1995; Dromi, 1987; Maital, Dromi, Sagi, & Bornstein, 2000; Jackson-Maldonado, Thal, Marchman, Bates, & Gutierrez-Clellen, 1993; Gillis & Verlinden, 1988).

Studies challenging noun dominance can be classified into two groups. One group of studies questions the universal nature of noun dominance. Tardif (1996), Gopnik and Choi (1995), Gopnik, Choi, and Baumberger (1996) stated that children use more verbs than nouns in Mandarin and Korean. On the other hand, Tardif, Shatz, and Naigles (1997) and Kauschke, Hae-Wook, and Soyeong (2007) stated that there are other reasons underlying noun dominance, such as word order of the language, child directed speech and interactional requirements. These challenges have led the argument to the view that language-specific characteristics have been neglected so far.

As the target languages of this research are Turkish and Dutch, first, we would like to raise attention on the results of studies on Turkish and Dutch monolingual children. The “nouns-before-verbs” pattern in acquisition has been handled in longitudinal, contextual and crosslinguistic studies in Turkish and Dutch. Türkay (2005) observed five Turkish speaking children and their mothers longitudinally and found out that the children in her study used nouns and verbs in equal measure, showing no privileged use of any category over the other. Kern and Türkay (2006) compared Turkish and French speaking children’s longitudinal data and found out that both groups of children used more nouns than verbs before and after the vocabulary burst period (around 20 months) but the gap between noun and verb categories in Turkish was always lower than the difference in French. Bornstein et al. (2004) made a cross linguistic analysis of vocabulary in young children and mentioned the noun primacy over verbs in Dutch speaking children’s lexical growth. Gillis (1984) observed a Flemish boy between the ages of 0;11 and 1;11 and found that the child's early lexicon was predominantly made up of nouns.

A rapid accumulation of studies with a focus on the acquisition of nouns and verbs has led to follow-up studies on bilingual children. Research in this domain with bilingual children presents a good arena to understand the interaction of language-general and language-specific processes in the early lexical development. In line with this objective, Xuan and Dollaghan (2012) conducted a study with 50 English-Mandarin bilingual children. The parents were supposed to report their children's lexicons using the English and Mandarin version of CDI. They found that the mean percentage of Mandarin nouns (38%) was significantly lower than the percentage of English nouns (54 %). In addition, the researchers examined the characteristics of the top 50 words and analysed these words to see if these early acquired words fitted into the four distinctive features called as SICI continuum (Maguire et al., 2006). The SICI continuum is based on four features: distinctive shape (S), easy individuation (I), concreteness (C), and imageability (I). In the related studies, these features have been argued to judge the typicality of objects. Xuan and Dollaghan (2012) concluded that the words in the top 50 list did not completely match the SICI features. Then, they inferred that only perceptual-cognitive factors were not satisfactory enough to explain the nature of the bilingual children's word learning. Following them, Lucas and Bernardo (2010) carried out a research with 60 Filipino-English bilingual children. Different from Xuan and Dollaghan, they audio-recorded the child-mother interactions and coded the data to see the frequency of nouns and verbs in the child's and the mother's utterances. They found out that Filipino-English bilingual children showed a noun bias in their early vocabularies but this noun dominance was in their English lexicon, not in their Filipino lexicon. They further added that this noun over verb dominance observed in English monolingual children is also available in a bilingual context. In line with this background, we aim here to investigate the noun-before-verb pattern in Turkish-Dutch bilingual children. There are two main reasons to focus on these two languages. Firstly, Turkish and Dutch are languages with very different language characteristics (see Table 1). Secondly, Turkish and Dutch are languages lying at the heart of this debate in the related literature. The research questions of this study are as follows:

Research Questions

- 1- What is the nature of Turkish-Flemish bilingual children’s early lexicon with respect to the noun bias phenomenon?
- 2- Do Turkish-Flemish bilingual children produce more nouns than verbs in Turkish?

3- Do Turkish-Flemish bilingual children produce more nouns than verbs in Dutch?

Table 1. Language-specific characteristics of Turkish and Dutch

	Turkish	Dutch
Language family	Ural-Altaic/Altaic	Indo-European/Germanic
Morphology	Agglutinated	Inflected
Word order	The canonical word order is SOV but it is very flexible. Five different word orders (OSV, SVO, OVS, VSO, VOS) are quite common in Turkish speakers' talks for pragmatic preferences.	The main clause word order is SVO but subordinate clause word order is SOV.
Noun morphology	Nouns are inflected for number, case and possession.	Nouns are inflected for number.
Verb morphology	Verbs are marked for person, number, tense, aspect, modality, voice, negation and interrogation	Verbs are marked for number and tense.
Subject drop	Subject is not obligatory.	Subject is obligatory
Noun-friendliness/verb-friendliness	Similar structural properties with languages known as verb-friendly such as Korean and Japanese	Similar structural properties with languages known as noun-friendly such as English, German and French

Methodology

Participants

Selection procedures: The study was advertised in the Turkish community in Flanders through social networks and personal announcements. Turkish-Flemish bilingual families whose children were in the target age group of the study were invited to contact the researcher. After their contact with the researcher, the families were visited at home and given more detailed information about the study. After the first encounter, the data was collected.

Characteristics:

Table 2. Sample Characteristics (N=19)

	<i>CDI-I</i>	<i>CDI-II</i>
Sex		
Female	6	5
Male	3	5
Birth Order		
First born	2	3
Later born	7	7
Primary caregiver		
Mother at home	50 %	40%
Daycare or non-parent	50%	60%

Mean (SD) age in months	11.86 (2.39)	27.2 (7.74)
Mean (SD) daily exposure to Turkish:	60(%) (23%)	56% (21%)
Mean (SD) daily exposure to Dutch:	40(%) (23%)	44% (21%)

Data Collection Procedures

Instrument: Following the suggestions of Marchman and Martinez-Sussman (2002), Marchman, Kuan, Yoshuda, and Xuan (2005), and Xuan and Dollaghan (2012) about the productive use of counterparts of the CDI with bilingual populations, the Turkish and Dutch adaptations of CDI were used to measure the participant children's lexicon. There are two parts in the CDI: one for children aged between 8 and 16 months, and one for children aged between 16 and 36 months. In both parts, only the vocabulary section was considered in this study.

Vocabulary measures: To be consistent with the research findings in our reference study (Xuan & Dollaghan, 2012) in the noun category, we considered 'animals', 'vehicles', 'toys', 'food and drink', 'clothing', 'body parts', 'small household items, and 'furniture', while in the verb category we only took into account 'action words'. Before starting our analysis, we calculated the noun and verb percentage in the Turkish and Dutch CDI, following the parallel coding in our study (Table 3). As seen here, verbs are represented more in the Turkish CDI-I (22%) than they are in the Dutch CDI-I (13%) whereas Dutch nouns are more than Turkish nouns.

Table 3. Description of categories in the original version of CDI-I (T-CDI and D-CDI)

Language	Total Lexicon	Nouns	%	Verbs	%
Turkish-CDI-I	418	159	38	95	22
Dutch-CDI-I	434	213	49	57	13

Table 4 shows the noun and verb percentage in the Turkish and Dutch CDI-II. The pattern observed here in terms of noun-verb balance is similar to the CDI-I, verbs superiority over nouns in Turkish (20.5% vs. 15%) and noun superiority over verbs in Dutch (36.5% vs. 42.4%).

Table 4. Description of categories in the original version of CDI-II (T-CDI-II and D-CDI-II)

Language	Total Lexicon	Nouns	%	Verbs	%
Turkish-CDI-II	711	260	36.5	146	20.5
Dutch-CDI-II	702	298	42.4	106	15

Data Collection

Data collection took place in the children's home. As stated, the families were given detailed information about the study and some necessary tips about how to fill in the inventory given. Then, parents were instructed to fill in the screening questionnaire, which was about their child's age, sex, past and present medical status, birth order and primary caregiver. Then, a brief language exposure form was given to reveal the child's bilingual language exposure. After these steps, parents, in most cases mothers were instructed to complete the Turkish and Dutch version of CDI in a random order.

When needed, they communicated with the father or other family members about words they were not sure of their children’s use.

Data Analysis

First of all, we have analyzed the frequency of words and nouns. Mean values and median of nouns and verbs were calculated for each age group. Calculating the median (the average number) for each data group is necessary when the data shows a wide range of scores. The median shows the midpoint, that is, the average number of the entity being analyzed. In order to reveal any significant differences among the occurrences of nouns and verbs in each age group, we used t-test for paired samples, a non-parametric statistical test which is used to calculate statistically significant differences between two groups of data. Likewise, in order to reveal any possible statistically significant difference between age groups, t-test for independent samples was used. When there is no normal distribution of the data, nonparametric tests, Mann-Whitney U for independent samples and Wilcoxon for paired samples, were used to calculate the difference between two sets of data. Statistical analysis was conducted through SPSS 18.

Results

We first looked at the total number of words, nouns and verbs in Turkish and Dutch in two age groups cumulatively: between 08-16 (CDI-I) and 16-36 (CDI-II) months.

Table 5. Mean (M), standard deviation (SD) and range for total number of words, total number of nouns, and total number of verbs in Turkish and Dutch in both age groups

	TURKISH					DUTCH				
	M	SD	Median	Min-Max	RANGE	M	SD	Median	Min-Max	RANGE
TOTAL WORDS	76.4	103.4	33	0-382	382	66.9	102.1	12	0-358	358
TOTAL NOUNS	50.8	66.9	21	0-245	245	53.4	79.4	12	0-245	279
TOTAL VERBS	25.6	37.7	12	0-137	137	13.4	23.1	1	0-79	79

The vocabulary development range is wide in both languages. Total Turkish vocabulary of our children changes from 0 to 382 with a mean value 76.4. The median 33 is showing that the average number of words is 33. That is, 9 children have a vocabulary of below 33 words and 9 children have a vocabulary above it. Total Dutch vocabulary ranges from 0 to 358 with the mean value of 66.9. The median is 12, meaning that 9 children have a vocabulary below 12 words and 9 children have a vocabulary above 12 words. In Dutch, the midpoint is 12 words. There is no statistically significant difference between Turkish and Dutch in terms of the total number of words ($t=-0.337$; $df= 18$; $p=0.793$).

Total nouns in Turkish range from 0 to 245 words with a median of 21, showing that 9 children have fewer than 21 nouns in their Turkish vocabulary, and 9 children have more than 21 nouns in their vocabulary. The mean number of nouns is 50,8. Nouns in Dutch also fall within a wide range, from 0 to 279. The mean value is 53,4. Although the mean number of nouns in Dutch is higher than the mean number of nouns in Turkish, the median in Dutch is less than the median in Turkish (12 and 21, respectively) indicating that the average number of nouns is 12 words, and 9 children have fewer than 12 words in their vocabulary, while the other 9 children have more than 12 words in their vocabulary. There is no statistically significant difference between the total number of nouns in Turkish and in Dutch ($t=-0.308$; $df=1$; $p=0.761$).

Total verbs in Turkish range from 0 to 137 with the mean value of 25.6. The median is 12 indicating

that the midpoint is 12, and verbs in the vocabulary of 9 children fall below this midpoint while verbs in the vocabulary of 9 children fall above this midpoint. The mean value of verbs is 25.6. Total verbs in Dutch range from 0 to 79 and the mean number of verbs is 13. The median is 1 meaning that 9 children do not have any verbs in their Dutch vocabulary. There is a statistically significant difference between Turkish verbs and Dutch verbs ($t=2.662$; $df=18$; $p=0.01$).

The distribution of total number of words, verbs and nouns, in Dutch is illustrated in Figure 1.

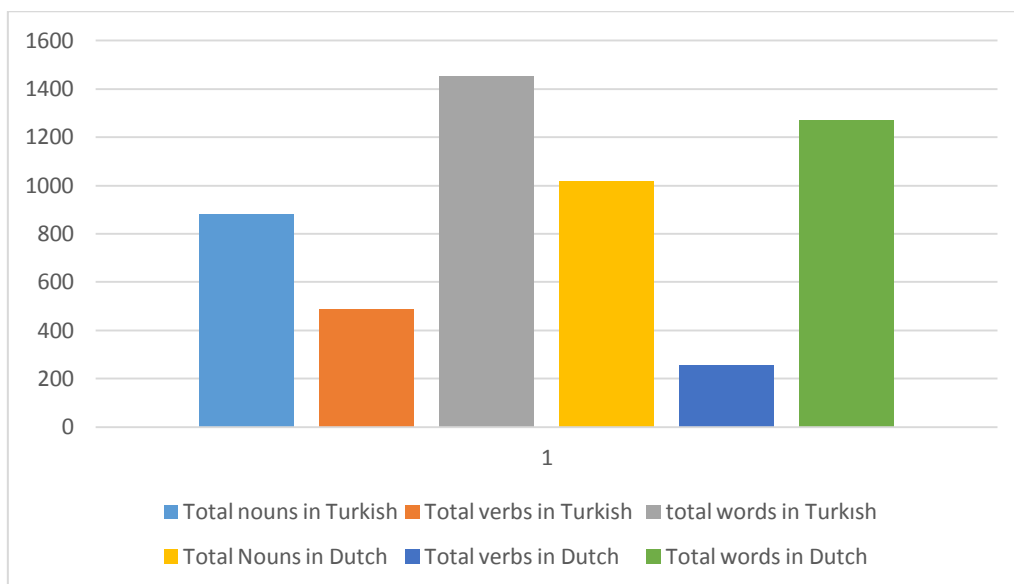


Figure 1. Distribution of total words, nouns, verbs in Turkish and in Dutch

We, then, compared the data from two perspectives; in terms of age and in terms of comprehension. Table 6 illustrates the mean, standard deviation and total number of words, nouns and verbs both in Dutch and in Turkish in CDI-I.

Table 6. Comprehension data between 08-16 months in Turkish and Dutch (Turkish CDI-I and Dutch CDI-I)

	TURKISH					DUTCH				
	M	SD	Median	Min-Max	Range	M	SD	Median	Min-Max	RANGE
TOTAL WORDS	31.6	34.2	12	2-91	89	9.4	10.1	7	0-29	29
TOTAL NOUNS	20.7	20.7	10	2-57	55	7.4	7.6	7	0-19	19
TOTAL VERBS	10.8	15.7	4	0-46	46	2.0	3.2	1	0-10	10

Comprehension data in Turkish show a profile as follows: The total number of words comprehended by children between 08-16 ranges from 2 words to 91 words with a mean of 31.6. The midpoint (median) is 12 indicating that 4 children can comprehend fewer than 12 words while 4 children can comprehend more than 12 words. Total number of nouns ranges from 2 to 57 with the mean number of 20.7. The median is 10, that is, 4 children comprehend fewer than 10 nouns, and 4 children comprehend more than 10 nouns. The mean number of verbs is 10.8 and the number of verbs comprehended range from 0 to 46. The median is 4, meaning that 4 children comprehended fewer than 4 verbs and others comprehended more than 4 verbs. When we look at the difference between nouns and verbs comprehended, we see that there is a statistically significant difference ($z=-0.35$;

p=0.04).

Comprehension data in Dutch shows a profile as follows: The total number of Dutch words comprehended by the 08-16 age group children ranges from 0 to 29 and the mean number is 9.4. The median is 7 indicating the midpoint of the number of words. 4 children comprehended fewer than 7 words and 4 children comprehended more than 7 words. The mean number of nouns is 7.4 and the number of total nouns comprehended ranges from 0 to 19. The median is 7 meaning that the average number comprehended is 7 nouns and 4 children comprehended fewer than seven, while the other 4 comprehended more than 7 nouns. The mean number of verbs comprehended in Dutch is 2.0 and the total number of verbs ranges from 0 to 10. The average number (median) of comprehended verbs is 1 indicating that 4 children comprehended no verbs in Dutch at all. There is a statistically significant difference between nouns and verbs comprehended in Dutch ($t=-2.810$; $df=8$; $p=0.023$).

The distribution of comprehension data in Turkish and Dutch by 08-16 months is illustrated in Figure 2.

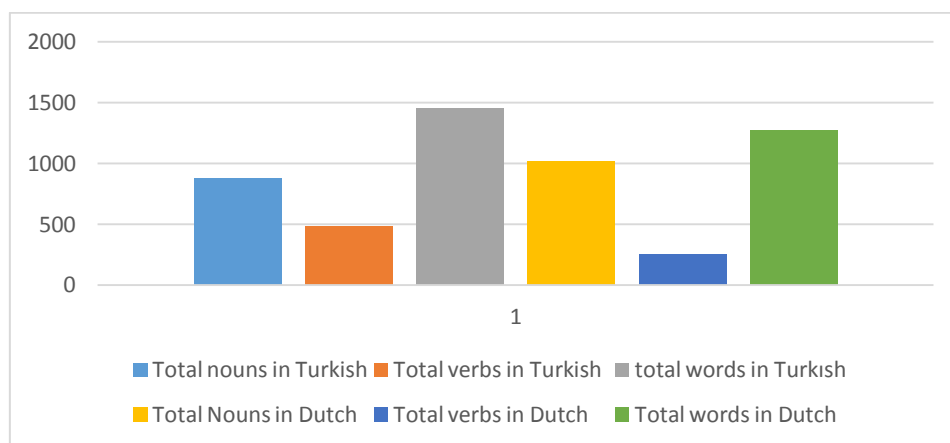


Figure 2. The distribution of comprehended nouns and verb in Turkish and Dutch in 08-16 months.

When we look at the comprehension data in terms of difference across languages, we see that there is not a statistically significant difference in total words comprehended between Dutch and Turkish ($t=1.813$; $df= 16$; $p=0.08$); neither in nouns ($t=1.813$; $df=16$; $p=0.08$); nor in verbs ($t=1.657$; $df=16$; $p=0.117$).

Table 7. Production data between 08-16 months in Turkish and Dutch (Turkish CDI-I and Dutch CDI-I)

	TURKISH					DUTCH				
	M	SD	Median	Min-Max	RANGE	M	SD	Median	Min-Max	RANGE
TOTAL WORDS	3.2	5.0	0.0	0-12	12	5.8	17.6	0.0	0-53	53
TOTAL NOUNS	1.6	2.5	0.0	0-6	6	4.7	14.3	0.0	0-43	43
TOTAL VERBS	2.0	4.0	0.0	0-12	12	1.1	3.3	0.0	0-10	10

The production data profile of children within the age span of 08-16 months in Turkish is as follows: The mean number of total words produced is 3.2. The number of total words produced changes from 0 to 12. The median is 0 because 6 out of 9 children in the group did not produce any word at all at the time of data collection. The mean number for produced nouns is 1.6 and the median is again 0 because 7 of the children were not able to produce any nouns at the time of data collection. The mean number for verbs is 2.0 and the average number of words (median) is 0 because of children who did not produce any verb. One child was able to produce 12 verbs and the other two did 1 and 5 verbs,

respectively. As seen in Table 7, children produced more nouns than verbs in Turkish (10 nouns and 18 verbs). There is no statistically significant difference between total nouns and total verbs in Turkish ($t=-0.529$; $df=8$; $p=0.611$).

The production data profile of children within the age span of 08-16 months in Dutch is as follows: The mean number of total produced words is 5.8 and the total number ranges from 0 to 53. The average number of the total produced words (median) is 0 because there is only one child who was able to produce 53 words in total and the others did not produce any words at all at the time of data collection. In terms of the production of nouns, there is only one child who was reported to produce 43 nouns at the time of data collection in Dutch. The other children did not produce any nouns in Dutch. In terms of verbs, again there is only one child who was able to produce verbs in Dutch ($N=10$). There is no significant difference between nouns and verbs in Dutch ($t=1.000$; $df=8$; $p=0.347$).

Figure 3 illustrates the distribution of nouns and verbs produced across languages.

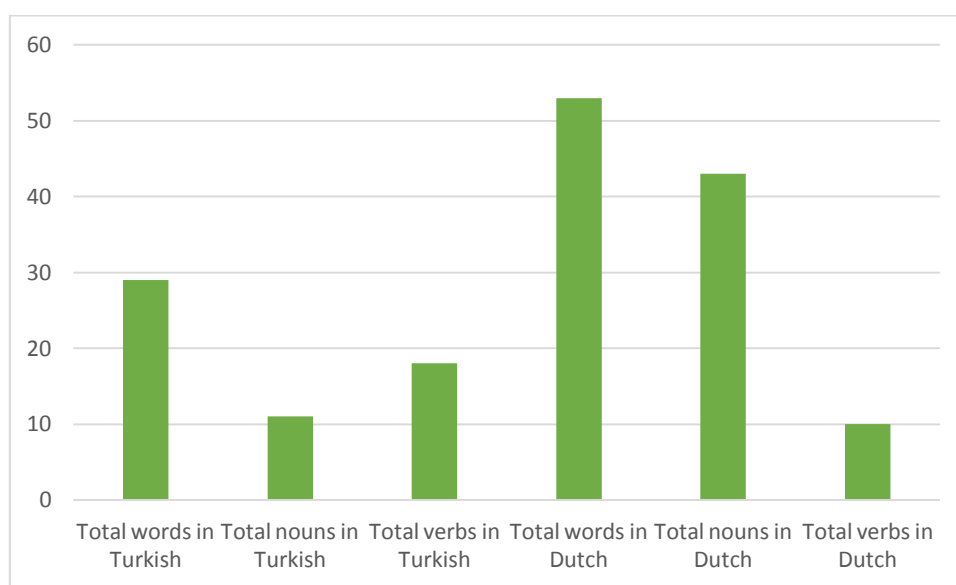


Figure 3. The distribution of produced nouns and verb in Turkish and Dutch in 08-16 months.

Then, we look at production differences across languages. There is no significant difference in terms of the total number of words produced between Turkish and Dutch ($t=-0.435$; $df=16$; $p=0.669$); neither in terms of nouns ($t=-0.734$; $df=16$; $p=0.474$), nor in terms of verbs ($t=0.505$; $df=16$; $p=0.620$).

Table 7 illustrates the production data between 16-36 months in Turkish and Dutch (Turkish CDI-II and Dutch CDI-II).

Table 7. Production data between 16-36 months in Turkish and Dutch (Turkish CDI-II and Dutch CDI-II)

	TURKISH					DUTCH				
	M	SD	Median	Min-Max	RANGE	M	SD	Median	Min-Max	RANGE
TOTAL WORDS	121.4	132.6	86.5	0-382	382	113.7	123	96.5	0-358	358
TOTAL NOUNS	76.9	83.4	46.5	0-245	245	90.6	95.2	81	0-279	279
TOTAL VERBS	44.5	52.6	23	0-137	137	23.1	28.8	15	0-79	79

The production profile of children aged between 16-36 months in Turkish is as follows: The total number of words produced by this age group ranges between 0 and 382. The mean number is 121.4 and the average number of words (the median) is 86.5; that is, there are 5 children that produced fewer verbs than 86.5 and 5 children that produced more verbs than 86.5. The number of nouns changes between 0 to 245, the mean is 76.9 and the median is 46.5; this is the midpoint indicating that 5 children produced fewer verbs, and 5 children produced more verbs than that number. The total number of verbs ranges from 0 to 137 with the mean number of 44.5. There is statistically significant difference between nouns and verbs in Turkish ($t=2.375$; $df=9$; $p=0.04$).

The production of Dutch words draws a similar profile in the sense of more nouns and fewer verbs. The total number of words produced in Dutch ranges from 0 to 358 with the mean of 113.7. The median 96,5 indicates that the average number of words produced is relatively high. The mean number of nouns is 90.6 and the average number (median) is 81. The verbs in Dutch are relatively fewer than nouns. The mean number is 23,1 and the median is 15. The average point is relatively lower than nouns in Dutch. The difference between nouns and the verbs produced in Dutch is statistically significant ($t=3.159$; $df=9$; $p=-0.012$).

Figure 4 illustrates the distribution of production data in Turkish and Dutch in 16-36 months (Turkish CDI-II and Dutch CDI-II).

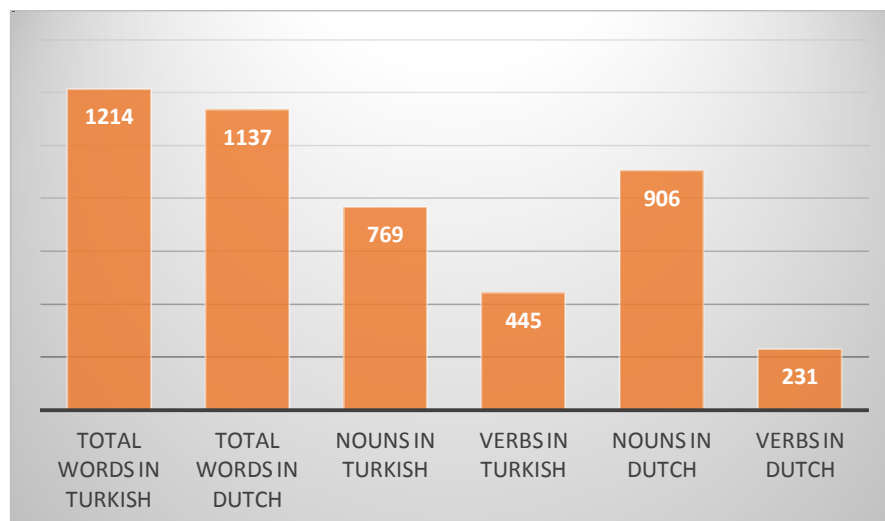


Figure 4. The distribution of produced nouns and verb in Turkish and Dutch in 16-36 months.

We, then, apply statistical test to see whether there is a statistically significant difference across languages. There is no statistically significant difference between the total number of produced words in Turkish and in Dutch ($t=0.024$; $df=16$; $p=0.981$). Likewise, noun production does not show a significant difference between Turkish and Dutch ($t=-0.466$; $df=16$; $p=0.647$). Although there are fewer verbs produced in Dutch, the difference is not statistically significant ($t=1.030$; $df=16$; $p=0.318$).

Next, we calculated the percentage of nouns and verbs in the children's total lexicons. Figures 5 and 6 display percentages of nouns and verbs as a function of total vocabulary size between ages 08-16. As seen in the Figure 5 for both languages, nouns occupy a bigger place than verbs, but in Dutch the percentage of nouns is higher while the percentage of verbs is lower compared to Turkish.

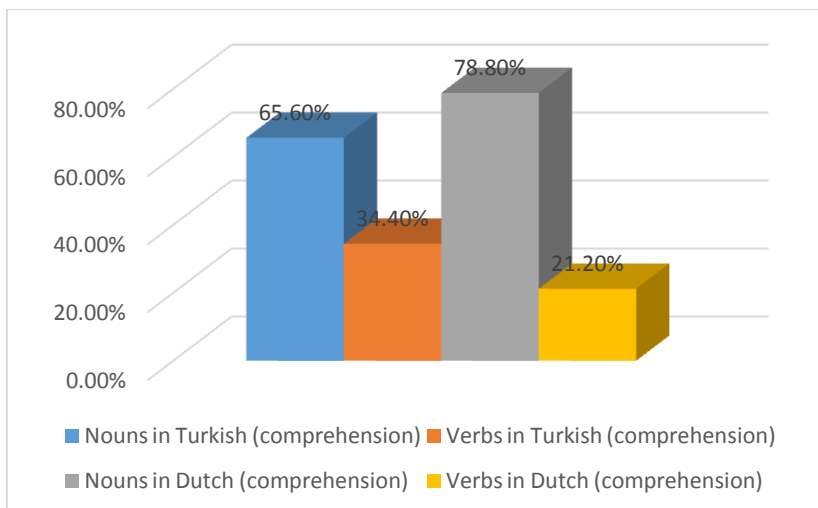


Figure 5. Frequency of nouns/verbs in the Turkish and Dutch CDI-I (comprehension)

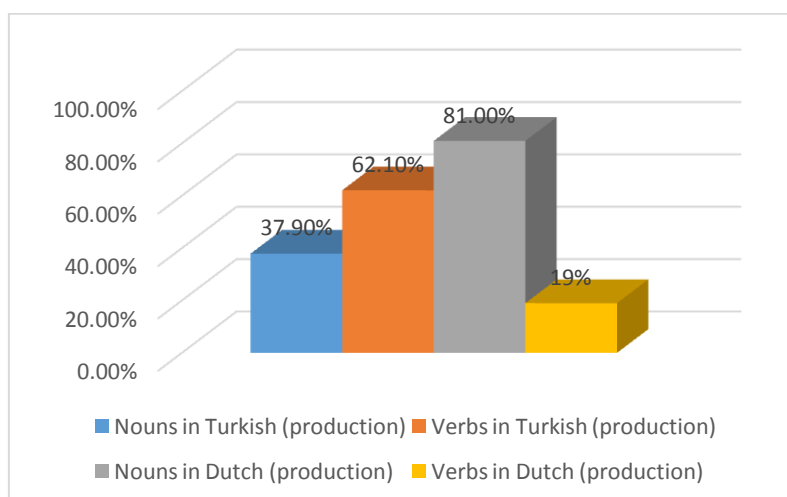


Figure 6. Frequency of nouns/verbs in the Turkish and Dutch CDI-I (production)

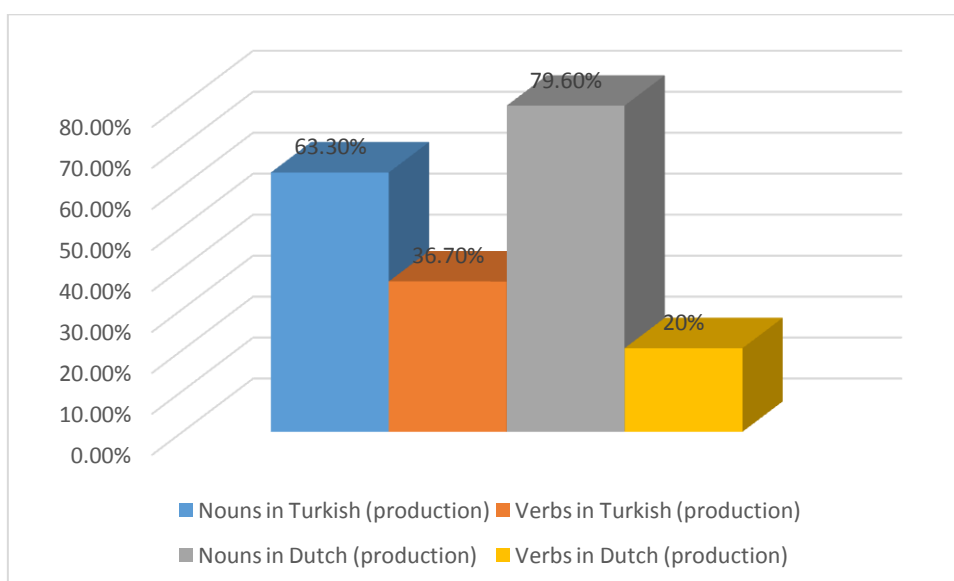


Figure 7. Frequency of nouns/verbs in the Turkish and Dutch CDI-II (production)

The production data displays a different picture. As illustrated in Figure 6, in Turkish, the percentage of verbs produced is higher than the nouns. That is to say that children produce more verbs than nouns in Turkish. However, in Dutch, more nouns but fewer verbs are produced.

The production data from CDI-II with older age group again indicates that total productive lexicon both in Turkish and Dutch consists of verbs to a great extent. There still is a different tendency between Turkish and Dutch. The frequency of verbs produced in Turkish is higher than the verbs produced in Dutch (36.7% and 20.3% respectively).

Discussion and Conclusion

We conducted this study to determine whether a noun bias would be found in Turkish-Dutch bilingual children's early lexicons. The general pattern we observed with Turkish-Dutch bilingual children in this study in terms of noun-verb dominance looks similar to the patterns observed in Turkish- and Dutch-speaking monolingual children's noun and verb development. As the results are preliminary, it may be too strong at this point to conclude that language-general mechanisms play a more crucial role in bilingual children's language development. Though this is the case, the interaction between language-general and language-specific characteristics, or in other words, cognitivism versus linguistic relativity, is remarkable in the results. The noun superiority over verbs in the children's Turkish and Flemish lexicons in both age groups (except productive vocabulary in the early age group, CDI-I), may be considered as a signal for a cognition-based approach into children's language trajectory but the difference in the noun-verb interplay in the children's Turkish and Dutch vocabularies may be attributable to language-specific processes employed to explain the nature of bilingual children's language growth. Similarly to studies on monolingual children, the preliminary results of this study should be supported by longitudinal and naturalistic data to reveal a complete picture of noun bias in Turkish-Dutch bilingual children's early language development. Another important point to mention in this study is individual variation. The high values in the standard deviations in the analysis indicate the need for a closer inspection of inter-individual differences. Various factors have been listed in the related studies that may be influential on young children's language development such as psychological, educational, social, and cultural-political factors (Verhoeven, 1999). In terms of psychological factors in the studies, there is a well-accepted approach that the mental storage of two languages is largely separated but at some points there are shared parts, especially on the level of general knowledge and skills (Leseman, 2010), so in following Leseman's perspective, we may propose that the children's Turkish and Flemish early lexicons are separate in terms of the gap between noun and verb categories but shared in terms of the noun dominance over verbs.

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