

Are Difficulties with the Prosodic Representation the Origin of Prolonged Article Omission?

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1. Introduction

This paper discusses article production in German by successive bilingual children with L1 Turkish, with a focus on article omission. Since Turkish, in contrast to German, does not have an article system, transfer effects from Turkish could result in prolonged article omission in German. The following questions will be addressed:

- (i) Does article misuse occur? That is, is a definite article used in a context requiring an indefinite article, and vice versa?
- (ii) Is article omission more frequent in the child L2 data than in the child L1 data?
- (iii) What is responsible for article omission in the child L2 data?

The paper is organized as follows. Section 2 provides an overview of the data used for the analysis. Section 3 presents the findings concerning article misuse and article omission. Section 4 discusses an account of article omission in terms of prosody. Section 5 contains the conclusions.

2. The data

The data discussed in this study were obtained as part of a long-term project examining successive bilingual children with L1 Turkish.¹ One of the goals of this project is to discover whether the acquisition of another language starting between the ages of 3 and 4 differs from simultaneous bilingual acquisition (from birth). All the children participating in the project are growing up in Turkish-speaking families in Germany and were first regularly exposed to German on entry to German kindergarten. Considerable data have been collected from more than twenty children over several years. These data consist mainly of spontaneous speech data from free-play situations. To study article use in L2 German, I examined some spontaneous production data from four of these children, two boys (Faruk and Fikret) and two girls (Gül and Eser).

Table 1 lists the age of onset (AO) for each child, the time (in Months of Exposure, ME) of each recording used in the analysis, and the Mean Length of Utterance (MLU) in that recording. Each recording is about 45 minutes long. Data collection from Faruk ended at ME24 and from the other children around ME30.

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¹ The project is entitled 'Specific language impairment and early second language acquisition: differentiating deviations in morphosyntactic acquisition', directed by Monika Rothweiler. It is one of several projects of Collaborative Research Center 538 at the University of Hamburg, funded by the German Science Foundation.

Table 1: Overview of recordings of successive bilingual children with L1 Turkish

dataset	Faruk (AO 2;9)		Gül (AO 3;0)		Eser (AO 3;0)		Fikret (AO 4;2)	
	ME	MLU	ME	MLU	ME	MLU	ME	MLU
1	8	2.6	8	1.6	9	3.5	8,5	2.1
2	12	3.0	12	1.7	11,5	3.5	12	2.2
3	15	4.2	14	2.1	14	3.5	15	3.0
4	18	3.6	18	2.9	18,5	3.7	18	2.9
5	24	3.6	24	3.6	24,5	4.3	24	2.8
6			30,5	3.4	30,5	3.4	29,5	3.4

3. Article production in L2 German

Turkish is a language that lacks an article system. There is no definite article. Unstressed *bir* marks a noun as indefinite and is regarded as article-like (Kornfilt 1997), but in contrast to an indefinite article it is optional (see Parodi, Schwartz, and Clahsen 2004). Stressed *bir* corresponds to the numeral *one*. In German there are other determiners besides articles, i.e. demonstratives, possessives, and quantifiers. These other types of determiners also exist in Turkish. Sometimes where a determiner is required it need not be a specific element, but one of several possible elements:

- (1) Wallace hat einen/diesen/seinen/keinen Hund weggegeben.
 Wallace has a this his no dog away given
 'Wallace gave away a/this/his/no dog.'

In the following sections the focus will be on article misuse and article omission.

3.1. Article misuse

To examine article misuse I analysed the singular count-noun contexts in the data at four comparable MEs: around ME8, ME12, ME18, and ME24. The results are summarized in Figure 1. An inspection of the contexts in which either a definite or indefinite article is required reveals that when an article is used it is generally the correct one. In other words, article misuse is very rare. Examples of incorrect article use are given in (2) and (3). In (2) the child is drawing a snake and asks the interviewer for another sheet of paper by saying:

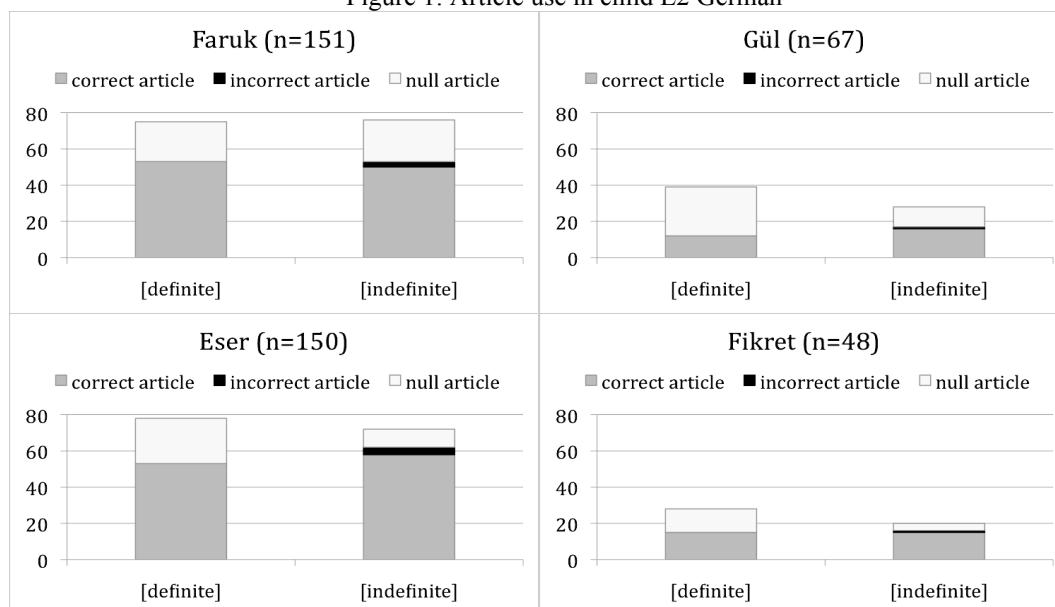
- (2) a. Ich will den Neuen haben. (Eser: ME24,5)
 I want the new have
 'I want to have the new one.'
 a'. Ich will ein Neues haben. (target)
 'I want to have a new one.'

In (3) the child and the interviewer are playing a game with various toy figures, some of which are laid out on the table, and others are hidden in a bag. The child first utters (3a) and then (3b). In this game there are no black toy figures, something the child knows since he has played the game several times before.

- (3) a. Brauchn noch eine schwarze Mensch. (Faruk: ME12)
 need still a black person
 'We still need a black person.'
 b. Hebt ihr die Schwarze?
 have you the black
 'Do you have the black person?'
 b'. Habt ihr einen Schwarzen? (target)
 'Do you have a black person?'

In Figure 1 only those contexts are considered in which the children either produced an overt definite or indefinite article or omitted an article. When a determiner is missing, it cannot be determined with certainty whether an article or another determiner has been omitted, but in the contexts considered here it is most natural to assume an article is omitted.

Figure 1: Article use in child L2 German



As can be seen from Figure 1, the children never used an indefinite article in a context requiring a definite article, but occasionally they used a definite article in a context requiring an indefinite article. This finding on article misuse in child L2 German is quite different from that on child L2 English by Zdorenko and Paradis (2008), who looked at longitudinal data obtained from a story-telling task, in which the children were asked to describe individuals or objects presented in pictures. Seventeen young children from various L1 backgrounds took part in their study. Seven children were assigned to the [+article] L1 group (3 Spanish, 3 Arabic, 1 Romanian) and 10 children formed the [-article] group (6 Mandarin, 2 Cantonese, 1 Japanese, 1 Korean). At the beginning of the study the children's mean age was 5;04, after around 9 months of exposure to English. The experiment was arranged so that one of the experimenters could not see the pictures. Upon first mention of an individual or object, the use of the definite article was judged inappropriate, as in (4) vs. (5):

- (4) incorrect *the* in indefinite context
 EXP: how do you start?
 CHI: # mm # the elephant throw the ball. (JHNN 5;11)
 (Zdorenko and Paradis 2008:238)
- (5) correct *the* in definite context
 CHI: first there are two cross-eyed animals at the pool.
 CHI: one was elephant ... who had a very fat body.
 CHI: and the elephant, the female elephant was bouncing up and down her ball.
 (Zdorenko and Paradis 2008:238f)

Both groups of children were consistently more accurate with the definite article than the indefinite article, independent of their language background. After 22 months of exposure to English, both groups reached over 90% accuracy with the definite article. After 27 months of exposure, the [+article] L1 group reached over 90% accuracy with the indefinite article. The [-article] L1 group had not reached

90% accuracy with the indefinite article even after 34 months of exposure. Article omission was rare in the [+article] group, but it was frequent in the [-article] group at least in the early stages of L2 acquisition. Articles were more often dropped in definite contexts than in indefinite ones. But after 16 months of exposure, article omission began to disappear even in the [-article] group. The main error in both groups was found to be article misuse rather than article omission.

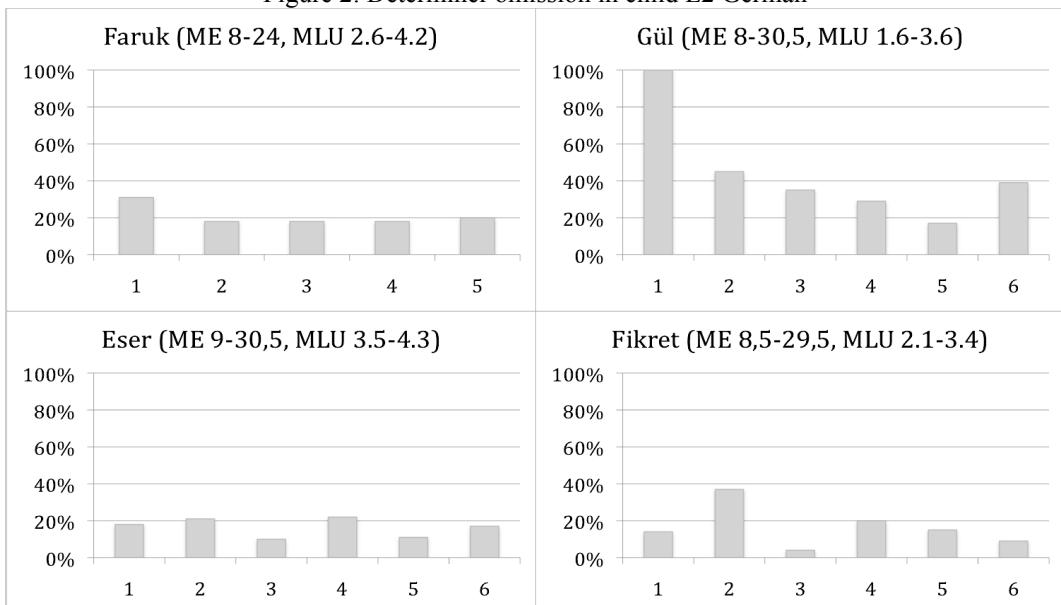
In contrast to the children studied by Zdorenko and Paradis the main error of the successive bilingual Turkish children does not appear to be article misuse but article omission. The difference in findings may be partially due to the different methods used for data collection. The children in Zdorenko and Paradis' study took part in an experiment in which the context for article use was clearly delimited, whereas the data from the successive bilingual children were obtained in free-play situations in which the context for article use could sometimes not be determined.

3.2. Article omission

Figure 1 above shows that the four successive bilingual children do omit articles to a non-negligible degree, especially in definite contexts, but it does not show whether omission decreases over time, since the data from various recordings have been combined. In the following, I concentrate on determiner omission and whether it decreases over time. The focus is on the presence or absence of a determiner in an obligatory context, independent of whether its morphological form is correct (as in (6a)) or not (as in (6b)). In virtually all cases in which a determiner is missing, as in (7), it looks like an article rather than another determiner is missing. The results are shown in Figure 2. (The values on the x-axis refer to the dataset numbers in Table 1.)

- (6) a. Hörst du meine Stimme? (Eser: ME18)
'Can you hear my voice?'
b. Lass das Finger los. (Fikret: ME24)
b'. Lass den/meinen Finger los. (target)
'Let my finger go.'
- (7) a. Indianer ist das. (Faruk: ME24)
a'. Ein Indianer ist das. (target)
'This is a red Indian.'

Figure 2: Determiner omission in child L2 German



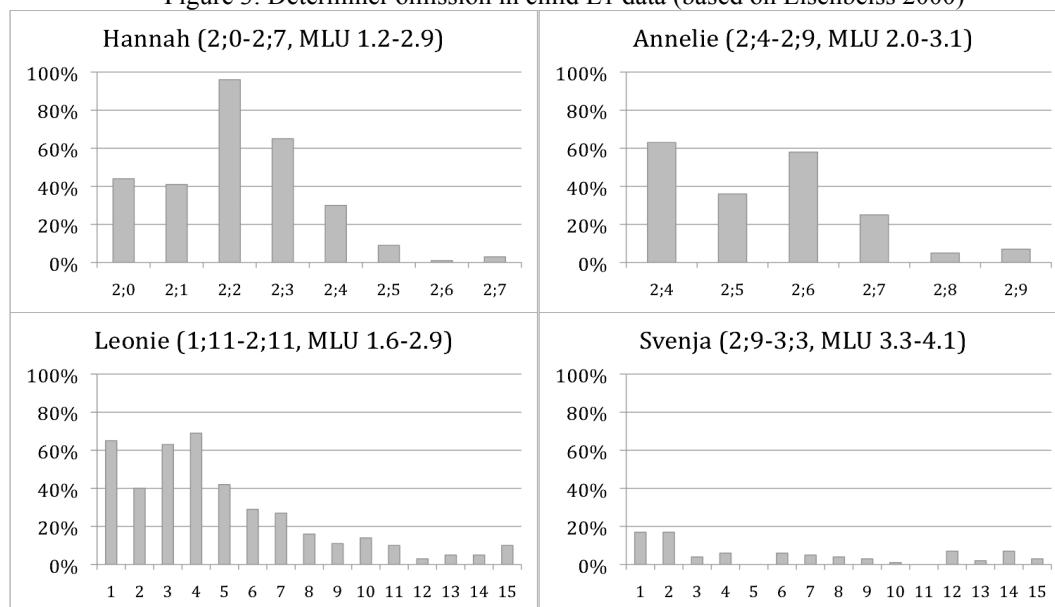
As can be seen from Figure 2, there is no consistent developmental trend. Determiner omission stays around 20% in Faruk's data, and fluctuates between 10 and 22% in Eser's data, and between 4 and 37% in Fikret's data. In Gül's data determiner omission is generally higher and consistently decreases until the final recording.

German children's acquisition of determiners has been shown to be U-shaped (Eisenbeiss 2000, 2002). The first utterances containing articles are often formulaic, as in (8), artificially boosting the occurrence of article-like elements at the initial stages of linguistic development. According to Eisenbeiss (2000) and Penner and Weissenborn (1996), omission of determiners by German-speaking children falls below 10% around age 3.

- (8) a. Wo's de hund?
'Where's the dog?'
(Eisenbeiss 2000:40)
- b. Das de baby.
'That/there (is) the baby.'
(Penner and Weissenborn 1996:186)

Figure 3 is based on the data from four of the seven monolingual German children discussed in Eisenbeiss (2000). (The values on the x-axis either refer to the age of the child at the time of recording or to the dataset number.) Eisenbeiss specifies the criteria she used for inclusion or exclusion of determiner contexts. Since the same criteria were applied in the analysis of determiner omission by the four successive bilingual children, a comparison between the child L1 data and the child L2 data is possible. There is a clear developmental trend in the L1 children's data: after some fluctuation in determiner production there is a rapid decrease in determiner omission. No such clear developmental trend is visible in the L2 children's data, apart possibly from the case of Gül.

Figure 3: Determiner omission in child L1 data (based on Eisenbeiss 2000)



What the comparison between the monolingual and successive bilingual children clearly shows is that article omission is not a problem that the successive bilingual children quickly overcome. A similar conclusion was reached by Pfaff (1992), who reported that two Turkish children persist in omitting articles in L2 German. Article omission by these two Turkish children (ages 1;8-4;3 and 2;11-5;3) is much higher than that by the four bilingual children discussed above (article omission occurs more than 50% of the time in the final recordings), although these children started to attend kindergarten at an earlier age, at 1;2 and 0;6 respectively. However, the family language of most children at the Berlin

kindergarten that these children attended was not German (about 90% of the children spoke Turkish at home).

4. Prosodification of articles

Several researchers suggest that article omission may be connected to the way in which articles are prosodified in the language. Lleó and Demuth (1999) discuss the prosodification of German articles and note that besides unreduced articles, there are also reduced articles. They provide the examples in (9). While the unreduced articles in (9a) and (9b) form a foot (F) and are prosodic words (PWd), the reduced article in (9c) is not a prosodic word and attaches to the preceding word. (PPh stands for Phonological Phrase.)

- (9) a. $\text{PWd}_{[F]}\text{[der]}\ \text{PWd}_{[F]}\text{[Mann]}$
 the.masc.nom man
 'the man'
- b. $\text{PPh}_{[\text{PWd}_{[F]}\text{[noch]}\ \text{PWd}_{[F]}\text{[ein]}\ \text{PWd}_{[F]}\text{[Kipper]}]}$
 again a.masc.nom truck
 'another truck'
- c. $\text{PPh}_{[\text{PWd}_{[F]}\text{[noch]}\ n]}\ \text{PWd}_{[F]}\text{[Kipper]}}$
 again a.masc.nom truck
 'another truck'
- (Lleó and Demuth 1999:415)

There is no difference in meaning between (9b) and (9c). But note that while the unreduced form *ein* can potentially be ambiguous between the indefinite article and the numeral corresponding to English *one*, the reduced form is unambiguous and can only be the indefinite article.

The four successive bilingual children often produce indefinite articles, but they generally produce unreduced rather than reduced forms. The data of the monolingual children Simone (Miller 1979) and Caroline, available on CHILDES (MacWhinney 2000), reveal that unreduced forms appear about three months before reduced forms. However, these data are available only as transcripts and not as audio recordings. To gain some insight into how often German-speaking adults use reduced and unreduced indefinite articles, I examined the indefinite articles produced by two of the interviewers (Vera and Silke) interacting with the bilingual children. The unreduced form *ein* (a.masc.nom or a.neut.nom/acc) can be reduced to *n*, the unreduced form *einen* (a.masc.acc) can be reduced to *ein* or *n*, and the unreduced form *eine* (a.fem.nom/acc) can be reduced to *ne*. The data are summarized in Tables 2a and 2b, in which the cells referring to reduced forms are highlighted.

Table 2a: Vera's production of reduced and unreduced indefinite articles in German

	einen	ein/eine	n/ne
EIN	---	55	28
EINEN	1	20	5
EINE	---	59	41

Table 2b: Silke's production of reduced and unreduced indefinite articles in German

	einen	ein/eine	n/ne
EIN	---	44	95
EINEN	1	5	27
EINE	---	15	56

Silke produced many more reduced articles than Vera: 75% (183/243) vs. 45% (94/209), but both Silke and Vera generally reduced *einen*. So the successive bilingual children generally produce unreduced indefinite articles although they must hear many reduced indefinite articles in the input. Could this be indicative of a problem with the prosodification of articles in German by Turkish learners?

In a number of papers Goad and White (2004, 2007, 2009) discuss article production in L2 English by Turkish speakers. They compare prosodification of articles in English to prosodification of the numeral *bir* and unstressed *bir* in Turkish. English articles are analysed as free clitics, which link directly to the Phonological Phrase, as shown in (10a) and (10b). Other determiners are analysed as prosodic words, as shown in (10c).

- (10) a. $PPh[a \text{ } PwD[book]]$
 b. $PPh[a \text{ } PwD[good] \text{ } PwD[book]]$
 c. $PPh[PwD[this] \text{ } PwD[book]]$
 (adapted from Goad and White 2007:231)

In English an adjective is inserted between the article and the noun, as in (10b), while in Turkish the adjective cannot be inserted between unstressed *bir* and the noun, as in (11a), but must precede *bir*, as in (11a'). Based on this contrast, Goad and White analyse unstressed *bir* as an affixal clitic rather than a free clitic. However, the numeral *bir*, which bears stress and is a prosodic word, precedes the adjective, as in (11b).

- (11) a.* *bir iyi adám*
 'a good man'
 a'. $PPh[PwD[iyi] \text{ } PwD[bir \text{ } PwD[adám]]]$
 'a good man'
 b. $PPh[PwD[bír] \text{ } PwD[iyi] \text{ } PwD[adam]]$
 'one good man'
 (adapted from Goad and White 2007:232)

Thus Turkish does not have a prosodic pattern corresponding to unstressed articles in English. Goad and White suggest that if a prosodic pattern necessary for the L2 is unavailable in the L1, L2 learners have three options at their disposal to deal with this problem: (i) they can stress the article, thus turning it into a prosodic word, (ii) they can replace the article by another determiner, which is a prosodic word, or (iii) they can delete the article. Snape and Kupisch (2010) provide a detailed analysis of production data from an endstate L2 learner of English with L1 Turkish, who makes use of all three options. While this account in terms of prosody can explain why article omission occurs, it cannot by itself explain article omission. If an L2 learner really knew when an article is required in the L2, but had no corresponding prosodic pattern available in his L1, he should use either option (i) or (ii), but not (iii).

Given this background, what are the predictions for Turkish-speaking child L2 learners of German? As discussed by Lleó and Demuth, reduced indefinite articles can be enclitic on the preceding word in sentence-internal position in German, as in (9c), but they can also be proclitic on the following word in sentence-initial position. One of the interviewees (Silke) produced several such examples. While enclisis may not be available to child L2 learners with L1 Turkish, proclisis in principle could be, at least in those cases in which the indefinite article directly precedes a noun. Although there are such contexts, the children do not produce reduced articles in these contexts either.² Thus their production of unreduced rather than reduced articles may mean that they have not yet acquired the prosodic pattern for reduced articles. Note that unreduced articles are prosodic words just like other determiners, such as possessives and demonstratives, in both Turkish and German. While a prosodic account may explain why the children produce unreduced articles, it cannot explain why the children omit articles. In particular, the omission of definite articles is unexpected, since definite articles are prosodic words, not clitics, according to Lleó and Demuth. Thus the fact that three of the children are more prone to leaving out definite articles than indefinite articles (see Figure 1) is puzzling. On the other hand, Turkish has a functional element (*bir*) that is similar to an indefinite article, while there is no functional element that is similar to a definite article. The fact that *bir* is optional in Turkish may encourage the children to treat indefinite articles in German as optional.

² There are a few recordings of these children when they speak Turkish with a Turkish-speaking interviewer. The transcripts reveal that they use unstressed *bir*.

5. Conclusions

The intent of my study was to investigate article misuse and, in particular, article omission in child L2 German. In contrast to the experimental data from child L2 English, the four successive bilingual children with L1 Turkish in this study very rarely use an incorrect article. There are only a few examples in which the children produce a definite instead of an indefinite article. In contrast, article omission is quite high. As opposed to child L1 data, in which a clear developmental trend can be seen, no such clear trend is obvious in the child L2 data. At the end of the recordings, after 24 and 30 months of exposure to German, the children still omit articles more often than the monolingual children, although their MLU is higher than the MLU of the monolingual children at age 3. But in contrast to monolingual children and German adults, the successive bilingual children generally produce unreduced rather than reduced indefinite articles. It was suggested that this is indicative of an underlying problem with the prosodification of indefinite articles. Unreduced articles are prosodic words, just like demonstratives and possessives in Turkish (and German), while reduced articles have no corresponding prosodic pattern in Turkish. The fact that the children omit articles, and in particular definite articles, cannot be explained in terms of prosody, since definite articles are prosodic words in German. That three of the successive bilingual children more often omit definite than indefinite articles may be due to transfer from Turkish: unstressed *bir* is similar to an indefinite article, while there is no functional element that corresponds to the definite article. Since *bir* is optional in Turkish, the children may be tempted to assume that indefinite articles are also optional in German.

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