The Role of the First Language in Child Second Language Acquisition of Articles

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1. Introduction

L2 learners of English often have consistent difficulty in the use of articles until very late stages of acquisition or do not ever reach the native-like level of performance. Importantly, similar errors with articles have been documented across learner contexts. For example, L2 learners have been found to use bare nouns when they are not appropriate, and they have been found to substitute or overuse the definite article *the* in contexts where the indefinite article *a* is required (Huebner, 1985; Ionin & Wexler, 2003; Ionin et al., 2004; Lu, 2001). The same kinds of errors have been documented in L1 acquisition of English (Brown, 1973; de Villers & de Villers 1973; Maratsos, 1974; Schaeffer & Matthewson, 2005, among others). While there is agreement that all English language learners have difficulty in using articles (at least initially), there is no consensus as to what the reasons for this difficulty are, and whether some reasons could be the same in L1 and L2 acquisition.

Most of the work on the acquisition of L2 English has focused on adult learners and has mainly examined L2 learners with L1s lacking definite/indefinite articles (e.g., Ionin & Wexler, 2003; Ionin, Ko, & Wexler, 2004; Lu, 2001; Robertson, 2000; except see Snape, 2005 and 2006). Thus, no recent research has examined the acquisition of articles in child L2 learners from different L1 backgrounds. Existing recent studies of young learners of L2 English (Haznedar, 2001; Lakshmanan, 1995; Paradis, 2005, among others) were aimed at investigating the children's acquisition of English verbal morphology and do not report the children's use of articles in particular. Child L2 acquisition is a good testing ground for investigating structures that are problematic for all learners of a language because it enables us to tease out problems related to cognitive immaturity on the one hand, and age-based limitations for native-like attainment on the other. Also, since young L2 learners do not fossilize, it is potentially possible to follow the process of L2 acquisition to the native-like final state.

In our study, we used elicited narratives as the material for studying the use of articles in L2 children. We created a longitudinal corpus of stories from 16 children, mean age of 5;4 at the outset, acquiring English as an L2. The children were followed for 2 years. On the basis of the children's L1 characteristics, we divided them into two groups, a group with [–article] L1s and a group with [+article] L1s. This study was designed to achieve the following goals: to determine whether the initial state in child L2 acquisition shows evidence for transfer of L1 with respect to articles; to investigate whether child L2 learners from both the [+article] and [–article] groups acquire articles in the same sequence; and to compare the rate of article overuse in the two groups.

2. Background
2.1 Previous studies on the acquisition of articles

Studies of L1 acquisition have found that children omit articles early on, followed by a period where *the* overuse in contexts for *a* is a notable error in production, particularly before the age of 4 years (Brown, 1973; Maratsos, 1974; Schaeffer & Matthewson, 2005). Explanations for *the* overuse offered in these studies are mostly based on immature discourse-pragmatic cognition. The agreement seems to be that children initially overgeneralize *the* in indefinite contexts where an adult would use *a*,

and this is often explained by the inability to estimate the hearer's knowledge (e.g., Schaeffer & Matthewson, 2005).

Similar acquisition sequences and error patterns obtain in adult L2 acquisition, where cognitive immaturity is not a tenable explanation for *the* overuse in particular, even though it is a reasonable explanation for young children's errors. Early studies of English L2 learners found that they omitted articles in their initial interlanguage and were less accurate with indefinite articles than with definite articles at early stages, leading to the conclusion that the English L2 acquisition sequence for articles is Ø > *the* > *a* (Huebner 1985, Master 1987, Parrish 1987, Thomas 1989). These conclusions about the order of article acquisition received further support in more recent studies (Lu, 2001; Lardiere, 2005; Robertson, 2000, among others). For instance, studies of Chinese learners of English (Lu, 2001; Robertson, 2000) found that, in beginner groups, article accuracy was significantly higher in definite than in indefinite contexts.

Turning to errors in particular, null articles in both definite and indefinite contexts and substitution of the definite article in indefinite contexts are the most widely reported types of errors. Studies of adult L2 learners whose L1s lacked articles found the overgeneralization of the null article in both definite and indefinite contexts. Article omission in such cases was naturally attributed to L1 transfer, although the absence of a comparison group whose L1s have article systems makes it difficult to know for certain. Another common error found in L2 acquisition of English is the overuse of the definite article. Huebner (1985) and Parrish (1987) found that initially, L2 learners extended the use of *the* to nouns mentioned in the discourse for the first time. These case studies pointed in the direction that L2 learners at early stages of acquisition erroneously associate *the* with specific nouns, overusing *the* in the contexts where the referent of a noun is known to the speaker but not to the hearer. More recent research with larger sample sizes consisting of Russian, Korean and Mandarin learners of English arrived at the same conclusion concerning *the* overuse in specific reference contexts (Ionin & Wexler, 2003; Ionin, Ko, & Wexler, 2004; Lu, 2001).

2.2. Theoretical accounts of L2 acquisition

In our study, we tested the predictions of Fluctuation Hypothesis (Ionin et al., 2004) and the Full Transfer/Full Access account (Schwartz & Sprouse, 1994; 1996). The Fluctuation Hypothesis (Ionin et al., 2004) is a parameter-setting account explaining the overuse of the definite article in particular. Ionin et al. (2004) propose that article systems in two-article languages like English can encode the features [±definite] or [±specific]. They argue that the grouping of articles in such languages is governed by a semantic parameter, the Article Choice Parameter (ACP), which can be set to either the definiteness value or the specificity value. In the formulation of the FH, Ionin et al. (2004) argue that L2 English learners with [–article] L1s, i.e. L1s that do not instantiate any setting of the ACP, will fluctuate between the two settings of the parameter until they are exposed to sufficient input to set the parameter correctly. The FH predicts that fluctuation may result in *the* used in [+specific], [–definite] contexts interchangeably with *a*, the target article.

On the Full Transfer/Full Access (FT/FA) account (Schwartz & Sprouse, 1994; 1996), L2 learners transfer functional categories and features of their L1 into the L2 as the starting point, and over the course of acquisition, they are able to adapt their interlanguage grammar in order to accommodate the input due to access to Universal Grammar (UG). If one assumes a FT/FA model of L2 article acquisition, differences between learners of [±article] L1 backgrounds would be expected, at least at the initial state, because the [+article] L1 learners would transfer the functional category Determiner into L2 English. In order to test this prediction, there is a need to study article omissions in L2 learners with both [+article] and [–article] L1s. Furthermore, since article omissions and substitutions were found in adult L2 learners, understanding the role of L1 transfer in child L2 is also crucial to understanding whether error forms have a common source in both adult and child L2 learner contexts, and how long it takes to achieve native-like accuracy. A limitation of some prior research is that it has been conducted on adult L2 learners, some of whom may have fossilized (e.g. Lardiere, 2005; White, 2003). There is a need for research on L2 learners whose acquisition patterns and rates are not reflective either of age-based constraints on the learning process and its outcome, or of cognitive immaturity.

3. Research Questions

We examined longitudinal data from English L2 children from [+article] and [–article] L1 backgrounds to address the following questions:

(1) Does L1 background play a role in the acquisition sequence? In other words, do L2 learners from both L1 backgrounds acquire definite before indefinite articles? We expected the same pattern in both groups, since definite before indefinite is the sequence documented in both L1 and adult L2 acquisition. If our prediction is correct, it would indicate that there is continuity in the first and second language acquisition sequences of English articles.

(2) Do L2 learners from [–article] and [+article] L1 backgrounds omit articles to the same extent? Do [–article] L1 learners acquire correct use of articles more slowly? We expected the [–article] L1 group to omit articles more frequently than the [+article] group, and to acquire them more slowly. If our prediction for group differences is correct, then our results would be consistent with an FT/FA account because L1 transfer is likely to underlie this difference since the learners from both groups are exposed to the same input.

(3) Is *the* overuse a common error in both [+article] and [–article] L1 groups? We predicted that both groups of children would show this error, since it is also found in L1 acquisition. Article substitution in [–article] L1 learners would be compatible with the predictions of the FH (Ionin et al., 2004). However, if our prediction is correct and both [+article] and [–article] L1 groups substitute *the* for *a*, the FH would not be sufficient to account for this finding, because the FH makes no prediction regarding article overuse in [+article] L1 learners.

4. Method
4.1. Participants

Sixteen children learning English as a L2 in Edmonton, Canada, were studied every six months for approximately 2 years. Children were from new Canadian families and had little or no exposure to English before regular attendance at a preschool or school program. Onset of exposure to English was determined by children's entry into such a program. The children's mean age was 5;4 and mean exposure to English was 9 months at the onset of the study. Mean ages and months of exposure at each round of testing are given in Table 1.

Table 1. Average ages and months of exposure (MOE) at each round of data collection

Round	1	2	3	4	5
Age	5;4	5;10	6;4	6;10	7;4
MOE	9	16	22	27	34

The children were selected for the present study in order to form two groups, roughly equivalent in size, with [+article] and [–article] L1 backgrounds. The [+article] group included 7 children whose L1s were Arabic, Romanian, and Spanish, and the [–article] group included 9 children whose L1s were Cantonese, Japanese, Korean, and Mandarin. More information about this study and these participants can be found in Paradis (2005) .

4.2. Materials and Procedures

In each of the 5 testing sessions, the children told stories, following two picture books, to the experimenter who could not see the pictures. This was done to ensure that the child could not resort to gestural communication, i.e., pointing, and could not assume mutual speaker/hearer knowledge based on joint attention to the same picture. The picture books used for the elicitation of narratives were designed as a part of the Edmonton Narrative Norms Instrument (ENNI) project (www.rehabmed.ualberta.ca/spa/enni).

In our analysis of the use of articles in the stories, two contexts of article use were set apart: first and subsequent mentions contexts were regarded as indefinite and definite contexts respectively, in order to make it clear which article was the target form. The narratives were transcribed in CHAT format (MacWhinney, 2000) and analyzed for instances of *a*, *the*, and Ø used with nouns referring to new characters (indefinite contexts) and nouns used to refer to these characters later on in the stories (definite contexts). The analysis was limited only to referring expressions that were used for the characters and concrete objects in the stories, i.e. four animate characters and three objects in each picture book. Thus, we considered only the use of articles with common nouns and did not analyze other ways to refer to characters, such as personal and deictic pronouns and proper names. Articles used were then coded according to their appropriateness in the context as 'correct' or 'incorrect'. Article omission was coded as 'null article' (which was always an error, since proper names were not included in the analysis). Examples of data coding are provided below.

(1)   incorrect *the* in indefinite context
        *EXP: how do you start?
        *CHI: # mm # **the** elephant throw **the** ball.

(2)   correct *a*, incorrect null article in indefinite contexts
        *CHI: **a** little elephant in # in the pool.
        *CHI: **Ø** giraffe see it too.

(3)   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.

5. Results
5.1. Accuracy in the use of definite and indefinite articles

One of our aims was to investigate the sequence of article acquisition in child L2 English. From previous studies we expected the definite article to be acquired earlier than the indefinite article, but prior research does not clearly indicate how long it might take for accuracy to be above 90% correct, i.e., at ceiling, and whether acquisition rates are slower for children whose L1s do not have articles. The questions we asked for the analyses of the children's accuracy in the use of articles were as follows: (1) Are accuracy rates higher with *the* than they are with *a*, and when do each reach over 90%? (2) Are the rates of acquisition different for children in the [–article] than in the [+article] L1 group? Children's accurate use of *a* was calculated as a proportion of uses of *a* out of all indefinite contexts where *a* was expected. Similarly, children's accurate use of *the* was calculated as a percentage of uses of *the* in all definite contexts involving common nouns as referents. The resulting percentage correct use of *a* and *the* for each round are shown in Figure 1a for the [+article] L1 group and Figure 1b for the [–article] L1 group.
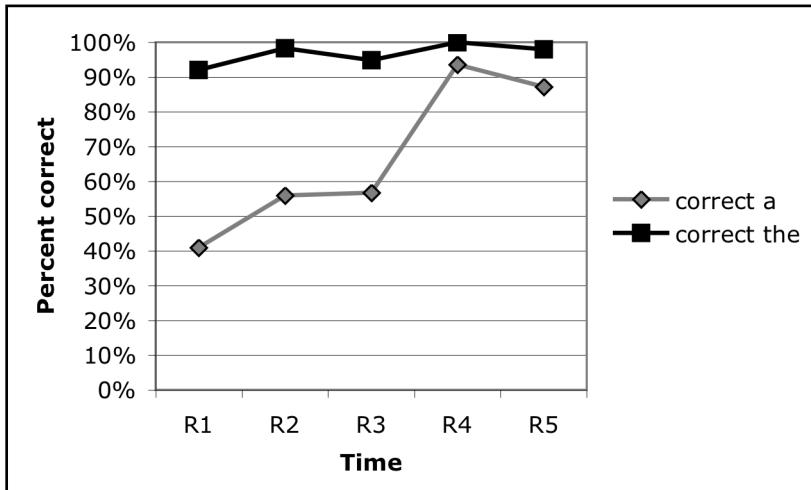
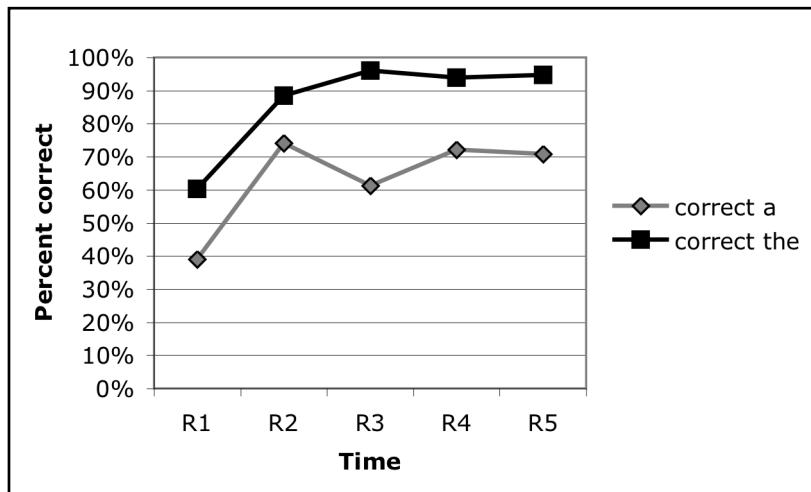Figure 1a. Mean percent correct use of articles for [+article] L1 group

Figure 1b. Mean percent correct use of articles for [–article] L1 group

For both L1 groups, accuracy rates were consistently higher at all rounds with *the* in definite contexts than they were with *a* in indefinite contexts. Above 90% accuracy for the use of *the* in definite contexts was reached by round 3 by both groups, i.e. in about 21 months from the onset. For *a* use in indefinite contexts, accuracy was still below 90% at the last round.

Results of a three-way mixed ANOVA with L1 background as a between-subjects factor ([+article] group and [–article] group), and round (5 levels) and article type (definite and indefinite) as within-subjects factors, revealed that both round ($F(4,48) = 10.68$, $p = .000$) and article type ($F(1,12) = 31.723$, $p = .000$) main effects were significant, but L1 background was not ($F(1,12) = 2.030$, $p = .180$). The significant main effect for the two-level factor, article type, confirms that the children were more accurate with the definite than indefinite article, as the means for the former were consistently higher. Applying planned independent sample t-tests on the correct use in context of each article type between each L1 group at each round, we found just one significant result in all the pairwise comparisons: The [–article] group had lower accuracy for the definite article at round 1 than the [+article group] (60.2% vs. 92.2%, $t(13) = -3.869$, $p = .002$). Over all, L1 background did not exert much influence on children's accuracy with article choice in context, with the exception that the [–article] group were lagging behind in accuracy at round 1 with *the*. Put differently, article type context

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was a more important factor than L1 background in determining these children's accurate use of English articles.

5.2. Error type distribution in definite and indefinite contexts

Previous research suggests that the overuse of *the* is a much more frequent error than the overuse of *a*. The accuracy analyses in the previous section support the prediction that accuracy is higher in definite contexts, but do not directly indicate if *the* overuse is the most common error, since the overuse would constitute the use of *the* in indefinite contexts. Furthermore, previous research has indicated that the overuse of null articles in L2 English was also documented in learners. Recall that null articles in the stories would always be errors regardless of context, because only singular common nouns referring to characters and objects in the stories were included in the analysis. The questions we asked for the analyses of error types were (1) What is the relative distribution of *the* overuse, *a* overuse and null article overuse among children's errors? (2) Is *the* overuse the most common error? (3) Does L1 background interact with error types, for example, do the [–article] children display more null article overuse than the [+article] children? First, the proportion of incorrect use of *the*, *a* and null articles was calculated from the total number of incorrect uses at each round across all children, and divided into L1 group and definite and indefinite contexts. The results of these analyses are presented in Figures 2a and 2b.
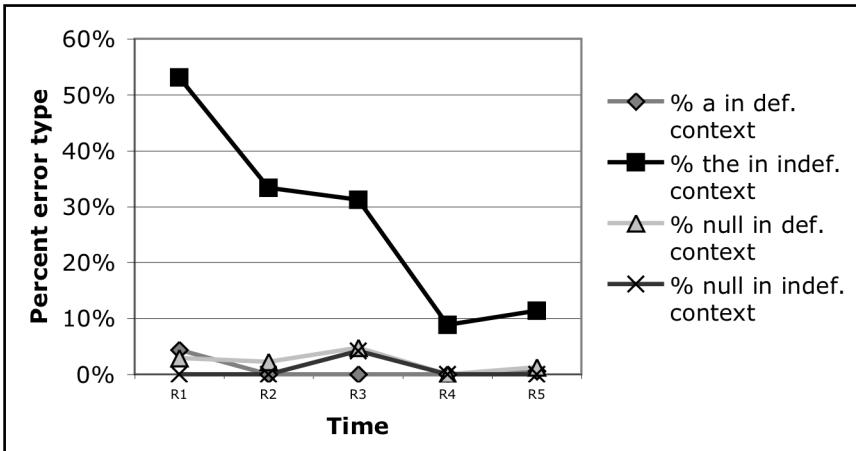

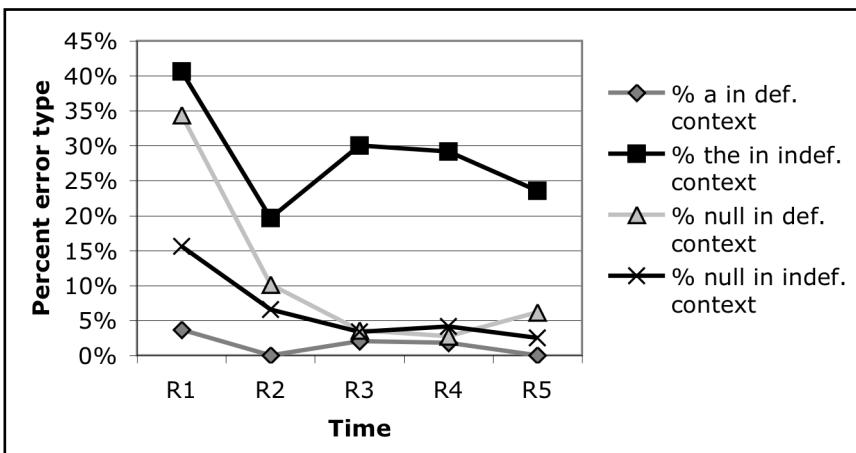Figure 2a. Percent distribution of error types for [+article] L1 group

Figure 2b. Percent distribution of error types for [–article] L1 group

The results show that *the* overuse is clearly the dominant error type for both the [+article] and [–article] groups, and that null articles are an error type specific to the [–article] group, since they are negligible in the [+article] group data but appear in the [–article] group data in both definite and indefinite contexts. Furthermore, null articles begin to disappear even for the [–article] group after round 3, indicating that these errors are more frequent during the early stages of English L2 acquisition.

Independent sample t-tests performed on the means collapsed across time support the distributional data in Figures 2a and 2b. The only significant group differences are for null article use in definite ($t(15)=2.375$, $p=.036$) and indefinite contexts ($t(15)=2.638$, $p=.019$), with the [–article] children having a higher proportion of these errors.

6. Summary and conclusions

The analyses revealed that the children in both L1 groups acquired the definite article before the indefinite article. L1 background had no significant influence on the acquisition sequence and accuracy. This finding indicates that there are similarities across child L1, child L2, and adult L2 acquisition of English articles.

We expected the [–article] L1 group to omit articles more frequently than the [+article] group and to acquire article more slowly. While there was very limited evidence for an effect of L1 background on rate of acquisition, there was a significant difference in the number of article omissions as errors between the L1 groups. Speakers of [–article] languages considered null articles to be an option in the contexts where the target was a definite or an indefinite article. The [+article] group appeared to have transferred the knowledge of articles from their L1s, because article omissions were very few. The difference in the error patterns in the [+article] and the [–article] groups shows an L1 effect, in accordance with the FT/FA account. After the second round, i.e. average 16 months of exposure, the [–article] group caught up with the [+article] group by reducing the number of omissions in definite and indefinite contexts to less than 5% in round 5, which supports the Full Access part of the FT/FA account because this account is focused on the initial state of L2 acquisition.

In contrast to the predictions of the FT/FA account, the error distribution in both groups cannot be fully accounted for in terms of the FH. In [+definite] contexts, *the* overuse was found in the [–article] group, as predicted by the FH (Ionin et al., 2004). However, in this [–article] group, two errors were predominant, the overuse of *the* and article omission. It is not clear how the FH would accommodate both findings, since it makes no predictions with regard to article omissions in [–article] L1 learners. Moreover, *the* overuse was also found in the [+article] group, which cannot be explained by the FH since fluctuation is predicted only in [–article] L1 learners.

In conclusion, we found that child L2 acquisition had features in common with both L1 and adult L2 acquisition. The general sequence of the acquisition of the English articles (*the* before *a*) appears to be the same in L1 and L2 acquisition. Apart from the acquisition sequence, the common aspect in L1, child L2 and adult L2 acquisition appears to be the overuse of *the* in indefinite contexts. Since direct L1 transfer is unlikely to be the reason for *the* overuse in either L1 or L2, the explanation for this error may lie elsewhere, for instance in article semantics. There have been some semantics-based proposals for why learners have more difficulty with *the* than with *a*, the main idea being that definite articles are less complex semantically and also more frequent. For example, Huebner (1985) simply explains difficulty with *a* by the fact that the need to refer to indefinite nouns is very low. Indeed, in the spoken language sub-corpora from the British National Corpus, *the* is the most frequent word (39,604 tokens per million words), and *a* occupies the 8th place (18,633 tokens per million words). Lardiere (2005: 181) offers a semantics-based explanation along the following lines: the definite article in English is easier to acquire because in principle the definite article can be applied to any noun regardless of its number or count/mass properties. The semantic conditioning of the indefinite article, on the other hand, is more complex than that of the definite article.

We see the learners' underlying grammatical competence to be L1-influenced, in part, at the earliest stages of L2 acquisition (in line with FT/FA), since L1 transfer is likely to be the reason for the significant difference between the article omission rates in [+article] and [–article] groups, and the lower accuracy rates at round 1 for the [–article] group. However, unlike in adult L2 acquisition, the

young learners were able to achieve 90% and higher rates of accuracy with the definite article in less than 2 years, perhaps due to the absence of potential age-based limitations. Thus, L1 influence appears to influence child L2 acquisition at the initial, but not the final state.

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