

L3 Acquisition of Articles in German by Native Japanese Speakers

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1. Introduction

Native (L1) speakers of languages which have no articles or other morphological markers for definiteness, must first establish two aspects when learning a language with articles; the distributional properties of articles, (where they can be used, where they must be used and where none are required); and the semantic or pragmatic properties of articles (what these articles mean in the context of the utterance).

Previous research on these two aspects has been considerable; the following section will look at a selection thereof. This will be followed by details of the current study in section 3; with section 4 presenting the results and finally section 5 will discuss these results in light of the research questions posed.

2. Previous Research

2.1 Chierchia (1998) – Nominal Mapping Parameter

Relating to the first aspect mentioned above, of the distributional properties of articles, Chierchia (1998) suggested the Nominal Mapping Parameter (henceforth NMP). This was proposed as a means of distinguishing between different types of languages with regard to articles. He suggested that languages differ in whether their noun phrases (NP) can function directly as arguments in syntactic expressions or not ([± argument] languages) and whether their NPs are predicates requiring a determiner of some kind to license them ([± predicate] languages). This typology predicts that there will be languages with three types of NP, as illustrated below.

- (1) [+arg, -pred] languages, which have no articles and lack number marking on nouns – any bare noun can be an argument, as in Japanese:

Soosya-wa gooru-rain-o mezasite rasuto-supaa-to kaketa
runner_{TOP} goal-line_{ACC} aiming-at last-spurt_{ACC} do-past
'The runner made a last spurt for the finish line.'
(Wakabayashi, 1998)

- (2) [+arg, +pred] languages, which have definite/indefinite articles but also have a count/mass distinction for nouns – some nouns need licensing but count plurals and some mass nouns do not, as in German and English:

Der Mann verkauft Bücher in einem Buchladen
the_{NOM} man sell_{PRES/3PS} book_{ACC/PL} in a_{DAT} bookshop
'The man sells books in a bookshop.'

- (3) [-arg, +pred] languages, which have definite/indefinite articles and number marking on nouns and determiners – all nouns need to be licensed, as in Spanish:

El hombre vende los libros en una librería
 the man sell_{PRES/3PS} the_{PL} book_{PL} in a bookshop
 ‘The man sells books in a bookshop.’

The NMP, however, does not account for the problems which are commonly found even amongst advanced learners of English in their selection of definite or indefinite articles for count singular nouns.

2.2 Lyons (1999) – Definiteness

Lyons (1999) noted that in English the morphological markers of *the* and *a/an* encode, amongst other things, definiteness [\pm definite] but not specificity [\pm specific], roughly defined as whether a referent is familiar to the speaker or not. This means that although an NP co-occurring with *the* must always be interpreted as definite, and an NP co-occurring with *a* must always be interpreted as indefinite, both are consistent with a specific or a non-specific reading, depending on context:

- (4) Joan wants to present the prize to *the* winner
 (a) ... but he doesn't want to receive it from her. (specific)
 (b) ... so she'll have to wait around till the race finishes. (non-specific)
 (Example (19) from Lyons 1999:167)
- (5) Peter intends to marry *a* merchant banker
 (a) ... even though he doesn't get on at all with her. (specific)
 (b) ... though he hasn't met one yet. (non-specific)
 (Example (18) from Lyons 1999:167)

He further noted that there are languages which morphologically encode specificity and not definiteness, such as Samoan.

2.3 Ionin, Ko & Wexler (2004) – Article Choice Parameter

In this study of native speakers of two languages without articles, Russian and Korean, acquiring L2 English, it was found that these learners were selecting articles based on specificity, as well as definiteness. The Russian speakers selected the indefinite article in definite, non-specific cases [+def, -spec] 33% of the time, (Korean speakers 14% in the same context). Overuse of the definite article in specific contexts [-def, +spec] was even higher, 36% for Russian and 22% for Korean L1 speakers. This led the researchers to suggest the existence of a semantic parameter in Universal Grammar (UG), which was termed, the Article Choice Parameter (henceforth ACP). The ACP would have two settings;

- (6) Articles which distinguish on the basis of specificity, such as those found in Samoan.
 (7) Articles which distinguish on the basis of definiteness, such as those found in English or German.

2.4 Ionin, Ko & Wexler (2004) – Fluctuation Hypothesis

Directly linked to the ACP, Ionin et al proposed the Fluctuation Hypothesis (henceforth FH). This hypothesis suggests that learners of article-less languages, when acquiring a language with articles, will fluctuate between the two settings of the ACP until adequate input allows them to set the value of this parameter correctly. The suggestion is that learners would select an indefinite article for sentences similar to the one in (4b) and a definite article for those similar to (5a).

3. Empirical Study

There has been little study of the acquisition of articles in L3; however, one recent important contribution was that of Leung (2005), who used written and oral data to compare two groups of French learners; L1 Cantonese → L2 English → L3 French and L1 Vietnamese → L2 French. Both Cantonese and Vietnamese have no articles and no marking on the DP for the [\pm definite] feature. She found the L3 group significantly outperformed the L2 group in both test types and all three areas tested; definite (suppliance of correct articles in context given), specific indefinite and non-specific indefinite.

The present study also looks at the acquisition of the feature [\pm definite] in an L3, but differs somewhat from Leung (2005), in that it looks at the influence of the L2 proficiency (English) on this feature in the L3 German of L1 Japanese speakers. In German, the NP is similar to English, either [+arg] or [+pred]. If the L2 has no influence on the learners' choice, we could expect to see learners once again fluctuating between definiteness and specificity. However, if the L2 does have some positive influence then learners should be selecting the correct article with greater accuracy, not only according to the proficiency level of the L3 but also dependent upon their L2 proficiency.

3.1 Research Questions

- (i) With reference to the ACP/FH: will the adult L3 learners of German who have acquired an L2 with articles that mark definiteness still fluctuate between a definiteness setting and a specificity setting?
- (ii) With reference to the L2 effect: will the level of L2 English proficiency have a positive effect on these learner's judgment of articles in the L3, in other words will learners of equal German proficiency but a higher English proficiency outperform those with a lower English proficiency?

3.2 Participants

The participants in this study were 39 native speakers of Japanese, who had all received compulsory tuition of English as an L2¹ (mean length of tuition 7 years, beginning at a mean age of 12.5 years). These subjects had no other non-native language experience² before beginning German as an L3 (mean length of tuition 3 years, beginning at a mean age of 21.7 years). There were also 8 German native controls who served as a baseline for comparison of the learners' results. The native controls were all students at the University of Essex (UK) and originated from different parts of Germany. The experimental group consisted of native Japanese speakers, who were studying or working in and around the Düsseldorf/Cologne area of Germany, where data were collected.

L3 German proficiency groups			
Group 1 Advanced	Group 2 Upper intermediate	Group 3 Lower intermediate	Group 4 Elementary
(n=16)	(n=12)	(n=9)	(n=2)

Table 1: Participants divided by L3 German proficiency

All non-native participants completed an independent measure of proficiency for German from the Goethe Institute. This enabled a division into four L3 German proficiency groups, as shown in Table 1. Due to the low number of participants in Group 4, results from this group will not be discussed.

¹ The original intention of this study was to have a control group of Japanese L1speakers acquiring German as an L2; however, this was not possible as English has been compulsory in Japan for some years now.

² This task was one of a number of tasks eliciting various features present on the DP in German; one of these features was grammatical gender. Originally there were 41 Japanese natives, however the data from two subjects were removed as they had experience of another language with grammatical gender; this was to ensure that their first contact with grammatical gender was with German.

The three German proficiency groups were further divided according to their English proficiencies, which were obtained via completion of the Oxford English Placement Test.

L2 English proficiency groups	L3 German proficiency groups		
	Group 1 Advanced	Group 2 Upper intermediate	Group 3 Lower intermediate
UI Upper intermediate	1UI (n=4)	2UI (n=4)	3UI (n=3)
LI Lower intermediate	1LI (n=7)	2LI (n=3)	3LI (n=3)
E Elementary	1E (n=5)	2E (n=5)	3E (n=3)

Table 2: Participants divided by L3 German and L2 English proficiencies

Mean German and English proficiency scores for each of these sub-groups can be found in the Appendices (section 6.1), together with mean age, length of immersion, length of tuition and begin of tuition for both languages.

3.3 The Task

The task was a written multiple choice task involving the selection of a determiner, which was in the form of dialogues of between three and five lines, with the article omitted. There were 40 short dialogues (ten contexts and four tokens per context) from each of which one of the determiners was missing. Intentional operators were used to elicit narrow or wide scope readings. The NPs for which the determiner was missing were all count singular concrete nouns. Subjects were asked to select one answer from the ten possibilities which were listed beneath each dialogue, there was no zero option. The choice of articles allowed selection of the correct gender and Case, according to the context of the noun. A sample token is shown in (8) with a gloss in (9).

(8) [+definite, -specific] with narrow scope reading

A: Entschuldigung. Können Sie mir helfen?

B: Ja, natürlich, was suchen Sie dann?

A: Ich suche ___ Straße wo sich das Stadttheater befindet, aber leider weiß ich den Namen nicht davon.

Antwort: der die das den dem einen eine ein einem einer

(9) A: Excuse me! Could you help me please?

B: Yes, of course. What are you looking for?

A: I'm looking for ___ street where the Royal Theatre is, but I don't know its name.

4. Results

4.1 Coding of results

Non-native-like selections of definiteness were coded with '1', native-like selections were coded with '0'. Appropriate or inappropriate selections of gender and/or Case were not calculated in the following results. Mean scores for each subject, divided by group, +/- definite and +/- specific, are shown in the Appendices (section 6.2).

4.2 Results by German proficiency – Fluctuation effect

The initial results indicated that learners were supplying appropriate articles a good deal of the time (78%). However, a higher overuse of the definite article was found in contexts where a native speaker would use an indefinite article; t-tests showed this to be significant (definite .26 / indefinite .18, $p=.011$). Further divided into contexts of specific and non-specific, the indefinite article was used inappropriately for non-specific contexts significantly more than for specific contexts (non-specific .22, specific .15, $p=.013$). This seemed to indicate that participants were inappropriately selecting this article on the basis of its (non-)specificity. However, when divided by German proficiency this fluctuation was not as clear.

Table 3 shows inappropriate article suppliance. If participants were making selections based on specificity rather than definiteness, we might expect to find a considerably higher number in the +specific column for overuse of the definite article and similarly a higher number in the –specific column for overuse of the indefinite article. More importantly the selections which cannot be explained by the FH are those which are marked with an asterisk (*), indicating selections based neither on definiteness nor specificity.

L3 German proficiency groups	Overuse of indefinite article in definite contexts		Overuse of definite article in indefinite contexts	
	+specific *	-specific	+specific	-specific *
1 Advanced (n=16)	8%	14%	17%	15%
2 Upper intermediate (n=12)	15%	17%	24%	27%
3 Lower intermediate (n=9)	26%	36%	35%	44%

Table 3: Inappropriate article suppliance by L3 German proficiency and specificity

A number of repeated measure ANOVAs were run to ascertain which of the many variables could be responsible for these inappropriate selections. Some variables produced main effects but no interactions (definiteness $p=.027$, specificity $p=.001$, scope $p=.02$, speaker knowledge $p=.02$). Interestingly the Case of the noun in question showed an interaction with German proficiency ($p<.001$), with definiteness ($p=.016$) and approaching significance for a 3-way interaction ($p=.054$). Further analysis showed a significantly higher overuse of the definite article in indefinite dative contexts. This pattern was confirmed throughout all German proficiency groups, and was further found to be significant when compared with nominative and accusative Case for proficiency groups 1 and 2.

L3 German proficiency groups	Definite article overuse			t-test: Dative & Nominative	t-test: Dative & Accusative
	Nominative Case	Accusative Case	Dative Case		
	Mean	Mean	Mean		
1 Advanced (n=16)	.08	.04	.35	$p<.001$	$p<.001$
2 Upper intermediate (n=12)	.18	.20	.38	$p=.014$	$p=.001$
3 Lower intermediate (n=9)	.33	.33	.54	-	-

Table 4: Definite article overuse by grammatical Case

4.3 Results by groups (German & English proficiency) – L2 effect

The results divided by L3 and L2 groupings (according to the divisions shown in table 2) showed that within the same German proficiency (e.g. German Group 1 Advanced) the target-like performance of the subjects increased as the English proficiency increased (e.g. from E – Elementary English to UI – Upper Intermediate English). Native speaker selections are also provided as a baseline, (see table 5).

L2 English proficiency groups	L3 German proficiency groups					
	Group 1 Advanced		Group 2 Upper intermediate		Group 3 Lower intermediate	
	Mean	SD	Mean	SD	Mean	SD
UI Upper intermediate	.11	.085	.13	.046	.29	.201
LI Lower intermediate	.12	.065	.18	.090	.35	.043
E Elementary	.16	.037	.30	.143	.42	.029
NS Native speakers	.03	.021				

Table 5: Inappropriate selection of [+/-definite] article

An ANOVA was run on the means shown in Table 5, which was found to be highly significant for L3/L2 Groups ($p < .001$); however, this does not distinguish English proficiencies within a specific German proficiency. Pairwise comparisons using Bonferroni adjustment were insignificant, perhaps due to the small number of participants in each group. However, a further ANOVA using German proficiency as the between-subjects factor and English proficiency as a covariate, showed both to be significant; (German proficiency [$F(2,33)=18.40$], $p < .001$, with a partial Eta squared of .53), and English proficiency [$F(1,33)=9.33$], $p = .004$, with a partial Eta squared of .22). This was further supported by the results of a partial correlation analysis run on these data. This analysis takes all data and calculates the correlation between the dependent variable (non-target-like article suppliance) once with both German *and* English proficiency included and once with German proficiency controlled for or partialled out; the second calculation showed a significant result for English proficiency ($r = -.44$, $n = 36$, $p = .005$).

5. Discussion and Conclusion

5.1 Fluctuation effect

Initial results show that subjects are supplying articles in a native-like manner much of the time, particularly those with a higher German proficiency; however, a number of inappropriate selections are still being made. Although some of these appear to be due to participants basing their choices on specificity rather than definiteness, a not inconsiderable number (particularly in the lower German proficiency level) are making article choices which are based neither on definiteness nor specificity. Further investigation shows a strong interaction with the Case of the noun, where this noun is dative.

One possible explanation is an extension of the Agreement Tense Omission Model proposed by Schütze & Wexler (1996) as a means of explaining why children acquiring an L1 omit one or the other feature, one interpretable (tense) and the other uninterpretable (agreement). It was assumed that these features are in competition with one another.

Perhaps this model can be extended to the learners in the current study, who must decide on the basis of the context of the sentence if the NP is definite or indefinite; furthermore in German the learners must also refer to the Case of the noun. Dative Case is non-structural; in this study all dative contexts were assigned Case via prepositions which are inherently dative. This appears to produce a computational overload, such that subjects delete or omit the definiteness feature; the speculation here is that they have a default definite article in this environment. Possibly they cannot integrate both definiteness *and* Case at the same time when Case is not structural. However, when structural Case is

involved there is no problem, as the computation of the syntax provides that for free, allowing them to make the appropriate decision on definiteness.

In conclusion and in answer to the first research question mentioned in section 3.1(i), it would seem that these learners are not fluctuating between definiteness and specificity. To a great extent their selections are appropriately set for definiteness. Inappropriate selections are not based solely on specificity but seem to have more in common with the feature of Case, specifically with dative Case.

5.2 L2 Effect

As mentioned above, the figure for appropriate suppliance of articles is relatively high, certainly higher than in comparable studies which have observed the L2 acquisition of articles (as opposed to L3 acquisition) by similar L1 subjects, such as Ionin et al (2004), for example. This would seem to indicate that the learners in this study are more aware of the definiteness feature – perhaps due to having acquired an L2 which has articles that mark definiteness in the same manner.

In answer to the second research question posed in section 3.1(ii), although group comparisons proved insignificant, perhaps due to small groups, a positive effect of L2 proficiency was clearly evident in the mean figures for each group. A trend was visible within all three German groups and learners of equal German proficiency but a higher English proficiency did outperform learners of a lower English proficiency. Possibly a larger sample would provide statistically significant results for within group comparisons.

6. Appendices

6.1 Group means for subjects; gender, age, proficiency score, age tuition begun, LoI/LoT for English and German

L3/L2 prof. group	Gender		Age	English				German			
	M	F		OEPT score /60	Age tuition begun	LoT in yrs	LoI in yrs	Goethe score /30	Age tuition begun	LoT in yrs	LoI in yrs
1E	4	1	27.60	24.40	13.00	6.00	.22	22.60	19.60	4.10	4.47
1LI	3	4	28.71	34.00	12.43	7.86	.05	24.43	19.00	3.71	4.58
1UI	1	3	33.70	41.50	12.75	8.50	.05	23.75	21.50	5.25	7.52
2E	3	2	34.26	25.60	12.80	6.40	.10	18.00	23.40	3.90	8.10
2LI	2	1	22.23	37.67	13.00	7.67	.33	18.33	19.33	2.17	.47
2UI	1	3	32.35	45.00	11.00	7.00	5.56	18.25	28.00	2.58	1.16
3E	2	1	26.50	24.67	13.00	6.00	.17	12.00	24.33	1.58	2.28
3LI	0	3	18.67	35.33	13.00	5.50	.00	12.00	15.33	3.17	3.17
3UI	1	2	24.67	43.67	11.67	10.67	3.03	13.67	22.67	1.17	1.19
TOT	17	22	28.43	33.82	12.49	7.19	.93	18.62	21.74	3.17	4.00
SD			9.12	7.963	1.45	1.86	2.26	5.393	5.95	2.32	6.18
Min.			18.00	20.00	5.00	3.00	.00	6.00	13.00	.00	.04
Max.			63.00	53.00	13.00	12.0	11.0	29.00	38.00	10.0	29.0

Key:

OEPT = Oxford English Placement Test

LoI = Length of immersion in years of parts thereof

LoT = Length of tuition in years of parts thereof

6.2 Mean scores by subject: inappropriate article selections by group, subject, definiteness and specificity

L3/L2 proficiency group	Subject i.d. number	Indefinite article overuse		Definite article overuse	
		+specific	-specific	+specific	-specific
1E	J04	.08	.38	.00	.17
	J08	.08	.25	.00	.08
	J11	.17	.25	.25	.17
	J14	.00	.25	.38	.17
	J28	.17	.00	.13	.25
1LI	J03	.08	.00	.00	.08
	J06	.08	.13	.25	.33
	J12	.00	.00	.50	.17
	J22	.17	.25	.00	.08
	J24	.08	.13	.25	.33
	J37	.00	.25	.00	.08
1UI	J41	.08	.00	.13	.00
	J05	.08	.00	.00	.00
	J19	.08	.38	.50	.08
	J25	.08	.00	.13	.25
2E	J39	.00	.00	.25	.08
	J16	.25	.25	.38	.58
	J23	.42	.38	.00	.42
	J29	.17	.00	.88	.75
	J30	.08	.00	.13	.08
2LI	J32	.17	.13	.25	.42
	J10	.25	.13	.38	.08
	J26	.00	.13	.00	.17
2UI	J27	.17	.25	.50	.17
	J09	.00	.00	.25	.42
	J31	.17	.13	.00	.08
	J38	.00	.13	.13	.08
3E	J40	.17	.50	.00	.00
	J20	.25	.38	.50	.50
	J21	.17	.50	.38	.58
3LI	J34	.50	.63	.38	.33
	J33	.17	.25	.50	.58
	J35	.17	.25	.38	.67
3UI	J36	.33	.13	.25	.42
	J07	.17	.00	.00	.17
	J13	.33	.50	.25	.08
	J17	.25	.63	.50	.67

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