

Null Arguments in Intermediate L3 German : The Role of L1

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Null Arguments in Intermediate L3 German

— The Role of L1¹⁾ —

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I. Introduction

Within the generative/UG-based framework, a central question related to third language acquisition (L3A) is the extent to which influences are cross-linguistic. This paper investigates the potential first language (L1) influences on third language (L3) acquisition, with specific regards to null argument interpretations. The paper examines whether intermediate L3 German learners transfer the sloppy interpretation from their L1 Japanese or whether any L2 English influence is included. Extant research (e.g. Yamada, 2020), in comparisons between two learner groups of German (L1 Japanese-L2 English advanced L3 German learners and L1 English intermediate L2 German learners) indicates that interpretation of null arguments by the L3 learners follows a similar pattern to that of the L2 learners. Yamada indicates that both learner groups allowed only the strict identity reading, but not the sloppy identity reading with null subjects in the respective target language. Her results indicate that the L3 German grammar was influenced by the L2 English, and that the L3 learners may reset the null subject parameter as proposed in Roberts (2007), in their L2 English, which results in allowing null subjects to have the strict identity reading in their L3. This finding is consistent with the Cumulative-Enhancement Model (Flynn, Foley, and Vinnitskaya, 2004) suggestion that L2 plays a role in L3A, but the L2 does not enhance L3 acquisition because German does not permit *pro*.

The current paper focuses on intermediate L3 German learners to determine whether their L1 Japanese still plays any role in the acquisition of L3A.²⁾ The paper is organized as follows: the second section reviews previous L3A research; the third section focuses on the status of (null) arguments in the three languages, Japanese,

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2) The experiment described in the current paper is the same as the one in Yamada (2020).

English, and German; the fourth section turns to experiments and results with Intermediate L3 German learners; and, finally, the last section, discusses these findings with concluding comments.

II. Transfer in the L3A

Here, three L3A studies are introduced, each of which argues that L1 influences L3A or that both the L1 and L2 influence the L3A.

2.1. The Privileged role of the L1

Na Ranong and Leung (2009) addressed the acquisition of co-indexation (and co-reference) between embedded null objects and overt matrix subjects in L3 Chinese. Their subjects were L1 Thai learners of high-intermediate/advanced L2 English who were also beginner/pre-intermediate L3 Chinese learners. Moreover, L1 English beginner learners of L2 Chinese and L1 Chinese speakers were included in the study. They began by testing L1 Chinese speakers and L1 Thai speakers, the researchers examined whether the syntactic status of null objects in Chinese and Thai is *pro*. Table 1 indicates that the L1 Chinese and L1 Thai accepted co-indexation more than 60% of the time in the respective language.

Table 1. Group rates of acceptance of co-indexation between embedded objects (null or overt) and matrix subjects (based on Na Ranong and Leung, 2009:175)

Participant group	Chinese version: null objects	Chinese version: overt objects	Thai version: null objects	Thai version: overt objects
L1 Chinese	62.08%	78.75%	n/a	n/a
L1 Thai- L2 English- L3 Chinese	61.25%	83.33%	70%	81.25%
L1 English- L2 Chinese	64.28%	76.19%	n/a	n/a

The results support those researchers who argue that the status of the null objects in L1 Chinese and L1 Thai may be similar, and that this could be *pro*. Conversely, although L1 English speakers were not expected to accept the co-indexation in L1 Chinese because English does not allow *pro*, the L1 English speaker acceptance rate was like that of L1 Chinese speakers and L1 Thai speakers. Given the results presented in Table 1, what remains unclear is which language influences the Thai

speakers' L3 Chinese, L1 Thai or L2 English. The latter case might indicate that typological differences determine the L3A patterns of the initial state (Rothman, 2010; Na Ranong and Leung 2009), however, suggest co-indexation possibilities in L1 English, as presented in (1).

(1) John_i thinks that Mary likes him_i.

The reason why L1 English speakers accept co-indexation in L2 Chinese appears to relate to the fact that they transferred the status of overt pronouns in L1 English to their L2 (Chinese), and the learners deemed that null objects in Chinese were phonetically variant to English overt objects. With this, the authors conclude that the L1 plays a privileged role with respect to null objects, observing that L1 Thai influenced L3 Chinese, and L1 English influenced L2 Chinese.

2.2. Exclusive L1 effect

Hermas (2010) investigated L1 Arabic, L2 French, L3 beginner learners of English to explore the resetting verb movement parameter. Verbs are raised to T' in Arabic and French so verb movement is observed, while this does not occur in English. However, in Arabic, frequency adverbs can be placed before raised verbs and so, as a result, either word orders are permitted in the language, S-Adv-V-O or S-V-Adv-O. For sentential negation, V appears before negation in Arabic and French, but after negation in English. Table 2 shows the three language word orders with respect to verb movement.

Table 2. Verb movement: word order

	S Adv V O	S V Adv O	V Neg	Neg V
Arabic	✓	✓	✓	
French		✓	✓	
English	✓			✓

Considering the cross-linguistic differences in two structures of adverbs and negation among the three languages, Hermas surmises that whichever transfer from L1 Arabic or L2 French occurs, such influence would not facilitate the initial state of L3 English. Accordingly, in acceptability judgment tests (AJT) (and preference tests), Hermas specified that L1 Arabic exclusively influences L3 English. The results of AJT is

presented in Table 3.³⁾ The L3 learners took both English and French versions of the tests.

Table 3. Accuracy rates (%) by structure and grammaticality in AJT (based on Hermas, 2010:352)

Structure	Grammaticality	L2 French	L3 English
Adverb	Target ✓	88.61	81.94
	Target*	46.11	17.5
Negation	Target ✓	90.55	82.77
	Target*	81.11	63.61

Hermas offers two potential reasons for L1 transfer. One relates to the L3 learners judging *SAdvVO grammatical in L2 French 46.11% of the time while correctly judging SAdvVO in L3 English 81.94% of the time, and so no L2 influence is reportedly involved. The second relates to L3 learners accepting SVAdvO 88.61% of the time in L2 French and not rejecting *SVAdvO in L3 English 82.5% of the time, and also accepting SAdvVO in L3 grammatical. Taken together, Hermas’ results appear to support L1 influence. When we attend to sentential negation, the L3 learners’ judgment in ungrammatical negation (63.61%) was not as accurate as that in grammatical negation (82.77%), which allow Hermas to conclude that the final state of L1 Arabic influences the initial state of L3 English.

2.3. Cumulative-Enhancement Model

In an exploration of relative clause acquisition for adult and child learners of L3 English whose L1 is Kazakh and whose L2 is Russian (Flynn, Foley, and Vinnitskaya, 2004) we report the adult learner results for comparison with the current study. The syntactic background of the three languages are as follows.

Table 4. Syntactic background

	Headedness	Word order	Branching direction
Kazakh	head-final	SOV	left-branching
Russian & English	head-initial	SVO	right-branching

3) The informants were divided into two groups according to their L2 French (post-intermediate or advanced) proficiency. Hermas (2010) does not report any significant difference in responses in L3 English between the two proficiency groups.

Flynn *et al.* surmise that if L1 plays a privileged role in languages subsequently acquired, L1 Kazakh speaker acquisition of L3 English is like that of L1 Japanese speaker acquisition of L2 English (because Kazakh and Japanese share the three syntactic properties as Table 4 shows). By contrast, if the L2 influences the L3, when the three properties are shared in both additional languages, then the acquisition pattern is like Flynn's observations (1983; 1987) of L1 Spanish L2 English learners, on the basis that (L1) Spanish shares the same properties as (L2) English. The three relative clause structure factors addressed in the study by Flynn *et al.* are shown in Table 5.

Table 5. Relative clause types (from Flynn, Foley, & Vinnitskaya, 2004: 10)

Lexical head with semantic content	The owner questioned <i>the businessman</i> [who greeted the worker].
Lexical head with no semantic content	The janitor criticized <i>the person</i> [who called the lawyer].
Free relative	The professor introduced [<i>whoever</i> greeted].

In an elicited imitation task, Flynn *et al.* find that the adult Kazakh speakers correctly produced all the three types of relative clauses about 60-70% of the time. The results are like those of L1 Spanish L2 English learners whose results indicate that the L2 Russian influenced their L3 English. What needs investigating, as Flynn *et al.* indicate, is a case where L1 and L3 properties match, but the L2 and L1 or L3 do not (e.g. L1 Russian-L2 Kazakh, L3 English learners). It might be possible that we observe that, for this specific group, their L3 English is influenced by their L1 Russian, which might indicate that the L1 plays a role in L3A, but also that L2 Kazakh does not have any effect. This possibility allows the authors to conclude that the language already acquired can be neutral or enhance the language acquisition afterwards.

III. The status of (null) arguments in Japanese, English, and German

This current section outlines how null arguments are interpreted in Japanese and how English and German differ from Japanese.

Japanese allows null arguments as shown in (2b) where an object is empty.

- (2) a. Kuma-wa jibun-no kuruma-o fuita.
 Bear -TOP self -GEN car -ACC wiped
 b. Sosite, Penguin -mo [e] fuita.
 and penguin-also wiped
 'Bear wiped his own car, and Penguin wiped [e], as well.'

[√ **strict reading**, √ **sloppy reading**]

The null object in (2b) allow two interpretations. One is the strict identity reading and the other is the sloppy identity reading. Under the strict identity reading, (2b) means Penguin wiped Bear's car while in the sloppy identity reading Penguin wiped Penguin's own car. If the null argument is *pro*, the sloppy reading is not available. Oku (1998), Saito (2007), Takahashi (2019) among others argue that the status of null arguments in Japanese is not *pro*, but Argument Ellipsis (AE), which permits the sloppy identity reading.

English and German do not allow null arguments as (3b) and (4b) illustrate.

- (3) a. Bear wiped his own car.
 b. *And Penguin wiped [e], as well.
- (4) a. Der Bär hat sein eigenes Auto gesäubert.
 the.Masc.Nom.Sg bear has his own car cleaned
 b. *Und der penguin hat auch gesäubert.
 and the.Masc.Nom penguin has also cleaned
 '(lit.) Bear wiped his own car, and Penguin wiped [e], as well.'

As a topic drop phenomenon is observed in German (Sigurðsson, 1993), German permits null arguments as null topic, but not as AE.⁴⁾ Table 6 shows the syntactic property of the three languages in term of null arguments.

4) Trutkowski (2016) observes that German allows the sloppy identity reading in the environment of verbatim topic drop.

Table 6. Syntactic background

	Null argument	Status
Japanese	✓	AE
English	-	-
German	(✓)	(topic)

✓ = null arguments are allowed.

- = null arguments are not allowed

IV. The Study

Here we report our investigation of null arguments interpretation in L3 Grammar.

4.1. Hypothesis

The research question asks: to what extent do L1 Japanese-L2 English intermediate L3 German learners of permit the sloppy reading with null arguments. This question is expressed in the form of four hypotheses, (5) and (6).

(5) L1 transfer

H1: If null arguments are available in the L3, intermediate German learners will allow the sloppy reading with null arguments in both subject and object positions because the null arguments are AE.

H2: They permit a strict reading with null subjects because the null arguments are AE.

(6) L2 transfer

H3: If null arguments are available in the L3, the intermediate L3 German learners will reject a sloppy reading with null arguments in subject position as the advanced L3 German learners because the null arguments are *pro* due to resetting the null subject parameter (Roberts, 2007).

H4: They allow a strict reading with null subjects due to the D-feature.

4.2. Participants

The participants were 22 L1 Japanese-L2 English L3 German learners at Japanese universities, aged 19-26 years (mean 20.6). The participants started learning German aged 17-19. They had already passed level 3 of Diplom Deutsch in Japan (Dokken) or were ready to take level 2 at the testing time, so their levels were equivalent to B1 of

the Common European Framework of Reference for Languages (CEFR). The learners' L3 German proficiency was regarded as intermediate. None of the participants had studied German in Germany. Their L2 English proficiency was also equivalent to a CEFR B1 level.

4.3. Stimuli and Procedures

All participants were investigated according to two experimental protocols: the truth-value judgment task, then the interpretation task; the task order was chosen to avoid participants ascertaining the focus of the study being interpretation of null arguments. Participants had an optional brief break between each task.

4.3.1. Grammaticality Judgment Task

The Grammaticality Judgement task was conducted to identify the participants who permitted null arguments in their L3 grammar. In the main study of a truth-value judgment task, we expect the L3 learners to judge interpretation of null arguments, in which case the L3 learners allow null arguments in their L3 grammar. The task consisted of nine stimuli: four null subjects, two null objects, and three indirect null objects. Examples are given in (7), (8), and (9).

(7) Null subject

Als Taroo eine Frau sah, die rote Kleidung trug, dachte, dass Sam's ältere Schwester wäre.

"When Taro saw a woman in a red cloth, (he) thought the woman is Sam's elder sister."
normal oder akzeptabel / unnatürlich oder nicht akzeptabel

(8) Null object

Taroo hat den Computer kaputt gemacht, aber sein Vater reparierte

"Taro broke a computer, but his father fix (it)."
normal oder akzeptabel / unnatürlich oder nicht akzeptabel

(9) Indirect null object

Taroo's Zimmer ist sehr schmutzig. Ich werde säubern.

"Taroo's room is very dirty. I will clean."
normal oder akzeptabel / unnatürlich oder nicht akzeptabel

The L3 learners were also asked to correct a sentence when they circled *unnatürlich* oder *nicht akzeptabel* for it. Responses were not explicitly timed, but the L3 learners were instructed to respond quickly, and to not return to previous items and revise their responses.

4.3.2. Truth-value Judgment task

In the main study, a Truth-value Judgment task was conducted to investigate the availability of sloppy reading with null arguments in L3 grammar. Each stimulus consisted of a dialogue among animals or people, with their photos that were presented to the learners on a projector while they listened to the corresponding audio. The dialogues were given in the L1 Japanese as it is essential that the learners clearly understood each context/situation. The instruction offered before the task introduced two students (male and female) studying German but not yet proficient so they sometimes made mistakes. The task required the L3 learners to judge whether the uttered German test sentences by the less proficient students correctly described the given dialogue contexts.

Examples of the test items are shown in (10) and (11). The dialogue is translated into English.

(10) Null object sloppy context

1



My car is very dirty.
I should clean it.

2



It's very clean now.

3



I should clean the
car, too.

4



Now, it is very clean.

Test sentence:

“Der	Bär	hat	sein	eigenes	Auto	gesäubert.
the.Masc.Nom.Sg	bear	has	his	own	car	cleaned
Und der	penguin	hat	auch	gesäubert.”		
and the.Masc.Nom	penguin	has	also	cleaned		

‘(lit.) Bear wiped his own car, and Penguin wiped [e], as well.’

correct / false

(11) Null object strict context

1



Bear:
Let’s clean the car.
Penguin:
I will help you.

2



Bear:
Now, it is really clean.
Thank you very much.
Penguin:
You’re welcome.

Test sentence:

“Der Bär hat sein eigenes Auto gesäubert.
the.Masc.Nom.Sg bear has his own car cleaned
Und der penguin hat auch gesäubert.”
and the.Masc.Nom penguin has also cleaned
‘(lit.) Bear wiped his own car, and Penguin wiped [e], as well.’

correct / false

Dialogues were recorded by two L1 Japanese speakers (female and male), and the two students’ test sentences by two L1 German speakers (female and male).

Each task consisted of 52 stimuli including 28 sentence types. Here, we report only the relevant data. Table 7 shows the eight stimuli including four sentence types.

Table 7. Sentence Types

Argument		Context	
Null subject	(n=4)	Sloppy	(n=2)
		Strict	(n=2)
Null object	(n=4)	Sloppy	(n=2)
		Strict	(n=2)

We created two test versions (version 1 and version 2) with the same stimuli being distributed in reverse order in each test. To avoid any ordering effect, half of the participants took version 1 and the other half of the participant group took version 2. Before starting the experiment, the L3 learners undertook a practice session. They were also given a list of vocabulary items with definitions, excluding any non-linguistic

factor from their interpretation of null arguments. For the grammaticality judgment task, the L3 learners were told that they should not go back to the previous items and correct their answers.

4.4. Results

We present the grammaticality judgment task results first, followed by the truth-value judgment task results.

4.4.1. Grammaticality Judgment Task

A benchmark was set in this task: when the L3 learners allowed null arguments at least once in each position of subject and object, they were included in the main study, the truth-value judgment task. As Table 8 shows, all 22 learners allowed both null subjects and null objects, as a result, they met our standard.

Table 8. Breakdown of L3 group patterns

	Null Sub. ✓ Null Obj. ✓	Null Sub. ✓ Null Obj. ×	Null Sub. × Null Obj. ✓	Null Sub. × Null Obj. ×
Intermediate (n=22)	22	0	0	0

✓ =accepted, × =rejected

4.4.2. Truth-value Judgment Task (TVJT)

The participant results were compared with those of the advanced L3 German speakers reported in Yamada (2020), given that the experiment in the current paper is the same one used in her study. Table 9 summarizes the results of our L1 Japanese-L2 English-L3 German participants.

Table 9. Participants' acceptance rate- null subject and null object items judged appropriate on the TVJT

L3 German Learners	Null Subject		Null Object	
	Strict Int.	Sloppy Int.	Strict Int.	Sloppy Int.
Intermediate	75.0%	63.6%	63.6%	77.3%
Advanced (Yamada, 2020)	83.3%	0%	58.3%	33.3%

Our TVJT results indicated that the intermediate L3 German learners allow null arguments to have the sloppy and strict readings in both subject and object positions between about 60% and 80% of the time. A one-way ANOVA (within-group

comparisons) confirmed that there is no significant main effect in acceptance rates among the four contexts (null subject strict, null subject sloppy, null object strict, and null object sloppy) ($F(3,63) = 0.91, p > .05$). This indicates that the L3 German learners did not differentiate null argument interpretation in subject position from that in object position. Compared to the responses of the advanced L3 German learners in Yamada (2020), where the advanced L3 learners categorically disallowed the sloppy interpretation with null subjects, the intermediate L3 learners did not reject the sloppy reading with null subjects, they accepted the reading 63.6% of the time. The result suggests that the status of null subjects was not *pro* in the intermediate L3 German. As Table 9 shows, the intermediate L3 German group showed a different developmental pattern from the advanced learners of L3 German.

V. Discussion and conclusion

The results are summarized in (a) and (b) below.

- (a) The intermediate L3 German allowed null arguments to have both the sloppy and the strict identity readings. There is no statistical difference in acceptance rates among the four readings.
- (b) Compared to the advanced L3 German group in Yamada (2020), the intermediate L3 learners behaved in a different way regarding the sloppy identity reading.

Returning to our earlier hypotheses, we now have support for H1 and H2 on the basis of the results above; the status of null arguments in the intermediate L3 German grammar is AE since they permitted both sloppy and strict identity readings with null arguments. Since their German proficiency level is intermediate, L1 influence is still observable.

The current study results from intermediate L3 German learners were compared to the data from the advanced L3 German learners in Yamada (2020). We found that the influence of previously learned languages does not appear in intermediate L3 grammar in the same way it does in advanced L3 grammar. The L1 Japanese-L2 English learners intermediate L3 German grammar is based on their L1 while the advanced L3 Grammar is based on L2 English. Therefore, whether L1 or L2 effects on L3A may be due to learners' L3 proficiency levels.

The data in the current study show that the L1 transfer to L3A model (Na

Ranong and Leung, 2009; Hermas, 2010) receives partial support. Support relates to the fact that although L1 transfer was observed, their L1 Japanese did not enhance their L3A (German). Regarding this intermediate L3 learner data, the results might also indicate that when L2 learning is ongoing (i.e. intermediate), L2 influences on the L3A do not appear to be until L2 proficiency is at least at an advanced level. As section II highlights, (e.g. Hermas, 2010) L2s play a role in L3A, but L2 proficiency level does not influence the initial state of L3 grammar because responses in tests from both advanced and post-intermediate learners of the L2 (in this case, French) do not significantly differ (see footnote 3). If we test intermediate L3 German learners whose L2 English proficiency level is near advanced, we might observe L2 influence in the intermediate L3 grammar. A tentative conclusion to these findings is that further empirical work is needed in controlling for both L2 and L3 proficiency levels.

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— The Role of L1 —

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The current paper reports findings showing, typical of Japanese-type null arguments (Oku 1998), that null arguments permit sloppy interpretation in the intermediate L3 German grammar of L1 Japanese-L2 English learners. The results are compared with those from an earlier paper (Yamada, 2020) that reports that L1 Japanese L2 English learners with *advanced* L3 German grammar, based on their L2 English, did not allow sloppy identity reading with null subjects, and so was not taken to demonstrate the role of L1 in L3 acquisition (L3A). The data reported in the current study suggest that L1 Japanese influenced the intermediate L3 German grammar. The paper therefore discusses L2 proficiency influences on the L3A, and suggests that additional language influences might relate to L3 proficiency levels. To some extent supportive of earlier reports (e.g. Na Ranong and Leung, 2009; Hermas, 2010), the results indicate that the intermediate L3 German data partially supports L1 transfer to L3A.