

# **UG and Poverty of the Stimulus: Topic Deletion Evidence from L2 learners of German\***

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## **Abstract**

The intention of this paper is to test whether L2 learners of German have access to UG by investigating their sensitivity to properties which are underdetermined by input and are not present in their L1; a ‘poverty of the stimulus’ phenomenon. To do this the study looked at the L2 acquisition of German, with particular emphasis on an aspect of spoken German, known as ‘topic-drop’. The research examined data obtained from speakers of different types of L1s in order to ascertain whether they were aware of the possible omission of subjects and objects in main and embedded clauses in colloquial German. The groups of learners were divided according to their L1; non-null subject L1s, null subject L1s, null subject and null object L1s and a group of bilinguals. Results show that while a native control group responded as expected on the underdetermined phenomena, the non-native speakers showed different patterns of response depending on the age at which they were first exposed to German and the type of L1 they spoke.

## **Introduction**

This paper looks at whether L2 German speakers of varying L1s are sensitive to a property which is underdetermined in the input and what, if any, effect the type of L1 has on their judgement of this property. The property in question is that of topic deletion (also known as topic drop) in colloquial German in main and embedded clauses. This means that in spoken German the omission of either the subject or object pronoun is possible, but only if the deleted pronoun is in topic position. This is illustrated in the examples below. In colloquial German the question posed in (1) can be answered in a number of ways;

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- (1) *Wo sind deine Schuhe?* German  
'Where are your shoes?'

With both pronouns overt, as in (2) and (3);

- (2) *Ich trag' die schon* German  
I wear them already  
'I'm wearing them already'

- (3) *Die trag' ich schon* German  
Them I wear already

With the subject pronoun deleted from topic position, as in (4);

- (4) *\_\_\_ trag' die schon* German  
(I) wear them already

With the object pronoun deleted from topic position, as in (5);

- (5) *\_\_\_ trag' ich schon* German  
(Them) wear I already

But never with both pronouns omitted, as in (6);

- (6) *\_\_\_ trag' \* \_\_\_ schon.* German

In embedded clauses, without an overt complementiser, the omission of a topic is allowed in specific cases; for example, in answer to the question posed below;

- (7) *Will Peter wirklich das neue Auto kaufen?* German  
'Does Peter really want to buy the new car?'

- (8) *Ich glaube [\_\_\_ hat er schon gekauft]* German  
I believe has he already bought  
'I think he's already bought (it)'

The research examined data from speakers of different types of L1s, ranging from languages which (generally) license omission of neither subject nor object, such as English, through to languages which allow both from within one clause, such as Japanese.

This paper is organized as follows; in the first section we look at the different language types and the structure of German with regard to topicalization and topic drop, concluding with a discussion of why this is a Poverty of the Stimulus case. The second section describes the subjects used in the research along with the tests. The results obtained are presented in the third section. The final section discusses the results and their implications, finishing with a brief conclusion.

## 1 Linguistic Assumptions

### 1.1 Language Typology

The language typology used in this research follows that of Huang (1984). In his paper, Huang argued that there are no languages which allow zero-object, only languages which, following on from the topicalization of an object, then allow it to be deleted from the topic position. Accordingly, he divided languages into three types, as shown below;

(9) Language Classification according to Huang (1984)

<i>Language type</i>	<i>Language Description</i>
Type I	sentence-orientated – allowing neither zero-topic nor pro-drop (e.g. English)
Type II	those allowing pro-drop but not zero-topic (e.g. Italian or Spanish)
Type III	discourse-orientated – allowing both zero-topic & pro-drop (e.g. Japanese)

However, Huang did note that there should be a fourth category for languages such as German and Dutch, which allow zero-topic (in colloquial usage) but are not pro-drop languages.

## 1.2 German Main Clause Structure

The V2 structure of German is well-documented; in most main clauses (except for yes/no questions and a few similar constructions) the finite verb moves from clause final position to complementiser position and another constituent, such as an adverb, the subject or object (as shown in 10a, b and c respectively below), moves into Spec-CP. It could be suggested that German, along with other languages exhibiting this same characteristic, have a [+topic] feature which forces this movement, generally known as topicalization, of a constituent into Spec-CP.

- (10) a. *Morgen kaufe ich den Wein* German  
Tomorrow buy I the wine
- b. *Ich kaufe den Wein morgen* German  
I buy the wine tomorrow
- c. *Den kaufe ich morgen* German  
That buy I tomorrow

As can be seen above, pronouns are one of the possible targets for topicalization. In colloquial German, however, topics can drop, the implication of which is that a topicalized pronoun – nominative or accusative - may be omitted, giving a phonetic spellout of the verb in sentence-initial position. As this dropping of a pronoun is in fact a case of topic drop, and, as only one pronoun can be in the topic position in each clause, there can therefore only be one pronoun drop per clause.

A further restriction to topic drop is that only 3<sup>rd</sup> person topicalized objects can drop but topicalized subjects can drop in any person. This is illustrated in the examples below, (11) showing object drop for the example in (10c), (12) showing the sentence with overt subject and object, (13) showing the grammatical omission of 1<sup>st</sup> person subject and (14) showing the ungrammatical omission of 2<sup>nd</sup> (non-3<sup>rd</sup>) person object.

- (11) *\_\_\_ kaufe ich morgen* German  
(3ps object) buy I tomorrow

- (12) *Dich habe ich nicht gesehen* German  
 You have I not seen  
 ‘I didn’t see you’
- (13) *\_\_\_ habe dich nicht gesehen* German  
 (1ps subject) have you not seen
- (14) *\*\_\_\_ habe ich nicht gesehen* German  
 (2ps object) have I not seen

### 1.3 German Embedded Clause Structure

In German embedded clauses the presence of a complementiser forces the finite verb to occupy the verb-final position.

- (15) *Wir glauben [daß er bald nach Hause kommen kann]* German  
 We believe that he soon to home come can  
 ‘We believe that he can come home soon’

However, when the complementiser is omitted, as is common with bridging verbs, such as *hoffen* – hope, *glauben* – believe, *sagen* – say and *denken* – think, the embedded clause exhibits once more a V2 structure.

- (16) *Wir glauben [er kann bald nach Hause kommen]* German  
 We believe he can soon to home come  
 ‘We believe he can come home soon’

Anecdotal evidence suggests that in the speech of some native speakers of German, topic drop is also possible from an embedded clause but only with a null complementiser and consequent V2 structure. Again only one topic omission is possible per clause and there appears to be a bias towards a higher acceptance of object topic drop, (illustrated below), than of subject topic drop

(17) *Ich hoffe[\_\_\_ hat sie schon geschickt]*

German

I hope (it) has she already sent

'I hope she's already sent (it)'

#### 1.4 One Account of Topic Drop

In his analysis of main clause topic drop, Rizzi (1994) differentiates between object drop, (shown in (18)), which he sees as a null constant bound by a null topicalized operator (which has intrinsic features of 3<sup>rd</sup> person, and hence disallows 1<sup>st</sup> and 2<sup>nd</sup> person interpretations) and that of subject drop, (shown in (19)), where he proposes that when the subject is moved to Spec-CP, it behaves as if it were in an A-position (with the trace in Spec-IP behaving like an NP-trace), thereby allowing the null constant in the Spec-CP to bind an NP-trace in the Spec-IP. Thus subject drop does not involve a null operator at all, and since the limitation to 3<sup>rd</sup> person is specific to operators it would not be expected in these cases. Rizzi further proposes that if an empty element can be identified via the ECP, then it will be, if not, the specifier of the root (Spec-CP) is exempt from the clause-internal identification process by having 'privilege of the root' (Rizzi 2000). This means that a null constant in Spec-CP is interpreted from discourse/context.

(18) Object omission

[<sub>CP</sub> OP *habe* [*ich* *gestern* nc *gesehen* ]]

(es) habe ich gestern gekauft

(it) have I yesterday bought

'I bought (it) yesterday'

(19) Subject omission

[<sub>CP</sub> nc *habe* [ t *es* *gestern* *gekauft* ]]

(ich) habe es gestern gekauft

(I) have it yesterday bought

'(I) bought it yesterday'

This gives an account of the difference between dropped subjects and dropped objects in terms of person reference. Furthermore, if V2 and topic drop are possible in embedded clauses in colloquial German, Rizzi's account also explains why objects but not subjects can drop. Object drop involves an operator. Operator movement is possible both in matrix and embedded clauses. Subject drop involves a null constant which, given Rizzi's assumptions, is only licensed in root clauses.

### 1.5 Poverty of the Stimulus

In L2 acquisition, Poverty of the Stimulus is commonly defined as effects which are not derivable from the L1 nor from the input but are present in the Target Language. Regarding the case in question, it is unlikely that topic drop is systematically taught in language classrooms<sup>2</sup>, and it is not licensed in all languages. However, it is conceivable that an L2 speaker could determine, on the basis of input that only constituents occupying topic position can drop in German, since a learner will potentially hear dropped topics, but never dropped clause-internal non-topics. But there is nothing in the input to tell them that while a dropped matrix subject is free in person reference, a dropped matrix object is restricted to 3<sup>rd</sup> person<sup>3</sup>. Nor is there anything to tell them that in embedded clauses topicalized objects can drop but topicalized subjects cannot. Both of these are dependent on knowing that there are two types of null topic – null constants and operators. This distinction is not signalled in input, however, and could only come from UG.

To test for Poverty of the Stimulus we looked at L2 learners of German in order to ascertain their awareness of the following facts:

- that both subjects and objects can be dropped independently in main clauses
- that the constituent must be in Spec-CP to be eligible for dropping
- that it is less natural to drop subjects than objects in embedded clauses

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<sup>2</sup> No mention of topic drop is made in the comprehensive guide to German by Hammer (rev. by Durrell) 1996: *Hammer's German Grammar and Usage* or Turneaure, B. 1995: *Der treffende Ausdruck*.

<sup>3</sup> A reviewer observed that learners could restrict themselves to only those dropped matrix objects which they hear in the input. It should be noted that many participants had little exposure to German outside the classroom, and therefore would have heard very few cases of topic drop (either subject or object). However if they did hear subjects being dropped in 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> person, there is no reason for them to not to expect that this is equally possibly for objects.

- that subjects of any person/number may drop but only 3<sup>rd</sup> person objects

## **2 Test Subjects and Method**

The participants completed both pre-test and main test in writing. There was no time limit set for either part of the test. Subject details and methodology are shown below.

### **2.1 Subjects**

All of the native speakers (NS) were students, who were, at the time, resident in the U.K. Group 2 were male school children resident in the U.K; Group 3 were, with 2 exceptions, school children and students resident in the U.K.; the two exceptions were one L1 English speaker and one L1 French speaker who were students at the University of Trier and resident in Germany, as were all subjects in Group 5. Of the two participants in Group 4, the Italian was a student at the University of Essex and resident in the U.K. and the Romanian was a student at the University of Trier, resident in Germany at the time of data collection. It should be noted that as there were only two subjects each in Groups 2 and 4, the data should be viewed with caution.

The L2 participants were divided according to their L1, this was in line with Huang's typology of language types, (see (9) above). The subjects represented by Type I languages (Group 3 in our test) were English and French, Type II (Group 4 in our test) consisted of two participants, an Italian and a Romanian and finally Type III (Group 5 in our test) participants were all Japanese. Additionally there were two English/German bilinguals, who formed Group 2. Mean age and gender statistics are shown in the two tables below.

## (20) Participant Mean Age Statistics ~ all Groups

<i>Group</i>		<i>Proficiency Level</i>	<i>Age</i>		<i>Mean Age</i>
			<i>Min</i>	<i>Max</i>	
1	Native Speakers (n=24)		18	47	24.6
2	Bilinguals (n=2)		14	15	14.5
3	Non-Null Subject L1	Advanced (n=10)	19	53	25.2
		Intermediate (n=8)	17	21	17.7
		Low Intermd. (n=9)	15	15	15.0
4	Null Subject L1 (n=2)		20	21	20.5
5	Null Subj & Object L1 (n=9)		20	24	21.0

## (21) Participant Gender Statistics ~ all Groups

<i>Group</i>		<i>Proficiency Level</i>	<i>Female</i>		<i>Male</i>	
			<i>Freq</i>	<i>%</i>	<i>Freq</i>	<i>%</i>
1	Native Speakers		13	54%	11	46%
2	Bilinguals		0	0%	2	100%
3	Non-Null Subject L1	Advanced	6	75%	2	25%
		Intermediate	10	83%	2	17%
		Low Intermediate	6	86%	1	14%
	Group 3 total		22	81%	5	19%
4	Null Subject L1		2	100%	0	0%
5	Null Subject & Object L1		6	67%	3	33%

**2.2 Pre-Test**

The original study consisted of 67 L2 learners of German and 2 bilinguals; all subjects completed a pre-test, in which they were asked to form grammatical German sentences from jumbled words. This test was used to ascertain if the participants were aware of the verb movement necessary for the following structures: main clause V2, embedded clause with complementiser (verb final) and without complementiser (V2). The results from this test were split according to construction type (main/embedded and +/- complementiser). The first phase (main clause) showed that 26 of the participants were unaware of V2 rules in main clause

structures, for this reason the data of these participants were excluded from all further tests. The data from a further three participants, who had a good knowledge of Swedish and Russian which also allow topic drop in a similar manner to German, were excluded, as these participants could have been exposed to this feature. The pre-test results were further used to divide the participants remaining into proficiency groups.

In the second phase, the data of a further 26 participants were excluded from the embedded clause test data only. These participants were generally sensitive to the fact that if the complementiser is present then the verb must be in verb final position but they appeared to be unaware that in the absence of a complementiser the verb appears once more in the V2 position.

### **2.3 Main Test Stimuli**

The NS, bilinguals and L2 learners of German answered a total of 10 questions in German. Each question consisted of a short paragraph followed by five stimuli. This short paragraph preceding the main stimuli was in English for the bilingual and L2 subjects who were resident in England, and in German for those resident in Germany and the native speakers. This paragraph served to ‘set the scene’ for the stimuli, which were in German. The stimuli were five possible verbal responses, (i.e. in spoken German), which the subject had to judge as acceptable or not. Each contained two cases of topic drop, (one of object topic drop and one of subject topic drop), one option where neither object nor subject was omitted, and one case each of object and subject omission but from a non-topic position. Of the ten questions five were main clause structures and five were embedded clause structures – without overt complementiser, thus all required the verb in second position. Furthermore, one of the main clause questions contained a non-3<sup>rd</sup> person object. The subjects were told that more than one option may be possible and that they should indicate all of the potential options. They were advised not to think too long about their answers but to provide a spontaneous acceptance or rejection of the options. An example of each type of test item, including ‘scene-setting context’, is shown below;

(22) Main Clause construction with 3<sup>rd</sup> person object

Die Schuhe / The shoes

*Susan's mother is looking for Susan's new shoes. She shouts upstairs to Susan, "Where are your new shoes?" Susan is already wearing them and answers.....*

a.	„Trag' ich schon"	
b.	„Ich trag' schon"	
c.	„Trag' sie schon"	
d.	„Die trag' schon"	
e.	„Ich trag' sie schon"	

(23) Main Clause construction with 2<sup>nd</sup> person object

Opa / Granddad.

*"Can you see me on this old school photo?" Granddad asked Thomas. Thomas shook his head and answered ....*

a.	„Ich seh' dich nicht, Opa"	
b.	„Seh' nicht, Opa"	
c.	„Seh' dich nicht, Opa"	
d.	„Seh' ich nicht, Opa"	
e.	„Dich seh' nicht, Opa"	

(24) Embedded clause construction with 3<sup>rd</sup> person object

Das Taschengeld / The pocket money

*"Has Tom had his pocket money?" Mother said to father. He answers....*

a.	„Ich glaub' hat er gestern bekommen"	
b.	„Ich glaub' er hat gestern bekommen"	
c.	„Ich glaub' er hat es gestern bekommen"	
d.	„Ich glaub' hat es gestern bekommen"	
e.	„Ich glaub' es hat gestern bekommen"	

### **3 Test Results**

#### **3.1 Native Speakers**

It has been noted (Rohrbacher 1999) that there can be dialect-dependent differences in the acceptance of topic drop, for this reason the responses of the native speakers were sorted by geographical area/state in which the 24 native speakers generally reside in Germany. T-tests and reliability analyses were run on these answers to ensure that their judgements of the stimuli were homogenous; the results showed no significant differences between speakers on the basis of their geographical origins.

#### **3.2 Main Clause Results**

The results from the main clause tests showing mean and standard deviation are shown below. As previously mentioned, there were only two subjects each in Groups 2 and 4, so these data should be viewed with caution.<sup>4</sup>

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<sup>4</sup> It was suggested by an anonymous reviewer that the data for Groups 2 and 4 should be removed, being insufficient for quantitative analysis. However, whilst acknowledging that these data should be viewed with caution, I consider that they are suggestive of patterns, which further research would hopefully confirm.

## (25) Mean acceptance results (%) and SD for main clause tests

Group & Proficiency		Overt Subject & object	Topic drop of			Non topic omission of		
			subject	3ps object	2ps object	subject	3ps object	
Group 1 NS (n=24)	Mean	97%	69%	83%	21%	6%	1%	
	S.D.	.08	.25	.19	.41	.13	.05	
Group 2 Bilinguals (n=2)	Mean	100%	38%	88%	100%	0%	0%	
	S.D.	.00	.18	.18	.00	.00	.00	
Group 3 Advanced (n=10)	Mean	95%	45%	60%	50%	15%	28%	
	S.D.	.11	.35	.27	.53	.17	.14	
Type I e.g. English	Intermed. (n=8)	Mean	78%	47%	78%	50%	34%	59%
	S.D.	.21	.16	.28	.53	.35	.30	
English (n=9)	LowIntrm (n=9)	Mean	61%	31%	44%	56%	42%	61%
	S.D.	.22	.24	.27	.53	.28	.13	
Group 4 Advan. (n=2) Type II e.g. Italian	Mean	100%	38%	25%	0%	13%	50%	
	S.D.	.00	.18	.00	.00	.18	.00	
Group 5 Advanc (n=9) Type III e.g. Japanese	Mean	83%	28%	39%	22%	28%	67%	
	S.D.	.18	.29	.22	.44	.29	.28	

T-tests were carried out (except where the groups were too small to be tested) on the following combinations; *Overt Subject & Object* (considered as a baseline) compared with *Non-Topic Omission Subject* and *Non-topic Omission Object*, also *Topic Drop Subject* compared to *Non-Topic Omission Subject*, and *Topic Drop Object* compared to *Non-topic Omission Object*. The results showed that the NS significantly rejected omission of subject or object from non-topic position, whilst clearly accepting omission of the same from topic position.

## (26) T-Test comparisons - Native Speakers - main clause.

Group 1 – Native Speakers	df	t	p	Sig
TOPIC DROP Subject + NON topic Subject Omission	23	14.684	<.001	Yes
TOPIC DROP Object + NON topic Object Omission	23	19.996	<.001	Yes
OVERT Subj & Object + NON topic Subject Omission	23	27.452	<.001	Yes
OVERT Subj & Object + NON topic Object Omission	23	49.330	<.001	Yes

Although the bilinguals fully rejected both types of non-topic omission, the group was too small to run t-tests on. L2 learners' data showed the following, the Group 3 Advanced subjects, whilst lower than the NS were, however, still significantly accepting or rejecting in line with the NS.

(27) T-Test comparisons – Group 3/Advanced - main clause.

<i>Group 3 – L1 English &amp; French - Advanced</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>Sig</i>
TOPIC DROP Subj + NON topic Subject Omission	9	2.714	.024	Yes
TOPIC DROP Object + NON topic Object Omission	9	2.899	.018	Yes
OVERT Subj & Object + NON topic Subject Omission	9	11.012	<.001	Yes
OVERT Subj & Object + NON topic Object Omission	9	10.371	<.001	Yes

The statistics for Group 3 Intermediate participants, although following a similar trend to that of the NS, were only significant in their rejection of *Non-Topic Omission Subject* compared to the overt acceptance of both pronouns ( $t=3.130$ ,  $p=0.017$ ). Group 3 Low Intermediate showed no preference for any category. Group 4 (Advanced / L1 = Italian & Romanian) participants whilst showing high rejection of *Non-Topic Omission Subject* seemed to willing to accept *Non-Topic Omission Object* at chance levels. The statistics from Group 5 (Advanced / L1 = Japanese) showed a very high acceptance of *Non-Topic Omission Object* (in fact significantly higher than *Topic Drop Object*).

### 3.3 Main Clause/Acceptance of 2<sup>nd</sup> person Object Drop Results

These data were extracted from the main clause test stimuli. Whilst only the NS showed a significant preference for 3<sup>rd</sup> over 2<sup>nd</sup> person Object Drop ( $t=6.828$ ,  $p<0.001$ ), all other groups (with the exception of the bilinguals and Group 3 Low Intermediate) showed a trend in the same direction as the NS. Mean percentages and standard deviation from all main clause tests are shown in (23) above.

### 3.4 Embedded Clause Results

The results from the pre-test for embedded clauses further reduced the number of subjects for this part of the main test; along with the native speakers and the 2 bilinguals, there were only 7 participants in Group 3 (type I) and 5 in Group 5 (type III) all advanced proficiency.

The table below shows that there were wide variations in the individual acceptances for *Topic Drop Object* with 10 of the 24 NS rejecting all 5 cases.

(28) Number of Acceptances of Topic Drop Object in embedded clauses by participant.<sup>5</sup>

<i>Number of acceptances per participant</i>	0/5	1/5	2/5	3/5	4/5	5/5
Group 1 – Native Speakers (n=24)	10	4	4	2	2	2
Group 2 – Bilinguals (n=2)	1	-	-	-	1	-
Group 3 – Type I (e.g. English) (n=7)	2	-	2	3	-	-
Group 5 – Type III (e.g. Japanese) (n=5)	5	-	-	-	-	-

Overall the NS did show a significant preference for *Topic Drop Object* over *Topic Drop Subject* in embedded clauses ( $t=3.308$ ,  $p=0.003$ ). However the acceptance of both subject and object topic drop was significantly lower than the baseline of *Overt Subject & Object* and also of the same conditions for main clause constructions (topic drop subject main and embedded clause comparison  $t=10.046$ ,  $p<0.001$ ). The bilinguals followed the same trend, but neither of the other two groups did. The results are shown below;

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<sup>5</sup> Individual participant scores are shown in Appendices A and B

(29) Mean acceptance results (%) and SD for embedded clause tests

<i>Group &amp; Proficiency</i>		<i>Overt Subject &amp; object</i>	<i>Topic drop of</i>		<i>Non topic omission of</i>	
			<i>subject</i>	<i>3ps object</i>	<i>subject</i>	<i>3ps object</i>
Group 1 NS (n=24)	Mean	96%	13%	31%	4%	7%
	S.D.	.10	.26	.34	.08	.15
Group 2 Bilinguals (n=2)	Mean	100%	0%	40%	10%	20%
	S.D.	.00	.00	.57	.14	.28
Group 3 Advanced (n=7) Type I (e.g. English)	Mean	89%	51%	37%	11%	51%
	S.D.	.16	.23	.27	.16	.32
Group 5 Advanced (n=9) Type III (e.g. Japanese)	Mean	88%	8%	0%	28%	80%
	S.D.	.11	.11	.00	.30	.24

## 4 Discussion and Conclusions

### 4.1 Main Clause Topic Drop

The native speakers, the bilinguals and the Group 3/Advanced (English/French L1) were able to distinguish topic drop from non-topic omission in main clauses. The less advanced L2 learners of Group 3, the learners from Group 4 (Italian/Romanian L1) and Group 5 (Japanese L1) allow non-topic null objects and to a lesser extent non-topic null subjects. The majority of subjects in Group 3/Advanced had spent very little (if any) time in a German-speaking country, so it is unlikely that they would have had great exposure to cases of topic drop. However, the results show that they can make the distinction, implying that they have acquired this property, which is assumed to be inferable from input. On the other hand there would seem to be some persistent L1 influence for speakers of languages which allow null subjects. Given Huang's language typology, perhaps they are assuming that pronoun drop in German is pro-drop extended to objects.

## **4.2 Object Omission Person Restrictions**

The native speakers clearly distinguish person in object drop, showing a significant preference for 3<sup>rd</sup> over 2<sup>nd</sup> person object omission. None of the L2 groups show this contrast, although most exhibit the same trend as the NS, the results are not significant. We must conclude that they are not sensitive to this case of Poverty of the Stimulus.

## **4.3 Embedded Clause Topic Drop**

With regard to dropped topics in embedded clauses, the native speakers and the bilinguals do seem to be sensitive to the status of operators and null constants. Although significantly lower than their acceptance of the same in main clause constructions, they show a significant preference for object drop to subject drop in embedded clauses. However, neither of the advanced L2 groups shares the sensitivity for this property.

## **4.4 Conclusions**

Whilst the English/French-speaking L2 learners of higher proficiency seem to be aware of the restrictions regarding non-topic omission in main clause constructions, they are generally unclear as to the person limitations of object drop and (except for the bilinguals) they are unaware of the difference in acceptance of subject and object drop in embedded clauses. As both properties relate to the status of operators and null constants, it is possible that they have not yet established the same representation for the operator as the NS have or perhaps they are treating topic drops in general as something different than null constants and operators. The Japanese-speaking L2 learners may be treating dropped forms as instances of pro-drop. An alternative explanation could follow the subset principle, that is that with regard to the omission of subjects and objects, Japanese would be classified as a superset language, allowing the subjects and objects of any person and number to be omitted from a variety of syntactic positions, whereas German would be a subset, limiting the omission to 3<sup>rd</sup> person objects and all subjects, but most significantly allowing omission only from the topic position.

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**Appendix A****Main clause Individual results (number of tokens per participant)**

Proficiency Levels –

1 = Native speaker

2 = Bilingual

3 = Advanced

4 = Upper Intermediate

5 = Intermediate

6 = Lower Intermediate

<i>Group</i>	<i>Profic. Level</i>	<i>Partic. No.</i>	<i>Overt subject +object</i>	<i>Topic Drop subject</i>	<i>Topic Drop3<sup>rd</sup> ps obj</i>	<i>Topic Drop2<sup>nd</sup> ps obj</i>	<i>Non-topic subject omitted</i>	<i>Non-topic object omitted</i>
1	1	1	5/5	5/5	3/4	1/4	2/5	0/5
1	1	2	4/5	3/5	3/4	0/4	0/5	0/5
1	1	3	5/5	3/5	4/4	1/4	0/5	0/5
1	1	4	5/5	4/5	3/4	1/4	0/5	0/5
1	1	5	5/5	4/5	3/4	0/4	0/5	0/5
1	1	6	4/5	3/5	3/4	0/4	0/5	0/5
1	1	7	5/5	3/5	1/4	0/4	0/5	0/5
1	1	8	5/5	5/5	3/4	0/4	1/5	0/5
1	1	9	5/5	4/5	4/4	0/4	0/5	0/5
1	1	10	5/5	2/5	4/4	0/4	0/5	0/5
1	1	11	4/5	5/5	2/4	0/4	1/5	0/5
1	1	12	5/5	5/5	3/4	1/4	1/5	1/5
1	1	13	5/5	5/5	4/4	0/4	0/5	0/5
1	1	14	5/5	3/5	4/4	0/4	0/5	0/5
1	1	15	5/5	4/5	4/4	0/4	0/5	0/5
1	1	16	5/5	3/5	3/4	0/4	0/5	0/5
1	1	17	5/5	3/5	3/4	0/4	0/5	0/5
1	1	18	5/5	3/5	4/4	0/4	0/5	0/5
1	1	19	5/5	2/5	4/4	0/4	0/5	0/5
1	1	20	5/5	5/5	4/4	0/4	0/5	0/5
1	1	21	5/5	3/5	4/4	0/4	0/5	0/5
1	1	22	5/5	4/5	3/4	0/4	0/5	0/5
1	1	23	5/5	4/5	3/4	0/4	1/5	0/5
1	1	24	5/5	5/5	4/4	1/4	0/5	0/5
2	2	25	5/5	2/5	3/4	1/4	0/5	0/5
2	2	26	5/5	3/5	4/4	1/4	0/5	0/5
3	3	37	5/5	3/5	2/4	1/4	0/5	1/5
3	3	47	5/5	5/5	3/4	1/4	2/5	2/5
3	3	48	5/5	1/5	3/4	0/4	0/5	1/5
3	3	50	4/5	3/5	3/4	1/4	2/5	2/5
3	3	52	4/5	2/5	2/4	1/4	1/5	2/5
3	3	53	5/5	2/5	2/4	0/4	0/5	2/5
3	3	57	5/5	1/5	0/4	0/4	1/5	1/5
3	3	69	5/5	5/5	4/4	1/4	0/5	0/5
3	4	28	5/5	1/5	4/4	1/4	0/5	4/5
3	4	30	4/5	3/5	4/4	1/4	0/5	2/5
3	4	31	4/5	2/5	1/4	1/4	1/5	3/5
3	4	32	5/5	4/5	2/4	0/4	4/5	0/5

3	4	33	4/5	3/5	3/4	0/4	5/5	2/5
3	4	34	3/5	1/5	2/4	0/4	0/5	2/5
3	4	35	3/5	2/5	4/4	0/4	1/5	3/5
3	4	36	4/5	2/5	3/4	0/4	2/5	4/5
3	4	38	5/5	3/5	3/4	0/4	1/5	3/5
3	4	39	3/5	3/5	4/4	1/4	1/5	3/5
3	4	49	5/5	3/5	3/4	0/4	0/5	2/5
3	4	56	5/5	2/5	2/4	0/4	1/5	2/5
3	5	27	2/5	2/5	3/4	1/4	1/5	3/5
3	5	41	3/5	1/5	0/4	0/4	3/5	4/5
3	5	42	4/5	1/5	1/4	1/4	4/5	2/5
3	5	43	4/5	1/5	3/4	1/4	3/5	2/5
3	5	44	4/5	4/5	2/4	1/4	1/5	2/5
3	5	45	3/5	0/5	1/4	1/4	3/5	4/5
3	5	46	3/5	2/5	1/4	0/4	2/5	2/5
4	3	51	5/5	3/5	1/4	0/4	1/5	3/5
4	3	55	5/5	1/5	1/4	0/4	1/5	2/5
5	3	59	5/5	1/5	0/4	0/4	0/5	1/5
5	3	60	4/5	1/5	1/4	0/4	0/5	4/5
5	3	61	4/5	4/5	2/4	0/4	3/5	3/5
5	3	62	4/5	2/5	1/4	1/4	1/5	3/5
5	3	63	5/5	3/5	2/4	0/4	4/5	2/5
5	3	65	3/5	3/5	3/4	1/4	2/5	5/5
5	3	66	4/5	2/5	2/4	0/4	1/5	4/5
5	3	67	4/5	1/5	2/4	0/4	3/5	4/5
5	3	68	5/5	0/5	1/4	0/4	0/5	1/5

**Appendix B****Embedded clause Individual results**

<i>Group</i>	<i>Profic. Level</i>	<i>Partic. No.</i>	<i>Overt subject + object</i>	<i>Topic Drop subject</i>	<i>TopDrop 3<sup>rd</sup> pers object</i>	<i>Non-top subject omitted</i>	<i>Non-top object omitted</i>
1	1	1	5/5	0/5	2/5	1/5	0/5
1	1	2	5/5	0/5	0/5	0/5	0/5
1	1	3	5/5	2/5	2/5	1/5	1/5
1	1	4	5/5	0/5	1/5	0/5	0/5
1	1	5	5/5	0/5	0/5	0/5	2/5
1	1	6	4/5	0/5	0/5	0/5	0/5
1	1	7	5/5	0/5	0/5	0/5	0/5
1	1	8	5/5	1/5	0/5	0/5	0/5
1	1	9	5/5	1/5	3/5	0/5	0/5
1	1	10	5/5	0/5	0/5	0/5	0/5
1	1	11	5/5	0/5	0/5	1/5	0/5
1	1	12	5/5	1/5	5/5	1/5	3/5
1	1	13	5/5	1/5	4/5	0/5	0/5
1	1	14	3/5	0/5	1/5	0/5	1/5
1	1	15	5/5	0/5	0/5	0/5	1/5
1	1	16	5/5	1/5	2/5	0/5	0/5
1	1	17	5/5	0/5	1/5	0/5	0/5
1	1	18	5/5	0/5	3/5	0/5	0/5
1	1	19	4/5	0/5	0/5	0/5	0/5
1	1	20	4/5	4/5	4/5	0/5	0/5
1	1	21	5/5	0/5	3/5	1/5	0/5
1	1	22	5/5	0/5	1/5	0/5	0/5
1	1	23	5/5	0/5	0/5	0/5	0/5
1	1	24	5/5	5/5	5/5	0/5	0/5
2	2	25	5/5	0/5	0/5	0/5	0/5
2	2	26	5/5	0/5	4/5	1/5	2/5
3	3	47	4/5	3/5	2/5	2/5	1/5
3	3	48	5/5	2/5	0/5	0/5	4/5
3	3	49	5/5	2/5	3/5	0/5	4/5
3	3	50	5/5	4/5	2/5	1/5	4/5
3	3	56	4/5	2/5	3/5	1/5	3/5
3	3	57	3/5	1/5	0/5	0/5	2/5
3	3	69	5/5	4/5	3/5	0/5	0/5
5	3	60	5/5	1/5	0/5	1/5	4/5
5	3	61	4/5	1/5	0/5	1/5	5/5
5	3	62	4/5	0/5	0/5	1/5	2/5
5	3	67	5/5	0/5	0/5	4/5	5/5
5	3	68	4/5	0/5	0/5	0/5	4/5
1	1	1	5/5	0/5	2/5	1/5	0/5
1	1	2	5/5	0/5	0/5	0/5	0/5