

Teasing apart L2 and SLI: Will Comprehension Make the Difference?

**Theres Grüter
McGill University**

1. Introduction

In the past few years, a small number of studies has drawn attention to the surprising similarities between the spontaneous speech of children with SLI and that of child second language learners. The first to point out the parallels between the two learner groups were Håkansson & Nettelbladt (1993, 1996, Håkansson 2001) in studies on the acquisition of word order in Swedish. They found that both Swedish children with SLI and child L2 learners of Swedish produced ungrammatical V3 utterances (instead of grammatical V2). More recently, Paradis and Crago have presented similar evidence from the acquisition of French. In a series of studies, they have shown that at a certain stage in development, the speech of anglophone children acquiring French as an L2 and that of French children with SLI looks remarkably alike. In particular, both learner groups are prone to omitting verbal inflectional morphology associated with tense and finiteness (Paradis & Crago 2000, Crago & Paradis 2002) as well as object clitics (Paradis & Crago 2002).

Until now, however, these remarkable similarities between the error profiles of second language learners and children with SLI have been investigated in the domain of language production only. This paper explores the question of whether the similarities between these two learner groups extend to language comprehension. It reports the results of two experimental tests conducted with second language learners of French, and with monolingual French children with SLI. The grammatical property under investigation is accusative object clitics, a property both learner groups have been shown to struggle with in spontaneous production.

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2. French object clitics

Object clitics (*me* ‘me’, *te* ‘you’ (sg.), *le* ‘him’, *la* ‘her’, *nous* ‘us’, *vous* ‘you’ (pl.), *les* ‘them’) constitute one of at least two pronominal paradigms in French. In contrast to the strong pronoun series (*moi* ‘me’, *toi* ‘you’, etc.), they occur in preverbal position (1a) and cannot normally appear in the canonical object position (1b), which in French is postverbal (1c). (For further distributional restrictions see Kayne 1975.)

- (1) a. Annie la lave.
Annie her wash-3sg
‘Annie is washing her.’
- b. *Annie lave la.
- c. Annie lave la poupée.
Annie wash-3sg the doll
‘Annie is washing the doll.’

The syntactic representation of object clitics is a much debated issue, which, however, is of secondary importance for the present study. The study is designed such that only two clearly defined and widely shared theoretical assumptions are necessary. First, it is assumed that object cliticization involves a syntactic dependency relation between the surface position of the clitic and the underlying position of the verbal complement. Note that such a dependency relation could be either the result of clitic movement (e.g. Belletti 1999), or of a binding relation between a clitic base-generated outside the VP and an empty category in the underlying object position (e.g. Sportiche 1996). Second, it is assumed that object cliticization in French involves properties linked to functional categories which differ in French and English. This is relevant as the L2 group in the present study consists of native speakers of English. The claim is that by acquiring object clitics, they are acquiring a property that cannot be transferred from their L1.

3. Developmental theories and their predictions for comprehension

Generally speaking, two types or families of theories – both in the case of Second Language Acquisition (SLA) and Specific Language Impairment (SLI) – can be identified: (i) ‘Grammatical Impairment Accounts’, which hold that deficits in production are due to impairment of underlying linguistic representations (e.g. Hawkins & Chan 1997, Beck 1998 for SLA; van der Lely & Stollwerck 1997, Rice, Wexler & Cleave 1995 for SLI), and (ii) ‘Performance Limitation Accounts’, whose basic tenet is that underlying linguistic representations are intact, and deficits in production are due to performance limitations in the production system (e.g. Lardiere 1998a,b, Prévost & White

2000 for SLA, Bishop 1994 for SLI). As ‘Grammatical Impairment Accounts’ locate the problem in the grammar proper, which must be involved in both production and comprehension, an impairment is predicted to affect comprehension as well as production. ‘Performance Limitation Accounts’, on the other hand, can (but do not necessarily have to) predict comprehension to be intact, despite impaired production. Crucially, intact comprehension in the face of impaired production can only be explained by ‘Performance Limitation Theories’.¹

4. The experiment

4.1. Participants

Three groups of children participated in this study: a control group of 12 normally developing, monolingual francophone children (L1), 7 normally developing anglophone children learning French as a second language (L2), and 6 monolingual francophone children with SLI (SLI). Details for each group are shown in Table 1.

Table 1. Participant groups.

<i>group</i>	<i>sample size</i>	<i>mean age</i>	<i>age range</i>
L1	12	6;7	6;2-7;1
L2	7	6;8	6;5-7;1
SLI	6	8;2	6;6-9;2

The children in the L2 group were all attending grade 1 in a French immersion school in Montreal, where the language of instruction is French only. At the time of testing, they had been attending this school for just under one and a half years, which constitutes their total length of exposure to French. According to parental report, none of these children had had regular exposure to French before entering kindergarten, with English being the only language spoken in the home. None of these children had ever displayed any language learning difficulties in their first language.

The children in the SLI group were recruited with the help of a speech language pathologist (SLP) in the greater Montreal/Sherbrooke area. They had all been diagnosed as *dysphasique* (a French term that corresponds to SLI). At the time of testing, they were attending grade 1 or 2 in regular, all-French schools. According to parental report, they had had no significant exposure to languages other than French. According to the SLP’s and/or psychologist’s report, these children had the following characteristics: normal hearing levels,

1. This claim refers to comprehension as measured on a tightly controlled experiment “constructed so that success can only be achieved by using grammatical knowledge” (Bishop 1997: 163).

no frank neurological impairment, nonverbal IQ scores of >80 ,² verbal IQs below normal range and/or a significant difference between verbal and nonverbal IQs, as well as below average scores ($<16^{\text{th}}$ percentile) on part 2 (“morphèmes grammaticaux”) of the French Canadian version of the Test for Auditory Comprehension of Language – Revised (TACL-R, Épreuve de compréhension de Carrow-Woolfolk).³

4.2. Procedure

Two experimental tasks were constructed to assess both production (elicitation task, 4.2.1) and comprehension (sentence-picture matching, 4.2.2) of object clitics.

4.2.1. Task 1: Elicited Production

The experimenter presented the child with a picture story containing 12 contexts for object pronominalization, that is, contexts in which the use of a pronoun – rather than a full DP – is the most felicitous choice. An example is provided in (2).

(2) Sample panel and script from the elicited production task:



E: Tu penses qu’il y a quoi dans la tasse de maman?
‘What do you think is in the mother’s cup?’

Child: (*expected answer*)
du café/ du jus
‘coffee/ juice’

E: (*target question*)
Et qu’est-ce que la maman fait avec le café/ le jus?
(‘And what is the mother doing with the coffee/ juice?’)

Child: (*expected answer*)
Elle le boit.
(‘She is drinking it.’)

2. IQs are measured on the French Canadian versions of the Weschler Preschool and Primary Scale of Intelligence – Revised (WPSSR-R) or the Weschler Intelligence Scale for Children – Third Edition (WISC-III).

3. No TACL scores are available for SLI6 as his age is beyond the age range of the test’s normalized sample.

4.2.2. Task 2: Sentence-Picture Matching

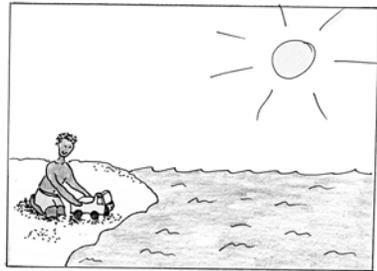
The aim of this task was to test children's sensitivity to the presence and absence of object clitics. To this end, sentences containing optionally transitive verbs were created (3).⁴

- (3) a. Marc le bouge.
Marc it move-3sg
'Marc is moving it.'
- b. Marc bouge.
Marc move-3sg
'Marc is moving.'

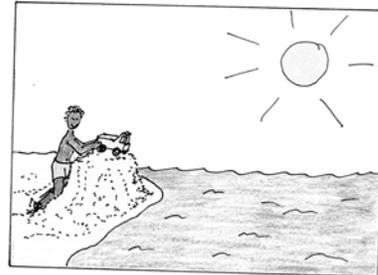
It is assumed that if a learner's grammar cannot properly represent clitics (= 'Grammatical Impairment Accounts'), a sentence such as (3a) will effectively be parsed as (3b). In consequence, the interpretation assigned to the clause will be that of (3b), where the agent, rather than some previously mentioned object, moves.

Target sentences were presented to the learners following a two- or three-panel picture story, as in (4).

- (4) Sample story and script from the sentence-picture matching task:



Voici Luc. Luc est à la plage. Il joue avec son camion dans le sable. Luc a joué près de l'eau toute la journée. Il fait très chaud.
('This is Luc. He is at the beach. He is playing with his truck in the sand. He has been playing near the water all day long. It is very hot.')



Luc a construit une grande butte dans le sable et fait rouler son camion par-dessus la butte.
('Luc has built a big hill in the sand, and is making his truck drive across the hill.')

4. Verbs used were: *bouger* ('move'), *descendre* ('climb down/lower'), *monter* ('climb up/lift up'), *plonger* ('dive/plunge'), *rentrer* ('return'), *retourner* ('return'), *sortir* ('leave/take out'), *tourner* ('turn').

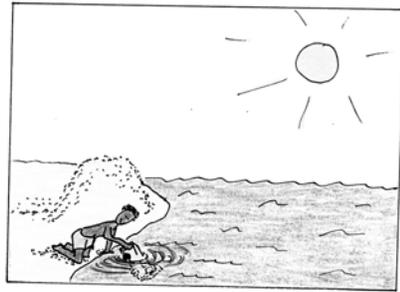
Following a story such as that in (4), learners heard either a sentence containing a clitic (5a = Clitic Condition), a sentence without an object (5b = Intransitive Condition), or a sentence with a lexical object (5c = Lexical Condition). The experiment includes eight items in each condition.

- (5) a. Luc le plonge dans l'eau. = Clitic Condition
 Luc it plunge-3sg into the water
 'Luc is plunging it into the water.'
- b. Luc plonge dans l'eau. = Intransitive Condition
 Luc plunge/dive-3sg into the water
 'Luc is diving into the water.'
- c. Luc plonge le camion dans l'eau. = Lexical Condition
 Luc plunge-3sg the truck into the water
 'Luc is plunging the truck into the water.'

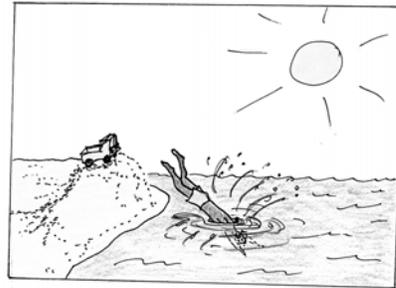
After hearing the sentence, the child was presented with three pictures: (i) a picture illustrating the transitive meaning of the verb (cf. 6a), a picture showing the intransitive meaning of the verb (6b), and a copy of the preceding picture in the story (which was no longer within the child's view). The child's task was to choose the picture that best matched the sentence.

(6) Choice of answers following the story in (4).

a. Transitive action



b. Intransitive action



Great care was taken to construct the stories such that a transitive and an intransitive action would be equally probable. In particular, each story contained a potential object of the action in the last picture shown, providing a felicitous context for the use of an object clitic.

4.3. Predictions

‘Grammatical Impairment Accounts’ as well as ‘Performance Limitation Accounts’ are designed to explain impairment in language production. Thus for the elicited production task in this study, both types of theories will predict a low rate of clitic suppliance in the L2 and the SLI groups. When it comes to comprehension, however, predictions differ, as discussed above. ‘Grammatical Impairment Accounts’ hold that learners cannot build appropriate representations for object clitics. In consequence, they should be unable to arrive at distinct grammatical parses for sentences in the Clitic Condition versus those in the Intransitive Condition. Thus these theories predict no significant differences between response patterns in the Clitic and the Intransitive Conditions. ‘Performance Limitation Theories’, on the other hand, can assume the comprehension of object clitics to be intact. These theories predict that the learners under consideration will be able to distinguish between sentences in the Clitic Condition versus those in the Intransitive Condition, leading to significantly different response patterns in these two conditions. The L1 control group is expected to perform at ceiling on all tasks.

4.4. Group results

4.4.1. Elicited Production

Responses were coded as four basic types: (1) clitic supplied (=CLITIC)⁵, (2) lexical complement, (3) object omitted (=OMISSION), or (4) other. The results from the elicited production task are summarized in Table 2.

Table 2. Elicited production: Frequency of response type in object pronominalization contexts

	CLITIC	LEXICAL COMPLEMENT	OMISSION	OTHER
L1 group	72.59%	7.41%	7.41%	12.59%
L2 group	24.39%	19.51%	53.66%	2.44%
SLI group	7.46%	16.42%	67.16%	8.96%

In an analysis of variance (ANOVA) with number of CLITIC responses as the dependent variable, group as a between-subjects factor, and context (the 12 contexts for object pronominalization) as a within-groups factor, the effect of group was significant ($F(2, 22) = 18.40, p < 0.001$). Tukey pairwise comparisons between groups indicated significant differences between the L1 group on the one hand, and the L2 and SLI groups on the other. No significant differences were detected between the L2 and the SLI groups.

5. For the present purpose, gender and number mistakes on clitics are not reported.

As expected, the L1 group supplied clitics in the majority of cases (72.59%), while clitic omissions were rare (7.41%). For both the L2 and the SLI group, on the other hand, OMISSION was the most frequent response type (L2: 53.66%, SLI: 67.16%), illustrating that the production of object clitics is deficient in both L2 and SLI. Moreover, it is equally deficient in both groups, which replicates the finding from spontaneous production reported by Paradis and Crago (2002).

4.4.2. Sentence-Picture Matching

The results from the sentence-picture matching task are summarized in Tables 3-5.

Table 3. Sentence-picture matching: L1 group. Frequency of response type by condition (✓ = correct response)

	transitive action	intransitive action	previous picture
Lexical Condition	89.6% ✓	8.3%	2.1%
Clitic Condition	87.5% ✓	8.3%	4.2%
Intransitive Condition	18.8%	80.2% ✓	1.0%

Table 4. Sentence-picture matching: L2 group. Frequency of response type by condition (✓ = correct response)

	transitive action	intransitive action	previous picture
Lexical Condition	96.4% ✓	3.6%	0.0%
Clitic Condition	64.3% ✓	32.1%	3.6%
Intransitive Condition	23.2%	75.0% ✓	1.8%

Table 5. Sentence-picture matching: SLI group. Frequency of response type by condition (✓ = correct response)

	transitive action	intransitive action	previous picture
Lexical Condition	100.0% ✓	0.0%	0.0%
Clitic Condition	75.0% ✓	22.9%	2.1%
Intransitive Condition	22.9%	75.0% ✓	2.1%

All three groups reached high overall accuracy scores (L1: 85.8%, L2: 78.6%, SLI: 83.3%), i.e. performed well in all conditions. In a 2-way group-by-condition ANOVA with number of 'transitive action' responses as the dependent variable, the effect of group was not significant ($F(2, 22) = 1.28, p = 0.2977$). While all three groups performed at ceiling in the Lexical Condition, the L2 and the SLI groups showed somewhat less accuracy than the L1 group in the Clitic and the Intransitive Conditions. Crucially, however, the pairwise

comparison between number of ‘transitive action’ responses in the Clitic versus the Intransitive Condition is significant for all three groups. This indicates that all learner groups clearly distinguish between sentences that differ minimally by the presence of absence or an object clitic. In other words, the clitic makes a difference to their interpretation of the sentence, suggesting that the comprehension of object clitics is intact in all three learner groups in this study.

4.5. Discussion of group results

The results from the elicited production task presented here replicate earlier findings showing that the production of object clitics is deficient in both L2 and SLI. Meanwhile, the results from the sentence-picture matching task suggest that the comprehension of object clitics is intact in both groups. With regard to the developmental theories discussed above, this constitutes evidence against ‘Grammatical Impairment Accounts’ and in support of ‘Performance Limitation Accounts’ of both SLA and SLI.

No statistically significant differences were detected between the L2 and the SLI group in either task. Thus it seems that the similarity between the error profiles of these two learner groups does indeed extend to the domain of comprehension. In other words, it appears at least initially that comprehension *cannot* tease apart L2 and SLI.

4.6. A look at individual results

While group results did not yield significant differences between L2 learners and children with SLI, it may be the case that closer scrutiny of individual results could help draw a more differentiated picture. Due to the limited sample sizes in this study, such considerations must remain tentative for the time being, yet I believe that they may nevertheless reveal potentially interesting patterns. Tables 6 and 7 present individual results for the L2 and SLI groups respectively.

Table 6. L2 group: individual results

	<i>Production score:</i> # of clitics produced in target contexts (out of 12)	<i>Comprehension score:</i> # of correct responses in the Clitic and Intransitive Conditions (out of 16)
E1	1	11
E2	0	8
E3	6	14
E4	3	12
E5	10	14
E6	0	10
E7	0	9

Table 7. SLI group: individual results

	<i>Production score:</i> # of clitics produced in target contexts (out of 12)	<i>Comprehension score:</i> # of correct responses in the Clitic and Intransitive Conditions (out of 16)
SLI1	0	11
SLI2	0	8
SLI3	0	12
SLI4	4	15
SLI5	0	13
SLI6	1	13

Within the L2 group, two distinct subgroups emerge: on the one hand, there are children who did not produce a single clitic in the production task (E2, E6, E7). It is precisely the same three children who also performed rather poorly on the sentence-picture matching task (i.e., with more than 5% probability of guessing, which equals a score of less than 12/16).⁶ On the other hand, there are children who produced several clitics (E3, E4, E5). The same subgroup also performed well (with less than 5% chance of guessing) on the comprehension task.⁷ Thus there seems to be a correlation between results from production and comprehension in this group, with L2 learners falling into one of two subgroups: either they are capable of producing *and* comprehending clitics (E3, E4, E5), or they can do neither (E2, E6, E7). These two subgroups could simply represent two consecutive stages in the acquisition of clitics, possibly analogous to L1 development: stage 1 – representation of clitics not yet acquired, stage 2 – representation of clitics acquired. What is interesting is that this bipartition of the group does not seem to be applicable to the SLI group.

Both profiles observed in the L2 group also appear in the SLI group: two children (SLI1, SLI2) produced no clitics and performed poorly on the comprehension task, while one child (SLI4) produced several clitics and did very well on the comprehension task. However, the three remaining children in this group (SLI3, SLI5, SLI6) present a profile not observed among the L2 learners here: they produced (almost) no clitics, yet performed well on the sentence-picture matching task. Their comprehension indicates that they are capable of parsing and representing object clitics appropriately, yet they do not produce them. It is this profile, I believe, that requires further explanation and investigation, as it seems to be unique to the SLI group – at least in the small sample of the present study.

6. ‘Guessing’ here is taken to be random choice between the pictures illustrating a transitive and an intransitive action (i.e. $p = .5$ for each).

7. E1, who produced a single clitic, and with 11 out of 16 correct responses on the comprehension task just fails the 5% criterion for guessing, seems to be on the borderline between the two subgroups.

In sum, when considering individual rather than group results, a difference between L2 learners and children with SLI appears: in the L2 group, there seems to be a correlation between performance in production and comprehension; in the SLI group, on the other hand, this is not the case.

5. Conclusion

This study was designed to investigate whether the similarities between the error profiles of L2 learners and of children with SLI observed in spontaneous production extend to comprehension. Group results from two experimental tasks targeting object clitics in French suggest that while both groups performed poorly in production, their comprehension of clitics seems to be intact. This can be interpreted as counterevidence to ‘Grammatical Impairment Accounts’ of language development in both L2 and SLI, which predict comprehension to be impaired as well. No statistically significant differences were found between the two learner groups in either the production or the comprehension task. Thus on the level of group results, the similarity of error profiles was found to extend to the domain of comprehension. However, in a tentative analysis of individual results, differences begin to emerge. It seems that in the L2 group, there is a correlation between results in the production and the comprehension task, while this is not the case in the SLI group. One error profile in particular – no clitics in production, yet good comprehension – was found in the SLI group only. Further investigation of larger samples will be necessary before conclusions can be drawn. The present study suggests, however, that analyses of group results alone will not be sufficient to gain insight into the (dis)similarities between difficulties observed in second language acquisition and in SLI.

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