

Comprehension and production of French object clitics by child second language learners and children with specific language impairment

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ABSTRACT

The objective of this research was to compare child second language (L2) learners and children with specific language impairment (SLI) on both production and comprehension in order to investigate whether the similarity of their error profiles observed in spontaneous production extends to comprehension. Results are presented from an elicited production and a sentence–picture matching task targeting accusative object clitics in French. As groups, both L2 learners and children with SLI show a low rate of clitic suppliance in production, yet perform well on the comprehension task. No statistically significant differences are found between the two groups on either task. Analyses of individual results, however, reveal diversity within both groups. Although there seems to be a correlation between performance in production and comprehension in the L2 group, this is not the case in the SLI group.

Until recently, there has been little contact between research on second language acquisition (SLA) and research on specific language impairment (SLI), although one of the central issues in both fields (the source of developmental errors made by the respective learners) is strikingly similar. Despite somewhat different terminologies, both fields engage in an ongoing debate between those locating the learners' deficit in grammatical representations and those seeking an account outside the grammar proper, that is, in performance or processing limitations.

In the past few years, a small number of studies has drawn attention to the surprising similarities in the spontaneous speech of children with SLI and child L2 learners. The first to point out the parallels between the two learner groups were Håkansson and 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 verb-third utterances (instead of grammatical verb-second), an error never seen in the first language (L1) acquisition of Swedish by normally developing children according to these authors. They observed that “[t]he SLI children behave as if Swedish were not their first, but rather their second, language” (Håkansson & Nettelbladt,

1993, p. 14). More recently, Paradis and Crago presented similar evidence from the acquisition of French. In a series of studies, they showed 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 (Crago & Paradis, 2003; Paradis & Crago, 2000) as well as object clitics (Paradis, 2004; Paradis & Crago, 2003). These authors appear to suggest (e.g., in Crago & Paradis, 2003, p. 107) that the developmental problems encountered by the two learner groups may be captured by the same developmental theory, namely the (extended) optional infinitive account of Rice, Wexler, and Cleave (1995).

The limitations of the available research comparing L2 and SLI, sparse as it is, lie in the exclusive reliance of these studies on spontaneous production data. In view of the current debate, particularly in the field of SLA, on the status of missing morphology in production, such data risk becoming inconclusive. As shown perhaps most clearly in the work of Lardiere (1998a, 1998b), absence of morphology in production cannot be taken as evidence of absence of the related grammatical representations. Thus, production data alone will have little force in distinguishing between developmental theories proposing a representational deficit and those invoking performance and/or processing difficulties. What is required is additional evidence from other domains, such as comprehension.

Drawing on evidence from both language production and comprehension relies on the assumption that there is one common grammar underlying both modalities. This assumption lies at the heart of generative linguistics, which seeks to provide an explanatory theory of speakers' abstract knowledge underlying their production and comprehension of language:

[T]here must be, represented in the mind, a fixed system of generative principles that characterize and associate deep and surface structures in some definite way—a grammar, in other words, that is used in some fashion as discourse is produced or interpreted. This grammar represents the underlying linguistic competence to which I referred earlier. (Chomsky, 1972, p. 18)

This view does not deny the existence of separate systems associated with the online processing involved in language production (see, e.g., Levelt, 1989) and language comprehension (e.g., Bishop, 1997). Indeed, their existence is necessary to explain behavior in language production (such as false starts or incomplete utterances) as well as in comprehension (e.g., the interpretation of garden path sentences).

Positing an impairment in this underlying grammar, which I will refer to as a “representational deficit,” predicts that the impairment will have effects on both production and comprehension, since both are subserved by the same underlying grammatical representations. Note that such parallel deficiencies in production and comprehension could in principle also be explained by independent impairments in the production as well as the comprehension systems. However, their similar effects would then be viewed as merely coincidental. Thus, it seems to me that on grounds of parsimony, positing a single underlying impairment in the case of deficiencies overarching modalities is a preferable solution. However,

if only one modality is found to be affected, this is *prima facie* evidence against an underlying impairment. Yet, interpreting such a finding is no trivial issue. Much recent work on aphasia, in particular by Grodzinsky (e.g., Grodzinsky, 1995), has demonstrated that agrammatic patients can often arrive at correct interpretations of sentences by employing nonsyntactic strategies (e.g., linear order) rather than underlying grammatical knowledge. Thus, the setup of an experimental comprehension task must be carefully controlled so as to exclude good performance derived by nonsyntactic strategies. In other words, what is required is “a test that is constructed so that success can only be achieved by using grammatical knowledge” (Bishop, 1997, p. 163). As I will argue in more detail below, the comprehension task presented in this paper constitutes precisely such a test. Thus, if learners’ comprehension as measured on this task is found to be intact, I will take this as evidence against a representational deficit in these learners’ grammars.

The aim of the present study is to test whether positing a representational deficit in the underlying grammar can account for the patterns of performance by (a) L2 learners, and (b) children with SLI. To this end, evidence from both production and comprehension of L2 learners as well as children with SLI was gathered. These data will not only bear on the debates within each field (SLA and SLI) but will also allow for direct cross-disciplinary comparisons between the two learner groups. Such comparisons will help determine whether the problems encountered by L2 learners and by children with SLI can indeed be captured by the same (type of) developmental theory or whether their similar performance in spontaneous production is merely accidental.

The study presented here investigates the acquisition of accusative object clitics, a property that has repeatedly been observed as problematic in various acquisition contexts. Three groups of children were included: (a) normally developing monolingual French children, (b) anglophone children acquiring French as an L2, and (c) monolingual French children with SLI. Two experimental tests were developed to evaluate the acquisition of object clitics: an elicited production task and a sentence–picture matching task. This paper reports the results of these experiments and discusses their implications for theories of SLA and SLI, as well as the (dis)similarities between the two learner groups, an issue of potential relevance not only to linguistics, but also to L2 education and speech language pathology.

SYNTACTIC BACKGROUND: ACCUSATIVE OBJECT CLITICS IN FRENCH

Object clitics (*me* [me], *te* [you] (sing.), *le* [him], *la* [her], *nous* [us], *vous* [you] (pl.), *les* [them]) constitute one of at least two pronominal paradigms in French. The weak or clitic series on the one hand, and full determiner phrases (DPs) and strong pronouns (*moi* [me], *toi* [you], etc.) on the other hand, appear to be in complementary distribution. In particular, clitics occur in the preverbal position (Example 1a) and cannot normally appear in the canonical object position, which in French is postverbal (Example 1b).

1. a. *Annie le lave.*
Annie him wash
Annie is washing him.
- b. **Annie lave le.*
Annie wash him

At least since Kayne (1975), a number of further restrictions on French clitics have been recognized: they cannot be the complement of a preposition, they cannot be conjoined, they cannot occur alone, they cannot be modified, and they cannot be dislocated or separated from the verb (except by other clitics). In all of these positions, either a full DP object or a strong pronoun is required.¹

In current linguistic theory, the status of Romance object clitics is a much debated and largely unresolved issue. However, the present study is designed such that only two clearly defined and widely shared theoretical assumptions are necessary. First, it is assumed that object cliticization in French involves a syntactic dependency relation between the surface position of the clitic and the underlying position of the verbal complement. Such a dependency relation could be the result of clitic movement from the object position to a position higher in the syntactic tree (e.g., Belletti, 1999; Kayne, 1975), or of a binding relation between a clitic base generated outside the verb phrase (VP) and an empty category (*pro*) in the underlying object position (Sportiche, 1996).

Second, it is assumed that object cliticization in French involves properties that differ from the grammar of English, and that these properties are linked to functional categories. English does not have a second pronominal paradigm analogous to the weak pronoun series in French.² The distribution of the English object pronouns *me*, *you*, *him*, *her*, and so forth patterns with that of other complements to V (and P), indicating that these pronouns should be represented as independent DPs rather than clitics. The precise nature of the difference between English pronouns and French clitics varies between theoretical accounts, yet it invariably involves properties of functional categories. Sportiche (1996) argues that clitics are base generated as heads of their own (functional) projections, called clitic voices. If it is assumed that English lacks clitic voices, the difference between English and French can be described as the presence or absence of a certain set of functional projections. In Belletti's (1999) account, the difference is not one of phrase structure, but (in part) one of feature strength. In particular, she proposes that clitics are base generated in the verbal complement position as determiner heads (D^0) carrying a strong case feature, which needs to be checked in the overt syntax, thus triggering movement. Under this account, the difference between English and French lies in a certain functional head, namely D^0 , which may bear a strong case feature in French, but not in English. This second assumption regarding the difference between French and English is relevant because the L2 group in the present study consists of native speakers of English. The claim is that the acquisition of French object clitics by native speakers of English cannot be accomplished by transferring properties from the L1 (English) into the L2 (French).

DEVELOPMENTAL THEORIES

SLA

In the field of SLA, there is an ongoing debate on whether and to what extent functional categories are represented in interlanguage grammars (Eubank, 1993–1994; Schwartz & Sprouse, 1996; Vainikka & Young–Scholten, 1996; White, 1996). Although some have proposed that the representations of functional categories in L2 grammars are permanently impaired (e.g., Beck, 1998), others argue that such representations are available to L2 learners, although there may be persistent problems in the mapping between these abstract representations and the associated surface morphology in the actual speech of L2 learners (e.g., Haznedar & Schwartz, 1997; Lardiere, 1998a, 1998b, 2000; Prévost & White, 2000). Thus, L2 theories can be broadly classified into two families: those that posit a permanent impairment in learners' L2 grammars, which I will refer to collectively as *grammatical impairment theories*, and those that do not.

The grammatical impairment theories comprise a number of accounts that differ from each other quite substantially (e.g., Beck, 1998; Bley–Vroman, 1989; Hawkins & Chan, 1997). However, their predictions converge when it comes to L2 functional material not present in the L1, the scenario of the present study: both production and comprehension of such functional items are expected to be significantly impaired as a result of their deficient grammatical representations.³

These predictions are not shared by theories holding that the underlying grammar of L2 speakers is unimpaired. Recent versions of such theories, such as Prévost and White's (2000) "missing surface inflection hypothesis," explicitly locate the deficit in the process of supplying overt morphology associated with functional categories in actual production. Lardiere (1998a, 1998b, 2000) refers to this deficit as the "mapping problem." Within these accounts, it is still an open issue what causes these mapping problems (but see Goad, White, & Steele, 2003, for an approach in terms of prosodic structure). What remains unclear, and I believe unaddressed in these accounts, is the extent to which the mapping problem will affect comprehension. It would seem that those accounts that explicitly view the lack of morphology as a surface or production problem will not expect comprehension to be impaired. Indeed, White (2003) presents results from an advanced L2 learner who consistently fails to supply surface morphology but performs at ceiling on a grammaticality judgment task. She takes these results as support for an access or mapping problem and as evidence against a deficit in underlying competence. I will infer somewhat cautiously, then, that at least these accounts would predict production to be impaired more severely than comprehension.

In sum, although grammatical impairment theories expect both modalities to be equally impaired (to the extent that they can be directly compared), accounts assuming underlying grammatical representations to be intact will predict comprehension results to be significantly better than production results. Thus, the decisive evidence will be that obtained from comprehension tasks, and in particular the comparison between production and comprehension results.

SLI

In the field of SLI, one of the central debates is between a characterization of the deficit as purely linguistic or syntactic in nature and accounts invoking more general processing limitations in the presence of intact grammatical representations. Despite terminological differences, this debate mirrors in many ways the two families of theories of L2 acquisition, described in the previous section.

Many theoretical accounts of SLI locate the impairment outside the grammar proper. Some attribute the deficits in the children's speech to limitations in auditory processing, that is, acoustic factors (e.g., Fellbaum, Miller, Curtiss, & Tallal, 1995; Tallal et al., 1996). In this case, both production and comprehension will presumably be affected. Such a model also predicts, however, that if there are two (nonsalient) homophonous items with different meaning in a language, both should be equally affected. Such a scenario arises for the property under consideration in this study, French object clitics, which are homophonous with the definite determiner (*le, la, les*). Several studies have shown a clear dissociation between the acquisition of determiners and object clitics in French by children with SLI (Hamann, 2003; Jakubowicz, Nash, Rigaut, & Gérard, 1998), thus presenting direct counterevidence to an auditory processing account. As the present study has no additional evidence that may bear on this issue, auditory processing theories will not be further discussed here.

Other accounts, also locating the deficit outside the grammar proper, attribute the problem to constraints on production, that is, performance limitations due to overload of a limited capacity system (e.g., Bishop, 1994; Connell & Stone, 1992; Fletcher, 1992). Bishop's (1994) "vulnerable markers hypothesis," for example, maintains that "SLI children have underlying competence, but performance limitations prevent them from applying this knowledge consistently" (Bishop, 1994, p. 532). In this case, the prediction is that comprehension should be intact, or at least that there will be a significant dissociation between production and comprehension.

On the other hand, several theoretical accounts of SLI propose a deficit in underlying syntactic representations, that is, in the grammar proper. The "representational deficit for dependent relations" (RDDR) hypothesis proposed in the work of van der Lely and colleagues, for example, holds that children with SLI have "a deficit with building non-elementary complex syntactic dependencies between constituents" (van der Lely & Stollwerck, 1997, p. 283). In various comprehension-based experiments, these authors have shown that English-speaking children with grammatical SLI have difficulties with a range of syntactically complex constructions (e.g., passives and topicalization, van der Lely & Harris, 1990; reference of reflexive and personal pronouns, van der Lely & Stollwerck, 1997). In the absence of more precise criteria for "complex syntactic dependency," however, we can only speculate about crosslinguistic predictions. Nevertheless, the syntax of French object clitics, discussed above, seems to present a prime example of such complex dependencies. Thus, under the RDDR hypothesis, both production and comprehension of French object clitics are expected to be impaired.⁴

Another account that clearly posits the deficit in the underlying grammar itself is the unique checking constraint (UCC) account by Wexler (1998, in press),

which constitutes a generalized version of the earlier extended optional infinitives account of Rice et al. (1995). Under the UCC account, any construction involving a D-feature (see Chomsky, 1995) that requires checking against more than one functional category will be problematic during the (extended) UCC stage. Wexler (in press) argues that object clitics in French present just such a construction. More specifically, he argues that as long as the UCC is active in a learner's grammar, "there are 4 structures tying for smallest number of violations, namely one violation" (Wexler, in press) in the case of clitic constructions. The child's actual output will depend on which of these four structures "wins" the competition. The winner will not always be the same candidate, thus providing an explanation for the optionality of the clitic in learners' production. Within Wexler's framework, two of the four candidates lead to what looks like correct adult French, that is, the clitic is produced in target position; one candidate leads to the omission of the clitic, and one to the production of a full noun phrase in the canonical object position. (For more detail, refer to the original source.) Thus, strictly speaking, the prediction for the rate of clitics in production is two out of four, that is, approximately 50%.

What is harder to evaluate are the predictions of the UCC account for the comprehension of object clitics. There is no discussion of this in Wexler (in press), yet it seems that the UCC account would predict good comprehension of structures containing object clitics: if the child hears an utterance containing an object clitic, s/he will use the correct parse, which is one of the four candidates present in his/her grammar.⁵ Thus, it is important to emphasize that the UCC account, despite falling into the family of grammatical impairment theories, does *not* predict impaired comprehension of utterances containing object clitics. However, I would like to point out that the account makes an interesting prediction with regard to utterances not containing an object, such as Example 2.

2. *Marc bouge.*

Marc moves (himself).

Note that the verb *bouger*, like its English counterpart "to move," can be used both transitively and intransitively. In other words, the absence of an object does not imply an object (as is the case with verbs like "to eat"). I believe that the prediction of the UCC account with regard to the comprehension of utterances like Example 2 has to be that they can receive not only the correct intransitive interpretation, but also an (incorrect) transitive one, where the subject moves some previously mentioned object. This latter interpretation would be the result of the child using one of the four competing structures, namely, the one leading to the omission of the clitic. Under this analysis, Example 2 would be parsed exactly like Example 3, except that the clitic (*le*) is assumed to be silent or omitted.

3. *Marc le bouge.*

Marc it moves

Marc moves it.

The UCC account therefore makes the additional prediction that learners at the UCC stage will provide a transitive interpretation for sentences like Example 2 significantly more often than speakers who have passed the UCC stage.

The discussion in this section has shown that while theoretical accounts of SLI can also be broadly classified into grammatical impairment theories on the one hand, and accounts positing the deficit outside the grammar proper on the other hand, their predictions for production and comprehension do not correlate as nicely with this dichotomy as they do in the case of theories of L2 acquisition. However, with the exception of the UCC account, the prediction of grammatical impairment theories of SLI, such as the RDDR hypothesis, is still that comprehension, as well as production, should be significantly impaired. It is this prediction that the present study aims to evaluate.

PREVIOUS RESEARCH: FRENCH OBJECT CLITICS IN LANGUAGE DEVELOPMENT

Object clitics in production

Studies of the speech produced by normally developing children acquiring French as an L1 have shown that nonreflexive object clitics typically emerge toward the end of the third year (Hamann, Rizzi, & Frauenfelder, 1996; Müller, Crysmann, & Kaiser, 1996). This is relatively late when compared to other functional elements such as subject clitics and determiners. Prior to the emergence of object clitics, higher rates of lexical complements as well as object omissions can be observed. The proportions of the latter have been argued to decline sharply as object clitics begin to be used (Müller et al., 1996; see also Wexler, in press). Moreover, when clitics are produced, they are overwhelmingly placed correctly. Despite these now well-documented descriptive facts, explanatory accounts for the late emergence of accusative object clitics have largely remained elusive (Hamann et al., 1996; but see Müller et al., 1996, for a weak continuity approach, as well as Wexler's, in press, UCC account discussed above).

The emergence of clitics in the speech of French children with SLI has been the focus of only a few recent studies. They converge in their conclusion that object clitics present an area of particular difficulty and delay for children with SLI. Moreover, this difficulty seems to persist beyond other problems, such as determiner omission and optional infinitives (Hamann, 2003; but see Wexler, in press, for a different view on optional infinitives).

Both Jakubowicz et al. (1998) and Chillier et al. (2001) conducted elicited production experiments with a group of children with SLI as well as normally developing controls. Jakubowicz et al.'s findings show two clear dissociations: first, as expected, the roughly age-matched normally developing children clearly outperform the children with SLI on both the reflexive and the nonreflexive (accusative) conditions. Second, both groups supplied significantly more reflexive than nonreflexive clitics, a result that is reminiscent of the nonparallel development of the two types of clitics in L1 acquisition (cf. Crysmann & Müller, 2000). Similar findings were obtained by Chillier et al. (2001).

Other studies have looked at the suppliance of object clitics in the spontaneous speech of children with SLI (Hamann, 2003; Hamann et al., 2003; Paradis, 2004; Paradis & Crago, 2003). A question that arises in all of these studies is how to determine the relevant contexts for the use of object clitics. Hamann (2003) and Hamann et al. (2003) include *all* contexts requiring a complement. In many of these contexts, objects will not be referents previously mentioned in the discourse, and a lexical complement thus constitutes the only felicitous option. As a result, the rate of clitic suppliance is likely to be underestimated. Paradis (2004) and Paradis and Crago (2003, p. 223), on the other hand, present “percentages of object clitics used out of the total of object pronominalization contexts,” that is, their count includes only contexts where a clitic is the most felicitous option in the adult language. Although this procedure cannot give total accuracy either, because of the fact that (young) children are known to use pronouns more freely than adults (cf. Hamann & Plunkett, 1998), I believe that overall it provides a more accurate count. On this count, Paradis’ (2004) and Paradis and Crago’s (2003) SLI group (mean age = 7 years, 6 months [7;6]) reaches a suppliance rate of 47.3%. This lies significantly below that of the age-matched control group (97.63%), as well as that of the substantially younger (mean age = 3;3) language-matched controls (85.56%).

In addition to rate of clitic suppliance, researchers have also looked at the type of response given *instead* of the expected clitic. The two most frequent categories are object omission (Example 4a), which is ungrammatical in French, and lexical complements (Example 4b), which are infelicitous rather than ungrammatical in a context where the object has been mentioned in the previous discourse.⁶

4. a. **Mimi brosse*
 Mimi brush–3sing.
 Mimi is brushing (him).
- b. #*Mimi brosse le garçon*
 Mimi brush–3sing. the boy
 Mimi is brushing the boy.
- c. *Mimi le brosse*
 Mimi him brush–3sing.
 Mimi is brushing him.

Omission rates reported in the literature vary, depending on the type of data and the procedure of counting (see above), extending over a range of 8–16% (Hamann et al., 2003) up to about 40% (Paradis, 2004; Paradis & Crago, 2003).

Despite considerable variability, the available data from the speech of children with SLI show that even by ages 7 or 8, these children still have substantial problems with object clitics. The reasons for this particular problem, however, remain unresolved. Jakubowicz et al. (1998) suggest a production deficit, whereas Wexler (in press) claims that the observed pattern is consistent with an account of SLI in terms of the UCC, which would constitute a competence deficit. It seems, then, that the production data available to date are not sufficient to decide between the different accounts.

In the field of L2 acquisition, only a few studies exist that have looked at the production of object clitics in child L2 French, all of which are based on general speech samples collected without a specific view to object clitics (Adiv, 1984; Paradis, 2004; White, 1996). The available results suggest that object clitics are a vulnerable area, especially in the early stages of L2 acquisition.

The participants in all three studies were anglophone children learning French in the Montreal area. However, the interpretation of results is subject to the problem discussed above, namely, which contexts should be included when establishing rates of suppliance and omission. Adiv's (1984) count, which only includes contexts where clitics were either produced or omitted (i.e., not counting contexts with lexical complements), leads to an omission rate of 87% for children in Grade 1 (Adiv, 1984, p. 136). It is important to note, however, that this omission rate drops to only 13% for children in Grade 3, indicating that clitic omission is a temporary phenomenon in L2 acquisition.

White (1996) presents a more detailed analysis of pronominal clitics in L2 French based on longitudinal data from two children. During the first year of exposure, object clitics are almost entirely absent (although this may be due to the low number of contexts requiring direct objects). During the second year, object clitics remain exceedingly rare, whereas lexical complements or the strong pronoun *ça* are used frequently. Omissions, by contrast, do not seem to be frequent in these data. However, note that White (1996), like Hamann (2003) and Hamann et al. (2003) for SLI, looked at *all* contexts requiring a complement. As discussed above, this perspective will tend to underestimate clitic omissions, as well as overestimate the use of lexical complements as a compensatory strategy (a strategy suggested by White, 1996, p. 354). Thus, based on the data provided, it cannot be determined at what rates these two children were producing clitics *in contexts where clitics are required by the discourse*.

In contrast, Paradis (2004) looked specifically at contexts requiring object pronominalization. Her results indicate that object clitics were supplied in required contexts at a rate of 41.48%. Omissions account for approximately 35–40%, and strong pronouns and lexical complements were produced in about 20% of cases.⁷ The author observes, moreover, that although omissions are the most frequent error type, the rate of lexical complements is considerably higher for the L2 learners than for the age-matched monolingual French children with SLI, suggesting that lexical complements may indeed provide a compensatory strategy for L2 learners, but not, or to a much lesser extent, for children with SLI. Further research is required to corroborate these findings.

In sum, the results converge in the following observations: object clitics appear relatively late in the speech of L2 learners, L2 learners prefer to use lexical complements in the place of clitics, and omissions do occur, although there is some disagreement as to the extent of this phenomenon. Moreover, longitudinal data suggest that the observed problems are a temporary phenomenon and will be largely resolved in the course of L2 development. The reasons for L2 learners' (temporary) difficulties with object clitics remain, as in the case of SLI, largely unexplained. Both Adiv (1984) and Paradis (2004) invoke L1 transfer in some form, whereas White (1996, p. 362) explicitly argues against this option and alludes instead to the similar delay of object clitics observed in L1 development

(p. 363), a phenomenon that is, however, poorly understood in itself. Adiv (1984, p. 135) further observes that object omissions cannot be due to transfer from the L1 alone and appeals to “inherent complexities in the L2” (Adiv, 1984, p. 139). However, the precise nature of these inherent complexities remains unclear.

Object clitics in comprehension

Compared to studies examining children’s production of object clitics, experiments on their comprehension are relatively rare. I am aware of only three studies investigating this property in the acquisition of French (Chillier et al., 2001; Hamann, Kowalski, & Philip, 1997; Jakubowicz et al., 1998). All of these experiments focus on the interpretation of reflexive and accusative clitics with regard to their binding properties, extending a larger research program on the status of the binding principles in acquisition, which was initiated by Chien and Wexler (1990). Although studies in this tradition have demonstrated the much discussed “delay of Principle B effect” in the Germanic languages, such a delay is not observed for Romance language children. The three studies on French mentioned above converge in their conclusions that by ages 5 or 6, normally developing French children master the interpretation of both reflexive and accusative object clitics in simple matrix clauses.

Jakubowicz et al. (1998) and Chillier et al. (2001) extended their investigations to a group of children with SLI. To my knowledge, there are no comparable studies with L2 learners. Jakubowicz et al. (1998), employing a sentence–picture matching task, found no significant differences between their SLI group and the normally developing children with regard to comprehension. Both groups performed at over 80% correct on reflexive as well as accusative clitics. This is contrary to their results from production, where the SLI group supplied clitics at a significantly lower rate than the normally developing controls. Based on these findings, the authors observe that “comprehension is relatively well preserved and production is considerably impaired,” which leads them to “the conclusion that the major impairment of the children with SLI studied here concerns the production level” (Jakubowicz et al., 1998, p. 153). This would imply that the children’s underlying syntactic representations were unimpaired.⁸

Conversely, Chillier et al. (2001) found that their SLI group performed at only 50% on the mismatch condition of their truth-value judgment task targeting accusative object clitics. On closer inspection, however, the majority of errors on accusative clitics can be attributed to the SLI children’s failure to detect gender mismatches, whereas they rejected mismatches based on binding errors much more reliably. Thus, once gender is put aside, Chillier et al.’s (2001) results closely resemble those of Jakubowicz et al. (1998) in that children with SLI do quite well in a comprehension experiment (around 80% correct), despite their rather poor performance on the production task. However, Chillier et al. (2001) arrive at a rather different conclusion, based to a large extent on a surprising difference between their younger and older SLI subgroups: the older group was substantially worse than the younger group at detecting binding errors with accusative clitics in the mismatch condition. This is in contrast to the older group’s significantly better performance in production. The authors thus observe that “the older SLI

Table 1. *Participant groups*

Group	Sample Size	Mean Age	Age Range
L1	12	6;7	6;2–7;1
L2	7	6;8	6;5–7;1
SLI	6	8;2	6;6–9;2

group showed an improvement in the production but not in the comprehension of pronouns.” They interpret these findings as “suggesting an incomplete mastery of the binding properties of direct object complements, which was not detected in production,” thereby at least partly implying a competence deficit.

Based on very similar overall results, Jakubowicz et al. (1998) and Chillier et al. (2001) arrive at strikingly different interpretations, suggesting that the data obtained in these studies are somewhat short of conclusive. Given the data available, the status of the binding principles in SLI (in production and comprehension) must therefore remain an open issue. The interest of the present study, however, is not in the acquisition of the clitic’s binding properties, but is more basically in the acquisition of the clitic itself. In studies on the acquisition of binding, it is generally taken as a premise that participants are capable of syntactically parsing and representing a clitic in a test sentence. I believe this is a plausible assumption in the case of normally developing children, given that by the relevant age, they spontaneously produce both reflexive and accusative clitics. However, in the case of children who are not, or only very sporadically, producing clitics in spontaneous speech, such as children with SLI and L2 learners, the validity of this assumption becomes questionable. Thus, what is needed is a new experimental paradigm that is capable of independently assessing learners’ ability to correctly interpret sentences containing object clitics. Such a paradigm is presented in the present study.

THE STUDY

Participants

Three groups of children participated in this study: 12 normally developing, monolingual francophone children (L1), 7 normally developing anglophone children learning French as an L2, and 6 monolingual francophone children with SLI. Details for each group are shown in Table 1. The children in the L1 group were attending Grade 1 in an all-French school in Montreal at the time of testing. According to parental report, they had had no significant exposure to languages other than French, nor had they displayed any language learning difficulties. This group presents a roughly age-matched control group for the L2 and SLI groups, intended to demonstrate that (a) the experimental tasks are adequate for the cognitive abilities of 6-year-olds, and (b) performance on object clitics has reached ceiling by this age in normally developing children.

The children in the L2 group were attending Grade 1 in a French immersion school in Montreal, where the language of instruction is French only. Thus, their average exposure to French is around 5–6 hr each weekday. At the time of testing, they had been attending this school for just under 1.5 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 L1.

The children in the SLI group were recruited through 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 Grades 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, no frank neurological impairment, nonverbal IQ scores of >80, verbal IQs below normal range and/or a significant difference between verbal and nonverbal IQs, as well as below average scores (<16th 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, Carrow–Woolfolk, 1985). All available psychometric details are shown in Appendix A.

Materials and procedure

Two experimental tasks were constructed to assess both production (elicitation task) and comprehension (sentence–picture matching task) of object clitics. The experiment was conducted by the same francophone research assistant for all children, either at their home or in a quiet room at their school. A second researcher (the author) was present in the room. Testing started with the first block of the comprehension task, followed by the production task, and ended with the second block of the comprehension task. The total duration of the experiment was 30–40 min per child.

Production: Elicitation task. The aim of this task was to elicit object clitics from the child. 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.⁹ The experimenter told the story according to a fixed script interspersed with target and filler questions, as illustrated in Figure 1.

When a child failed to respond, the second researcher asked the child whether s/he knew the word for the activity shown and offered the French verb in the infinitive form. The experimenter then repeated the question.¹⁰ The elicitation task was tape-recorded and later transcribed by the experimenter. Transcripts were cross-checked by a second native speaker. Contexts where one or both transcribers were unsure about the presence or absence of a clitic were excluded from the total count.¹¹



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.

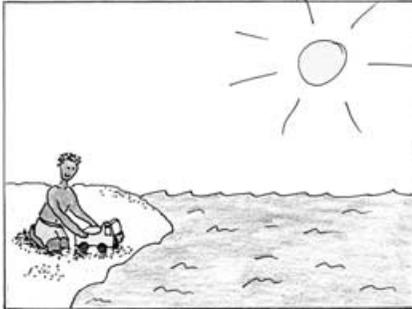
('She is drinking it.')

Figure 1. A sample panel and script from the elicited production task.

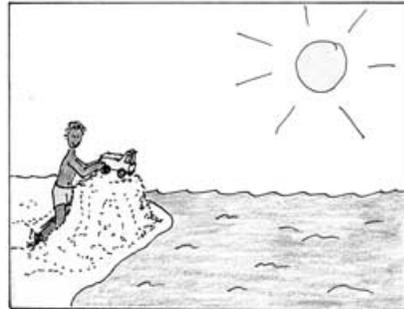
Comprehension: Sentence–picture matching task. The aim of this task was to test children's sensitivity to the presence and absence of object clitics. For this purpose, eight optionally transitive verbs were presented to the child in three different conditions: (a) with a lexical complement (lexical condition, Example 5a), (b) with an object clitic (clitic condition, Example 5b), and (c) without a complement (intransitive condition, Example 5c), making for a total of 24 test items.¹²

- | | | | | | |
|-------|---|--------------------|----------------|------------------------|------------------|
| 5. a. | Luc plonge | le camion | dans l'eau. | lexical condition | |
| | Luc plonge-3sing. | the truck | into the water | | |
| | Luc is plunging the truck into the water. | | | | |
| b. | Luc | le | plonge | dans l'eau. | clitic condition |
| | Luc | it | plunge-3sing. | into the water | |
| | Luc is plunging it into the water. | | | | |
| c. | Luc | plonge | dans l'eau. | intransitive condition | |
| | Luc | plunge/dive-3sing. | into the water | | |
| | Luc is diving into the water. | | | | |

Each test sentence was presented to the child following a two- or three-panel ministory. An example is shown in Figure 2. The children were told that we had forgotten to stick the last picture of our stories into the book, and that we now needed their help to find the right picture. When the experimenter turned to the empty page, she enunciated the target sentence with natural intonation and then presented the child with a choice of three pictures, arranged in a fictitious triangle on an A3-sized (11.7 × 16.5 in.) answer card. The child's response consisted



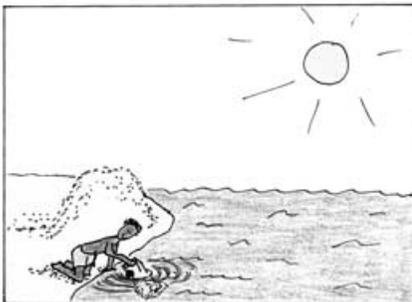
I
Voici Luc. Luc est à la plage. Il joue avec son camion dans le sable. Luc a joué près de l'eau toute la journée. Il fait très chaud.
(‘This is Luc. He is at the beach. He is playing with his truck in the sand. He has been playing near the water all day long. It is very hot.’)



II
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.’)

Figure 2. A sample story and script from the sentence–picture matching task.

A: Transitive action



B: Intransitive action

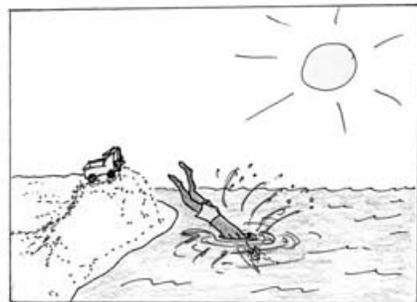


Figure 3. The choice of answers following the story in Figure 2.

of pointing to one of the three pictures. Each answer card contained a picture illustrating the transitive meaning of the verb (Figure 3, Picture A), a picture showing the intransitive meaning of the verb (Figure 3, Picture B), and a copy of the preceding picture in the story (which was no longer within the child’s view). Great care was taken to construct the stories such that a transitive and an intransitive action would be equally probable.¹³ 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. The 24 test items were divided into two blocks of 12 and arranged in semirandomized order. Each block was preceded by two practice items. The order of presentation of the two blocks was varied between children.

Predictions

Production. The principal aim of the elicited production task was to replicate earlier findings based on spontaneous production data from both L2 and SLI learners of French. It is thus expected that both groups will either omit object clitics or replace them with a lexical complement in a substantial number of object pronominalization contexts. Impaired or variable performance in the production of object clitics is predicted by all theoretical accounts of SLA as well as SLI discussed above. The two experimental groups (L2 and SLI) are therefore expected to show a similar response profile. The normally developing monolingual children in contrast, are expected to supply clitics in the majority of obligatory contexts.

Comprehension. The sentence–picture matching task was designed to test whether learners' grammars are impaired with regard to the underlying representation of object clitics. If a learner's grammar does not contain the appropriate structures or mechanisms for representing clitic constructions, s/he will be unable to parse sentences in the clitic condition (Example 5b) in the same way as an (unimpaired) native speaker. The question is, *how* will s/he interpret them in this case? The assumption made here is that if an element cannot be integrated into the syntactic representation, it will have to be deleted by logical form (the interpretive interface) in order to arrive at a convergent derivation. In other words, the learner is assumed to simply ignore the clitic, especially because the sentence is grammatical without it, albeit with a different interpretation, namely, an intransitive one (Example 5c). Thus, if there is an underlying grammatical impairment with regard to object clitics, the prediction is that learners' response patterns in the clitic and the intransitive conditions will be indistinguishable.^{14, 15} In contrast, if learners' difficulties with object clitics observed in production are due to a more peripheral deficit in the production system, the prediction is 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. On all theoretical accounts, good performance on the lexical condition (Example 5a) is expected for both L2 and SLI learners. The normally developing controls (L1) are expected to perform at or near ceiling on all conditions.

In addition to testing the hypothesis of underlying grammatical impairment for both L2 learners and children with SLI, this task will also allow for a direct comparison between the two learner groups. If the source of their developmental difficulties with object clitics is the same, they are predicted to perform identically. However, if the source of the problem is a different one for each population, the two groups are expected to perform differently.

Table 2. *Sentence–picture matching for the L1 group: Frequency of response type by condition*

Condition	Transitive Action (%)	Intransitive Action (%)	Previous Picture
Lexical	89.6 CR	8.3	2.1
Clitic	87.5 CR	8.3	4.2
Intransitive	18.8	80.2 CR	1.0

Note: CR, correct response.

Results

Elicited production. Responses were coded as four basic types: (a) clitic supplied (clitic),¹⁶ (b) lexical complement, (c) object omitted (omission), or (d) other.¹⁷ The results from all three groups are presented in Figure 4.

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 was carried out. The effect of group was significant, $F(2, 22) = 18.40$, $p < .001$. The effect of context was marginally significant, $F(11, 242) = 1.97$, $p = .0318$, whereas the interaction between the two effects was not significant, $F(22, 242) = 0.94$, $p = .5405$.¹⁸ Tukey pairwise comparisons between groups indicated significant differences between the L1 and the L2 groups and the L1 and the SLI groups, but not the L2 and the SLI groups.

As expected, the L1 group supplied clitics in the majority of contexts, with omissions occurring rather rarely (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. The SLI group produced substantially fewer clitics (7.46%) than the L2 group (24.39%), yet this difference did not reach statistical significance.¹⁹ The frequency of lexical complements is also almost equal in the two groups, which results in overall highly similar error profiles for the two experimental groups.

Sentence–picture matching task. The results from the sentence–picture matching task are summarized in Tables 2–4.

In a 2-way Group \times Condition ANOVA with number of “transitive action” responses as the dependent variable, the effect of group was not significant, $F(2, 22) = 1.28$, $p = .2977$. The effect of condition was significant, $F(2, 44) = 138.80$, $p < .0001$, as was the interaction between group and condition at the $\alpha = .05$ level, $F(4, 44) = 2.90$, $p = .0324$.²⁰ Subsequent pairwise comparisons using the Tukey honestly significant difference procedure were performed. There were no significant differences between the three groups for any of the conditions. (Within group comparisons will be addressed below.) Furthermore, a two-way Test

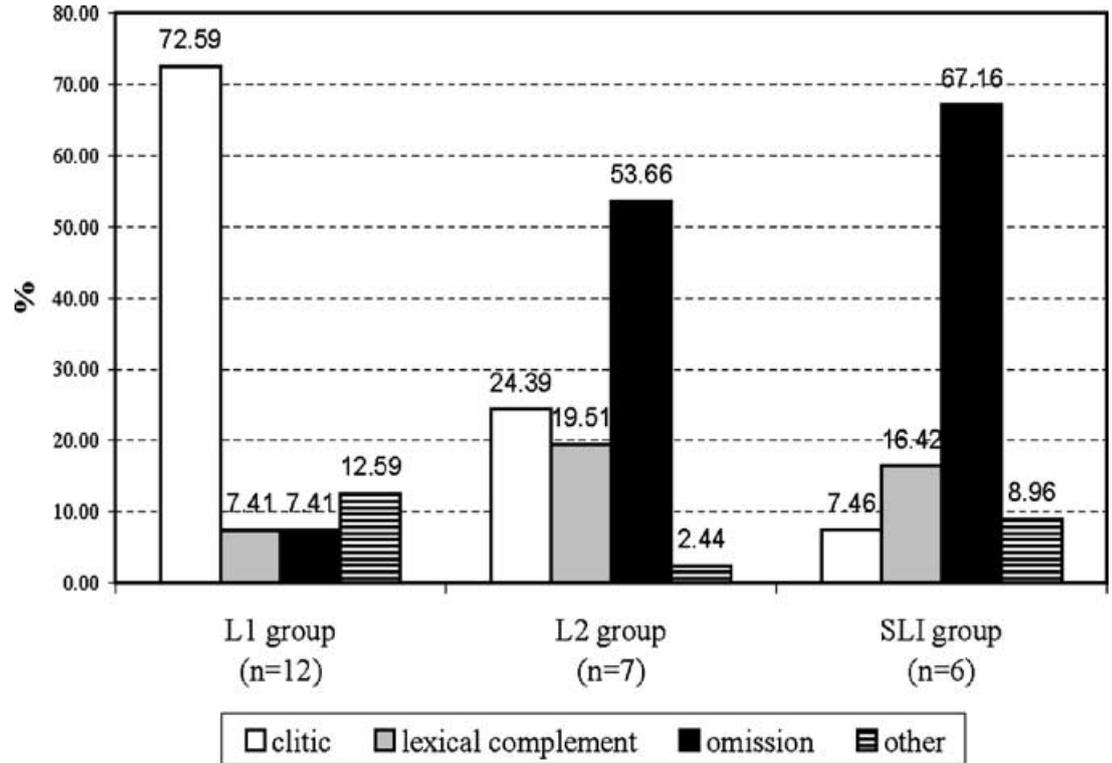


Figure 4. Frequency of response type in object pronominalization contexts in elicited production.

Table 3. *Sentence–picture matching for the SLI group: Frequency of response type by condition*

Condition	Transitive Action (%)	Intransitive Action (%)	Previous Picture
Lexical	100.0 CR	0.0	0.0
Clitic	75.0 CR	22.9	2.1
Intransitive	22.9	75.0 CR	2.1

Note: CR, correct response.

Table 4. *Sentence–picture matching for the L2 group: Frequency of response type by condition*

Condition	Transitive Action (%)	Intransitive Action (%)	Previous Picture
Lexical	96.4 CR	3.6	0.0
Clitic	64.3 CR	32.1	3.6
Intransitive	23.2	75.0 CR	1.8

Note: CR, correct response.

Condition \times Order of Presentation ANOVA was performed to test for a potential effect of order of presentation. This effect was not significant, $F(1, 23) = 0.04$, $p = .8468$.

The preceding picture in the story (“previous picture”) was chosen in only 2% of cases overall, demonstrating that participants in all groups were paying attention to the task and not selecting randomly among the three choices presented on the answer card. All groups performed at ceiling in the lexical condition. From this we may conclude that semantic and selectional properties of the verbs used in the task were not problematic for any participant group. All three groups reached high overall accuracy scores (L1 = 85.8%, L2 = 78.6%, SLI = 83.3%) similar to those obtained in previous, related studies (Jakubowicz et al., 1998; Chillier et al., 2001; see above). There were no statistically significant differences between groups. Thus it seems that not only did all three groups perform well on this task, but they performed *equally* well.

The L1 group performed with over 80% accuracy in all three conditions. The expectation that this group would perform at or near ceiling on all conditions is thus confirmed.

The SLI group performed with at least 75% accuracy in all three conditions. Crucially, the pairwise comparison between (number of transitive-action responses in) the clitic and the intransitive conditions was significant. This result indicates that as a group, the children with SLI are capable of distinguishing between sentences that differ minimally by the presence or absence of an object clitic. As argued above, the clitic must be parsed and represented in order to achieve

Table 5. L2 group individual results

	Production Score	Comprehension Score
E1	1	11
E2	0	8
E3	6	14
E4	3	12
E5	10	14
E6	0	10
E7	0	9

Note: Production score, number of clitics produced in target contexts (out of 12); comprehension score, number of correct responses in the clitic and intransitive conditions (out of 16).

this distinction. The group result therefore suggests that the children with SLI tested here are indeed capable of parsing and representing object clitics, providing evidence against an underlying impairment in this area of the grammar.

The L2 group reached 75% accuracy in the intransitive condition, and 64% accuracy in the clitic condition. Although the accuracy rate in the clitic condition is not sufficiently high to exclude guessing if we look at the clitic condition alone, the pairwise comparison between (number of transitive-action responses in) the clitic and the intransitive conditions reached significance, despite the relatively low number of items and participants. This indicates, as in the case of the SLI group, that the L2 learners as a group are capable of distinguishing between sentences that differ minimally by the presence or absence of an object clitic. Consequently, these learners too must be able to parse and represent the clitic, which suggests that this part of their L2 grammar is unlikely to be affected by an underlying deficit.

Looking at these group results alone, one might be tempted to conclude (a) that both children with SLI and L2 learners have good comprehension of clitics, providing evidence against an underlying representational deficit, and (b) that the two groups performed identically, thus the similarity of their error profiles extends to the domain of comprehension. However, I believe both of these conclusions are premature, as a closer look at individual performances will show. Because of the limited sample sizes in this study, analyses of individual results must remain tentative. Nevertheless, I believe that such analyses are crucial, not only for revealing potentially interesting patterns, but also for preventing premature conclusions from group results, such as those above.

In both the L2 and the SLI groups, considerable individual variation can be observed, as illustrated in Tables 5 and 6, respectively. 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). Interestingly, it is precisely the same subgroup who also performed rather poorly on the sentence–picture matching task (that is, with more than 5% probability of guessing, which equals a score of <math><12/16</math>).²¹ On the other hand, those children who produced

Table 6. *SLI group individual results*

	Production Score	Comprehension Score
SLI1	0	11
SLI2	0	8
SLI3	0	12
SLI4	4	15
SLI5	0	13
SLI6	1	13

Note: Production score, number of clitics produced in target contexts (out of 12); comprehension score, number of correct responses in the clitic and intransitive conditions (out of 16).

several clitics (E3, E4, E5) also performed well (less than 5% chance of guessing) on the comprehension task.²² 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).

What is interesting about the bipartition of the L2 group is that it does not seem to apply to the SLI group. Both profiles observed in the L2 group also appear in the SLI group: one child (SLI4) produced several clitics and did very well on the comprehension task, patterning with the first subgroup of L2 learners, whereas two children (SLI1, SLI2) produced no clitics and performed poorly on the comprehension task, patterning with the second L2 subgroup. However, the three remaining children in the SLI group (SLI3, SLI5, SLI6) present a profile not observed among the L2 learners: 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 at all.

Discussion

The group results obtained on the elicited production task show a low rate of clitic suppliance by both L2 learners (24.39%) and children with SLI (7.46%), replicating earlier findings from spontaneous and elicited production reported in Paradis and Crago (2003) and Paradis (2004). Contrary to the findings in these previous studies, however, the present study found no difference between the two groups in the rate of lexical complements substituted for clitics (L2 = 19.51%, SLI = 16.42%). The suggestion that L2 learners, but not children with SLI, use lexical complements as a compensatory strategy is thus not confirmed (cf. Paradis, 2004; White, 1996). The results obtained here indicate that the production of object clitics is clearly deficient in both the L2 and the SLI groups. These results are in accordance with the predictions of all developmental accounts of SLA and SLI discussed here.

The group results obtained on the sentence–picture matching task suggest that both L2 learners and children with SLI have good comprehension of object clitics. In other words, they appear to be able to distinguish between (the interpretation of) sentences that differ minimally by the presence or absence of an object clitic. As argued above, this could be taken as evidence against theories of both SLA and SLI positing a representational deficit in the grammars of L2 learners and children with SLI, respectively. Furthermore, the group results from the comprehension task revealed no differences between the L2 and the SLI groups. Thus, at this point, it appears that the hypothesis of a developmental problem common to the two learner groups could still be maintained, yet only if this problem was located outside the grammar proper.²³

However, a closer look at individual results presented a more diverse picture, suggesting that distinctions between the two learner groups begin to emerge at the level of individual patterns of performance. It seems that in the L2 group, there is a correlation between results in the production and the comprehension tasks, with L2 learners performing well either in both modalities or in neither. These two sub-groups could simply represent two consecutive stages in the acquisition of clitics: stage 1, representation of clitics not (yet) acquired, and stage 2, representation of clitics acquired. Stage 1, in this case, would conform to the predictions made by grammatical impairment theories. Indeed, it seems that the representation of object clitics in the L2 grammars of these learners is not targetlike at this stage. This observation can be explained within a “full transfer/full access” account of SLA, which holds that the initial state L2 grammar is essentially a blueprint of the learner’s L1 grammar (Schwartz & Sprouse, 1994, 1996). In the case of English-speaking learners, this transferred grammar will not contain any representations of clitics, as they are not part of the grammar of English. At Stage 2, however, the predictions of grammatical impairment theories are no longer borne out, as these learners perform well on the comprehension task, despite variable performance in production. Thus the results obtained here suggest that a representational deficit, at least with regard to object clitics, cannot be a permanent characteristic of L2 grammars. Whereas target-like representations may not be initially available as a result of full transfer, such representations appear to be acquirable in the course of L2 development, as indicated by some L2 learners’ good performance on the comprehension task in this study.

Unlike in the L2 group, there appears to be no correlation between performance in production and comprehension in the SLI group. Whereas some children with SLI performed like L2 learners at Stages 1 or 2, some showed an error profile not found in the L2 group at all: no clitics in production, yet good comprehension. 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. The observed error pattern, in particular the good performance in comprehension, points to a source of the problem outside the grammar proper. However, I am unaware of any current developmental theory predicting this precise pattern of behavior. Clearly, more data are required to substantiate these tentative observations before they can be further discussed. Moreover, even the very limited data available here illustrate that group results alone cannot reveal the full range of facts and may even blur the overall picture.

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 would extend to comprehension and whether accounts positing a representational deficit in the underlying grammar of either of these learner groups could be maintained. At the level of group results, the similarity of error profiles was indeed found to extend to the domain of comprehension, with both groups performing well on the comprehension task, despite poor or variable performance in production. However, a closer look at individual results revealed a more diverse picture, suggesting that distinctions between the two learner groups begin to emerge at the level of individual patterns of performance. It seems that in the L2 group, there is a correlation between results in the production and the comprehension task, whereas 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. If future research on larger samples can replicate this particular profile, this would indicate that the error profiles of the two learner groups are not identical; thus, difficulties encountered by L2 learners and children with SLI are unlikely to be captured by the same developmental theory.

The good performance of both learner groups on the comprehension task initially appeared to indicate that a representational deficit cannot be maintained for L2 learners or children with SLI. The variation revealed by the individual data, however, forced us to reconsider this conclusion. In the case of L2 learners, it was found that the subgroup performing poorly on both tasks did indeed conform to the predictions of grammatical impairment theories. This performance can be accounted for under the full transfer/full access hypothesis of SLA, whereby L2 learners initially transfer the representations of their L1 into the L2. In the case of English-speaking learners of French, such as those studied here, these initial representations will not contain clitic constructions, as they are not part of the L1 grammar. The good performance on comprehension by the other subgroup, however, indicates that such constructions can be acquired in the course of L2 development. Thus, a representational deficit is unlikely to be a permanent characteristic of L2 grammars.

In the case of SLI, the question of a representational deficit cannot be answered conclusively by the data obtained here. Four of the six children in this group performed well on the comprehension task, which, by the rationale adopted here, constitutes counterevidence to grammatical impairment theories. The remaining two children, however, performed poorly on both production and comprehension, in accordance with the predictions of such accounts. Clearly, the SLI group in this study is a heterogeneous one. It therefore remains possible that a subgroup of children diagnosed with SLI does indeed have a representational deficit in their underlying grammars (cf. Bishop, Bright, James, Bishop, & van der Lely, 2000). These results indicate that to locate the specific deficit(s) postulated in SLI, it is crucial to consider individual performances in addition to group results. Moreover, the findings of the present study suggest that individual analyses are imperative for future work on the comparison between L2 and SLI, as differences between the two populations appear at precisely this level.

APPENDIX A

Scores and percentile ranks of children in the SLI group on standardized tests of verbal and nonverbal abilities

Child	Age	IQ		Percentile Rank		
		Nonverbal	Verbal	TACL-R Part 2	ÉVIP	EOWPVT
SLI1	8;8	102	63	<1	10	10
SLI2 ^a	8;1	NA	NA	3	NA	<1
SLI3	8;1	81 ^b	74	2	11	2
SLI4	8;4	80–90 ^c	<70	<2	2	12
SLI5	6;6	84 ^b	57	6	37	36
SLI6	9;2	91 ^c	81	NA ^d	NA	<1

Note: Scores were supplied by the speech language pathologist and/or the school psychologist. French version of the Test for Auditory Comprehension of Language—Revised (TACL-R; Épreuve de Compréhension de Carrow–Woolfolk, Carrow–Woolfolk, 1985), standardized on a French Canadian population by the Groupe Coopératif en Orthophonie Pour la Région des Laurentides, Part 2, Morphèmes grammaticaux; ÉVIP, French version of the Peabody Picture Vocabulary Test (Échelle de Vocabulaire en Image Peabody, Dunn, Thériault, & Dunn, 1993); EOWPVT, French adaptation of the Expressive One-Word Picture Vocabulary Test (Gardner, 1990).

^aAt the time of writing, SLI2 was scheduled for psychological reevaluation; no recent IQ scores were available. The SLP expressed confidence that his nonverbal scores would be within normal range.

^bAs measured on the Wechsler Preschool and Primary Scale of Intelligence—Revised (Wechsler, 1989).

^cAs measured on the Wechsler Intelligence Scale for Children—Third Edition (Wechsler, 1991).

^dSLI6 was evaluated on the French version of the Clinical Evaluation of Language Fundamentals—Revised. He ranked at the 5th percentile for *classe de mots* (word class), and below the 1st percentile for *production de phrases* (sentence production).

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NOTES

1. For the present purpose, I ignore the somewhat different facts presented by positive imperatives, which is the only context in French where clitics are enclitics rather than proclitics.
2. However, see Schwartz (1999) for a proposal that English has a partial series of morphological clitics, which would nevertheless be different from the French syntactic clitics.
3. How exactly learners are expected to perform under these grammatical impairment theories will depend to a large extent on the nature of the task and is probably best discussed in connection with each individual task. In general, even though one might predict, on theoretical grounds that absence of syntactic representation should result in complete absence of the corresponding lexical material in, for instance, production, such sharply delineated results are not expected when taking into consideration the number of potential alternative sources of such material (e.g., lexical chunks, unanalyzed repetition, metalinguistic knowledge). The only general prediction that I feel is justified under these circumstances is that there will be a significant difference between the performance of L2 learners and native speakers in both production and comprehension (provided the task correctly targets the property under investigation).
4. The prediction of impaired production and comprehension is shared *in principle* by the missing agreement hypothesis (e.g., Clahsen, 1988, 1989). Because it is not entirely clear to what extent French object clitics involve an agreement relation of the relevant kind, this account is not discussed here.
5. Thanks to an anonymous reviewer for pointing this out to me.
6. Some studies also observe a few instances of reflexive *se* where accusative *le/la* should have been used.
7. Approximate numbers are inferred from Paradis' (2004) figures 1 and 2, where no exact numbers are indicated.
8. Jakubowicz et al. (1998) take their results as "indirect evidence in support of our claim that children with SLI are selectively vulnerable to the operation of merging a pronominal argument . . . in a noncanonical argument position" (p. 153), where "merging" is explicitly interpreted in terms of the syntactic operation Merge as proposed in the minimalist program (Chomsky, 1995). This conclusion, I believe, is misguided. Merge, as used in the minimalist framework, is part of the computational module employed in *all* syntactic processing, be it production or comprehension. Thus, an impairment of Merge predicts equal problems with production and comprehension. It seems that what Jakubowicz et al. (1998) have in mind is an impairment concerning the stringing together of syntactic elements in noncanonical order *in real-time production*. This may well be the case, but it does not amount to an impairment of the syntactic operation Merge.
9. The following verbs were used in the target questions: *ouvrir* (open), *boire* (drink), *manger* (eat), *laver* (wash), *casser/briser* (break), *embrasser* (hug), *jeter* (throw out), *brosser/peigner* (brush), *couper* (cut), *donner* (give), *mettre* (put), and *fermer* (close).
10. This situation only arose in the case of L2 children. Francophone children (L1 and SLI) always provided a response spontaneously.
11. This applied to 16 out of 300 contexts overall (5.3%).
12. The 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), and *tourner* (turn).

13. This was not an easy task, and the aim of perfectly equal pragmatic probability has probably not been reached in each individual case, in particular when the frequency of a verb differed greatly between its transitive and intransitive use. To control for possible contextual biases, it would have been necessary to construct two different versions of this experiment, using each story with a transitive-action ending in one version and an intransitive-action ending in the other. Under the present circumstances, including the relatively small sample sizes, it was deemed that the negative consequences of the increased complexity in the administration of the task would outweigh the desirable effect of controlling for contextual bias. In future more comprehensive experiments, however, such counterbalancing should be considered.
14. This prediction is not shared by the UCC account (Wexler, in press). See above for discussion.
15. An anonymous reviewer points out that it would be enough for a learner to have classified the clitic as a pronominal element capable of filling an argument slot in order to arrive at the correct interpretation of sentences containing a clitic. Thus, the reviewer argues, good performance on this task could be achieved without target-like representations of clitic constructions. However, note that under this scenario, learners would have to be assumed to follow an interpretive strategy analogous to that proposed for agrammatic patients (e.g., Grodzinsky, 1995): associating DPs with argument roles by linear order, irrespective of syntactic representations. This seems an unlikely scenario, at least in the case of L2 learners. Because simply deleting the clitic will immediately lead to a convergent syntactic representation, I believe that this constitutes a more likely strategy for the populations under consideration here.
16. Because the stimuli were not controlled for gender and number, gender and number mistakes on clitics are not reported, although such errors occurred in substantial numbers in both the L2 and the SLI group. All such errors consist of the substitution of masculine *le* for feminine *la* or plural *les*.
17. Originally, two categories, *other-grammatical* and *other-ungrammatical*, were set up. As the vast majority of “other” responses in all groups were considered grammatical by both transcribers, the two categories were collapsed.
18. Because the interaction effect is not significant, the marginal significance of the effect of context can be ignored, as it will not affect between-group comparisons.
19. As an anonymous reviewer points out, the lack of a significant difference may well be due to the small number of subjects and the large variations within the groups, as shown in the individual results presented below.
20. Similar results were obtained on a three-way ANOVA with items (the eight verbs used in this task) as the error term: the effect of group was not significant, $F(2, 14) = 0.84$, $p = .452$, but both the effect of condition, $F(2, 14) = 35.22$, $p < .0001$, and the interaction effect, $F(4, 28) = 5.406$, $p = .002$, were significant.
21. Guessing here is taken to be random choice between the pictures illustrating a transitive and an intransitive action (i.e., $p = .5$ for each).
22. 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.
23. Recall that the UCC account predicts variable performance in production as well as good comprehension of clitic constructions, exactly as observed in the group results obtained here. However, as discussed above, the UCC account also predicts that

learners at the UCC stage would (sometimes) interpret sentences in the intransitive condition as transitive. This prediction was not borne out, as all groups reached high accuracy scores in the intransitive condition.

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