Third person clitic production and omission in Romance SLI

Anna Gavarró (Universitat Autònoma de Barcelona)

Abstract

Specific Language Impairment affects the process of language acquisition and has as its main manifestation in English an extended root infinitive stage. In Romance, only the non-null subject languages present root infinitives to a significant extent; the null subject languages, such as Catalan and Spanish, do not exhibit them. The same underlying mechanism responsible for root infinitives has been argued to be at the source of object clitic omission (Wexler, Gavarró and Torrens 2004, Gavarró, Torrens and Wexler 2010). Object clitic omission, just like root infinitives, is not found universally. It is found only in languages with participle agreement, like Catalan, and not in languages without it, like Spanish. Here we compare new results from SLI Catalan-speaking children with the data available on Spanish-speaking SLI children. We find a sharp contrast between the two languages: Spanish-speaking SLI children omit a small number of object clitics, while Catalan-speaking SLI children tend to omit them or alternatively produce dative clitics. The pattern of production of object clitics differs from that of clitic definite articles, homophonous with object clitics; from this we draw the conclusion that clitics do not conform a natural class in acquisition (contra Leonard’s Surface Hypothesis), for either typically developing children or children with SLI.

Specific Language Impairment is a pathology that affects language acquisition in the absence of any other impairment and in recent years has received much attention as a valuable source of information on the (innate) language faculty. In the words of Leonard (2004: 402) “Specific Language Impairment (SLI) is a term that is applied to children who show a significant deficit in their spoken language ability with no obvious accompanying problems such as hearing impairment, mental retardation or neurological damage. This type of language disorder is regarded as developmental in nature because affected children exhibit language learning problems from the outset.” Leonard estimates that SLI affects around 7% of 5-year-olds according to epidemiological data and attributes it to a genetic source, given that children with SLI are more likely than typically developing children to have parents or siblings with SLI, and that concordance rates for SLI are also higher for monozygotic twins than they are for dizygotic twins.
In this paper we corroborate the finding in the literature that clitics do not constitute a natural class in acquisition, contrary to the claims of Leonard’s (1998) Surface Hypothesis, according to which phonologically deficient elements such as clitics are all vulnerable in SLI. We undertake a comparison of SLI in the Romance languages, and argue that for some of them, but only some, the omission or deviant production of clitic pronouns may be used as an SLI marker. Furthermore, we provide an account of the phenomenon along the lines of the Extended-UCC hypothesis (Wexler 2003), according to which early child grammar presents some computational limitations (in feature checking) that extend in time in SLI children.¹

In the first section I provide the theoretical background to this study. In section 2 new results on clitic production and omission in Catalan SLI, both longitudinal and experimental, are presented; I compare the results to those on Spanish found in the literature, and propose an analysis of the findings along the lines of Wexler (2003, to appear). In section 3 the analysis proposed is shown to extend to languages other than Catalan and Spanish, and section 4 presents the conclusions.

1. Background

Rice (2003) and Rice and Wexler (1996) argued that the optional use of tense markers (third person –s, regular past tense –ed) in SLI English-speaking children is the most outstanding feature of this linguistic disruption in English. The existence of a prolonged optional infinitive stage has been substantiated for a number of other languages, namely Dutch (de Jong 1999), German (Clahsen 1989, Clahsen, Bartke, and Göllner 1997) and Swedish (Hansson and Nettelbladt 1995). The optional infinitive stage is found to have all the properties of the optional infinitive stage in typically developing (TD hereafter) children except for its timing: children with SLI tend to stay in the optional infinitive stage for an extended period (see for example the results of Wexler, Schaeffer, and Bol 2004 on child Dutch).

The claim in Wexler (1998) is that the optional infinitive stage results from the interaction of two principles, the Unique Checking Constraint (1) – a principle subject to maturation – and Minimise Violations (2). The Unique Checking Constraint states that children go through a period of grammatical development in which the derivations they license involve only one instance of feature-checking by a given DP; young children,

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¹ Earlier versions of this paper were presented at the 37th Linguistic Symposium on Romance Languages in Pittsburgh, the Colloquium of Generative Grammar in Girona and the COST IS0804 2010 Meeting in Athens. The author wishes to acknowledge two anonymous reviewers and the editors for their comments on a previous version of the paper, the financial support provided by project HUM2006–13295–C02–01, and the help of Anna Tàpias, who acted as experimenter in the experiment reported in section 2.1. I am also greatly indebted to the subjects who took part in the experiments reported.
therefore, have immature grammars which constrain their computational capacities. Minimise Violations, on the other hand, holds for all grammars, adult and child, and guarantees that of two alternative derivations the one that violates fewer grammatical principles (optimally none) will be the one selected by the speaker.

(1) Unique Checking Constraint (on children in Optional Infinitive stage)
The D-feature of DP can only check against one functional category.

(2) Minimise Violations
Given an LF, choose a numeration the derivation of which violates as few grammatical properties as possible. If two numerations are both minimal violators, either one may be chosen.

Following Wexler (to appear) SLI children only differ from TD children in a slower maturation out of the stage at which the UCC is operative.

It is well known that the optional infinitive stage is of negligible incidence in null subject languages such as Italian and Spanish (Rizzi 1993/94, Torrens 1995 a.o.), a fact that can be accounted for given the properties of the verbal inflection in those languages (in standard analyses of Italian, Spanish and all null subject languages, agreement is an interpretable feature and does not need to be checked out, therefore no double checking is required).2 Given this general perspective, what are our expectations for SLI in Romance?

We do not expect tense marking to be substantially impaired in the Romance null subject languages even in SLI, given the absence of widespread root infinitives in TD children. This is in fact what has been found for one of the Romance languages investigated, Italian (see Leonard, Sabbadini, Leonard, and Volterra 1987, Leonard, Bortolini, Caselli, McGregor, and Sabbadini 1992, Bottari, Cipriani, Chilosi, and Pfanner 1998, Leonard and Bortolini 1998). Bottari, Cipriani, and Chilosi (1996) report no root infinitives at all in 20 out of 27 Italian SLI children, and a very low percentage in the remaining seven. For a Romance language which is non-null-subject, such as French, the prediction of the UCC is that problems with the expression of finiteness should be found

2 Some authors argue that a form analogous to the root infinitive is indeed to be found in the Romance null subject languages: a form identified variously as the infinitive (Buesa 2007), the imperative (Salustri and Hyams 2003) or a bare form homophonous with the third person singular (Pratt and Grinstead 2007 and authors cited therein). The lack of unanimity in identifying such root analogue is in itself indicative that the phenomenon is at best much weaker than what is found in the non-null subject languages. Most of the work arguing for an optional infinite stage in the null subject languages is based on the analysis of spontaneous production; those having studied it experimentally have found its incidence to be very low (5% in Davidiak and Grinstead 2004’s study of child Spanish).
In SLI children – a prediction that is borne out, as shown in Hamann, Cronel-Ohayon, Dubé, Frauenfelder, Rizzi, Starke, and Zesiger (2003).

In the search for other markers of SLI in Romance, Jakubowicz, Nash, Rigaut, and Gérard (1998) found a high incidence of object clitic omission in French SLI. This parallels object clitic omission in TD children, but lasts for a much longer period. In contexts requiring a clitic (because the referent of a DP is old, known information, with a close linguistic antecedent), children produce either a full DP (3) or omit the clitic (4), although they may also produce a target-like sentence with a clitic (5). (Examples (3) and (4) are taken from Jakubowicz and Nash, to appear.)

(3)  *Il met son tee-shirt.*  (Jér, SLI3b, 7;3)

he puts-on his tee-shirt
(targ: *Il le met* ‘He puts it on’)

(4)  *Elle gratte.*  (Ben, SLI3b, 5;6)

she scratches
(targ: *Elle la gratte* ‘She scratches it’)

(5)  *Il le cache.*

he it hides
‘He hides it.’

The percentage of each of the options in (3–5) for the populations of TD and SLI children in French is presented in Table 1, reworked from Jakubowicz and Nash (to appear). The group of children in Table 1 correspond to different age groups (TD three- and four-year-olds; SL1 children in group SLI1 are the oldest, mean age: 9;8, and least impaired; group SLI3 is the youngest, mean age: 6;10, and most impaired; SLI2 is in between the two for age (mean age: 8;2) and severity of impairment).
Table 1: Percentage of response types produced in accusative clitic contexts, French

<table>
<thead>
<tr>
<th>Subject group</th>
<th>Clitic omission</th>
<th>Full DP</th>
<th>Other DP</th>
<th>Reflexive clitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD 3-y-o</td>
<td>15.7%</td>
<td>19.7%</td>
<td>17%</td>
<td>5%</td>
</tr>
<tr>
<td>TD 4-y-o</td>
<td>4.3%</td>
<td>9.7%</td>
<td>5%</td>
<td>1.7%</td>
</tr>
<tr>
<td>SLI3a</td>
<td>8%</td>
<td>66.4%</td>
<td>8%</td>
<td>16.8%</td>
</tr>
<tr>
<td>SLI3b</td>
<td>20.6%</td>
<td>29.1%</td>
<td>15.4%</td>
<td>21.7%</td>
</tr>
<tr>
<td>SLI2</td>
<td>14.8%</td>
<td>37.6%</td>
<td>11.6%</td>
<td>14%</td>
</tr>
<tr>
<td>SLI1</td>
<td>4.7%</td>
<td>27.3%</td>
<td>8.7%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

As we can see, apart from the response types exemplified above, children produced other transitive structures or an inappropriate reflexive clitic.

Note that French has a property shared by some, but not all Romance languages: when a third person clitic occurs, if the verb is in a perfect tense the participle agrees with the object:

(6) a. Jean a ouvert la fenêtre.
    Jean has opened the-fem window(fem)
    ‘Jean has opened the window.’

b. Jean l’a ouverte.
    Jean CL has opened-fem
    ‘Jean has opened it.’

The analysis proposed by Wexler (to appear), Wexler, Gavarró, and Torrens (2004) and Gavarró, Torrens, and Wexler (2010) capitalises on this property of French cliticisation, and treats object clitic omission in child French as the result of the operation of the UCC in conjunction with Minimise Violations. Here we briefly sketch the analysis proposed.

Let us assume along the lines of Sportiche (1996) that a sentence with an object clitic presents a null DP object in canonical position that must be raised to Spec, CP, to check an uninterpretable feature of Cl, so that the derivation may converge at the interface. In addition, in a participle-agreement language another uninterpretable feature must be deleted in vP – the feature which gives rise to participle agreement. The configuration is represented in (7):
Therefore, while two uninterpretable features must be deleted in a participle-agreement language (e.g. French), only one feature must be deleted in a non-participle-agreement language. The UCC only visibly affects the first set of languages, not the second; this prediction of the hypothesis is borne out for Catalan and Spanish, as shown in Wexler, Gavarró, and Torrens 2004; compare the rate of object clitic omission for TD children in these two languages.

Some authors have challenged this view, and contended that child Spanish presents clitic omission (see, for example, Fujino and Sano 2002, Castilla, Pérez-Leroux, and Eriks-Brophy 2008 and Castilla and Pérez-Leroux 2010) . We have argued that this conclusion stems from a combination of factors: the experimental method used to elicit clitics, the recount procedure and, most importantly, the fact that the varieties of Spanish investigated allow null objects (for a detailed review, see Gavarró et al. 2010).
Table 2: Production of third person clitics, Catalan and Spanish TD children

<table>
<thead>
<tr>
<th></th>
<th>Clitic</th>
<th>Clitic omission</th>
<th>Full DP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Catalan, present tense</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 year olds</td>
<td>22.6%</td>
<td>74.2%</td>
<td>3.2%</td>
</tr>
<tr>
<td>3 year olds</td>
<td>68.2%</td>
<td>25%</td>
<td>6.8%</td>
</tr>
<tr>
<td>4-5 year olds</td>
<td>95.7%</td>
<td>4.2%</td>
<td>0</td>
</tr>
<tr>
<td><strong>Spanish, present tense</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 year-olds</td>
<td>100%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3 year-olds</td>
<td>97.5%</td>
<td>2.5%</td>
<td>0</td>
</tr>
<tr>
<td>4 year-olds</td>
<td>100%</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

In this approach, object clitic omission is predicted for the Romance languages with participle agreement (such as French and Catalan, already illustrated, but also Italian), but not for Romance languages without participle agreement (e.g. Spanish and Romanian). There are nevertheless some differences between Catalan, French and Italian with respect to participle agreement: in many Catalan varieties (those tested by Wexler, Gavarró and Torrens 2004, Gavarró et al. 2010) participle agreement is optional, as shown in (8).

(8) *El pare ha obert les finestres. Les ha obert/obertes.*

the father has opened the windows CL-fem-pl has opened/opened-fem-pl

In some varieties of French, participle agreement is apparently also becoming optional; in all varieties agreement is only audible with some verbs (e.g. *ouvrir* ‘open’, where *ouvert* ‘open’ and *ouverte* ‘open-fem’ are pronounced differently) but not with many others (e.g. *voir* ‘see’, where *vu* ‘seen’ and *vue* ‘seen-fem’ are homophonous). In Italian, participle agreement is both obligatory with third person clitics and always phonologically overt, so that it is more robust than in French and most varieties of Catalan. However, these differences seem to be immaterial in acquisition, and we assume that the underlying mechanisms of participle agreement and cliticisation remain the same for the three languages under scrutiny in spite of superficial differences. In Gavarró et al. (2010) we show in detail how the predictions of the UCC are borne out, even beyond Romance, for the acquisition of pronominal clitics and participle agreement in typically developing children.

Turning now to the broad issue of clitics, in Catalan, Spanish, and many other Romance languages, third person pronominal clitics are homophonous with definite articles. For TD children, Guasti, de Lange, Gavarró, and Caprin (2004) and Guasti, Gavarró, de Lange, and Caprin (2008) have shown that articles develop very early in the
Romance languages (as opposed to Germanic languages). Compare the rates of determiner omission for Catalan, Italian and Dutch at three developmental stages:

<table>
<thead>
<tr>
<th>Table 3: Mean percent omission of articles in different periods of linguistic development in utterances with verbs (from Guasti et al. 2004), TD children</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Catalan</td>
</tr>
<tr>
<td>Italian</td>
</tr>
<tr>
<td>Dutch</td>
</tr>
</tbody>
</table>

Determiner omission is very high in the first stage for Catalan and Italian, but significantly higher in Dutch; the contrast between Catalan and Italian on the one hand and Dutch on the other remains in stages 2 and 3. The different patterns of development of articles are attributed by Chierchia, Guasti, and Gualmini (1999) and Guasti et al. (2008) to the setting of the parameter which determines the realisation of arguments as NPs or DPs in a language (Chierchia’s so called Nominal Mapping Parameter). To the extent that Catalan and Spanish belong to the same language class, that of the Romance setting of the Nominal Mapping Parameter, we would not expect any contrast between Catalan and Spanish regarding determiner production, in either SLI or TD children. Moreover, were SLI only to affect the maturation out of the UCC-stage, we would not expect SLI children to develop DP any later than TD children. In contrast, Leonard’s (1998) Surface Hypothesis states that SLI children have difficulty with elements of scarce phonetic saliency, such as clitics; if this hypothesis was correct, the prediction would be that homophonous determiners and pronominal clitics would show the same behaviour in children with SLI.

Given this background, in the next section I address the following questions: (i) Are clitics, due to their phonological properties, singled out in SLI as a class? And (ii) Is the deficit attested in third person pronominal clitics in SLI universal, or is it subject to cross-linguistic variation, as it is in TD children?
2. **Catalan and Spanish, a point of comparison**

As in Wexler, Gavarró, and Torrens (2004) and Gavarró et al. (2010) I take Catalan and Spanish as a term of comparison, given a crucial difference between the grammars of these two languages, namely the presence/absence of participle agreement.

2.1. Some new results on Catalan

Here I present some new data from Catalan that correspond to the spontaneous productions of the only two Catalan-speaking children with SLI available in the CHILDES database (MacWhinney and Snow 1985). These children were selected after an initial screening of 2000 three-year-olds in state schools (through the school support units CREDA); the children initially selected for language specific problems were administered tests for audition, intelligence (WPPSI), and a protocol for the detection of SLI. Details of the recordings of the two children appear in Table 4.

<table>
<thead>
<tr>
<th></th>
<th>Data source for Catalan spontaneous production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age in months</td>
</tr>
<tr>
<td>J, transcript 1</td>
<td>45</td>
</tr>
<tr>
<td>J, transcript 2</td>
<td>57</td>
</tr>
<tr>
<td>A, transcript 1</td>
<td>43</td>
</tr>
<tr>
<td>A, transcript 2</td>
<td>58</td>
</tr>
</tbody>
</table>

The transcripts of the Catalan-speaking children were analysed for the presence/absence of (i) root infinitives, (ii) determiners and (iii) object clitics. As is standard, immediate repetitions of adults were discarded, and repetitions of the same sentences by the child himself were computed only once.

In the analysis of the verbal productions of our two SLI Catalan-speaking children, only seven (1.25%) cases of root infinitive were found, out of a total of 556 verbal productions. Given that Catalan is a null subject language, this falls out from the predictions of the UCC.

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4 I am grateful to Mònica Sanz, of the Departament de Psicologia Bàsica, Universitat de Barcelona, for providing information on the selection procedure of the children in the CHILDES database, recorded by the team of Miquel Serra at the Universitat de Barcelona. The database does not include any Catalan-speaking child with SLI other than the ones in this paper; the remaining SLI children are all native speakers of Spanish.
In relation to direct object clitics, we find on average an omission rate of 66.6%, even though there are relatively few clitic contexts by which to evaluate clitic production/omission. Pronominal clitics do not reach levels above 28.6–35.7% in the second transcript even though the children were respectively 4;9 and 4;10 years old at the time of the recordings; this sharply contrasts with the behaviour of TD children, who produce 95.7% of pronominal clitics for the group of 4 to 5 year-olds, as shown above.

The full inventory of definite articles in Catalan is (e)l, la, els, les, for masculine singular, feminine singular, masculine plural and feminine plural respectively (recall that they are homophonous with object clitics). As shown in Table 5 article production appears to be delayed in the first transcript, but by the second transcript J and A are omitting very few definite articles (3.6% by J, 9.3% by A). Although no statistical analysis of these data is possible due to the few data points available, there is a clear contrast between the production of pronominal clitics and the production of definite articles.

Given the scarcity of spontaneous production data for Catalan SLI, compounded with the problems associated with the analysis of spontaneous production, we ran an elicitation experiment with five SLI children: P and C, both aged 5, N, aged 9, S, aged 12 and Y, aged 15. They were attending a speech therapist’s consultancy and had been diagnosed with SLI by standard practice. The elicitation test used was designed in the context of COST Action A33 (Varlokosta et al. in preparation); the children were asked to complete a sentence by the method exemplified in (9):

\[(9)\quad \text{La nena renta la girafa i la girafa està neta. Com és que la girafa està neta? La girafa està neta perquè la nena…} \]

the girl washes the giraffe and the giraffe is clean now. Why is the giraffe clean? The giraffe is clean because the girl…

Expected response: \textit{La renta.} cl-fem washes ‘washes it.'
Each child was tested on 12 experimental items (see the appendix for the full list) plus fillers. Following the procedure of COST A33, twenty TD children were tested for Catalan (mean age: 65 months; age range: 61–70). Here we report the results for Catalan TD children (Table 6) as a point of reference for the new SLI results (Table 7):

**Table 6**: Results of elicitation for Catalan, TD children

<table>
<thead>
<tr>
<th>Target clitic</th>
<th>Omission</th>
<th>Dative cl</th>
<th>Full DP</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-year-olds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>206/240</td>
<td>0</td>
<td>31/240</td>
<td>1/240</td>
<td>2/240</td>
</tr>
<tr>
<td>85.8%</td>
<td>12.9%</td>
<td>0.4%</td>
<td>0.8%</td>
<td></td>
</tr>
</tbody>
</table>

**Table 7**: Results of elicitation for Catalan, SLI children

<table>
<thead>
<tr>
<th>Target clitic</th>
<th>Omission</th>
<th>Dative cl</th>
<th>Full DP</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>P (age 5)</td>
<td>3/12</td>
<td>8/12</td>
<td>1/12</td>
<td></td>
</tr>
<tr>
<td>C (age 5)</td>
<td>3/12</td>
<td>8/12</td>
<td>1/12</td>
<td></td>
</tr>
<tr>
<td>N (age 9)</td>
<td>5/12</td>
<td>7/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S (age 12)</td>
<td>11/12</td>
<td></td>
<td>1/12</td>
<td></td>
</tr>
<tr>
<td>Y (age 15)</td>
<td>1/12</td>
<td>10/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>23/60</td>
<td>33/60 (55%)</td>
<td>2/60 (3.3%)</td>
<td>2/60 (3.3%)</td>
</tr>
<tr>
<td>(38.3%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The SLI children tested were all older than the ones in the CHILDES database, with two only slightly older and the remaining three older by five years or more. With the exception of S, all of them behaved differently from the TD children whose results have been presented so far: although the participants did not omit third person object clitics, they did not exhibit a target-like behaviour given that they produced many *li* dative clitics. This answer type is exemplified in (10):

(10) ... perquè *la mare li pentina*.  
because the mother cl-DAT combs  
‘because the mother combs his/her hair.’
2.2. Previous results on Spanish

If we turn to Spanish, de la Mora (2004) carried out various elicitation tasks with ten Mexican Spanish-speaking children, together with ten age-matched and ten MLU-matched children, all from Mexico, DF. Age and MLU of the SLI children appear in Table 8:

*Table 8: Data source for Spanish*

<table>
<thead>
<tr>
<th>Child</th>
<th>Age in months</th>
<th>MLU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDH</td>
<td>66</td>
<td>3.6</td>
</tr>
<tr>
<td>MEDF</td>
<td>63</td>
<td>3.5</td>
</tr>
<tr>
<td>MEET</td>
<td>74</td>
<td>2.3</td>
</tr>
<tr>
<td>FELB</td>
<td>73</td>
<td>2.5</td>
</tr>
<tr>
<td>FELG</td>
<td>69</td>
<td>2.9</td>
</tr>
<tr>
<td>MERC</td>
<td>60</td>
<td>2.8</td>
</tr>
<tr>
<td>MEJC</td>
<td>51</td>
<td>1.8</td>
</tr>
<tr>
<td>MEJH</td>
<td>73</td>
<td>3.2</td>
</tr>
<tr>
<td>FEPS</td>
<td>47</td>
<td>2.7</td>
</tr>
<tr>
<td>FEAC</td>
<td>59</td>
<td>3.2</td>
</tr>
</tbody>
</table>

De la Mora (2004) provides results on object clitics for two contexts, spontaneous production (in an experimental setting) and ‘prompted response’:

*Table 9: Percentage of object clitic production, Spanish, SLI children*

<table>
<thead>
<tr>
<th></th>
<th>Target-like clitic prod.</th>
<th>Unmatched clitic prod.</th>
<th>Clitic omission</th>
<th>Full DP</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spontaneous production</strong></td>
<td>157 (37%)</td>
<td>68 (9%)</td>
<td>39 (9%)</td>
<td>150 (36%)</td>
<td>6 (2%)</td>
</tr>
<tr>
<td><strong>Prompted response</strong></td>
<td>191 (45%)</td>
<td>72 (17%)</td>
<td>34 (8%)</td>
<td>120 (29%)</td>
<td>3 (0.7%)</td>
</tr>
</tbody>
</table>
Object clitic omission ranges between 8% and 9%; this contrasts with the result found for Catalan. The overall accuracy in the production of object clitics is, according to de la Mora (2004), only 45% in the prompted response condition, but her error category includes all errors (and reflects not only omission but mostly errors involving gender and number, on which we have nothing to say\(^5\)); if we focus on omission, Spanish SLI cannot be characterised by the omission of object clitics. Nor is there evidence of inappropriate dative or reflexive clitics. It is worth pointing out that de la Mora’s tasks give rise to a high number of full DPs in contexts in which they would appear not to be felicitous; we do not have an explanation for that, but in her results large numbers of full DP were also produced by the age- and MLU-matched children, so it is not a feature that characterises SLI; in the results for Spanish TD children in Wexler, Gavarró, and Torrens (2004) no full DPs were produced by the Spanish-speaking children, and only a marginal number were produced by the Catalan-speaking ones – so the reason for the considerable number of full DP in child Mexican Spanish may relate to the experimental design and procedure.

De la Mora (2004) also quantifies the production of the definite articles *la*, *los* and *las*, as shown in Table 10.

Table 10: Percentage of target-like production of definite articles, Spanish, SLI children and controls

<table>
<thead>
<tr>
<th>Group</th>
<th><em>la</em></th>
<th><em>los</em></th>
<th><em>las</em></th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLI</td>
<td>91.49% (43/47)</td>
<td>72.73% (8/11)</td>
<td>87.5% (7/8)</td>
<td>85% (56/66)</td>
</tr>
<tr>
<td>MLU</td>
<td>100% (54/54)</td>
<td>100% (42/42)</td>
<td>100% (10/10)</td>
<td>100% (106/106)</td>
</tr>
<tr>
<td>AGE</td>
<td>98.61% (71/72)</td>
<td>93.75% (30/32)</td>
<td>91.67% (22/24)</td>
<td>96% (123/128)</td>
</tr>
</tbody>
</table>

Overall, accuracy in the production of definite articles is 85% for the children with SLI, a rate which is slightly different for age- and MLU matched children (since they produce target-like forms in 96% and 99% of cases respectively). In this respect, there seems to be no contrast between Catalan (with a production rate of 84%) and Spanish SLI. In fact, the Catalan-speaking SLI children produce articles very consistently after MLU 1.5, and the results by de la Mora also indicate relatively little difference between SLI and TD children.

Previous work on object clitics in SLI in Spanish provides results similar to those yielded by de la Mora (2004). Former work by Serra Raventós and Bosch Galceran (1993) based on spontaneous production does not provide details of the errors produced by five Spanish-speaking children with SLI (ages 6;8 to 8;1), but indicates that “errors with pronouns were less frequent than expected” and “consisted of omission.

\(^5\) But see Grinstead, Cantú-Sánchez, and Flores-Ávalos (2008) for an analysis of the errors in nominal number morphology in Spanish SLI.
inappropriate use, some errors in agreement and doubling” – note that pronouns in that study included clitics other than third person object clitics (while in this paper we restrict ourselves, as in most of the literature, to third person); interestingly, there was no statistically significant difference between the children with SLI and their controls in clitic production.

Bedore and Leonard (2001) report an experimental study of fifteen Mexican Spanish-speaking children aged between 3;11 and 5;6, with a mean MLU of 2.88 (MLU range: 2.46–3.62); these children were tested together with age- and MLU-matched children. The results for object clitic production are shown in Table 11. (The fact that a relatively high number of non-responses were produced is due to the elicitation procedure, in which the children were asked a rather open question.)

**Table 11:** Object clitic responses (target in bold), Spanish SLI children and controls

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Masc. sg.</td>
<td>41</td>
<td>5</td>
<td>31</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Fem. sg.</td>
<td>21</td>
<td>55</td>
<td>13</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Masc. pl.</td>
<td>4</td>
<td>0</td>
<td>17</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fem. pl.</td>
<td>0</td>
<td>5</td>
<td>3</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Omission</td>
<td>10</td>
<td>7</td>
<td>15</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>No resp.</td>
<td>14</td>
<td>18</td>
<td>11</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>MLU matched</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omission</td>
<td>14</td>
<td>8</td>
<td>12</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Age matched</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omission</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen, omission only amounts to 46/360 responses, i.e. there is a 12.7% omission rate, which resembles de la Mora’s (2004) omission rate of 8–9%. Bedore and Leonard (2001) also provide results for MLU-matched and age-matched groups of children. The percentage of omission of object clitics for the MLU-matched group is close to that of the SLI children: 45/360 responses, 12.5%. The age-matched children produced a very low rate of clitic omission, 12/360 responses, 3%, as we would expect given the results for Spanish in Wexler, Gavarró, and Torrens (2004). Despite the general claim by Bedore and Leonard (2001) that object clitic production is an impaired domain
in a language like Spanish, presumably due to errors in the production of gender/number morphemes, the error pattern in Spanish is very different from that in Catalan.

2.3. A comparison

Here we undertake a comparison of the new results for Catalan with those in the literature for Spanish. This is a first approximation to the topic before, in future work, the same experiment is run in Catalan and Spanish with a similar and higher number of matched subjects.

For the moment, let us compare the spontaneous production of the Catalan-speaking children A and J to the results for Spanish of de la Mora (2004). I leave aside the first recording of A and J, given the small size of the sample. J’s MLU in the second transcript, 4.7, is higher than those of all the Spanish-speaking children, whose MLU ranges from 1.8 to 3.6; yet, he omits 71.4% of third person object clitics, while the Spanish-speaking children omit between 8% and 9% (depending on the elicitation technique). A’s MLU in the second transcript is 3.1, higher than that of six of the Spanish-speaking children, and lower than that of four; his omission rate is 64.3%, again much higher than the 8-9% average omission for the Spanish-speaking children.

Our experimental results indicate that with children older than 4, there is no object clitic omission, but target-like performance represents only 38.3% of production. There is one child, S, aged 12, who has adult-like performance, and such cases can also be found in the records for other languages such as French and Italian. The remaining four children revert to the dative clitic li instead of the third person object clitic. No such phenomenon is mentioned in the literature in relation to child Spanish.

How well do these results match the predictions of the UCC? If we compare what TD and SLI children do in Spanish, we can see that the results reported are as one would expect from the UCC: there is virtually no clitic omission in child Spanish, and very little in Spanish SLI. In contrast, there is considerable omission in TD children under the age of 4 in Catalan and high rates of omission in young Catalan SLI children. Object clitic omission may thus be a marker of SLI only in Catalan, not in Spanish. There is something, at first sight, unexpected in the original experimental results for older SLI Catalan-speaking children: the lack of third person clitic omission. There is, on the other hand, a phenomenon not previously attested in the high degree of occurrence seen here: the production of dative clitics when third person objects ought to appear. In the results by Jakubowicz and Nash (to appear) reported above, children produced an unexpectedly high number of reflexive clitics instead of third person object clitics (at a rate of 21.7% for the SLI1b group). By contrast, the presence of dative clitics in Catalan was marginal in the results for TD children in Wexler, Gavarró, and Torrens (2004), and is also found, to a lesser extent, in the TD children in Table 4 above.
Why should Catalan SLI children revert in particular to dative clitics in place of third person object clitics? Gavarró and Mosella (2009) studied the acquisition of dative clitics in Catalan with an elicitation task similar to that used in Wexler, Gavarró, and Torrens (2004), Gavarró et al. (2010). Forty Catalan-speaking children between 2 and 5 were tested, and they produced target-like clitics very consistently after the age of 2. Table 12 presents the results.

Table 12: Production and omission of dative clitics, Catalan, TD children

<table>
<thead>
<tr>
<th>Age group</th>
<th>Omission</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-year-olds</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>3-year-olds</td>
<td>8%</td>
<td>91%</td>
</tr>
<tr>
<td>4-year-olds</td>
<td>3%</td>
<td>97%</td>
</tr>
<tr>
<td>5-year-olds</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Adults</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

These results were analysed in the light of the UCC and we argued that omission was very low (after a threshold MLU) because a dative clitic did not involve the checking of more than one uninterpretable feature. Therefore the UCC did not have any effect on the derivation of a sentence with a dative clitic, and children produced dative clitics without difficulty.

Based on the analysis of Gavarró and Mosella (2009), SLI children may revert to a dative clitic because a dative clitic is not problematic for a grammar subject to the UCC. That is, just as children omit clitics at an early age (whether TD or SLI) to avoid a UCC violation, they may produce a different third person clitic also in order to avoid a UCC violation. The resulting sentence converges because the child has not failed to eliminate any uninterpretable feature, but the sentence is still deviant because a dative clitic has been produced instead of an accusative clitic.

We can conclude that, in Spanish, the three existing studies on clitic production in SLI produce very consistent results, all indicating low rates of object clitic omission; this contrasts with what we have found to be the case for the spontaneous productions of two Catalan-speaking children with SLI, who omit third person object clitics in over half of the clitic contexts, at an age when TD children have ceased to omit pronominal clitics. The older children tested omitted no clitics, but instead produced dative clitics in place of object clitics.

Given the limitations of the new data, to give further support to our hypothesis we now turn to the results available on pronominal clitic production in other languages.
3. Beyond Catalan and Spanish

By hypothesis, we expect object clitic omission and/or replacement to occur for an extended period in SLI in participle agreement languages. We will start with two such languages, French and Italian, and will proceed with languages without participle agreement, for which the prediction is early target-like behaviour.

In French, third person pronominal clitics are homophonous with definite articles. When compared to those in Catalan, there is one difference of no consequence: there is no gender marking in the plural forms of French definite articles and pronominal clitics. Jakubowicz et al. (1998) discuss clitic acquisition in general and argue that, if the rates of disruption of article and object clitic production are not coincident, we can discard the possibility that the phonological features of these elements are at the source of the disruption (as Leonard’s (1998) Surface Hypothesis claims). Jakubowicz (2003) and Jakubowicz et al. (1998) indeed observed that definite article production and pronominal clitic pronoun production follow different developmental paths. The results already presented in Table 1 from Jakubowicz and Nash (to appear) indicate an overall 66% omission rate of object clitics in young French children with SLI; the groups of older children with SLI display decreasing rates of omission: 20.6%, 14.8%, 4.7% (still higher than the 4.3% omission rate of TD four-year-olds). Those same children produced target-like determiners at rates between 81.8% and 100%.

Paradis and Crago (2001) and Paradis, Crago, and Genesee (2003, 2005/2006) have also studied third person object clitic omission and production in the acquisition of Quebec French, and maintain that clitic omission is a marker of SLI in French.

Italian is the other participle agreement language that has been investigated. Leonard et al. (1992) examined the semi-spontaneous productions of fifteen SLI children aged 3;8 to 5;7, with an MLU ranging from 2.7 to 4.2. These children produced only 26% of the clitics expected, and otherwise omitted them; the MLU-matched controls in the study produced 66.3% of the expected clitics, and the age-matched controls 91.7%.

The analysis of SLI in Italian of Bottari et al. (1998) is based on the analysis of the productions of eleven children whose mean MLU was 2.6, similar to the mean MLU of the Catalan-speaking children and Spanish-speaking children studied here. Regarding object clitic production, their results are given in Table 13.
We can see in the results of Bottari et al. (1998) that some children hardly produced any clitic contexts at all (similarly to the children in our study, who only produced one clitic context in the first transcript). For those who did produce clitic contexts, omission was generally high, with only two children with relatively low levels of omission: DG (8% omission) and AR (19% omission). The remaining six children omitted pronominal clitics at rates between 30.7% and 83%. The levels of determiner omission are higher than those of pronominal clitics for all the Italian subjects in this study, in contrast with what is found in the majority of studies reported here – for reasons that remain unclear. The dissociation of determiner and object clitic production is also pointed out by Bottari et al. (1998) as it was for French by Jakubowicz et al. (1998).

Cipriani, Bottari, Chilosi, and Pfanner (1998) undertake the longitudinal study of a child with SLI from age 6;2 to 13;2 (MLU at 6;2: 2.3; at 13;2: 4.3). In the spontaneous productions of this child, clitic omission was consistently high (from 50 to 75% of clitic contexts) until age 9;4. At age 11;2 it dropped to 7% and after age 12 descended further to 4%.

Bortolini, Caselli, Deevy, and Leonard (2002) and Bortolini, Arfè, Caselli, Degasperi, Deevy, and Leonard (2006) investigated possible clinical markers for SLI in Italian. The eleven pre-school SLI children tested produced on average less than 20% target object clitics. The authors concluded that children with SLI were significantly less
likely to produce target clitics in obligatory clitic contexts than TD children; the error type in elicited production was omission.

The pattern of clitic omission/disruption in Catalan resembles that in French and Italian. If we assume that SLI is a grammatically based disruption, the result of a protracted UCC-stage, the facts of clitic omission/disruption in the Romance language with participle agreement are predicted (as pointed out for French and Italian in Wexler 2003). For other Romance languages without participle agreement, such as Romanian, we would expect very low rates of object clitic omission: this is in fact the case for TD Romanian-speaking children (see Babyonyshev and Marin 2004; I refer the reader to Babyonyshev and Marin 2006 for a full discussion of the work on TD Romanian speaking children, including the work of Avram 1999). To my knowledge no study of Romanian SLI has as yet been undertaken.

It is important to stress that the analysis put forward here generalises over languages outside the Romance family, as nothing in the hypothesis ties it to a particular language type: it is a more abstract characteristic of a grammar, namely the presence of an uninterpretable feature in vP, that determines whether clitic omission/replacement will take place or not. To show how the analysis holds for a language outside Romance, we briefly consider recent results from Greek.

Greek is a language with clitics and without participle agreement; TD children acquiring Greek do not omit object clitics (see Tsakali and Wexler 2004). However, work on object clitics in Greek SLI has appeared to be inconclusive. For example, while Tsimpli (2001) reported levels of clitic omission over 90%, other studies have reported low omission rates (5% omission rate in Terzi 2007). Recently, Manika, Varlokosta, and Wexler (2011) re-examined previous studies and concluded that variation in the results from one study to the next had its source in varying methodologies and subject selection. They then conducted an elicitation experiment with seventeen SLI children (aged 4;10 to 8;1) and thirty-two control TD children, and found no statistical difference in the performance of the two groups, who produced the expected clitics over 95% of the time. Greek SLI children pattern with Spanish SLI children, not with Catalan, French or Italian children.

Finally, Stavrakaki and Chrysomallis (2011) tested a bilingual French-Greek child aged 9. According to them, the child performed at ceiling with Greek object clitics, but showed difficulty in French. If we assume that a true bilingual child (i.e. not affected by cross-linguistic influence) performs like a monolingual child for each of his/her languages, then we predict that a bilingual child may for example omit clitics in Catalan, Italian or French, but not in Greek or Spanish. This prediction appears to be borne out in the French-Greek child tested by Stavrakaki and Chrysomallis (2011).
4. Conclusion

Let us go back to our research questions:

(13)  

a. Are clitics, due to their phonological properties, singled out in SLI as a class?

b. Is the deficit encountered in third person pronominal clitics universal, or is it subject to cross-linguistic variation, as it is in TD children?

With respect to the first question, several authors stated before us that the same phonological unit varies in the degree of affectation in SLI depending on whether it is a determiner or a clitic pronoun, a claim corroborated by our own results. Hence, the phonological properties of clitics cannot be the source of impairment, and clitics do not constitute a class when we consider acquisition, whether impaired or not.

In answer to the second question, our own results and those in the literature allow us to conclude that object clitics appear to be problematic in only a subset of languages, Catalan, French and Italian, but not in others, such as Spanish. So problems with object clitics are subject to cross-linguistic variation in SLI, just as they are in TD children (Gavarró et al. 2010), in spite of the fact that the literature often refers to object clitics as a problematic domain for children with SLI irrespective of the language. If we assume the Extended-UCC analysis of SLI, what we expect for Romance is that SLI will have different visible consequences depending on how the participle agreement parameter is set in that particular language. Third person object clitic production is problematic if the participle agreement parameter is set positively, but not when the parameter is set negatively (meaning that vP does not have an uninterpretable feature). The empirical evidence presented here indicates that, when the participle agreement parameter is set positively, this may result not only in omission but also in replacement of a third person object clitic by a dative clitic, i.e. the UCC may have varying effects on production.

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MacWhinney, Brian, and Catherine Snow

Paradis, Johanne, and Martha Crago

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Wexler, Ken, Anna Gavarró, and Vicenç Torrens


Wexler, Kenneth, Jeannette Schaeffer, and Gerard Bol


**Appendix**

Test items (presented together with 5 fillers), elicitation task

1. La princesa ha tapat el soldat. Ara, el soldat no té fred. Com és que el soldat no té fred? El soldat no té fred perquè la princesa...
The princess has covered the soldier. Now the soldier isn’t cold. How come the soldier isn’t cold? He isn’t cold because the princess …

2. La mare ha pentinat la nena i la nena ha quedat molt maca. Com és que la nena ha quedat molt maca? La nena ha quedat molt maca perquè la mare...
The mother combed the girl’s hair and now the girl looks very pretty. How come the girl looks pretty? She looks pretty because the mother …

3. El nen eixuga l’hipopòtam. L’hipopòtam aviat estarà sec. Com és que l’hipopòtam estarà sec aviat? L’hipopòtam estarà sec aviat perquè el nen...
The child dries the hippopotamus. The hippopotamus will soon be dry. Why will the hippopotamus soon be dry? It will be dry because the child …

4. La nena desperta el nen i el nen es posa a plorar. Com és que el nen es posa a plorar? El nen es posa a plorar perquè la nena...
The girl wakes the boy up and the boy bursts out crying. Why is boy crying? The boy is crying because the girl …

5. El pintor pinta la nena i la nena està contenta. Com és que la nena està contenta? La nena està contenta perquè el pintor...
The painter paints the girl and the girl is happy. Why is the girl happy? She is happy because the painter …

6. El nen mulla el gat i el gat està xop. Com és que el gat està xop? El gat està xop perquè el nen...
The boy sprays the cat and the cat is wet. Why is cat wet? The cat is wet because the boy …
7. L’home ha pintat la casa i la casa ara és blava. Com és que la casa ara és blava? La casa ara és blava perquè l’home...
The man has painted the house blue. Why is the house blue now? The house is blue because the man...

8. El gos llepa el gat i el gat està content. Com és que el gat està tant content? El gat està content perquè el gos...
The dog licks the cat and the cat is happy. Why is the cat happy? The cat is happy because the dog …

9. L’abella ha lligat el grill i el grill ara no pot saltar. Com és que el grill no pot saltar? El grill no pot saltar perquè l’abella…
The bee has tied the cricket and the cricket can’t jump. Why can’t the cricket jump? It can’t jump because the bee…

10. La nena renta la girafa i la girafa està neta. Com és que la girafa està neta? La girafa està neta perquè la nena…
The girl washes the giraffe and the giraffe is clean now. Why is the giraffe clean? The giraffe is clean because the girl…

11. El nen ha menjat un tros de pastís i el tros de pastís ja no hi és. Com és que el tros de pastís ja no hi és? El tros de pastís ja no hi és perquè el nen...
The boy has eaten a piece of cake and the piece of cake is gone. Why is the piece of cake gone? The piece of cake is gone because …

12. La nena ha caçat una papallona i la papallona no pot volar. Com és que la papallona no pot volar? La papallona no pot volar perquè la nena…
The girl has caught a butterfly and now the butterfly can’t fly. Why can’t the butterfly fly? It can’t fly because the girl…