

*The acquisition of object clitics in Italian: Data from an elicited production task**

1. Introduction

The acquisition of clitics in Romance languages is a topic of central interest in current linguistic research (see Guasti [1993-1994], Schaeffer [2000], Wexler *et al.* [2004], Hamann *et al.* [1996], Jakobovicz *et al.* [1998] a. m. o.). As noticed by Monachesi (2006), the acquisition of clitics can be viewed as an interface phenomenon: their adult-like use requires the mastering of different aspects of linguistic knowledge.

Studies on the acquisition of object clitics in Italian have shown that when children produce clitics, no misplacement is found. However, in early stages the number of clitics uttered is low and their use is delayed (Guasti [1993-1994]). Clitic omissions have been found in spontaneous speech samples (Guasti [1993-1994], Cipriani *et al.* [1993], Antelmi [1997]) and in a mixed judgement-elicited production task (Schaeffer [2000]).

Examples of clitic omissions in early Italian (from the Calambrone corpus, Cipriani *et al.* [1989], contained in the CHILDES database, Mac Whinney and Snow [1985]) are given in (1) – (3) below. In the examples, “0w” indicates that a pre-verbal (direct) object clitic has been omitted.

- (1) vie' 0w accarezzi .
 come pro -- pet
 ‘come, (you) pet --’
 (Raffaello, 2;6)

- (2) poi 0w metto qua
 then pro -- put here
 ‘then (I) put -- here’ (while playing with a toy turtle and a toy frog)
 (Diana, 1;11)

- (3) penché perché 0w ha usuato lui .
 because because -- has used he

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‘because he has used --’
(Raffaello, 2;6.13)

Interestingly, omissions are characterized by optionality. This phenomenon, which can be extended to other functional categories as well, has been addressed in more than one study. Besides accounts focussing on clitics’ structural properties only (Wexler *et al.* [2004]), there are approaches which put the development of children’s referential system in the foreground: Guasti (1993-1994) suggests that the optionality stage reflects an incomplete mastery of the referential system associated with nouns and pronouns.

Referentiality is a key word in Schaeffer (2000) as well. The fact that children sometimes correctly produce a clitic, and sometime omit it, induced Schaeffer to adopt the “Full Clause Hypothesis”, claiming that functional categories are present from the beginning in child grammar. According to the author, children optionally omit clitics because they lack a pragmatic principle, the Concept of Non-Shared knowledge (speaker and hearer knowledge are always independent). Children would sometimes fail to distinguish between discourse related and non-discourse related referentiality, with the result that they would optionally mark referentiality through a syntactic mechanism (in our case, clitic placement), or through a non-linguistic mechanism (as if the referent was part of the long-term shared knowledge between speaker and hearer). Omissions would thus result from the marking of referentiality through a non-linguistic mechanism.

In Tedeschi (to appear) the high accessibility status (Ariel [1990]) of clitics in discourse is underlined, and it is suggested that optional omission is not caused by pragmatic factors, but by a competition between discourse and syntactic requirements, due to economy constraints which would affect children’s performance. The same paper presented data from an elicited production task. The experiment investigated clitic production in six preschool Italian children. The original aim of the pilot-study was to test the influence of discourse factors on clitic omission. In particular, the prominence of the clitic’s antecedent was manipulated and a correlation between prominence of the antecedent and number of omissions was expected. However, no evidence was found for this correlation. For this reason, the results were merged. The present paper gives a quantitative and qualitative description of the findings. The data show that children’s production is characterized by a relatively high number of agreement errors, some of which are particularly interesting with respect to the acquisition of argument structure and referentiality.

2. Pilot-study: Elicited production

In this paper, data from 6 Italian children aged 3;02.22 to 4;02.7 (mean age 3;6) are discussed. The data come from a pilot-study run in Italy in March 2006. Children were tested at the day-care centre “A. Giordani”, in Cento. In the pilot-study, sentences requiring obligatory use of direct object clitics were elicited. The task consisted in the description of pictures in which one agent performed an action on one or two (animate) patients. The following transitive verbs were used: *baciare* (to kiss), *guardare* (to look), *chiamare* (to call), *pettinare* (to comb) and *sgridare* (to reproach). All third person direct object clitics were elicited (masculine-singular, masculine-plural, feminine-singular, feminine plural).

The experimenter adopted the following procedure:

Condition 1:

A. Identify the characters X, Y and (if present) Z. The experimenter can help the child recognize them (e.g. «Do you know the characters in this picture? This is a monkey, right? And this is a lion»).

B. Ask the child: «What is X doing to Y?» If the action is not clear, give suggestions without using clitic pronouns (e.g. «What is the monkey doing to the lion? It seems to me that the monkey is combing the lion, right? Tell the puppet! What is the monkey doing to the lion?»).

Condition 2:

A. Identify the characters X, Y and (if present) Z. The experimenter can help the child recognize them.

B. Focus the attention of the child on the character(s) Y (and Z), antecedent(s) of the direct object clitic, by making comments about them. In this phase, the experimenter participates in the description (e.g. «Look at this lion! It looks beautiful, doesn't he? He is so big, so colourful. He is smiling, right?»).

C. Ask the child: «What is X doing to Y?»

In both conditions, the answer in normal adults involves obligatory use of a direct object, preferably a clitic. For example, in the case of a picture where a monkey (feminine) is combing a lion (masculine), the expected answer is *lo pettina* (pro cl-him combs).

The material used in the experiment consisted of 20 items and 8 fillers. The order of the pictures was randomised with the constraints that 1) two pictures of one condition and 2) two pictures eliciting the same clitic should not occur in immediate succession.

Non-parametric statistics (Wilcoxon Signed Ranks test) did not show any significant difference between conditions ($z = -0.447$, $p > 0.1$). However, as observed in the introduction, the study provided some unexpected findings which are worth discussing. For the purposes of this paper, the results for Condition 1 and Condition 2 are merged together. For a more detailed description of the experiment, its original aim and post-hoc considerations see Tedeschi (to appear).

3. Quantitative analysis

3.1 Omissions and substitutions

This chapter reports the results of the pilot-study mentioned above. Table 1 shows the overall proportion of clitics uttered, omitted and substituted. Children's answers were coded as irrelevant for the purposes of the study in 25.9% of cases. Irrelevant data are not reported in this paper.

Clitics	Omissions	Substitutions
65% (78/120)	5.8% (7/120)	3.3% (4/120)

Table 1 Overall percentages (and proportions) of clitics uttered, omitted and substituted

The percentage of clitics uttered includes agreement errors (also “inversions”, as described in 3.2 below) and indirect object clitics, which were sometimes produced, especially with the verb ‘to kiss’ (to give a kiss). The percentage of omissions includes omitted direct and indirect object clitics. For substitutions are intended utterances characterized by use of the character's name or by use of a demonstrative pronoun. Reflexive clitics were not included.

Table 2 shows the individual results:

	Clitics	Omissions	Substitutions
Alessandro (3;6.21)	45% (9/20)	0% (0/20)	10% (2/20)
Alice (3;2.22)	30% (6/20)	20% (4/20)	5% (1/20)
Edoardo (3;4.26)	90% (18/20)	0% (0/20)	5% (1/20)
Elena (4;0.7)	65% (13/20)	0% (0/20)	0% (0/20)
Joanna (4;2.7)	70% (14/20)	15% (3/20)	0% (0/20)
Sara (3;5.3)	90% (18/20)	0% (0/20)	0% (0/20)

Table 2 Individual results: Clitics uttered, omitted and substituted

The proportion of clitics uttered varied from child to child. Alice, the youngest child, produced the lowest number of clitics and her results show the highest percentage of omissions. Alessandro also produced a limited number of clitics but in his case 6 items out of 20 were lost because of his lack of attention during the task. By recalculating the proportion on the basis of the items which received an answer, the percentage of clitics uttered would reach 64%.

In line with the findings reported by Schaeffer (2000), children sometimes produced full DPs instead of clitic pronouns. However, the percentage of full direct objects is much lower here than in Schaeffer's results (3.3% vs. 23%).

3.2 Agreement errors and “inversions”

A first analysis of the data reveals that children made agreement errors in 33.3 % of cases (26/78). Agreement errors have been attested in previous studies. However, the design of the experiment allowed a deeper investigation of this phenomenon¹. It has been mentioned above that all direct object clitics were elicited. Moreover, Agent and Patient always differed in gender. The characteristics of the material allowed the detection of a second type of error: the inversion of Agent/Subject and Patient/Object in children's answers. More than a half of the previously coded as “agreement” errors were thus reconsidered as “inversions”.

Inversions were only counted on the basis of direct object clitics. In fact, in the variety of Italian spoken in Cento and in the surrounding areas, the indirect object clitic *gli* ‘to him’ (masculine, singular) in colloquial language often substitutes the more formal clitic *le* ‘to her’ to indicate a feminine referent. Moreover, the clitic *gli* often substitutes the plural weak pronoun *loro* ‘to them’, for both masculine and feminine².

Agreement errors	Inversions
15.4% (12/78)	17.9% (14/78)

Table 3 Proportion of errors with respect to the clitics uttered.

Table 4 shows the proportion of agreement errors and inversions in relation to the clitics uttered by each child.

¹ In the pictures, the same character appeared sometimes as agent of the action, and sometimes as patient. This particular characteristic of the material used might have influenced the phenomenon of inversion, increasing it.

² The dative clitic *gli* /*gi*/ was sometimes substituted by the form *li* /*li*/, easier to articulate. *Li* is an accusative clitic (masculine, plural). It is possible that children sometimes wrongly produced /*li*/ as a direct object clitic with verbs requiring an indirect object. However, /*li*/ was coded as dative (corresponding to *gli*) in the presence of ditransitive verbs. /*li*/ was coded as the direct object clitic *li* in all other cases. As a consequence, case errors might have been underestimated.

	Agreement errors	Inversions
Alessandro (3;6.21)	0% (0/9)	22.2% (2/9)
Alice (3;2.22)	0% (0/6)	0% (0/6)
Edoardo (3;4.26)	11.1% (2/18)	27.7% (5/18)
Elena (4;0.7)	38.5% (5/13)	15.4% (2/13)
Joanna (4;2.7)	14.3% (2/14)	28.6% (4/14)
Sara (3;5.3)	16.7% (3/18)	5.5% (1/18)

Table 4 Agreement errors and inversions of agent and patient (individual results).

Proportions are based on the number of clitics uttered.

The following sections present a qualitative analysis of the results, including examples of errors and omissions. The findings will be further discussed in chapter 5.

4. Qualitative analysis

4.1 Omissions are optional

Despite the low number of omissions, the few cases attested confirm that the phenomenon of omission is optional. Joanna, aged 4;02.7, made productive use of clitics during the test. However, the examples in (4) and (5) below show that with the verb *chiamare* ('to call'), the child sometimes produced, and sometimes omitted a direct object clitic.

(4) Question: What is the dog doing to the sheeps?

Answer: chiama (pro calls --)

(5) Question: What is the dog doing to the sheep?

Answer: la chiama (pro cl-her calls)

Given the low rates of omissions, a deeper investigation of the contexts in which this phenomenon emerges was impossible. I plan to carry out a new test on a younger population (age 2 to 3) in the future, in order to investigate possible factors affecting omission.

4.2 Different types of errors

As mentioned in section 3.2, children made agreement errors and other errors which were classified as "inversions". With exception of the youngest child, who gave a low number of target-

like answers, all children made agreement errors or inversions. Here I would like to present a description of the second type of error. Five children out of six made errors similar to the one presented in (6) below. Agent and Patient seem to be inverted. The child uses a clitic form which agrees with the subject, and not with the object. In the picture presented to the child whose answer is reported in (6), a lion is combing a monkey. In Italian, the grammatical gender of lion is masculine (m), and the grammatical gender of monkey is feminine (f)³. The child was asked what the lion was doing to the monkey. The answer is given below:

- (6) lo trucca
 pro cl-him makes up
 ‘(she) puts make up on him’
 (Alessandro, 3;6.21)

On the basis of this example only, it would still be possible to claim that the child did not know the gender of the characters, and that we are dealing with agreement errors originating from a limited knowledge in this respect. However, when children used a full DP to refer to the characters, they always chose the correct gender. Moreover, these errors were also found with plural objects, and in such cases the verb appeared in third person plural. The fact that in the data clitics sometimes agreed with the subject (instead of agreeing with the object), while the verb agreed with the object (instead of agreeing with the subject), appears to indicate that children could not always link the clitic to its antecedent, or that they inverted Agent and Patient in their answers.

The example in (7) below is uttered in response to the question «what is the dog (m) doing to the sheeps (f)?» The child’s answer suggests that relating a clitic to its antecedent and/or assigning thematic roles is sometimes problematic. This fact is made clear by various self-corrections by the child.

- (7) lo vanno a plendele... la va... la vanno a plendele
 pro cl-him go to pick up...pro cl-her goes pro cl-her go to pick up
 ‘(they) go to pick him up, (he) goes her, (they) go to pick her up’
 (Edoardo, 3;4.26)

In the first sentence uttered in (7), «they go to pick him up», the child uses a clitic form which agrees in gender and number with the subject (masculine, singular), and not with the object

³ From now on, gender will be indicated with (f) for feminine and with (m) for masculine.

(feminine, plural), while the verb agrees with the object (plural), and not with the subject (singular). In the first self-correction, the child utters a clitic form which agrees in gender (but not in number) with the object, while the verb correctly agrees with the subject (singular). In the second self-correction, the clitic still agrees with the object in gender (but not in number), and the verb once again agrees with the object, and not with the subject.

A similar example of inversion is given in (8) below. In this case, the picture described a penguin (m) looking at two seals (f), and the child was asked to tell what the penguin was doing to the seals.

- (8) lo lo lo le guaddano
pro cl- him cl-him cl-him cl-her look
'(they) look at him him him her'
(Alessandro, 3;6.21)

In (8), the child first selects the wrong antecedent for the clitic (masculine, singular), then he corrects himself and selects the required form (feminine, plural). However, the verb still agrees with the object (plural).

The results of a study on adult subjects investigating attraction effects occurring in a c-commanding condition of intervention show that, in French, the presence of an object clitic in preverbal position triggers interference effects of attraction in subject-verb agreement (Franck *et al.* [2006]). The authors observe the occurrence of agreement errors when an object clitic intervenes between the subject and the inflected verb, as in (9) below:

- (9) le professeur les lit/*lisent
the professor cl-them reads/*read
'the professor reads/*read them'

A similar effect of attraction might partially account for the errors found when subject and object differed in number. In (7) and (8) above the verb wrongly agrees in number with the object instead of agreeing with the subject.

The examples in (6) – (8) suggest different hypotheses, reflecting the fact that clitics allow investigations from several viewpoints. Inversions could be the result of a difficulty in establishing semantic, discourse or syntactic relations. These are just sketched hypotheses. In order to define the relevance and the nature of the findings presented in this section, further investigations are needed.

4.3 Subjects and objects in comprehension

A phenomenon similar to “inversion” between subject and object has been observed in more than one study on preschool children. Hendriks *et al.* (2006) report and discuss data from a study by Chapman and Miller (1975) on 15 English preschool children, tested in both production and comprehension. In production, after watching an action performed by an experimenter with two dolls, children (age 1;8 – 2;8) were asked to tell the experimenter what had happened. They answered correctly in 83.7% of cases with two animate actors. In comprehension, the same children performed correctly in only 66.5% of cases. They often demonstrated the action expressed by the sentence «the boy is hitting the girl» with the girl doll hitting the boy doll. The results were partially replicated by McClellan *et al.* (1986). Hendriks *et al.* propose an Optimality Theory account for these findings, and they relate poor performance in comprehension to the wrong ranking of two constraints, PRECEDENCE and PROMINENCE. For English children, PROMINENCE (animacy, but also discourse prominence) would erroneously be ranked higher than PRECEDENCE (word order). Although it is not the aim of this paper to define what kind of cues are used by Italian children in clitic comprehension, the fact that children’s production presents a certain number of errors suggests that an even higher percentage could be found in comprehension. The investigation of the effects of word order and prominence in comprehension might reveal which of the hypotheses formulated in 4.2 for production better correlates with comprehension results.

5. Conclusion

As shown in table 1 and 2, in section 3.1 above, the results of the pilot-study present a low number of omissions. This fact largely depends on the age of the tested population. Similarly to Schaeffer (2000), the data show that the tested subjects, aged 3 to 4, performed almost adult-like in this respect. However, our results present an even lower number of omissions (5.7% *vs.* 15%) While the test discussed in this paper elicited object clitics through a specific question, Schaeffer’s test was a mix between elicited production and a judgement task. The different methodology used in the pilot-study and in Schaeffer’s experiment could be the reason of the discrepancy in the results.

Despite their low number, omissions are clearly optional. As shown in the examples (4) and (5) in section 4.1, the same child produced or omitted a clitic in the same session, even when the action performed (the verb) was the same. This finding indicates that omissions are not the consequence of a lack of competence with respect to the verbal valence of the verbs used to elicit clitics in the experiment. The acquisition of argument structure could rather be addressed in order to

account for the errors discussed in section 4.2. In fact, the examples in (6) – (8) reflect an agent – patient mismatch between the visual material presented and children’s answers. A second factor which could have affected children’s performance is the task of relating a clitic to its antecedent. Although children used clitic pronouns to refer to (prominent) antecedents, thus establishing a clitic – antecedent relation, they sometimes failed to choose the correct antecedent. In this view, the fact that both characters were animate topics, salient in discourse, might have originated a competition between candidate antecedents, resulting sometimes in the production of a wrong clitic form. Intervention factors were also addressed, following a syntactic analysis of attraction.

The acquisition of clitics is affected by several linguistic factors and involves interaction of different aspects of linguistic knowledge. Clitics can be viewed as structurally, phonologically and referentially deficient pronouns (Cardinaletti – Starke [1999; 2000]), whose properties are acquired in early stages of development. The acquisition of clitics can be associated with the acquisition of argument structure, as in the lexical approach proposed in Monachesi (2006). Omissions suggest that children sometimes encode information through a linguistic, and sometimes through a non-linguistic mechanism/channel (Schaeffer [2000]; Avrutin [2004; 2006]; Serratrice *et al.* [2004]), revealing competition at the syntax – discourse interface. Moreover, children rely on lower-than-normal processing capacities, an increasingly addressed factor in language acquisition research. The study of clitics can focus on how different aspects of linguistic knowledge are acquired, on how syntactic and pragmatic competences are integrated, and on how economy constraints can affect children’s performance. Further investigations, both in production and in comprehension, seem promising in all respects.

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