

The delay of Italian Past Participle Agreement

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1. Introduction

In recent years, one of the prominent topics in language acquisition has been the study of the early verbal morphology. It is well known that children may initially produce bare roots or infinitival forms without the specification of Tense or Agreement. However, Tense and Agreement features express different kinds of grammatical functions and, if possible, they should be kept apart and separately analyzed. While Tense features have a meaning inherent to the action expressed by the verb itself, Agreement features express a relation between the verb and one of its arguments. In this paper we will focus on the acquisition of gender agreement features visible on the Italian past participle, investigating how the link between the verb and its internal argument is established in Early Syntax.

It is not easy to look at the acquisition of Agreement features, especially in fusional languages. By looking at children's early productions, it is hard to determine which feature is missing in the derivation. Consider for example sentences as (1-2), attested in children's speech.

- (1) Cromer wear glasses (Eve, 1;6)
(2) Du das haben (Andreas, 2;1)
you that have-inf

In these sentences, verbs are used in the root (1) or in the non-finite form (2) without any Tense or subject-verb agreement specification. All the following variants of (1) could have been intended and could be considered as the target sentence:

Cromer $\left[\begin{array}{l} \text{wears (+pres, +3ps)} \\ \text{wore (+past)} \\ \text{must wear (+mod)} \end{array} \right]$ glasses

All these variants have actually been taken into consideration in order to explain the non-finite form of (1) (see Rizzi 1994; Wexler 1994, 1998; Hoekstra & Hyams 1998). If we assume that the target is *wears*, the verbal root might have been produced either because the grammatical structure lacks both Tense and Agreement (Rizzi 1994) or because morphology adopts the null morpheme if one of the features is left unchecked (Wexler 1998). In any case, it is hard to isolate Agreement within the contexts given in (1-2), since the missing morphology expresses more than only agreement features.

In this paper we will investigate a construction where agreement features might be more easily isolated. In Italian, not only subject-verb but also object-verb agreement is realized in *passato prossimo*. This is a complex tense formed by the combination of an auxiliary plus the past participle. In this construction, subject-verb agreement and Tense are realized on the auxiliary, while object-verb agreement is visible on the past participle. Consider (3):

- (3) a. Gianni **le** ha viste
 Gianni they-**fem-pl** have-pres-sing-3pers seen-**fem-pl**
 “Gianny saw them”
- b. *Gianni **le** ha visto
 Gianni they-**fem-pl** have-pres-sing-3pers seen-**def**

In (3a), the proclitic pronoun *le* carries the features [+fem, +plur] and it obligatorily agrees with the past participial ending *-e* carrying the same features. When the default agreement morpheme is used, as in (3b), the sentence is ungrammatical.

Notice that past participle is not sensitive to Tense variations, and that all the complex tenses involving past participles are obtained by modifying the auxiliary. For this reason, it is plausible to assume that past participial morphology only expresses Agreement. Thus, cases as (3) allow one to observe the early Agreement mechanism at work.

The past participle agreement pattern is relatively complex and an accurate description can be found in Belletti (2006). In this paper we will focus only on those cases where agreement with the syntactic object is obligatory, as in (3a), or forbidden, as in cases where the object is expressed by a full DP in post verbal position. In this situation, no agreement is possible in Standard Italian and sentence (4b) is ungrammatical. Only the default form *-o* is allowed, as in (4a).

- (4) a. il maialino ha lavato la mucca
 the little-pig has washed-**def** the **fem-sing** cow-**fem-sing**
- b. *il maialino ha lavata la mucca
 the pig has washed-**fem-sing** the-**fem-sing** cow-**fem-sing**

In order to master past participle agreement, children have to learn the mechanism responsible for agreement in (3) with an object clitic. Moreover, they have to constrain such mechanism in order not to overgeneralize it to cases with a post-verbal DP as in (4).

In the next section we will review some studies that looked at the constructions under exam. As we will see, data do not always converge and the picture is still unclear. For this reason, in the section 3 we will present the data relative to a new experiment where we tried to replicate some of the findings previously reported in the literature. In the last section, we will look more in

depth at the syntactic Agreement relation between the past participle and the object, proposing an explanation for the agreement pattern we observed in our experiment. Our account relies on the early properties of the DP and on specific assumptions on local agreement relations.

2. What do we know about Past Participle agreement in Early Italian?

Despite the great attention given in the literature to subject-verb agreement, few studies looked at object-verb agreement in the early stages of development. As a consequence, data are relatively scarce and results do not always converge.

To our knowledge, the first study addressing the issue has been reported in Antinucci & Miller (1976). On the basis of a spontaneous speech analysis, A&M observed that Italian children undergo a phase in which they incorrectly allow agreement of the past participle with a post-verbal lexical DP, overgeneralizing the rule. However, this claim is weakened by the fact that A&M only presented isolated examples, as the ones reported in (5), without any quantification of the phenomenon.

- (5) a. Prese io (le calze) (Chi: 1;8)
 taken-fem-plur I (the socks)
- b. La signora chiusa la porta (Chi: 1;10)
 The Lady closed-fem-sing the door
- c. ho sbagliata strada (Chi: 2;4)
 have-I miss- fem-sing way
- d. Chi gli ha lavate le gambe? (Chi: 2;8)
 who to-him washed fem-plur the legs

Although it is possible that children go through a stage in which their grammar overgeneralizes agreement to post-verbal DPs, another problem of A&M's study is that it relies only on spontaneous speech transcriptions, which do not permit to control for the context. In fact, while in cases as (5b-d) the object is realized, in sentences as (5a) the object is only intended and it can be retrieved in the transcription with a variable degree of confidence.

A better way to look at children's past participial constructions is an elicited production task, in order to set the stage in a way that number and gender of the object are directly retrievable from the story context. McKee & Emiliani (1992) and Schaeffer (2000) used this methodology, finding that A&M's original claim, namely that children overgeneralize past participle agreement to post-verbal full DPs, is not verified (table 1).

Sentences with overt clitics were elicited in those two studies and also in this case the results of McKee & Emiliani (1992) and Schaeffer (2000) converge: they found a positive correlation between the presence of the clitic and the realization of past participle agreement.

However, if we look at sentences without an overt object, the two studies present noticeable differences. In fact, while McKee & Emiliani report

Agreement on past participles in the totality of children's utterances, Schaeffer found Agreement only in the 20% of the cases.

Tab. 1. Past participle agreement with clitics, full DPs or null objects

	McKee & Emiliani (1992) mean age 2;4 – N=9	Schaeffer (2000) Mean age 2;5 – N=5
Clitic	14/14 (100%)	8/8 (100%)
Ø	8/8 (100%)	2/10 (20%)
Full DP	1/28 (3.6%)	0/8 (0%)

By looking at the table above, we can draw, for the moment, at least two conclusions. The first is that, whenever a clitic is produced, children use the correct agreement form by the age of 2;5 years. The second conclusion is that, on the contrary, agreement is not realized with a post-verbal DP. This means that, if a stage of DP agreement exists, as claimed in Antinucci & Miller (1976), it has already disappeared in the period under scrutiny¹.

What is still unclear is what happens with null-objects, since the two studies report a very different situation. In order to verify the first two conclusions and to try to clarify the controversial situation with null objects, we conducted a new elicited production task.

3. Experiment: past participle agreement in early Italian

In this section we present the results of a new experimental study aiming at investigating more closely whether Italian-speaking children correctly produce past participle agreement in the early stages of development. We elicited past participle agreement with 1) a post-verbal lexical DP or 2) a direct object clitic pronoun. In this way, we intended to verify whether Italian-speaking children correctly produce default agreement with post-verbal objects and correct agreement morphology with a pre-verbal object clitic. We also expected to find cases of object omission, which are not allowed in adult Italian.

3.1 Participants

Fifty-six children (age 2;1 – 4;11) participated in the study. Nine additional children were excluded because they did not understand the task or because their answers were unintelligible. Children were tested individually in three different day-care centres, all located in the region Emilia Romagna, Italy. Since our goal is to look at Agreement either with a clitic pronoun or with a full DP, the experiment included two conditions to elicit the two different kinds of objects

¹ Results are similar for older age groups reported in Schaeffer (2000), with the exception of agreement relative to null objects. Schaeffer reports only one null object in the period between 3 and 4 years.

and participants were divided into two groups. Data are summarized in table 2, where participants have been classified also in accordance with their age.

Tab. 2. Participants

Group	Past participle + DP	Clitic + Past participle
2-year olds (N=10)	Mean age 2;8 (N=5)	Mean age 2;7 (N=5)
3-year olds (N=25)	Mean age 3;6 (N=11)	Mean age 3;7 (N=14)
4-year olds (N=21)	Mean age 4;6 (N=11)	Mean age 4;4 (N=10)

3.2 Procedure, methods and material

Children were tested individually in a quiet room at their day-care centre. We introduced a hand puppet called *Lumachina*. The toy was presented as a silly and forgetful animal that always asked for clarifications. We made use of props to create short scenes in which a character performed an action on another character. The puppet asked a question about each performed scene and children were required to answer the puppet's questions. Their responses were recorded on a CF portable recorder and coded by the experimenters.

Children in the first group, after each story, were asked questions which did not mention the patient of the action (in the form "what has X done?") in order to elicit a post-verbal object DP. An example is given in (6) below:

(6) *What has X done?*

Question: Cos' ha fatto il maialino?

what has done the little pig?

'What has the little pig done?'

Answer: Ha lavato la mucca

Has washed-def the-fem-sing cow-fem-sing

'He has washed the cow'

Participants in the second condition, instead, heard questions in the form "what has X done to Y?". Here the patient is explicitly mentioned and the most felicitous answer involves the use of a clitic pronoun:

(7) *What has X done to Y?*

Question: Cos' ha fatto il maialino alla mucca?

What has done the little pig to the cow?

'What has the little pig done to the cow?'

Answer: L' ha lavata

Her-fem-sing has washed-fem-sing

'He has washed her'

Notice that the agent and the patient of the action always differed in gender: the agent was always masculine-singular and the patient feminine-singular. The

target of our investigation was the realization of past participle agreement with feminine singular direct objects.

The elicited verbs were *lavare/pulire* (to wash/to clean), *pettinare/spazzolare* (to comb/to brush), *coprire* (to cover) and *truccare* (to put make up on someone). Each subject was presented with ten or twenty scenes. Of these, five or ten were experimental items, while the remaining stories were fillers.

3.3 Results

Children's answers were coded for direct object-past participle agreement in *passato prossimo*. Answers that did not involve the use of *passato prossimo* were excluded from the analysis (32%). Children sometimes provided answers with post-verbal DPs in response to questions eliciting direct object clitics, and vice versa. These answers are included in our analysis.

Let us examine past participle agreement in sentences with clitics, DPs and null objects in turn. For what concerns past participle agreement with full DPs, results are in line with the data reported by Emiliani & McKee (1992) and by Schaeffer (2000), indicating that children correctly produced default *-o* agreement at high rates from early on. Results are reported in table 3.

Tab. 3. Past Participle agreement with post-verbal DPs

	Default-o (correct)
2-year olds	90% (18/20)
3-year olds	98.9% (93/94)
4-year olds	100% (50/50)
Tot.	98.2% (161/164)

In Table 4 we report instead the results for past participle agreement with direct object clitics as well as with null objects.

Tab. 4. Past participle agreement with clitics and null-objects

	Clitic	Null objects
2-year olds	25% (1/4)	0% (0/4)
3-year olds	80.5 (33/41)	11.1% (1/9)
4-year olds	75.9% (60/79)	20% (1/5)
Tot.	75.8% (94/124)	11.1% (2/18)

The data in table 4 show that past participle agreement does not take place when children produce null clitics/null objects. This result contrasts with the data reported by McKee & Emiliani (1992). Although numbers for the first age group are low, we found that children have a strong tendency to produce the default *-o* form when the object is left unexpressed, in line with Schaeffer's (2000) data.

With respect to past participle agreement with overtly realized clitics, our data differ from both Schaeffer's and Emiliani & McKee's. The results of our experiment indicate that past participle agreement is characterized by optionality until the age of four and that clitic-past participle agreement mistakes are still noticeable in children's answers at the age of 4;11.

3.4 Comparison with subject-verb and determiner-noun Agreement

Our findings suggest that the acquisition of past participle agreement is delayed. In this section we will show that it is acquired later than other kinds of agreement. In order to do so, we checked for mistakes in children's responses with respect to 1) subject-verb agreement and 2) determiner-noun agreement.

Children's answers to filler questions were included in our analysis, when relevant. Fillers aimed at eliciting the name of an object ("what has X brought?"/ "what has X brought to Y?"). Children's responses (to both experimental items and fillers) were coded for subject-verb agreement (with auxiliaries and with lexical verbs), and for determiner-noun agreement. The results are presented in table 5 below. Notice that we only included non-masculine (i. e. non-default) determiner-noun agreement in our analysis.

We found no agreement mistake out of 466 instances of subject-verb agreement, in accordance with previous data reported in Guasti (1993/1994). For what concerns determiner-noun agreement, children correctly produced the right forms and we found only one mistake out of 430 instances, which amounts to 0.2%.

Tab. 5. Children's mistakes with other types of agreement

	Subj-verb agr	Det-noun agr
2-year olds	0% (0/60)	1.9% (1/52)
3-year olds	0% (0/222)	100% (0/233)
4-year olds	0% (0/184)	100% (0/145)
Tot.	0% (0/466)	0.2% (1/430)

These data contrast with the agreement mistakes found with past participle, supporting the hypothesis that past participle agreement is delayed with respect to other types of agreement.

3.5 Discussion

In this final section, we will explore more closely the syntax of past participle agreement and clitics, considering the mechanisms that rule agreement in adult language.

In our experiment we found that children produce adultlike sentences like (8) and (9), with default agreement morphology in presence of a post-verbal DP and with past participle agreement in presence of a clitic pronoun.

(8) Ha lavato la mucca
 Has washed-def the-fem-sing cow-fem-sing
 'He has washed the cow'

(9) L' ha lavata
 Her-fem-sing has washed-fem-sing
 'He has washed her'

However, children also produce deviant sentences like (10) and (11), realizing default agreement morphology when it should not be allowed, since in sentences (10) and (11) the intended object, given in the story, was always feminine.

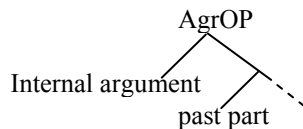
(10) * L' ha lavato
 Her-fem-sing has washed-def

(11) * ha lavato
 has washed-def

The fact that children produce sentences like (8) and (9) indicates that they have the adult syntactic mechanism. However, their grammar seems to be more permissive than the adult one, since they also produce sentences like (10) and (11), which are not allowed in standard Italian.

Let us first consider the derivation of sentences (8) and (9). Following Sportiche (1998), Kayne (1989) and Belletti (2006), we assume that a local spec-head configuration is established during the derivation between the object and past participle, in a dedicated functional projection. Following Chomsky (1995), we will label this projection AgrOP.

(12) Local Agreement

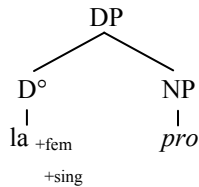


AgrOP is realized in a position higher than the VP and both the internal argument and the past participle must move from their base position in order to realize the local configuration in (12). For this reason, past participle agreement is found only when the internal argument is moved from its base position, as with passives and unaccusatives (Burzio 1986), while it is impossible in cases like (8), where the DP remains unmoved.

Let us now look at what happens in sentences with a clitic pronoun, as in (9). Following an insight from Uriagereka (1995), it is plausible to assume that clitics are base-generated within the DP. This assumption is supported by the fact that 3rd person object clitics diachronically spring from demonstratives and

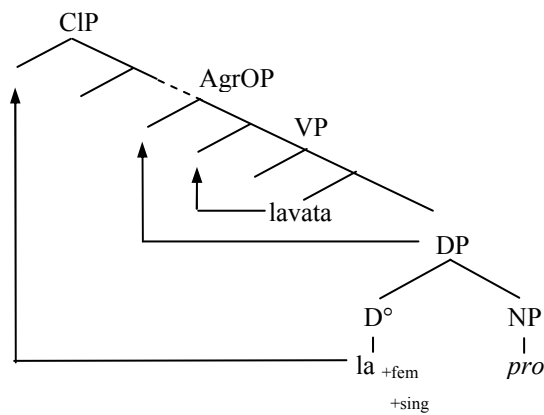
that in Modern Italian they are still homophonous with definite articles. In addition to this morphological similarity, clitics also share another important property with definite articles: they are specific. Clitics can then be considered to be the heads of their DP, licensing a null pronoun with a specific interpretation²:

(13)



Once the DP has been generated, it moves outside the VP in order to obtain a specific reading (Diesing 1992), passing through AgrOP. Here it meets the past participle, creating the required spec-head configuration. At this point, in the last step, the clitic undergoes head-movement reaching its final position.

(14)



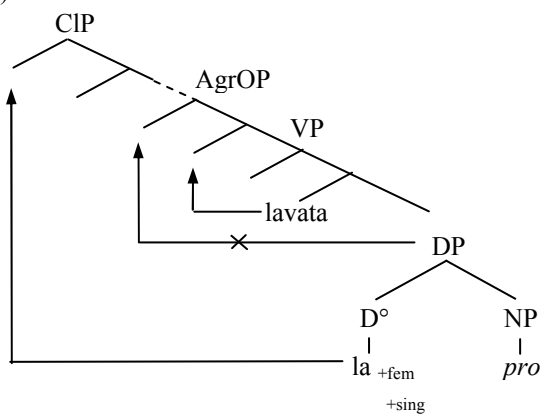
The three steps illustrated in (14) are correctly realized whenever children produce adult constructions like (9). Having clarified the syntactic mechanism assumed for the derivation of the adult-like sentences (8) and (9), we can now focus on the deviant sentences.

² Notice that when no clitic is present, object *pro* can only receive an arbitrary interpretation, roughly correspondent to 'the people' (Rizzi 1986). This interpretation is clearly incorrect if referred to the story narrated in our experiment, since the patient of the action was specified in the context.

One way to account for sentences as (10) is to assume that the spec-head configuration in AgrOP has not been created. In principle, this could happen for two reasons: either because children fail to set the head movement parameter relative to the past participle, leaving it inside the VP, or because they fail to move the DP. Both solutions are plausible. However, it won't be easy to find empirical data supporting the hypothesis that past participle is left unmoved³ while there are some indications (Schaeffer 2000) that children might find problematic the movement of the object DP.

For this reason, we propose that children may leave the internal argument in its base position. Since no spec-head relation is established in AgrOP, the default morpheme *-o* surfaces.

(15)



If children derive sentences like (10), as illustrated above, we need to postulate only a minimal variation from adult grammar without assuming an incorrect setting of the head movement parameter⁴.

Let us now consider the last kind of sentences we found: the ones with null-objects and default participial morphology. The discussion of this case requires a treatment of early null-objects, a complex topic that goes far beyond the purpose of this paper. However, the correlation between the two phenomena, null clitics and default agreement morphology, can be captured by assuming that children overlicense referential null-pronouns without the clitic. Instead of the full DP

³ One way to verify this hypothesis is to look at the position of the early past participle production in relation to adverbials. However, in the relevant age-range, low adverbials are only sporadically produced.

⁴ A possible violation of the Head Movement Constraint might occur if the DP stays in situ. However, it is possible that DP movement takes place only partially, triggering a lower position than AgrOP, but allowing the clitic head to cross the past participle. L. Rizzi (p.c.) suggests that DP movement might initially trigger only the vP Phrasal Edge.

structure given in (10), children would generate the more simplified structure below:

- (16) DP
|
NP
|
pro

In this case, referential *pro* is licensed without the clitic and it carries no agreement feature. Even if movement in AgrO is realized, the past participle is expected to surface in its default form. Those cases can then be accounted for by assuming that children do not know yet all the conditions governing the licensing of null-pronouns. For this reason, they might license referential *pro* also without an element which permits its identification, as the clitic.

Notice that the impoverished DP structure proposed in (16) can be adopted to describe the syntax of early pronominal omission. However, our proposal that missing or optional agreement is related to the local spec-head configuration in AgrOP is also compatible with the idea that null-objects stem from a more general object omission option available in early childhood (Pérez-Leroux, Pirvulescu and Roberge 2008).

4. Conclusions

In this study we presented an elicited production task that shows optionality in Early Italian past participle agreement in presence of an overt clitic, modifying the picture that emerged from previous studies (McKee & Emiliani 1992, Schaeffer 2000). If compared with other forms of agreement, such as subject-verb and determiner-noun, past participle agreement seems to be more problematic and errors can be found until the age of four. The delay of this kind of agreement is somehow surprising. In the last section, we tried to account for this delay by considering the complexity of the agreement mechanism, which is sensitive to the movement of the internal argument. In particular, we proposed that the specifier-head configuration created through DP movement in adult syntax can be delayed and only optionally realized by children.

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