

Participial Constructions in Child Grammar: Correlations with Verb Movement Properties

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1. Introduction

In this paper, we investigate the development of participial constructions, specifically the present perfect construction, from a cross-linguistic perspective. We will account for previously unobserved differences regarding auxiliary omission within this construction in the acquisition of monolingual Spanish, German, Italian, and French. A quantitative analysis of the data of 10 children (age range 1;6-2;8) acquiring these four languages shows substantial differences with regard to the types of participial constructions that are produced, i.e. full-fledged present perfect forms (containing both an inflected auxiliary and a past participle) versus bare past participles, in which the auxiliary has been omitted. (1) and (2) provide examples of these two types of participial constructions from the various child grammars under investigation.

(1) Full-fledged Present Perfect

- a. Lo *he dicho* yo.
3sgOcl have said I
“I have said it.”
(Spanish)
- b. Mamma se n’è *andata*.
Mom refl. cl. is gone
“Mom has gone.”
(Italian)
- c. J’*ai travaillé* à l’école.
I have worked at the school
“I’ve worked in school.”
(French)

(2) Bare Past Participle

- a. Schale *mitgebracht*.
peel with-brought
“I brought the peel with me.”
(German)
- b. Disegno *cascato*.
picture fallen
“The picture has fallen.”
(Italian)
- c. *Vu* voiture.
seen car
“I have seen the car.”
(French)

We will show that the child grammars under investigation differ in their use of these two types of participial constructions, in that some (such as Spanish) use only the full-fledged present perfect form, others (such as German) only the bare participle form, and yet others (such as Italian and French) make use of both forms. Such differences between the child grammars are unexpected, given that the respective adult grammars do not differ from one another in the same manner. As is evident from Table 1, the proportion of full-fledged present perfect constructions is comparable in the adult grammars of all four languages under investigation.

| Language | Aux+Participle | Bare Participle |
|----------|-----------------|-----------------|
| Spanish | 99.7% (285/286) | 0.3% (1/286) |
| German | 94.6% (245/259) | 5.4% (14/259) |
| Italian | 96.4% (106/110) | 3.6% (4/110) |
| French | 99.4% (480/483) | 0.6% (3/483) |

Table 1: Proportion of Full and Bare Participles in the Adult Grammars¹

We propose that these asymmetries in child participial constructions are derived from the interaction between (i) language-specific participle movement properties (which are correlated in a way to be explained to the two different types of participial constructions), and (ii) a universal principle of tense omission, Tense Deletion up to Recoverability (TDUR).

The remainder of the paper is organized as follows. Section 2 presents the results of the quantitative analysis comparing the patterns of auxiliary omission in the participial constructions of the various child grammars under investigation. Section 3 outlines some important theoretical assumptions for our analysis of the observed auxiliary omission patterns. Section 4 contains our analysis of the observed auxiliary omission patterns, and section 5 concludes this paper.

2. Auxiliary Omission in Child Spanish, German, Italian, and French

The data used for this study come from two monolingual Spanish-speaking children, three German-speaking children, three Italian-speaking children, and two French-speaking children (age range 1;6-2;8) all of which are available on CHILDES. Details about the different language corpora are provided in Table 2.

| Language | Child | Age | Source |
|----------|----------|----------|---------------------------|
| German | Caroline | 1;8-2;3 | Nijmegen Corpus/CHILDES |
| | Kerstin | 1;6-2;6 | Nijmegen Corpus/CHILDES |
| | Julia | 1;11-2;5 | Clahsen Corpus/CHILDES |
| Spanish | Maria | 1;8-2;8 | Ornat Corpus/CHILDES |
| | Emilio | 2;0-2;8 | Vila Corpus/CHILDES |
| Italian | Diana | 1;8-2;6 | Calambrone Corpus/CHILDES |
| | Martina | 1;11-2;7 | Calambrone Corpus/CHILDES |
| | Viola | 2;0 | Calambrone Corpus/CHILDES |
| French | Gregoire | 2;0-2;8 | Champaud Corpus/CHILDES |
| | Philippe | 2;0-2;8 | Léveillé Corpus/CHILDES |

Table 2: Child Language Corpora for German, Spanish, Italian, and French

The files were coded for full-fledged participles, containing an overt auxiliary in addition to the past participle, and bare participles. Our findings with respect to the distribution of full participle versus bare participle constructions in the child grammars of the languages under investigation are as follows. As indicated in Table

¹ These percentages were calculated based on quantitative analyses of adult input excerpts from the CHILDES corpora listed in Table 2.

3, Spanish monolingual children show a very strong preference for the full-fledged present perfect form. They use this form almost exclusively, that is about 94% of the time. By contrast, bare participles are virtually absent from the data. Hence, we propose that auxiliary omission in participial constructions is *not* available in the grammars of Spanish-speaking children.

| Child | Aux + Past Participle | Bare Past Participle |
|-------------|-----------------------|----------------------|
| Maria | 93.6% (103/110) | 6.4% (7/110) |
| Emilio | 94.1% (48/51) | 5.9% (3/51) |
| <i>mean</i> | <i>93.8%</i> | <i>6.2%</i> |

Table 3: Spanish Proportion of Full Participle and Bare Participle Constructions

German monolingual children, on the other hand, display the mirror image of what we have observed in Spanish: they produce almost only bare participles, which represent on average 96% of participial constructions, as illustrated in Table 4. Behrens (1993) provides additional data in support of such a generalization from Daniel and Mathias, who first start using the full-fledged present perfect form at ages 3;0 and 2;11 respectively, and up until then only use bare participles². Thus, given that German-speaking children use almost exclusively bare participles, we shall generalize that auxiliary omission is obligatory in the participial constructions of German speaking children.

| Child | Aux+Past Participle | Bare Past Participle |
|-------------|---------------------|----------------------|
| Caroline | 1.4 % (1/70) | 98.6 % (69/70) |
| Kerstin | 10% (3/30) | 90% (27/30) |
| Julia | 0% (0/3) | 100% (3/3) |
| <i>mean</i> | <i>3.9%</i> | <i>96.1%</i> |

| | | |
|----------------|--|------|
| Behrens (1993) | | 100% |
|----------------|--|------|

Table 4: German Proportion of Full Participle and Bare Participle Constructions

Unlike Spanish and German children, Italian and French speaking children use both forms of the participial construction as evident in Tables 5 and 6.

| Child | Aux+Past Participle | BarePast Participle |
|-------------|---------------------|---------------------|
| Diana | 87.7% (114/130) | 12.3% (16/130) |
| Martina | 53.7% (29/54) | 46.3% (25/54) |
| Viola | 66.7% (4/6) | 33.3% (2/6) |
| <i>mean</i> | <i>77.4%</i> | <i>22.6%</i> |

| | | |
|----------------|--|-----------|
| Franchi (2002) | | 22% - 54% |
|----------------|--|-----------|

Table 5: Italian Proportion of Full Participle and Bare Participle Constructions

² Also, Schlyter (1990) in her study of three French-German bilingual children finds that in German the present perfect is not used until age 2;10, 3;4, and 2;7 respectively.

Table 5 shows that Italian-speaking children use the full-fledged present perfect form, on average, 77% of the time and bare participles about 23% of the time. These data are also supported in a study by Franchi (2002), who reports an auxiliary omission rate in three Italian children (age range 1;7-3;3) ranging from 22% to 54%.

| Child | Aux + Past Participle | Bare Past Participle |
|-------------|-----------------------|----------------------|
| Gregoire | 90.6% (163/180) | 9.4% (17/180) |
| Philippe | 66.2% (92/139) | 33.8% (47/139) |
| <i>mean</i> | <i>79.9%</i> | <i>20.1%</i> |

Table 6: French Proportion of Full Participle and Bare Participle Constructions

French-speaking children display a pattern strikingly similar to that of Italian-speaking children. Their data display roughly 80% full-fledged present perfect forms and 20% bare participles as shown in Table 6 above. Meisel (1985), Schlyter (1990), and Rasetti (2003) confirm that such optionality with regard to the use of the two participial constructions exists in the child grammar of French. Therefore, auxiliary omission in participial constructions appears to be optional in child Italian and French.

In sum, we have observed a three-way asymmetry with regard to the possibility of auxiliary omission in the child grammars of Spanish, German, Italian and French. Spanish does not allow omission of the auxiliary in participial constructions, which leads to the production of full-fledged present perfect forms exclusively. Conversely, child German requires obligatory auxiliary omission, and thus turns out bare participles exclusively. Child Italian and French allow for optional auxiliary omission, which results in the occurrence of both bare participles and full-fledged present perfect forms. In what follows, we provide an analysis of these observed asymmetries.

3. Theoretical Background

3.1 Participle Movement in the Adult Grammars

In the literature on participial constructions, the idea that a participle is somehow closely connected to the auxiliary has been expressed by a number of authors in a number of ways (Gueron & Hoekstra (1988), Grimshaw (1991), Shlonsky (1997)). Although these proposals are rather different from one another, they share a common core, namely, they attempt to formalize and cast in theoretical terms an observable dependency between participles and auxiliaries.

In our analysis we adopt the proposal of Shlonsky (1997), which stipulates that the close relationship between the participle and the auxiliary in the participial construction is expressed by movement of the participle to T, where it incorporates and therefore forms a complex head T^0 with the auxiliary. Shlonsky argues that such a movement is universal and obligatory. Languages differ from one another only in that some languages (such as Hebrew, Polish, or Rumanian) have participle incorporation in overt syntax, while other languages have participle incorporation at LF. We propose that part of the asymmetry between the participial constructions in the various child grammars follows from the different properties that these

languages possess with respect to participle movement. More specifically, the participle moves to T in overt syntax in some languages, while it moves to T at LF in other languages.

Spanish is a language for which it has been suggested that the participle and the auxiliary form a unit in overt syntax (Torrego (1984), Suñer (1987), Zagona (1988)). It is a well-known fact that no lexical material can intervene between the auxiliary and the participle in Spanish, as evidenced in the examples in (3).

- (3) a. Juan *ha comido*. *Aux^Participle*
 John has eaten
 “John has eaten.”
- b. *Juan *ha ya comido*. **Aux^XP^Participle*
 John has already eaten
 “John has eaten already.”

Based on this observation, Zagona (1988), for example, argues that the participle incorporates into the auxiliary in overt syntax, forming an inseparable unit. Applying Shlonsky’s terminology, we argue that Spanish is a language that displays overt participle movement to T, where the auxiliary and the participle form a complex head T^0 in overt syntax.

For German, the hypothesis of overt incorporation is highly implausible. Given that German is a V2 language, with a head-final TP, a variety of lexical material is able to intervene between the auxiliary and the participle, as shown in (4).

- (4) a. Hans *hat gegessen*. *Aux^Participle*
 John has eaten
 “John has eaten.”
- b. Hans *hat schon gegessen*. *Aux^XP^Participle*
 John has already eaten
 “John has eaten already.”
- c. Hans *hat den Apfel gegessen*. *Aux^XP^Participle*
 John has the apple eaten
 “John has eaten the apple.”
- d. Den Apfel *hat Hans gegessen*. *Aux^XP^Participle*
 The apple has Hans eaten
 “John has eaten THE APPLE.”
- e. Hans *hat den Apfel gestern schon gegessen*. *Aux^XP^n^Participle*
 Hans has the apple yesterday already eaten
 “Hans has eaten the apple already yesterday.”

Thus, following Shlonsky’s hypothesis, we argue that, in German, movement of the participle to T and subsequent incorporation with the auxiliary takes place at LF.

Similarly, Italian and French are languages for which an overt unit-formation hypothesis for the auxiliary and the participle has been rejected (see, for example, Belletti (1990)). In these languages, certain adverbial and negative elements can intervene between the auxiliary and the participle as well, as shown by the examples

in (5) and (6). Consequently, we assume that the participle in these languages undergoes participle movement to T and incorporation with the auxiliary at LF.

- (5) a. Gianni *ha mangiato*. *Aux^Participle*
 John has eaten
 ‘John has eaten.’
- b. Gianni *ha già mangiato*. *Aux^XP^Participle*
 John has already eaten
 ‘John has eaten already.’
- (6) a. Jean *a mangé*. *Aux^Participle*
 John has eaten
 ‘John has eaten.’
- b. Jean *a déjà mangé*. *Aux^XP^Participle*
 John has already eaten
 ‘John has eaten already.’

Under these assumptions the available options for participle movement in the adult grammars of the languages under investigation can be summarized as in Table 7.

| Language | Participle Movement Parameter | |
|----------|-------------------------------|-----------------|
| | Overt Movement | Covert Movement |
| Spanish | √ | |
| German | | √ |
| Italian | | √ |
| French | | √ |

Table 7: Participle Movement Parameter in the Adult Grammars

Spanish displays overt movement of the participle to T, while in the remaining three languages the participle movement parameter is set to “covert.” However, language-specific parameterization of participle movement alone cannot derive the patterns of auxiliary omission in the child grammars of these languages. We propose that a universal principle of tense omission is operative in child grammar, and that the interaction of this principle with the participle movement properties discussed above accounts for the observed differences between the languages under study.

3.2 Auxiliary Omission: Tense Deletion up to Recoverability (TDUR)

The basic idea underlying our analysis of auxiliary omission is a commonly adopted one concerning the defunct nature of Tense in child grammar. Optional tense omission in child grammar has frequently been employed in order to account, for instance, for the co-occurrence of finite and non-finite verb forms during the RI stage of language acquisition (see, for example, Wexler (1994), Rizzi (1994), Hoekstra & Hyams (1998)). In earlier work (Berger-Morales & Salustri (2002)), we have made use of this idea of Tense omission, but extended it by proposing that

children omit Tense *obligatorily* up to *recoverability*. We labeled this principle Tense Deletion up to Recoverability (TDUR), as in (7).

(7) *Tense Deletion up to Recoverability (TDUR)*:

The Tense head is obligatorily deleted (i.e. not pronounced) in the child's grammar up to recoverability (i.e. as long as the lexical properties of the verb can be recovered).

Importantly, such a definition of recoverability predicts the following for participial constructions. Under the assumption that the auxiliary itself has no meaningful content (see, for instance, Wexler (1998)) the deletion of the auxiliary in participial constructions is forced as long as the preservation of the participle is guaranteed, since the latter provides recoverability of the verbal meaning. Such a situation is provided if the auxiliary alone occupies the Tense head in overt syntax, and the participle does not incorporate until LF. On the other hand, if the auxiliary and participle both occupy the Tense head in overt syntax, as in the case of overt participle movement, no deletion of material can take place under TDUR.

4. Analysis of Auxiliary Omission Patterns in the Child Grammars

In this section, we will show how this universal principle of Tense omission interacts with the language-specific settings of the participle movement parameter in such a way that it derives straightforwardly the observed asymmetries in auxiliary omission patterns between the child grammars of the four languages under investigation.

4.1 The Straightforward Cases: Spanish and German

Recall that Spanish-speaking children virtually never omit the auxiliary in participial constructions, while German-speaking children omit the auxiliary obligatorily.

As in the adult grammars, Spanish-speaking children set their participle movement parameter to the "overt" value, while German-speaking children set theirs to the "covert" value. Crucially, we assume that in both child Spanish and child German, this parameter has already been fixed to its target-consistent value at the stage of acquisition under investigation. Given these assumptions, TDUR predicts three S-structure scenarios for participial constructions in child Spanish.

Scenario (a) in Table 8 shows the participle having undergone overt movement to T, as the setting of the participle movement parameter in child Spanish dictates. TDUR cannot apply, since the deletion of the complex head under T, which contains both the auxiliary and the participle, would render the lexical meaning of the verb unrecoverable. Consequently, a full-fledged present perfect form surfaces.

| | T ⁰ | AgrPrt ⁰ | Comments |
|---|--------------------------------|---------------------|--|
| a | [aux participle] _i | t _i | Overt participle movement to T, incorporation with aux, followed by prohibition of T head-deletion under TDUR, results in a full-fledged present perfect form. |
| b | *aux— | participle | Not a possible scenario in the child grammar due to setting of overt participle movement parameter. |
| c | *[aux participle] _i | t _i | Not a possible scenario in the child grammar due to non-recoverability of verbal content. |

Table 8: S-Structure Scenarios for Spanish Participial Constructions under TDUR

Neither scenario (b) nor scenario (c) are possible in the child grammar of Spanish; the former because covert participle movement is not an option, the latter because recoverability is not satisfied when the entire verbal complex deletes. Given the possibility of (a) and the impossibility of (b) and (c), auxiliary omission does not apply in child Spanish, and only full-fledged present perfect forms occur.

As far as German is concerned, TDUR predicts the following scenarios in Table 9.

| | C ⁰ | T ⁰ | AgrPrt ⁰ | Comments |
|---|---|----------------|---------------------|---|
| a | *[aux participle] _i _j | t _j | t _i | Not a possible scenario due to the setting of covert participle movement parameter. |
| b | aux _i | t _i | participle | Covert participle movement to T, aux deletion under TDUR, results in a bare participle. |

Table 9 S-Structure Scenarios for German Participial Constructions under TDUR

Scenario (a) is ruled out in the child grammar of German, since overt movement of the participle to T (and subsequent movement of the complex head to C) is impossible due to the participle movement parameter being set to the “covert” value. Scenario (b) implies covert participle movement, and TDUR forces deletion of the Tense head, which contains the auxiliary, under C. The resulting bare participle ensures recoverability of the lexical properties of the verb. Given that (b) is the only possible scenario, obligatory auxiliary omission in child German is accounted for.

Thus, the interaction of TDUR with the target-consistent parameter settings in the child grammars straightforwardly derives the patterns showing lack of auxiliary omission in Spanish and obligatory auxiliary omission in German. Given that adult Italian and French have the same parameter setting value as German does, namely “covert” we might want to infer that Italian and French-speaking children will exhibit the same pattern of auxiliary omission as the German-speaking children. However, as we have seen in Tables 5 and 6, this is not the case. Instead, auxiliary omission is *optional*, and not obligatory, in Italian and French child grammars. In the following section, we will resolve this puzzle by showing that the observed

optionality is due to a delayed setting of the participle movement parameter in Italian and French.

4.2 The Case of Italian and French

It has been shown (for example by Wexler (1998)) that, when syntactically significant production begins in child grammar, major parameters have already been set to the target-consistent values. However, in recent research (Rizzi (2002), Chierchia (2000)), it has been argued that such very early parameter setting might not hold across the board, and that in certain cases a delayed fixation of parameters may occur. Such cases include the parameters controlling determiner omission, copula omission, or root infinitives. We want to claim that, in Italian and French, the nature of the adult input that children receive is such that it results in delayed fixation of the participle movement parameter.

4.2.1 The Nature of the Input

Table 10 illustrates the input that the children acquiring the various languages under investigation receive.

| Language | Aux [^] Participle | Aux [^] XP ⁿ Participle |
|----------|-----------------------------|---|
| Spanish | 100% (285/285) | 0% (0/285) |
| German | 3.7% (9/245) | 96.3% (236/245) |
| Italian | 89.6% (95/106) | 10.4% (11/106) |
| French | 85% (408/480) | 15% (72/480) |

Table 10: Adjacency of Auxiliary and Participle in Present Perfect Constructions (Adult Input)³

Consider first the Spanish data. In virtually all of the present perfect constructions, the auxiliary and the participle appear directly adjacent to one another.

In the German input data about 96% of the utterances show lexical material intervening between the auxiliary and the participle.

In the Italian and French adult input, the scenario is less straightforward. Children are exposed to utterances in which the auxiliary and the participle appear directly adjacent to one another, as well utterances in which they are non-contiguous. More specifically, less than 10-15% of the utterances contain intervening material.

Given these input patterns, how do the Italian- and French-speaking children decide how to fix the participle movement parameter?

4.2.2 Fixing of the Participle Movement Parameter

Based on learnability considerations, such as the Subset Principle (see Berwick (1985), Manzini and Wexler (1986)), let us assume that children select as a default

³ These percentages were calculated based on quantitative analyses of adult input excerpts from the CHILDES corpora listed in Table 2.

parameter setting the most restrictive option available to them. In the case of participle movement, the most restrictive choice is that of “overt” participle movement. Hence, we propose that children choose such option as the default. This default setting of the parameter may then be reconsidered by the child, but only if counter evidence in the form of non-contiguous aux-participle form is attested in the adult input. Given the input patterns for the various languages that we have seen in Table 10, the predictions are as follows.

In child Spanish, no counter evidence against the default value of “overt” participle movement is found in the input. Therefore, the initial default value of the parameter will be maintained.

In child German, the default setting of the parameter is proven to be wrong by 96% of the utterances in the input. This leads to a re-setting of the parameter to the “covert” value before relevant production begins.

In child Italian and French, counter evidence against the default parameter value is attested as well. However, we want to claim that the evidence in the input of these languages is *so* scarce that a delay in the correct or target-like setting of the parameter is expected.

Since there clearly exists some evidence against the default overt parameter setting, namely from the 8-27% non-contiguous aux-participle forms, the Italian and French children, like the German children, do not maintain the participle movement parameter at its default value. However, given the scarcity of negative evidence in these languages, the Italian and French children, contrary to the German children, are not able to set the parameter to its target-consistent value either. Instead, the participle movement parameter remains unfixed during this period of acquisition. In the Italian and French children, this non-fixation of the parameter gives them the possibility to apply both values of the parameter, overt movement as well as covert movement of the participle. Even though the input cues that drive the target-like setting of the parameter are rare, they eventually will prove to be enough for the children to adjust the participle movement parameter to the target-consistent “covert” value. During the stage of acquisition under investigation here, though, the parameter setting possibilities for the Italian and French children are “overt” as well as “covert.”

With these assumptions concerning the value of the participle movement parameter in child Italian and French at hand, TDUR derives the following scenarios in Table 11.

| | T ⁰ | AgrPrt ⁰ | Comments |
|---|--------------------------------|---------------------|---|
| a | [aux participle _i] | t _i | Option for overt participle movement to T, incorporation with aux, followed by prohibition of T head-deletion under TDUR, results in a full-fledged present perfect form. |
| t | aux | participle | Option for covert participle movement, aux deletion under TDUR, results in a bare participle. |

Table 11: S-Structure Scenarios for Italian and French Participial Constructions under TDUR

Scenario (a) is an option in Italian and French. We have seen that overt participle movement to T can apply, by which the auxiliary and the participle form a complex Tense head. TDUR will not delete this complex head, since recoverability of the verbal content would be violated. As a result, a full-fledged present perfect form surfaces. Due to the non-fixation of the participle movement parameter, the participle may also move covertly. Such a scenario is shown in (b). Here, TDUR can delete the auxiliary, because the resulting bare participle ensures recoverability of the verbal content. We therefore correctly derive optional auxiliary omission in child Italian and French.

5. Conclusion

In sum, the analysis that we have proposed shows that the interaction of a universal principle that applies in child language, TDUR, and the language-specific properties, namely the setting of the participle movement parameter, accounts for

- (i) the difference between child and adult language in terms of auxiliary omission and
- (ii) the newly discovered differences between various child languages in terms of auxiliary omission.

In addition, we suggested that it is reasonable to assume a delay in parameter fixation if the input available to the learner is unclear. By this, we are able to account not only for an obligatory auxiliary omission in the participial constructions of child German, and a complete lack thereof in the participial constructions of child Spanish, but also for the optionality of auxiliary omission in child Italian and French.

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