Partitivity, atomization, and Noun-Drop: A longitudinal study of French child language[*]

0. Introduction

Language acquisition research in generative grammar uses a number of different approaches to confirm, modify or invalidate hypotheses. Typically, studies either test a theoretical model by adapting child language data to it or to compare child and adult grammars. Alternatively, data may be used to argue for the continuity or maturation hypotheses. Since Hyams (1986), however, language acquisition research has focused more on the development and refinement of the theory. A detailed analysis of acquisition data will allow us not only to better understand the mechanisms underlying a number of syntactic phenomena, but also to decide between competing proposals. The acquisition of noun-drop in French and other languages is one of these phenomena.

Noun-drop is found in a number of languages, including Spanish, Dutch, German and Scandinavian languages (Sleeman, 1993). At first glance, a straightforward comparison of these languages with English, which does not license noun-drop, would lead us to posit a link between morphological richness and the presence of this phenomenon. Of all these

languages, only English, a morphologically poor language, does not license noun-drop.[1] In addition, languages such as Dutch allow noun-drop only when adjectives are inflected (see section 2.3).

The study of noun-drop allows us to test a number of influential hypotheses on the nature of acquisition. For example, Chomsky (1993) proposes that the syntactic component of the language faculty is basically invariant across languages and individuals, and that the specific syntactic properties of a language are the consequence of its morpho-syntactic properties. These properties trigger the setting of different linguistic parameters, which are ultimately responsible for the variation observed across languages (including functional heads). The relevant morpho-syntactic properties are typically abstract features, which do not necessarily have a one-to-one correspondence with overt phonological forms. Syntactic variation is therefore determined by information that is external to the computational component of syntax, in conjunction with universal principles that are highly deductive. Under this approach, we may conceive of the morphological realization of agreement as the relevant trigger for the licensing of the empty category (e.g. *pro*) in noun-drop constructions.

However, other analyses of noun-drop have been proposed. Some provide answers to problems arising from morphological analyses; others offer more generalized explanations of the data (i.e. analyses that are not construction-specific). For example, while noting that noun-drop occurs in French only with determiners and adjectives that have quantificational properties (i.e. "classifying adjectives" according to accepted

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[1] Except in particular circumstances (see section 2.2).

terminology), Sleeman (1996) proposes a syntactic analysis whose main tenet is the presence of an operator-variable structure between the adjective and the empty category resulting from noun-drop (see section 2.3). Similarly, Bouchard (2002) presents a semantic analysis based on the mechanisms required to create the partitive reading necessary for the identification of a referent in these structures (see section 4.2) that extends, in part, to his account of adjective placement in French and English.

Faced with these different analyses, our purpose in this article is two-fold. The first objective is purely descriptive: to examine noun-drop in French-speaking children for the first time, and more specifically, to determine the role of agreement in relation to these structures. French is an interesting case, as its nominal morphology can be viewed as situated between Spanish and English in terms of richness.

The second objective is more theoretical: to demonstrate that acquisition data allow us to evaluate and discriminate between different analyses proposed for the same syntactic process. Specifically, we will show that noun-drop is not related to the syntactic licensing of an empty category (either by agreement features or other syntactic means), as has often been proposed. Instead, it is based on semantic processes involved in the denotation of the Determiner Phrase (DP).

1. Definition

Noun-drop (also called N-Drop or n-ellipsis) is defined as the absence of the noun in the DP in the presence of an adjective or specific determiners (Barbaud 1976, Ronat 1977):

(1) a. *Je prends la fleur rouge. Toi, prends la __ jaune.*

     'I'll take the red flower. You take the yellow ____.'

b. *J'ai lu tous les livres de J. J. publiés par les Éditions Telles*

   alors que tu n'as lu que le premier __ .

   'I've read all J. J.'s books published by Such'n'Such Editor, while you've

   only read the first___'

c. *Nous avons publié le ___ plus intéressant.*

   'We've published the most interesting.'

Syntactic environments licensing these structures and analyses of this phenomenon vary among languages. Until recently, accounts of noun-drop have invoked the morpho-syntactic conditions imposed by different languages, emphasizing the role of agreement features in their ability to license the empty category created by noun-drop.

2. Cross-linguistic syntactic analyses of noun-drop: the apparent role of morphology

The main arguments for morphology as a trigger for noun-drop stem from comparisons between morphology-rich languages such as Spanish, which allows it, and morphology-poor languages like English, which do not. A second source of data is the fact that some languages that allow adjectives to appear either in neutral or inflected form in certain

contexts (e.g. Dutch and informal German) allow noun-drop only when the adjective is inflected. We review these cases below.

2.1. Spanish

Spanish generally allows noun-drop independently of the type of adjective used, as long as the omitted noun can be retrieved through context or morphology (Sleeman, 1996; Snyder, Senghas, & Inman, 2001). Both the following examples are possible in Spanish (only the first is possible in French, a language we will address below)[2]:

(2) a. *Quiere la manzana verde y yo la __ amarilla.*

'S/he wants the green apple and I the yellow __.'

   b. *Se casó con la ___ inteligente.*

'He married (himself) with the intelligent __.'

The co-occurrence of rich morphology and an elided noun is reminiscent of the situation with null pronouns in *pro-drop* languages[3] such as Spanish, especially when compared with data from non *pro-drop* languages, such as English.

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[2] Cabredo Hoffher (2006) distinguishes examples such as (2a-b) from (i) below:
(i)   *La __ de Juan.*
      'That of John' = John's
In (2a-b), *la* is indeed a determiner, while in (i) it is a pronoun. According to Cabredo Hoffher, only (2a-b) are cases of noun-drop. In that sense, (i) is similar to (ii) in French:
(ii)   *Celle de Jean.*
      'That of John' = John's
[3] That is, in languages licensing null subjects.

2.2. English

Both Barbiers (1991) and Muysken (1983) establish a link between noun-drop and *pro-drop*. These authors propose that agreement morphology richness within the Noun Phrase legitimates noun-drop, as it does for verb morphology and subject omission. We can therefore observe a distinction between English (3a), on the one hand, and Spanish (3b) and French (3c), on the other.

(3) a. *I eat the green apple, you eat the yellow __ .[4]   (poor morphology)

    b. *Como la manzana verde, comes la __ amarilla.*   (rich morphology)

    c. *Je mange la pomme verte, tu manges la __ jaune.*   (rich morphology)

However, a closer look at English reveals that noun-drop is possible, albeit under different grammatical conditions. For example, in English, noun-drop can occur in the context of demonstratives (4a), possessives (4b), quantificational determiners (4c) and partitives (4d):

(4) a. You like this car, but I like those __.

    b. I saw John's cat, but did not see Lucy's __.

    c. You read one book, and I read many/two __.

    d. Each __ saw a bear in the woods[5].

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[4] Use of adjectives without nouns (for ex., Give me the yellow) can be grammatical, but only in very constrained environments (see footnote 10).

To account for these cases, Kester (1996), drawing on Loebeck (1995), adopts an analysis where the empty category (*pro*) representing an elided noun must be licensed and formally identified through morphology. More specifically, the empty category must be properly governed by an overtly marked element[6] such as:

- The [+ plural] feature of demonstrative determiners *these* and *those*, quantifiers like *many*, *some*, etc., and cardinal numbers like *two*, *three*, etc. (*You don't like this car, but you like those*.)

- The [+ possessor] feature of pronominal genitives (*I saw John's cat, but did not see Lucy's __*.)

- The [+ partitive] feature of determiners such as *each*, etc. (*Each __ saw a bear in the woods*).

Although the latter observation weakens the link between noun-drop and *pro-drop* languages, it reinforces that between noun-drop and agreement features. Dutch, another non *pro-drop* language, offers additional support for this position.

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[5] Note that judgments vary in this type of structure.
[6] The configuration is the following, where X represents the governing element bearing the relevant features:

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      XP
     /  \
    X    YP
          |
         pro
```
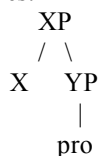
2.3. Dutch

Dutch is relevant to this issue, as adjectives may or may not be inflected depending on the context. More precisely, attributive adjectives must bear the suffix [ ] (5a), but not when they modify a neutral noun (5b) (Sleeman 1993 and references):

(5)   a. *Ik neem de oude auto.*

        'I take the old car'

   b. *Een oud huis.*

        'An old house'

The point here is that only suffixed adjectives license noun-drop (6a) (Muysken & van Riemsdijk 1986):

(6)   a. *Ik neem de oude __.*

        'I take the old __'

   b **Ik heb liever een oud.*

        'I prefer an old __'

We could therefore conclude that it is the inflection of the adjective that licenses noun-drop in Dutch. In fact, Barbiers (1991) proposes that in Dutch noun-drop, the N or NP

node dominates an empty category *pro*, which is identified by the morphological features of the inflected adjective, as is the subject *pro* in *pro-drop* languages (see also Kester 1996).

2.4. Informal spoken German

Muysken and van Riemsdijk (1986) provide a similar argument based on informal spoken German data. In this dialect, adjectives can be inflected (7b), although they are normally not inflected in more formal varieties of German (7a). This is the case for *lila* 'lilac (colour)' in the following examples:

(7) a. *Ein lila Kleid.*

   'a lilac dress'

 b. *Ein lilanes Kleid.*

   'a lilac dress'

Crucially, the noun may be omitted only in the second construction, i.e. when the adjective is inflected:

(8) a. **Ein lila __ .*

 b. *Ein lilanes __ .*

To sum up this section, it appears at first glance that agreement is indeed the triggering factor for noun-drop. A recent article by Snyder, Senghas and Inman (2001) on noun-drop in Spanish child language investigated this question and concluded that agreement cannot be the sole factor in the licensing of noun-drop. This leads us to provide an alternative analysis based on the notions of partitivity and atomization in Section 3. First, we review Snyder *et al.*'s paper.

3. Acquisition of noun-drop in Spanish

In an influential paper, Snyder, Senghas and Inman (2001) studied the acquisition of noun-drop in Spanish first-language acquisition using the longitudinal corpora of two Spanish-speaking children, María and Koki (Montes, 1987). They tested the hypothesis that noun-drop in Spanish stems *directly* from the acquisition of morphological agreement paradigms for determiners or adjectives. In other words, they verified whether morphological richness in agreement is a *necessary* and *sufficient* condition for noun-drop to emerge. This being the case, a child having mastered gender and number agreement should allow noun-drop, and a cause and effect relationship should be observed between these two phenomena. On the other hand, if a child masters agreement but does not produce noun-drop for a certain time, this would indicate that this phenomenon does not depend solely on the acquisition of agreement morphology. Instead, it could be linked to other independent properties of language, such as an independent syntactic parameter or some abstract syntactic feature of determiners. Alternatively, the child could present noun-drop concurrently with, or before, mastery of

agreement. This would show that the two phenomena are not necessarily related, or that a directional cause and effect relation cannot be established between agreement (first) and noun-drop (second).

Snyder *et al.*'s analysis of longitudinal corpora uncovered a child, María, who showed mastery of agreement concurrently with the production of noun-drop. At the age of 2;1 years, she produced her first clear uses of noun-drop, at the same time as she produced her first attributive adjectives and exhibited strong mastery of gender and number marking on determiners.

Furthermore, Snyder, *et al.* analyzed the corpus of another Spanish-speaking child, Koki, who mastered number and gender agreement on determiners and adjectives for a short period before starting to produce noun-drop. At the age of 2;2 years, she already used attributive adjectives and produced a number of determiners and pronouns in appropriate forms. In 97% of cases, she made no gender or number errors. However, she started producing noun-drop only at the age of 2;6 years. Her first ellipsis followed seven productions of full complex DPs (i.e. DPs with a determiner, a noun and an adjective, or a determiner, an adjective and a noun), occurring at between 2;2 and 2;5 years. Therefore, Koki produced her first clearly identifiable noun-drop up to four months after producing her first DP containing an overt determiner and an attributive adjective, and at least four months after demonstrating mastery of gender and number agreement on the determiner. Although no numbers are given on predicative adjectives, the authors documented, between the ages of 1;7 and 2;2, 41 occurrences of masculine singular determiners *el*

'the', *un* 'a', *otro* 'other' (used as a determiner), *ese* 'this', *este* 'that', *mucho* 'a lot' (used as a determiner); 42 cases of feminine singular determiners *la* 'the', *una* 'a', *otra* 'other', *esa* 'this', *esta* 'that'; 9 masculine plural determiners *los* 'the', *muchos* 'many', *otros* 'other'; and 3 in the feminine plural *las* 'the'. Of these 95 determiners, 92 agree in number and gender with the noun. Based on these results, Snyder *et al.* conclude that "[their] findings likewise speak against any account in which overt morphology is the learner's principal source of evidence concerning noun-drop (Snyder *et al.* 2001: 169)." The question arises as to whether the presence of a determiner (and not its agreement features) is sufficient to allow the noun to drop (we return to this matter in section 4.2). More importantly, the fact that the first child, María, produces noun-drop at exactly the same time as she exhibits mastery of agreement suggests that agreement may not be a precursor to noun-drop. We suggest that a look at noun-drop in French will provide another important source of data to better understand the phenomenon. In fact, in French, in which DP morphology is overt (although not as prominently as in Spanish; see below), noun-drop is semantically constrained.

4. French

In French, DPs contain overt traces of morphological features, at least more so than in English. Determiners take different forms in the feminine and masculine (except in the plural), and many adjectives agree in gender and number with the noun and determiner. However, number is rarely overtly manifest in the phonological realization of the

adjective, and the plural liaison marker /z/ is phonologically, sociolinguistically and syntactically constrained (i.e. *de vertes étendues* [v´rtzeta~nd¥]). Some adjectives (e.g. *grand* [g±a~], *grande* [g±a~d]) 'tall') have different phonological forms in the masculine and feminine, whereas others are invariable (*flou* [flu], *floue* [flu] 'vague/fuzzy').

Nevertheless, not all adjectives allow noun-drop, that is only a sub-set of adjectives license the absence of a noun (Sleeman, 1993). According to Barbaud (1976) and Ronat (1977), adjectives that allow noun-drop are "classifying" adjectives, i.e. superlatives, color adjectives, adjectives denoting a hierarchy (cardinals, ordinals, *precedent* 'preceding', *suivant* 'following', *prochain* 'next', *même* 'same', *autre* 'other', *seul* 'only'), and size adjectives (*grand* 'big', *petit* 'small', etc.).

(9)   a.   *J'ai entendu la ___ plus importante.*   [superlative]

      'I hear the ____ most important.'

      b.   *J'ai entendu les deux ___.*   [cardinal]

      'I heard both ____'

      c.   *J'ai entendu le premier ___.*   [ordinal]

      'I heard the first ____'

      d.   *Je préfère la ___ vert foncé.*   [color]

      'I prefer the ___ dark green'

      e.   *Je veux le gros ___.*   [size]

      'I want the big ___'

      f.   **J'ai entendu l' ___ importante.*   [non classifying adjective]

'I heard the ___ important'

There have been two major attempts recently to explain noun-drop in French, one syntactic, the other semantic.[7]

4.1. Syntactic account of French noun-drop

Sleeman's analysis (1996) does not appeal to agreement. Her account does not rely on morphology, but rather on the syntactic-semantic properties of adjectives that license noun-drop, combined with the DP structure she adopts. Sleeman proposes that Barbaud's "classifying" adjectives have quantificational properties, meaning that they express a partitivity relation between a set of objects or individuals and a sub-set of these. For example, the DP *the blue dress* denotes a sub-set (a blue dress) of the set of all possible dresses. Sleeman then follows Cinque (1994) in assuming that adjectives head their own projections.

With the above premises, Sleeman proposes that the quantificational properties of classifying adjectives be expressed through an operator variable-relation between a null operator in SpecAP and the null category (*pro*) left behind by noun-drop. This is exemplified by the sequence *le gros pro* (pro = *livre* 'book')

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[7] Bernstein (1993) offers an account based on the presence of an abstract word marker in French, which incorporates in D and serves as a licenser for noun-drop in certain contexts. Without completely dismissing the validity of such an analysis, among other problems, the analysis appears at first glance somewhat circular: noun-drop is possible in French because of the abstract word marker, and the abstract word marker is present because we need it to explain noun-drop; see Bouchard (2002) for a review, and Alexiadou (2001), and Ntelitheos and Christodoulou (2005) for arguments against the word marker account.

(10) $[_{DP}$ le $[_{AP}$ Op$_i$ $[_{A'}$ gros $[_{NP}$ pro$_i$]]]]

Sleeman's analysis encapsulates the intuitive explanation for this structure in French, i.e. that noun-drop is possible when the omitted element is recoverable from the context, in the sense that the operator provides the necessary formal clue to the omitted noun. The quantification interpretation of the adjective presupposes a set of nouns, with free indexation linking the elided noun with the operator in SpecAP. Note that in terms of acquisition, this analysis is plausible, because the production of operator-variable structures (such as in wh-questions; cf. (11), Zuckerman & Hulk (2002); and references) arise early in children (around the age of 2):

(11)   *Où le chat?*

'Where the cat?'

However, this raises the following question: if the null operator option is valid, why don't all languages use it, thereby licensing noun-drop indiscriminately? In other words, how can we explain the differences between English and French other than saying that these languages have different strategies to express the same syntactic phenomenon? This explanation is clearly less than optimal.[8] This leads us to suggest a different account for the (French) facts: the semantically based account of noun-drop in French and English proposed by Bouchard (2002).

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[8] This is Sleeman's (1993) position.

4.2. Semantic account (Bouchard, 2002)

Within a larger theoretical framework that attempts to account, among others, for differences between English and French in adjective position in the DP, Bouchard (2002) presents a novel analysis of noun-drop. Rather than syntactic postulates, his analyses relies on mechanisms that are generally at play in the to encoding of the denotation of a DP.

In a nutshell, Bouchard posits that a DP is the canonical expression of a referent in an event. His assumed structure differs from that proposed in Valois (1991a, b), in that there is no functional projection containing number features, the latter being projected as part of either the noun (English) or the determiner (French). These number features allow the DP to be atomized, i.e. a referent is selected from a set of similar individuals. Number indicates that the set has cardinality, it contains a certain number of elements, and there is a referent in the event. In French, number features are expressed on determiners, while the noun carries them in English.

To illustrate the atomization process of a DP, the expression *the dog/le chien* can be summarized as follows:

(12)   Level 1: set of all possible referents {a, b, c … x, y, z}

Level 2: set of referents that have the properties of DOG {b, y, z}

Level 3: set from atomization by Number features (on the noun in English, on D

in French) {z}

With respect to noun-drop, Bouchard assumes that the noun can be omitted in syntactic contexts where the referent can be identified in its absence. This is the case in *partitive* constructions of the type illustrated in (13), where the overt elements are sufficient to identify a referent. In these cases, the presence of the cardinal determiner implies a superset in the discourse domain, for which a set can be selected. More precisely, the partitive relation, as understood by the presence of a cardinal determiner, necessarily implies the presence of a set and a subset required for atomization. Thus, partitivity allows us to recover the content of the missing noun.

(13) a. *Deux __ ont été publiés par Jean.*

'Two ___ were published by John.'

b. *Les trois ___ont été publiés par Jean.*

'The three ___were published by John.'

This analysis can be extended to the English cases discussed in (4) repeated in (14), where different elements, such as the possessive marker, imply the existence of a set from which atomization can operate:

(14)　a.　　You like this car, but I like those __.

　　　b.　　I saw John's cat, but did not see Lucy's __.

　　　c.　　You read one book, and I read many/two __.

　　　d.　　Each __ saw a bear in the woods.

A similar situation occurs with noun-drop in the presence of classifying adjectives, this time with different results in French and English (see examples in (9), repeated in (15)).

(15)　a.　*J'ai entendu la ___ plus importante.*　　　[superlative]

　　　　'I hear the ____ most important.'

　　b.　*J'ai entendu les deux ___.*　　　　　[cardinal]

　　　　'I heard both ____'

　　c.　*J'ai entendu le premier ___.*　　　　[ordinal]

　　　　'I heard the first ____'

　　d.　*Je préfère la ___ vert foncé.*　　　　[color]

　　　　'I prefer the ___ dark green'

　　e.　*Je veux le gros ___.*　　　　　　[size]

　　　　'I want the big ___'

　　f.　**J'ai entendu l' ___ importante.*　　　[non classifying adjective]

　　　　'I heard the ___ important'

First, Bouchard agrees with Barbaud, Ronat and Sleeman that noun-drop is dependent on the establishment of partitivity between the adjective and the (understood) set denoted by

the elided noun. In other words, citing Sleeman (1996:31): "[…] classifying adjectives have discriminating properties that serve to create a subset at a cognitive level: adjectives that allow N-omission are partitive, and they mean, roughly, the one of the ones from a given set." However, Bouchard's notion of partitivity differs from Sleeman's. For Bouchard, partitivity as expressed by these adjectives is double: on the one hand, adjectives permit the selection of a set of possible individuals from a set of all possible referents, and on the other hand, the noun selects a subset of this set. Partitivity is therefore the result of the intersection of two or more subsets.

To illustrate, consider the DP *the blue dog /le chien bleu*. Here the adjective *bleu* distinguishes a subset of potential referents from the subset of all possible referents, as follows:

(16) Level 1: set of all possible referents {a, b, c … x, y, z}

  Level 2: set of BLUE and DOG   {a, c, x, y}

  Level 3: set from atomization by Number features (on the noun in English, on D

    in French) {x}

Now consider noun-drop in French, such as *le __ bleu*, where *bleu* is a classifying adjective. Here the partitive relation between BLUE in Level 2 and atomization via the determiner *le* makes it possible to recover the reference set, i.e. to identify the referent, as atomization of a subset by number sufficiently narrows the referent of the expression for

the expression to be identified. Non-classifying adjectives, on the other hand (e.g.

importante in (15f)), cannot do that. They are insufficiently salient, i.e. recognizable on

cognitive grounds, to discriminate among all possible referents.[9]

This strategy is not available in English, which explains why Snyder *et al.* (2001) found

no cases of noun-drop in their English corpus. Because number features are realized on

the noun, and not the determiner, atomization cannot take place in the absence of the

noun, hence the ungrammaticality of examples such as (17).[10]

(17) *I want the green __.

The point here is that this analysis of noun-drop in French and English is not the result of

a syntactic process licensing *pro* through morphological features, but rather the result of

semantic requirements inherent in the denotational processes of DP. More specifically,

the presence of the determiner is *obligatory* for noun-drop licensing in French. [11]

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[9] If the hyperset is contextually narrowed to a limited set, a non-classifying adjective can also appear
without a noun (in both French and English). In this case, Bouchard argues that for a pragmatic (as opposed
to a grammatical) process of noun ellipsis. Bouchard (2002;231) gives the following example:
*Parmi les tableaux exposés dans ce musée, je distinguerai trois catégories: les magnifiques, les bizarres et
les affreux.*
'Among the paintings exhibited in this museum, I will make a distinction between three categories: the
magnificent (ones), the strange (ones), and the awful (ones).'
[10] Except, once again, in certain cases where ellipsis is limited to discourse context, such as in (i) (or in
expressions like *the rich, the poor*) etc.
(i)   Vendor: *Would you prefer the green umbrella or the blue?*
         Client :   *I'll take the green, please.*
[11] Bouchard assumes the following structure for N-Drop constructions:

      DP
     / \
    D   AP

(Note that nounless DPs have also been assumed for English genitives in Abney (1987) and Valois (1991b).

4.3. Dutch and Spanish

Bouchard's analysis works well for both French and English. The question now is whether this system is compatible with the Spanish and Dutch (or informal German) data, a point that Bouchard only briefly addresses for Dutch, and not at all for Spanish. In this section, we explore a few possibilities that could render the data compatible. This is by no means intended as the definitive account of the data, as that would require a detailed analysis of both languages' syntactic structures, which would be outside the scope of this article. However, it could serve as the starting point for future research.

According to Bouchard, the Dutch data in (6) and the informal German data in (8) can be similarly explained if we take the presence of the adjectival suffix ([ə] in Dutch and – *nes* in German) as the relevant elements for identifying the set denoted by the elided noun. For example, Corver and van Koppen (2006) propose that focus is the necessary condition for noun-drop and that the *schwa* in Dutch is the relevant marker of focalization. Because focalization is a process that creates some kind of subset of a superset, it would be logical to assume that it also sets up the partitive relation between the two sets necessary for noun-drop legitimization.

Spanish is a little trickier, as it depends on whether noun-drops are analyzed as real cases of noun ellipsis (as in French). If so, we could conceive a similar solution for Spanish, considering the adjectival morpheme as being useful to identify the subset. Since this morpheme appears in all variable adjectives (i.e. the majority of cases), this would

explain why noun-drop is not restricted to a subset of adjectives, as in French. This in turn would raise the question as to how French invariable adjectives (e.g. *jaune* 'yellow') still allow noun-drop.

Some researchers have however argued that there is no such thing as noun ellipsis in Spanish. For instance, Luján (2002) proposes that Spanish determiners are modified pronouns that "allow a binding analysis of contextually interpreted DPs with bare Adj[ective]s in Romance, which have traditionally been treated as elliptical structures." [12]

(18) a. *El libro interesante*

'the interesting book'

b. *El ___ interesante*

'the interesting (one)'

c. *El ___ que es interesante*

'the (one) that is interesting'

(19) a. *La tienda de la esquina*

'the store on the corner'

b. *La ___ de la esquina*

'the (one) on the corner'

c. *La ___ que es de la esquina*

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[12] Italian behaves similarly with the determiner *quell-* in that no restriction on the adjective classes is imposed on noun-drop:
Quello interressante
'The interesting (one).'

'the (one) that is on the corner'

Because restrictive relatives (or the PP) create the desired partitivity, this could be compatible with Bouchard's analysis. By the same token, it would explain why noun-drop in Spanish is not restricted to the subclass of classifying adjectives, unlike French (which does not allow the equivalents on (18) and (19)).

Clearly, further research is needed on not only noun-drop in these languages, but their general syntax, since in Bouchard's work, noun-drop is just a part of a larger account of various related syntactic phenomena in the respective languages. However, we believe that the above observations could be further developed and lead in a unified analysis that does not rely on agreement, but rather on the establishment of a partitive relation between a set and a superset.

In the next section, we will show that acquisition data tend to support Bouchard's (2002) analysis.

4.4. Acquisition

To sum up, according to Bouchard noun-drop is not the result of a *pro* licensing process via agreement features. In French, the determiner (and its number features) plays a crucial role in enabling the atomization process to take place from a set of sets created by the partitivity condition on noun-drop. In other words, the presence of a determiner is

more important than that of agreement features in triggering noun-drop. In fact, a previous transversal study of the phenomenon (Valois, Royle, Bourdua-Roy, & Sutton, in press) concluded, in line with Snyder *et al.* (2001) and Ntelitheos & Christodoulou (2005), that agreement is irrelevant for noun-drop. In their study Valois *et al.* examined the cross-sectional transcriptions of 15 children, aged 1;8 to 3 years (6 girls, 9 boys) as part of a larger independent study (Sutton *et al.*, 2004-2008). They showed that the first manifestations of agreement appear in the youngest child of the corpus, that is, at a younger age than could be established in the Snyder *et al.* (2001) corpus. More importantly, these manifestations coincide with the appearance of the first clear cases of noun-drop.

Table 1. Production of determiners (in numbers and percent correct) and noun-drop in the transversal Sutton corpus (Valois *et al.*, in press).

Child	Age	Noun-drop	Determiners (% correct)	Total Utterances
A12	1;8	4	6/6 (100)	55
A8	2	1	18/18 (100)	167
A2	2	1	23/25 (92)	151
B3	2;1	3	22/23 (95.7)	93
B16	2;2	3	40/40 (100)	128
B18	2;4	1	38/40 (95)	159
B9	2;4	3	22/24 (91.7)	94
B13	2;5	6	62/64 (96.9)	133
B22	2;6	4	36/39 (92.3)	145
B1	2;7	2	59/60 (98.3)	133
C3	2;8	0	36/37 (97.3)	139
C2	2;9	7	31/31 (100)	113
C10	2;10	0	11/13 (84.6)	147
C17	2;11	1	41/41 (100)	113
C14	2;12	14	43/44 (97.7)	134

These authors also found that acquisition of concord (the production of predicate adjectives, which are complements of the verb phrase, subject and object clitics, and past participles bearing agreement) occur later than the first cases of noun-drop. Structures with predicative adjectives and past participles start to appear *well after the production* of the first cases of noun-drop (3 months later). Given both these observations, it becomes difficult to view agreement as a strong causal factor in noun-drop.

Two more observations support our hypothesis that the presence of a [3] determiner, and not agreement, is the crucial element in noun-drop:

(i)   No cases[13] of noun-drop were observed without a determiner (e.g. *Je veux ___ *verte* 'I want ___ green')[14]

(ii)   No cases of noun-drop were observed with a non-classifying adjective[15]

The first observation clearly demonstrates that the presence of a determiner, above and beyond the presence of agreement features, is essential for noun-drop. The second observation is unexpected. We could have anticipated a period of acquisition during which Noun-Drop would have been ungrammatical. As Clark (1985) mentions, there are few aspects of French that children acquire without error (however, number, as indicated through singular/plural contrast, would be one of these, just as is aspect, that is the relation between the imperfect and other past tense forms; cf. Thordardottir & Namazi,

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[13] See also examples below in the present corpus (26).

[14] This is all the more significant since we know that perception knowledge usually precedes production, and, as shown extensively by Pannemann (2007) (and references therein), children are aware of the "syntactic presence" of determiners well before they produce them.

[15] However, few non-classifying adjectives were produced. and none within a complex DP (N=48).

2007), and there are many structures which are acquired early with only short periods of erroneous production before mastery. But recall the role of the adjective in French nounless DPs: In conjunction with the determiner, the adjective allows for the partitive reading of the DP, the only possible reading in the absence of the noun. If this condition is essential for noun-drop, it is not surprising that children do not produce noun-drop with non-classifying adjectives. This supports the notion that very young children are sensitive to the distributional properties and features of different adjectives in French, and can use this information to produce adult noun-drop structures.

Intuitively, noun-drop should be not analyzed as the result of a grammatical process of *pro* licensing via agreement features. First, French is not a *pro drop* language. Second, the nature of *pro* in accounts of noun-drop constructions is somewhat peculiar. Usually, *pro* stands for the maximal projection DP, whether in subject or object position in *pro-drop* or topic languages (Huang 1984), or in object position under certain circumstances in languages such as Italian (Rizzi 1986), French and English (Roberge 1990, Cummings & Roberge 2005). However, it stands for an X^0 in noun-drop. Third, unlike Spanish, the richness of French nominal morphology is not immediately apparent (see Table 2 below; omitting the complex and contracted partitive forms *de la*, *du*, *des*). For one thing, gender marking is absent from all plural determiner forms. Gender marking is also absent in the singular forms of definite determiners before vowel-initial nouns. However, an exception is found with indefinite articles in Standard French, although, due to liaison, the phonetic difference between the masculine and feminine is minimal. In fact, gender marking is neutralized in these cases in informal Quebec French (IQF); cf. (Barbaud, Ducharme &

Valois, 1982, see Table 2). Finally, if agreement were a sufficient factor to license noun-drop, we would expect it to be possible independently of the adjective type involved. As we saw, this is not the case. In other words, the role of the determiner in noun-drop is clear: it serves to make the atomization process possible in French via the number features, rather than activate morphological features in order to license *pro*. This is also why noun-drop is not possible in English: because the noun carries the number feature, it cannot be dropped.

Table 2. The French determiner system

Type of determiner	Form		
	Masculine	**Feminine**	**Plural**
Definite	le /lœ/	la /la/	les /l´/ or /le/
before #_ V	l' /l/	l' /l/	les /l´z/ or /lez/
Indefinite	un /œ~/	une /yn/	des /d´/ or /de/
before #_ V	un / œ~n/	une /yn/ (œn/ œ~n in IQF)	des /d´z/ or /dez/
Demonstrative	ce /sœ/	cette /s´t/	ces /s´/ or /se/
before #_ V	cet /s´t/	cette /s´t/	ces / s´z/ or /sez/
Possessive (e.g. 1pers.)	mon /mø~/	ma /ma/	mes /m´/ or /me/
before #_ V	mon /mø~n/	mon /mø~n/	mes / m´z/ or /mez/

To verify these findings, we looked at a longitudinal study of one child to determine the stage at which the relevant agreement bearing structures and determiners, as well as the noun-drop constructions, actually occur.

5. Longitudinal study of one child in CHILDES

[1] Because previous studies have focused on other languages such as Spanish, or on cross-sectional corpora in French (Valois *et al.*, in press), we believe it is important to assess the acquisition of noun-drop in a longitudinal corpus. In particular, the links established between the acquisition of specific determiners and the emergence of noun-drop with these same determiners can only be inferred from a cross-sectional analysis. A better test of this hypothesis would be obtained from the longitudinal corpus of a given child, where we can observe the acquisition of these structures at different developmental stages. To determine the roles of agreement and determiner in noun-drop, we analyzed the transcription of Pauline, a French-speaking child from a middle class family in Rouen, France, in CHILDES (MacWhinney & Snow, 1990). Pauline was interviewed between the ages of 1;2:20 and 2;6:13, the ideal age range for our study type, at intervals varying from 10 to 20 days (Bassano & Maillochon, 1994). From this corpus we extracted all instnaces of DP-internal as well as DP-external agreement.

[2] The reason for analyzing DP-external agreement (concord) was twofold. First, most previous researchers have not made a principled distinction between different agreement types in morphology-based accounts of noun-drop. Theoretically, all types of input could play a role in promoting noun-drop. Second, variable adjectives can occur external to the DP in predicative structures, and these same adjectives are not excluded from DP structures. Bearing in mind that variable adjectives are relatively rare in the corpus, their acquisition can be tracked in DP external structures. Other structures showing agreement in French are past participles (which are often used adjectivally) and 3rd person singular verb clitics (overwhelmingly nominative forms in this corpus). The rationale for

analyzing DP-internal agreement is straightforward: it allows us verify the parallel or asynchronic emergence of noun-drop and concord. We also make a principled distinction between adjective and determiner agreement to verify whether one of these lexical categories has more impact on Pauline's acquisition of noun-drop.

[4] In terms of theoretical explanations for noun-drop, we may expect different possible linguistic behaviour patterns in Pauline's corpus. For one, if the development of noun-drop structures requires mastery of agreement, we should observe a close acquisitional sequence between the appearance of agreement (specifically intra-nominal agreement) and the production of noun-drop structures. In addition, we would not expect noun-drop to precede signs of agreement mastery. On the other hand, if noun-drop production is linked to the semantic operation of reference, specifically for number features, we would expect the mastery of determiners bearing these features to lead to the use of noun-drop structures.

All structures containing nouns (proper nouns, DPs with prepositional complements, complex DPs[16], and DPs with Noun-Drop) were noted. Unlike Snyder *et al.* (2001), we could not compare concord in plural versus singular DPs, because plurality is not marked on regular nouns in French, and the determiner, as shown in Table 2, does not vary in gender in the plural. Gender agreement was verified on singular determiners, adjectives (predicative and attributive), clitics (nominative and accusative) and past participles bearing agreement. Agreement errors were defined as the production of non-target gender in the presence of a clear (lexical or discourse) gender cue. Ambiguous cases (e.g.,

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[16] Complex DPs contain at least one adjective.

determiners in the absence of lexical or discourse cues such as *pi le tout petit euh* 'and the very small ah') were not analyzed. Global results are summarized in Appendix A.

From 1;2:20 to 1;7:27, we note that agreement is manifested exclusively on the determiner (except for one use of the 3ps subject clitic *il* 'he'; DPs with noun-drop were excluded from this particular analysis). In this same period, we find one production of a predicate adjective: the masculine form *lourd* 'heavy.m' ('It's heavy') in isolation. Because masculine is the default gender in French, this is not a clear-cut case of the emergence of agreement. It could simply be a frozen expression. Note that in this early period we observe only three misuses of determiners (gender errors, e.g. *mon bille 'my.m marble.f'). The determiners occurring before age 1;7:27 cover the range of definite and indefinite determiners in French: the definite articles *le* (masc.) and *la* (fem.) and their contracted form *l',* which is used before a following vowel-initial word, the definite plural *les*, and the indefinite singular articles *un* (masc.) and *une* (fem.). It seems that Pauline masteres the determiner system at a very early age, or at least as far as the definite/indefinite distinction is concerned. An overview of her production of these in feminine and masculine DPs is presented in Table 3.

Table 3 Singular determiner production (in numbers and percentages) by Pauline

	Production	
	Masculine	Feminine
Context		
Masculine	106 (94%)	7 (6%)

Feminine	6 (6%)	99 (94%)

Classifying adjectives are observed in the corpus starting at age 1:10;07. The first form produced is *Petit?* 'small ?' in its masculine form, in a noun-drop structure. However, no other adjective of this type is produced until age 2:1;17 (*mon beau sessin [dessin]* 'my nice.m drawing'). A large amount of these adjectives are produced in noun-drop contexts [9] (45/78 or 58%), especially *autre* (e.g., *l'autre __* 'the other (one)'). Complex DPs (without noun-drop) containing these adjectives become frequent only around age 2:04;17. Errors are observed on feminine variable adjectives 31% of the time (see Table 4). Most were of the lexeme *petite* 'small.f', produced as *ti* before *fille* 'girl' (a reduced form) seven times at 2;04:17 and correctly six times in the same recording (two errors occurred on *blanche* 'white.f' at 2;05:07). Invariable adjectives are not preferred over variable ones, as Pauline produced 25 feminine and 12 masculine tokens of these.

Table 4 Variable classifying adjective production (in numbers and percentages) by Pauline

	Production	
	Masculine	Feminine
Context		
Masculine	21 (95%)	1 (5)
Feminine	9 (31%)	20 (69%)

We also analyzed predicate singular and plural adjective production, as plural variable adjectives have distinct feminine and masculine forms. Most early predicate adjectives were of the type *C'est + X* 'It is + X' (e.g. *C'est dur* 'it's hard'; *c'est chaud* 'it's hot', *c'est froid* 'it's cold' etc.), which always command a masculine adjective. Results are presented in Table 5. As can be seen, predicate adjectives are more prone to error when used in feminine contexts.

Table 5 Variable predicate adjective production (in numbers and percentages) by Pauline

	Production	
	Masculine	Feminine
Context		
Masculine	36 (100%)	0
Feminine	3 (30%)	7 (70%)

The first clear use of a variable predicate feminine adjective occurs at 2;01:17 (*m petite moi monter* 'me small me climb'). This may be considered the first clear indication of the mastery of concord. However, few instances occurred in the corpus, with maximally only two feminine variable adjectives per recording, Past participle forms were also quite rare in Pauline's corpus, totalling only 16 exemplars, most of them invariable (see below for an example in the clitics analysis). The only instance of a feminine variable form was at age 2;6:13 (*ses grandes soeurs, eh bah, elles [/] sont [/] elles sont mises à pleurer*: her big sisters, uh bah, they / are / they *Refl AUX.pl put.f.pl to cry = 'her big sisters, well they started to cry').

Finally, the production of third person singular clitics was analyzed (no plurals were observed). These forms carry gender information on the subject (or object) of the verb and are therefore indicators of concord acquisition. Pauline produced a total of 47 of these clitics in her corpus, starting at the first recording, albeit quite sporadically up to age 2;2.29. An overview of correct and erroneous production is presented in Table 6. Production of these forms mirrors the results on classifying adjectives (i.e., errors on feminine forms, *l'est là l'autre* 'it.m is there the.f other ___ [pin.f]'; *il est fermé* 'it.m is closed [box.f]').[17]

Table 6 Third person singular clitic production (in numbers and percentages) by Pauline

	Production	
	Masculine	Feminine
Context		
Masculine	23 (92%)	2 (8%)
Feminine	7 (32%)	15 (68%)

We observed a total of 70 cases of noun-drop in the corpus, with determiners (including quantifiers), classifying adjectives or both. All the cases of noun-drop (excepting the example in (22) below) are grammatical. In addition, they do not always co-occur with full complex DPs, which only appear at later development stages (between 2;1 and 2;4,

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[17] As a reviewer notes, this could also be a reduced feminine form. If this is indeed the case, error levels would be lower (27%) on feminine clitics. However, in colloquial French this is usually masculine, as feminine would involve an /a/ vowel (e.g., *al est là l'autre)*. [5]

see Appendix). The first clear cases (n=3) of noun-drop occur at 1;10:07. An example is given in (20).

(20)   *É deux là!*

         'Those (?) two there' (meaning two orange-coloured rings)

Note that all cases of noun-drop before the age of 2;0:1 occur with either cardinal determiners or the indefinite determiner *un/e* (which can sometimes be interpreted as a cardinal), except for *petit*, presented above. The first cases of noun-drop with definite determiners or genitive determiners[18] occur at 2;01:00:

(21)   (Activity taking place: Pauline takes hold of a picture of a pig)

         Lo __ [*l'autre*]

         'the other'   (= the other picture)

(22) (Activity taking place: Pauline picks up a fork)

         Non

         **Ma ____*

         'my ___'

In Valois *et al.* (in press), most cases of noun-drop involved the adjective *autre* 'other'. We found a similar result in Pauline's early productions. Excluding the above examples, the first occurrences of noun-drop with an adjective other than *autre* is found at 2;1:17 (23). First occurrences of specific adjectives are presented in Table 7.

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[18] This form is ungrammatical, however, no other instances of this type are observed.

(23)   *et ça c' est un __ keuké* (cassé) *là.*

'and this is a broken (one)'   = broken pencil

Table 7 Age of appearance of all adjectives used in noun-drop structures by Pauline

Age	Adjectives		
	Masculine	Feminine	Invariable
1;10:07	*Petit* 'small.m'		
1;12:21			*Autre* 'other'
2;1:17	*Beau* 'nice.m'		*Keuké* (cassé) 'broken' *Rouge* 'red'
2;2:19			*Même* 'same'
2;2;29	*Grand* 'big/tall.m'		
2;3:20		*Petite* 'small.f'	*Noir* 'black' *Pareils* 'same'
2;4:03			*Orange* *Jaune* 'yellow'
2;5:07		*Blanche* 'white.f'	*Sales* 'dirty.pl' *Bleu/e* 'blue'
2;5:20	*Gros* 'big.m'	*Saude* (chaude) 'hot.f' *Froide* 'cold.f' *Grande* 'big/tall.f'	
2;6:13		*Toutes* 'all.fpl' *Grosses* 'big.fpl'	

The first case of noun-drop with a definite determiner and an adjective other than *autre* occurs at 2;3:20.

(24)   *mangé la *tout petite __*

      'eaten the.f very.m small.f (one)'   (in the context of storytelling, where the Big

                                            Bad Wolf is eating a small girl).

A review of Pauline's use of structures bearing agreement information data is presented in Table 8, where we note 1) Pauline's first use of different structures bearing agreement; 2) the first instance with four or more occurrences of a given structure type (a criterion used in Hiriarteborde's 1973 study of past tense production to establish that a form is acquired); and 3) the first instance of a given structure type with more than 80% correct use (after attaining the second criterion), which is assumed to signal mastery.

Table 8 Ages of appearance of structures signalling agreement in Pauline's Corpus

	Concord			Local Agreement		
	Clitics	Predicative Adjectives	Past Participles	Determiners	Classifying Adjectives	N-drop
Age						
First observation	1;2;20	1;6:08	1;9:24	1;2:30	1;10:07	1;10:07
Four tokens in recording	2;4:03	1;8:19	2;1:17	1;6:22	2;2:05	2;0:03
Over 80% correct*	2;4:03	1;8:19	2;1:17	1;6:22	2;2:05	2;0:03

On the first line, clitics and determiners first appear in the earliest of Pauline's recordings. This is followed by predicate adjectives (1;6:22), past participles (1;9:24) and classifying adjectives and noun-drop at 1;10:07. It appears that Pauline's acquisition of noun-drop is the logical consequence of acquiring agreement processes. However, the four-token criterion yields a different pattern, as shown in (25):

(25) Det > Pred Adj > **Noun-Drop** > PPart > ClassAdj > Cl

In this picture, noun-drop *precedes* the productive use of classifying adjectives (and some other types of agreement), but not determiners. A look at correct uses of different forms tells a similar story. When a criterion of 80% correct production is used to evaluate Pauline's mastery of each structure, the same order of acquisition is found. We observe that determiners are produced at this level at age 1;6:22. This criterion is not reached for determiners in a number of subsequent recordings (see Appendix B, ages 1;7:27, 1;8:05, 1;10:20, 2;0:3 and 2;2:05). However, because the number of tokens in these recordings was low, determiner acquisition involves complex paradigms (see Table 2), and Pauline shows more than 80% correct production overall (94% correct on average) after this age, we believe that determiner agreement is mastered. Classifying adjectives are more problematic, as Pauline restricts her inventory to only a few types (*petit*/*petite*) and makes a majority of errors on these exact same forms. It seems that she does not master this aspect of local agreement according to the 80% criterion, at least not before age 2;5:07.

Thus, the 80% criterion might *eliminate* classifying adjective agreement as a trigger for noun-drop.

In light of these results, two points arise. First, although it would be useful to consider a larger corpus to draw a clearer conclusion based on longitudinal data, the fact remains that these observations are consistent with the conclusions reached in three independent studies of child language (Snyder *et al.*, 2001, Ntelitheos & Christodoulou, 2005, and Valois *et al.*, in press), including two on languages (Spanish and Greek) with much richer morphology than French: that it is very difficult to establish a causal relation between agreement and noun-drop. This leads us to our second point.

If agreement is not the triggering factor, then what is the difference between English, French and Spanish, for instance, which are ordered as itemized along the "rich agreement continuum"? The only study to date that does not appeal to agreement (and *pro* licensing) and still distinguishes between French and English is Bouchard's. In his analysis, the presence of the determiner is crucial for DP atomization, and by extension, noun-drop. Our observations indicate that Pauline acquires the use of determiners at essentially the same time as she produces her first noun-drops. This occurs even when agreement errors on both predicate and "classifying" adjectives are still present, regardless of how few.[19] The only conclusion that we can reach is consistent with both the semantic account of noun-drop and the findings in Valois *et al.* (in press): the

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[19] We also found an instance of noun-drop with a non-contracted determiner before a vowel initial adjective, once again implying the presence of some kind of empty element between the determiner and the adjective (see section 4.1)

(i)   *le ... le ___ orange là* .   2;04:03

presence of determiners, and not agreement features, is the main factor in noun-drop licensing.

[7] Another important observation concerns the different roles played by determiners and agreement in noun-drop. Looking closely at Pauline's corpus, we find that noun-drop occurs *one determiner at a time*, and not necessarily with determiners carrying agreement (e.g., *deux* 'two'). For example, once she has acquired *deux* 'two,' which is invariable, she then uses it in noun-drop structures, followed by the appearance of noun-drop structures with other determiners as they are acquired, e.g., *un* 'one.m', then *une* 'one.f', *d'* (with *autre*) 'some', *l'* (with *autre*) 'the', and so on. Our analysis rests on this third point: the determiner, and more specifically its number features, sometimes in conjunction with a classifying adjective, triggers the double partitive relation required to identify the referent in the absence of a noun.

In closing, it is important to note that, consistent with Valois *et al.*'s transversal study of 15 children, we found very few cases of noun-drop (or none, depending on a better understanding of examples (26)–(30) below) occurring without a determiner, which further strengthens our initial position that the determiner is the crucial factor in this structure's appearance.

In all, five observed cases suggest instances of determinerless noun-drop, but all are ambiguous between genuine cases of noun ellipsis and cases of either performance errors or discourse related ellipsis (two involve the adjective *même* 'same,' which is used

elsewhere by Pauline without a determiner in a non noun-drop context, and one involves a structure (*toute petite* 'very small') that we believe to be a post nominal predicative use of the adjective (see 29)). Even if these were real cases of noun-drop, a binomial probability calculation determines that the number of occurrences of determinerless DPs with noun-drop is statistically non-significant ($p = .10$). We can therefore conclude that these are most probably performance errors. The five cases of "noun-drop without determiners" found in Pauline's corpus are presented in (26)–(30).

(26)   Mother: *Le plus grand c'est celui là.*

        'The biggest (one) is this one'

      Activity: Pauline puts down the yellow ring that her mother has handed to her.

      Pauline: *Petit* ?

        'Small'   1;10:07

(27)   Mother: *C'est le crayon rouge ?*

        'That's the red pencil?'

      Pauline: *Rouge à moi.*

        'Red to me (= mine)'   2;1:17

(28)   Pauline: *Un aurte* [o:±t] = Une autre

        'Another (one)'   = another clothespin

      Activity: Pauline looks into a basket

      Pauline: *Même*.

'Same'

Pauline : *L'aurte.*

'The other' 2;2:19

(29)   Activity: Pauline takes out a clothespin from a basket and compares them to two

others

Pauline: *Même pas (le) même.*

'Not even (the) same' 2;2:19

(30) Pauline : *Raconte une, aconte* [raconte] *une histar* [histoire]

'Tell a, tell a story'

Euh, toute petite.

'Uh (a?) very small ___' 2;5:7

6. Conclusion

The data gathered during our corpus analysis allowed us to shed further light on the acquisition of noun-drop in French, revealing an absence of causal link between the acquisition of noun-drop and the acquisition of agreement in pre-school French-speaking children.

Our study shows that morphology does not appear to play such a strong syntactic role as assumed in previous studies, at least in terms of the licensing of an empty category such as *pro* by strong morphological features. [8] The main arguments motivating our conclusion are that (i) the first clear cases of noun-drop occur at the same time as the first cases of agreement, making a cause-effect relation difficult to establish; (ii) concord, at least in terms of the 80% criterion for classifying adjectives and the use of past participles, appears much later than noun-drop; (iii) the first manifestations of agreement occur on determiners, making these potential candidates for triggers for noun-drop; and (iv) looking closely at Pauline's corpus, we find that noun-drop occurs *one determiner at a time*, and not necessarily with determiners carrying agreement (e.g., *deux* 'two'). These conclusions are consistent with the semantic analysis of noun-drop proposed by Bouchard (2002).

Finally, although much work is still needed to draw a definitive conclusion, if our assumptions about Dutch, German, and Spanish are correct, this analysis could lead to a unified account of the cross-linguistic data and provide an answer to a question that initially appeared to be related to language-specific variation.

Appendix A: Pauline's production and misuses of agreement bearing structures, and noun-drop constructions, in raw numbers

Age	NDrop	Cl	Cl-E	Det	EDet	PrD	PrdA	EPrdA	CDP	Adj	EAdj	PPrt
1;2:20ab	-	1	-	-	-	1	-	-	-	-	-	-
1;2:30	-	-	-	2	1	-	-	-	-	-	-	-
1;3:19	-		-	-	-	-	-	-	-	-	-	-
1;4	-	-	-	-	-	1	-	-	-	-	-	-
1;4;20	-	-	-	-	-	-	-	-	-	-	-	-
1;4:30	-	-	-	1	-	-	-	-	-	-	-	-
1;5:20	-	-	-	-	-	3	-	-	-	-	-	-
1;6:08	-	-	-	-	-	2	1	-	-	-	-	-
1;6:22	-	-	-	10	-	4	-	-	-	-	-	-
1;7:03	-	-	-	9	-	2	-	-	-	-	-	-
1;7:27	-	-	-	1	1	9	-	-	-	-	-	-
1;8:05	-	-	-	-	2	5	3	-	-	-	-	-
1;8:19	-	-	-	5	-	6	4	-	-	-	-	-
1;9:03	-	1	-	3	-	7	1	-	-	-	-	-
1;9:24ab	-	1	-	-	-	2	1	-	-	-	-	2
1;10:07	3	-	-	1	-	5	4	-	-	1	-	-
1;10:20	2	-	-	2	1	8	3	-	-	-	-	-
1;11:05	3	1	-	8	-	3	1	-	-	-	-	2
1;12:21	3	-	-	2	-	3	7	-	-	1	-	-
2;0:03	5	1	-	5	2	2	2	-	-	-	-	-

2;0:20	-	1	2	7		2	5	-	-	-	-	-
2;1:00	2	1	-	14	1	-	2	-	-	1	-	1
2;1:17	4	-	3	7	-	-	4	-	1	3	-	4
2;2:05	5	-	-	6	2	3	4	-	-	5	-	-
2;2:19	14	-	3	3	-	-	6	-	-	9	-	1
2;2:29	1	2	-	8	1	4	11	-	2	2	-	-
2;3:20	5	3	-	23	1	2	-	-	3	9	1	2
2;4;03	3	8	-	13	-	1	8	-	1	4	-	-
2;4:17	2	9	-	39	4	-	10	-	15	11	7	-
2;5:07	10	11	1	36	-	2	10	-	3	11	2	1
2;5:20	3						9	3	16	16	-	-
2;6:13	5						22	-	8	5	-	3
Total	70	38	9	205	13	75	118	3	48	78	10	16

CL = Clitic; Cl-E = Clitic Error; OCl = Object Clitic; Det = Singular determiner (article, quantifier, genitive pronoun);

Edet = Error Det; PrD = Proto Det; PrdA = Predicate Adjective; EprdA = Error Predicate Adjective; NDrop = noun-drop;

CDP = Full complex DP; Adj = Classifying adjective; Eadj = Adj error (either in CDP or N-Drop); Pprt = Past Participle

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