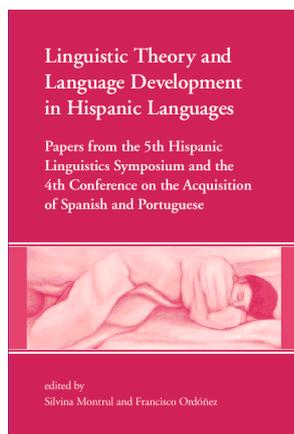


Plural Acquisition and Development in Spanish

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1. Introduction

It is generally accepted that morphological number is a slightly late developed category. Some studies in Spanish acquisition reported that it appears after gender in nominal categories (Hernández Pina 1984, Pérez Pereira 1991, Aparici, Díaz y Cortés 1996), and most of the longitudinal studies on emergence of verbal morphology show that number morphemes appear later than person morphemes.

Recent studies for Spanish (Fernández 1994, Ezeizabarrena 1997, Bel 1998, Grinstead 2000) and Catalan (Serrat 1997, Bel 1998, Grinstead 2000) report that person agreement is present from very early on while number is absent or scarce, even if there are individual differences from one child to another. Similar findings are reported for other languages. Poeppel & Wexler (1993) showed that German children use very few plural verbs in early stages and plural subjects are almost absent. Pizzuto & Caselli (1992, 1993) reported the late acquisition of verbal morphology for number, in Italian children. For this same language, Guasti (1993, 1994) maintains that children know person agreement much earlier than number is acquired. Nevertheless, Mueller-Gathercole, Sebastian and Soto (1999) and Aguirre (in press) do not find any period in which person is acquired but number is absent.

In the generativist framework, this delay in number acquisition has been used as an argument to explain the root infinitives phenomenon in languages like Dutch, German or French. Hoekstra & Hyams (1998) base their proposal concerning this phenomenon in the underspecification of number

category. Whenever number is not specified in DP (Determiner Phrase) a non-inflected verbal form, an infinitive, occurs; so, number is considered crucial in these languages to express finiteness. On the contrary, in Spanish, Catalan or Italian finiteness is expressed in person morphology and the absence of number is not a problem. Similarly, Bel (1998) proposed that number can be unspecified in Catalan and Spanish child language because it is not necessary to identify the subject (person agreement is present), nor is it necessary for case assignment (achieved by tense). A very different proposal has been made by Grinstead (2000), who assumed that all functional categories must be present to assign case to the subject. This author defends that during some periods person and tense are present, but number is absent and consequently, lexical subjects cannot appear until number is acquired.

Some researchers like Hoekstra & Hyams (1998) and Bel (1998) have considered that number can be acquired but the child is not accurate enough to produce it. It is optional and it can be “underspecified” (in Hoekstra & Hyams’s terms). The result is that sometimes it appears, but other times it is absent even if it is required. So, the frequency of plural in child language remains much lower than in the adult target for a long time: children seem to “avoid” plurals.

We need to take into consideration that plurals are much less frequent than singulars in adult speech and that children show even lower rates of plurals in their productions (cfr. table 8). In this respect it is very important to examine corpora in which the data are rich enough to have the opportunity to show plurality, if it is already acquired¹. This paper focuses on the acquisition of number in Spanish. We will attempt to make a detailed examination of the emergence of plural markers in nominal and verbal categories, in order to present a proposal of number agreement development. In addition, a quantitative analysis of plural in Spanish child language will be added.

According to our results, nominal plural emerges before verbal plural, and is more frequent, even if these differences do not appear in the child-directed-speech. The use of plural increases gradually, showing the most dramatic changes around 2;0 years old.

It will be argued that children go through three stages:

Stage 1: no functional plurals (even if some *formal* plurals do appear)

Stage 2: emergence of the first singular/plural oppositions; at the beginning, the plural morpheme is indicated with only one marker in all the utterances: or in the article (*e(l) / (l)o(s)*) or in the noun (0 / -s): it is the **single marker** stage.

Stage 3: the **markers extension**, coinciding with the generalization of plural use and the establishment of the first nominal agreement relationships (both D and N can be marked, or N and Adj); gradually, the generalization of marking continues, and we find some overuse of plural and the first nominal-verbal agreement.

Our proposal on plural emergence is consistent with other accounts of morphological development. The “single marker” stage corresponds to *protomorphology* (Dressler & Karpf 1995), or *Phase II, grammatical defective* (López Ornat 1999). The “markers extension” stage, coincident with the productive use of plural on SV, can be framed as the *morphological stage-rules* (Dressler & Karpf, 1995), or the *phase III, inflexible grammar* (López Ornat, 1999).

All these accounts have in common the consideration of morphology acquisition as a process where the child begins with unanalyzed uses. In a second stage the rules emerge, even if inconsistently or incorrectly applied at the beginning. We do not consider these stages as closed divisions, with rigid frontiers between them; on the contrary, they are the result of a general strategy of economy, and they show some relevant factors that influence on its application.

2. The Spanish plural system

All Spanish nouns can appear in both numbers: singular and plural (in this case, with the general meaning of “more than one”).^{2,3} The Spanish plural has two important characteristics. On one hand, it is a very redundant morpheme. It appears in nouns, adjectives and verbs, in a very regular way, as shown in (1):

- (1) **Unos** perros saltan contentos.
 some-masc.**pl** dog-masc. **pl** jump-**pl** happy-masc. **pl**
 'Some dogs jump happy(ly)'

But, on the other hand, in most of the cases, the marker that must transmit this information is an /-s/, at the end of the word, a very fragile sound, with little saliency, and frequently weakened or lost in many Spanish dialects. For these reasons, it is very important in the study of plural development, to take into account *all* the means by which the meaning of plurality can be conveyed:

- By suffixation (with different allomorphs in nominal or verbal inflection):

- Nominal categories: \emptyset / -s or \emptyset / -es...

The paradigms \emptyset / -es (used when the noun ends with a consonant: *flor* / *flores*) are more perceptible than the paradigms \emptyset / -s (used when the noun ends with a vowel: *casa* / *casas*)⁴.

- Verbal categories: -mos, -n.

The agreement between the verb and the nominal categories (subject, attribute...) is much more evident for the 3rd person. Agreement for the 1st person does not normally occur because of pronoun omission (as is normal in pro-drop languages). Markers for the 2nd person plural are phonically more complex, but they do not appear in children's early speech.

- By means of the agreement with the article:

The masculine plural forms of the article (*el* / *los*, *un* / *unos*) have more than one marker, although we consider them as only one suffix in the adult system (the parentheses show the sounds that children normally omit in early speech): **e**(l) / (l)**o**+ **s** / **u**(n) / (u)**no** + **s**. Feminine articles have only the -s marker (*la* / *las*, *una* / *unas*).

There are also some determiners that contain inherent lexical plurality, like numerals (zero and one are exceptions), and some indefinites (*mucho* ‘much’, *más* ‘more’ ...).

The very interesting fact, for our aims, is that just one marker in a sentence could be enough to show plurality even though it produces ungrammatical utterances, as shown in (2).⁵

- (2) lo(s) perro salta contento
 uno(s) perros salta contento
 do(s) perro salta contento
 'two dog(s) jump happy(ly)'

Children go through many stages before controlling the adult use of plural. We will try to analyze these steps in two different ways, as will be presented in the next section.

3. Method

We show here two kinds of analyses: The first one is qualitative; we present the plural data of three children taken from longitudinal spontaneous speech data. Table 1 shows the children studied.

Table 1: Children studied in the Qualitative Analysis

Corpus	Child	Age	MLU ⁶	Source	samples	child's words
Aguirre	Magín (MAG)	1.7 – 2	1.2-2.4	Spain-Madrid	14	9486
Albalá-Marrero	Idaira (IDA)	2.9 – 4.7	1.9-3.9	Spain-Canary I.	6	5818
L. Ornat	María (MAR)	1.8 – 3.1	1.9-4.7	Spain-Madrid	21	25655

The second analysis is quantitative, obtained from the greater part of Spanish CHILDES database: Romero, Serra-Solé, Ornat, Linaza, Montes, Vila, Albalá-Marrero and one half of Díez Itza. The corpus, rather heterogeneous (specially because of the small size of the last two groups), contains more than 110.000 children's words, also in spontaneous speech samples, with the next distribution. These are shown in Table 2.

Table 2: Children studied in the Quantitative Analysis

Age groups	MLU	total samples	total words
1.6-2	1.88	24	11056
2.1-2.6	2.60	27	23045
2.7-3	2.96	21	15835
3.1-3.6	3.66	18	15703
3.7-4	4.13	14	34076
4.1-4.6	4.47	3	3027
4.7-5	4.16	8	7739
Total		115	110481

4. Results of the Qualitative Analysis: plural acquisition phases

We find the following stages in plural development:

4.1. Premorphological stage

The child normally uses singulars in contexts in which the adult target shows plurals. We can find some plural forms but they are invariable and

scarce. These forms are unanalyzed, in the sense that plural suffixes are not linked to plural meaning. There is not real singular/plural contrast:

*MAR: *ostá* [= *no está*] *a bota* [= *la/s bota/s*]. 'there is not boots' (1;8)

*MAR: *botás* [= *botas*]. 'boots'

*MAR: *e nene* [= *el/la nene/a*] *a botas* [= *las botas*]. '(the) boy (the) boots'

In most cases the plural forms are nominal, even if Magín shows some verbal examples, like “*tan*” for “*están*” (‘be’), even with a singular referent (‘a for’ ‘the flower’):

*MAG: *a@c f(l)or* 'the flower' (1;8)

*MAG: *no (es)tán* [*]. 'are not'

He uses *no tan*, instead of the adult form *no están*, (*no tan e pipi* ‘are not the bird’), and *be van*, instead of the adult form *se van* (*be van, avión* ‘leave, the plane’). These two forms are fixed structures that the child uses to express non-existence. Nearly all of these occurrences of third person plural are agreement errors with the subject appearing normally in singular. By the same time, the child uses also the singular forms *no está* and *se va*, but the choice of one or the other is still unmotivated.

4.2. Single marker stage

At some point (in María, at 1;9, with an MLU of 2.07; in Idaira at 3;0, with an MLU of 2.41;⁷ in Magín at 1;9, with an MLU of 1.8) the child begins to mark the plural, as opposed to the singular with the value of “more than one”:

*MAR: *Caca a* [= *en*] *manos* [...]. 'dirt in hands' (1;9)

*MAR: *o* [= *dónde*] *está*, *o tá* [= *dónde está*] *mano?* 'where is hand'

*MAR: *o tá* [= *dónde está*] *mano?* 'where is hand'

*MAR: *Este poquí* [= *zapato*] *no* [...]. 'this shoe no' (1;9)

*MAR: *Ete* [= *este/os*] *sí poquís* [= *zapatos*]. 'this yes shoe'

*IDA: *y sale* [/] # *y ya* [/] *y sale* # *y sale e(l) huevo* (qu)e *poe la iposa* [% *mariposa*] # *aquí* -∴. [...] 'and goes out, and already, and goes out, and goes out the egg that the butterfly lays, here'

*INV: *ay, y qué sale de ahí* [= *unos huevos*]?'oh, and what comes out of there?'

*IDA: *(l)o(s) huevo*. 'the-pl eggs' (3;0)

*MAG: *lo(s) nene*. 'the-pl kids' (1;9)

*MAG: *na nena*. 'the girl' (1;9)

*MAG: *lo(s) bobo* [: *globo*] [*] & *ete'tan*. 'the-pl balloons' (1;9)

*MAG: *mira pece(s)*. 'look fish-pl' (1;9)

The most interesting fact of this stage is that the child starts employing the plural with grammatical meaning using **only one** of the different possible markers along the utterance:

- a) A very productive mechanism is the opposition by means of the article: *e(l)* vs. *(l)o(s)*: *e huevo / o huevo* 'egg'.⁸ The *e/o* opposition is phonetically easier to perceive and produce than \emptyset /*s*; maybe for this reason, many children (Idaira, in our sample) prefer it.⁹ But it has some serious limitations: it cannot be applied to feminine referents, where the articles are *la/las*, and nor can it work in contexts where the noun does not need a determiner.
- b) \emptyset /*e(s)*: this paradigm, as we have seen before, is more perceptible than the more common \emptyset /*s*. Children that usually elide *-s*, can use */e/* as morpheme of plural. It is the case of Magín, whose first clear plural appears at 1;9 in nouns is *pece* 'fish-pl'. He uses it together with its respective singular *pez*. At 1;10 we find also *luce* 'lights' and *balone* 'balloons'.
- c) \emptyset /*s*: finally, other children begin the use of plural with the adult-like complete form, but with no other markers in the utterance. This happens with María: *a mano / a manos* 'hand/s'; *e mimo / mimos* 'spoiling/s'; *ete poquí / ete poquís* 'shoe/s'.¹⁰

At this moment the child begins to identify the plural suffixes and use them productively (they grammaticalize the concept of plural); the single marker is enough to express plurality. This identification usually starts in the nominal categories; in the next stage, it is generalized to the verb. Even if Magín shows some examples of single marker in the verb¹¹ (*la nube quemán*, 'the cloud(s) burn'), this kind of agreement errors are characteristic of the "markers extension" step.

4.3. The markers extension stage

Gradually, the use of the plural becomes more frequent. And at a certain point, the child begins to produce more than one marker per utterance to indicate it. In Figure 1 María's (MAR) and Magín's (MAG) productions are shown, where we can see the relationship between the increase in plural use and the emergence of multiple markers.¹² We can consider that the children really enter in the multiple marker stage when the "critical mass" of plurals reaches 40 tokens, at age 2;0 in María and 1;11 in Magín.¹³

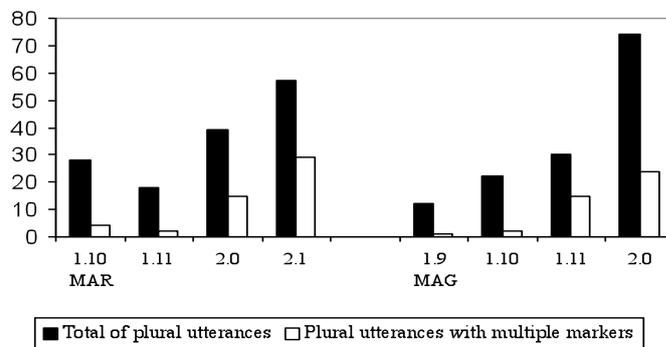


Figure 1: Plural Production in Magín and María

We can find double markers inside a word (intralexical markers) or between words (interlexical markers, or agreement). Regarding the first option, we begin to find the form *los* without an *s* elision and the full suffix *-es* in the *pez/peces* paradigm.

- *MAG: los ojo [*]. 'the-pl eye' (2;0)
- *IDA: co señores. 'with men' (3;3)
- *IDA: se compra pañal, camiseta # &camis [/] co patalones.
'buy baby clothes, shirt, with trousers' (3;7)

But the second option is more interesting: plural markers begin to appear in more than one word per utterance. This is the emergence of morphological number agreement.

- *IDA: las hojas [%pho: lar óhah]. 'the leaves' (3;3)
- *MAG: los caramelos¹⁴ está [*] ahí. [...] 'the candies is there' (2;0)
- *MAG: aquí están la [*] llaves. 'here are the-sg keys' (2;0)

Agreement usually starts inside the nominal phrase, between article and noun, or determiner and noun; noun-verb agreement arrives later, even if this stage coincides with the development of the plural in verbs.

Another characteristic of this step is the switch in the class of errors made by children: they pass from category omissions and agreement mistakes between the noun and his determiner to agreement mistakes between noun and verb. In the following graph, we can see the development of omissions and agreement errors in María. We have considered the percentage of determiner omissions versus non-agreement DET-N in the total of errors, as shown in Figure 2.

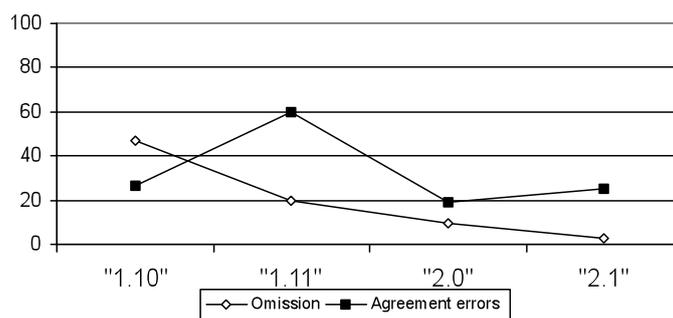


Figure 2: María's plural omissions and agreement errors.

During the predominance of one single marker, the loss of agreement arises inside the Nominal Phrase, because a lot of utterances consist of just a single Nominal Phrase (NP); during the markers extension, the sentence structure also develops and we find an absence of agreement between Noun and Verb.

Agreement errors in Magín also decrease (he does not have omission of determiners¹⁵), as we can see in Figure 3. Tables 3 and 4 show this evolution inside the NP and between S and V.

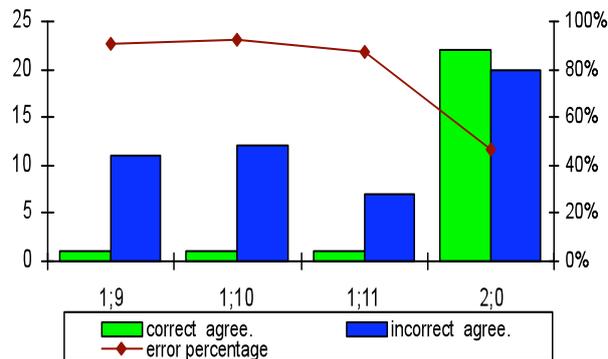


Figure 3: Magín's agreement errors.

Table 3. Magín's agreement errors in NPs (Det – N)

Age	Det. error	Noun error	Utterances with obligatory agreement	Correct agreement	Incorrect agreement	
1;8		1	1	0	1	100%
1;9		11	11	0	11	100%
1;10	10	4	15	1	14	93%
1;11	2	5	9	2	7	78%
2;0	11	6	42	24	18	43%

Table 4. Magín's agreement errors in Sentences (S – V)

Age	Det. error	Noun error	Verb error	Utterances with obligatory agreement	Correct agreement	Incorrect agreement	
1;10	4	2		2	0	2	100%
1;11	3			3	0	3	100%
2;0	1	1	5	10	3	7	70%

The advance of the new more complex system competes with the old one ("single marker stage") and is made evident by the self-corrections of the children:¹⁶

María (2;0)

*MAR: o tutas [= las piernas]. '(the) legs'

*PAD: qué? 'what?'

*MAR: la tutas [= piernas]. 'the-sg legs'

*PAD: no te entiendo. 'I do not understand you'

*MAR: las tutas [= piernas], las tulas [= piernas], las p(i)ernas. 'the-pl legs'

*PAD: entiendes tú, mamá? 'do you understand, mum?'

*MAR: las tutas [= piernas], las pernas [= piernas] +... 'the-pl legs'

Magín (2;0)

MAG: te pasa [] las moscas. 'the-pl flies pass-sg you.'

*MAG: te pasan por delante. '(they) pass-pl in front of you.

And even more by some overregularization errors:¹⁷

Idaira (4;7)

*IDA: de (l)a casa poque # tocaron, tuntun@w, y viene un seño, y e(l) seño
viero lo(s) pato Donal # y epués e(l) seño no [/] no quería. [...]
 'from the house because (they) knocked "tuntun" and comes a man
 and the man saw-pl the-pl duck Donald and later the man did not
 want`

Table 5 illustrates this development in Magín's and María's data:

Table 5. Singular /plural in nominal group (tokens).

Age	Nouns		Articles		Dem./Poss./Indf		Pers. Pron.	
	Magín	María	Magín	María	Magín	María	Magín	María
1;7	63 / -		42 / -		23 / -		- / -	
1;8	126 / -	134 / 7 ¹⁸	25 / 15	27 / 6	20 / -	28 / -	2 / -	- / -
1;9	452 / 1	345 / 38	135 / 11	56 / 2	39 / -	57 / 3	3 / -	8 / -
1;10	881 / 11	316 / 28	285 / 5	90 / 6	91 / -	119 / 2	44 / -	21 / 3
1;11	301 / 4	142 / 16	107 / 9	45 / 5	64 / 5	61 / -	55 / 4	17 / -
2;0	313 / 38	174 / 32	189 / 36	51 / 10	20 / 5	54 / 8	56 / 3	27 / -

4.4. Some comments on verbal plural development

As we have seen, the plural emerges later on in verbs, and its presence continues being less frequent than in nouns, but the pattern of development is quite similar in both cases. Table 6 shows the development of verbal plurals in Magín and María.

Table 6. Verbal forms in indicative (tokens)

Magín	Age	Present						Past						
		Singular			Plural			Singular			Plural			
		1 st	2 nd	3 rd	1 st	2 nd	3 rd	1 st	2 nd	3 rd	1 st	2 nd	3 rd	
	1;7	1		25										
	1;8	4		62			1							
	1;9	27		113	15				22					
	1;10	45	1	299	24		9		17					
	1;11	27	7	117	18		6	4	1	50				5
	2;0	72	6	140	5		20	1	3	9				1

María	Age	Present						Past						
		Singular			Plural			Singular			Plural			
		1 st	2 nd	3 rd	1 st	2 nd	3 rd	1 st	2 nd	3 rd	1 st	2 nd	3 rd	
	1;8	1		21			1							
	1;9	9	2	77										
	1;10	9	9	41	9				6					
	1;11	12	1	28	2				1					
	2;0	33	16	52			5		3					1

The first formal plurals are usually of the form "vamos" (go-present 1st person pl), with imperative or exclamative value, or in verbal periphrases "ir a + infinitive".¹⁹ Also the *copulas* "ser" or "estar" (be) appear early on in plural (*so(n)*, *(es)tán*), in the pre-morphological stage without meaning of

plural, and only later in contrast with singular. When the child extends the plural markers (not only Det+Noun), the verb appears as a new place to put them; we find an increase in the types of verbs appearing in plural, and, as a result, Verb-Noun agreement begins.

Concerning the use of person, we find only the 1st and 3rd person of the plural; the presence of the 2nd is very limited. The phonetically more complex forms are often simplified: *taiedo* (“trajeron”, ‘they brought’), *cabaro* (“acabaron”, ‘they finished’) IDA (3;7). Table 7 compares this development in verbs with the nominal group of Table 5.

Table 7. Singular /plural in verbs (tokens).

Age	Verbs	
	Magín	María
1;7	26 / -	
1;8	66 / 1	22 / 1
1;9	162 / 15	88 / -
1;10	362 / 33	65 / 9
1;11	206 / 29	42 / 2
2;0	231 / 26	104 / 6

5. Discussion

5.1. Nominal plural acquisition vs. verbal plural acquisition.

We consider that the concept of plurality is semantically associated with the noun. Only the referent to whom the noun is joined can appear as “more than one”, causing the addition of the plural markers. So, we can assume that plural markers in nouns are primary, while plural markers in other elements like adjectives or verbs are secondary and normally appear as a consequence of agreement. For this reason, if only *one* element in the sentence has a marker, we expect it to be the noun. The determiner could also be a good candidate to mark plurality because its role is to present and give a specific reference to the noun. Together with the noun, other elements can mark plurality in the sentence, but they will have a syntactic motivation—agreement—and not a semantic one.

In accordance to these considerations, we predict that the child will begin to identify and produce the plural suffixes in nouns and determiners first, and, later on, in adjectives (inside the NP) and in the verb. As we have seen, these predictions are born out by our data. For example, María shows a phase (1;9) in which the plural suffixes are added basically to nouns, and, to a lesser extent, to the determiners. A similar pattern of acquisition is found in Magín’s data: the first plural contrast in nouns also occurs at 1;9 (*pe(z) / pece(s)*). In the same session, we find the first plural contrast in articles (*un bobo* [: *globo*] / *lo(s) bobo*). Due to a phonological limitation, Magín does not produce, at this moment, any *-s* in the final syllable position,²⁰ so the only nominal paradigm that can be marked as plural is the group that adds the morpheme *-es*.²¹ This phonological limitation will push Magín to use the contrasts in the article *e/o* (*el/los*) and *u/o* (*un /unos*) very soon. One month later, the first *-s* in final syllable position will begin to appear, just to mark the plural in nouns (*pinitos* and *zapatos*). The easy contrast, *e/o*, is also

frequently used by Idaria; usually she does not produce the *-s* as a plural marker because it is pronounced like an aspiration in the Canarian dialect.

As we have seen, determiners are elements that introduce and specify the nouns in the discourse, providing not only a meaning but also a referent. For this reason, they can also be perfect elements to convey information about plurality, a grammatical meaning added to the noun. In this sense, it is not surprising that children with specific phonological problems prefer to mark plurality in masculine nouns with determiners. For all the three children plural verbal forms appear later than nominal plurals. Much later in María and Idaira, and only a little while later in Magín. (See Tables 5 and 7.) We must wait until age 2;0 to find the first plural verbs and the first occurrences of subject verb agreement in María's data. Afterwards, the number of plural verb forms increases gradually, as well as the utterances with a correct agreement (see table 7). First plural verbs emerge very late for Idaira. She begins to use *son* and *(es)tán* at 3;7.

The plural verbal forms emerge very early in Magín (see table 6). At 1;10, only one month after the first nominal plurals, we find 6 utterances that contain *son* and one occurrence of *queman*, *mojan*, *llama* and *pican*. At the same time Magín begins to use properly (only with plurals) the forms *están* and *van*. At the morphological stage, the verbal plural forms develop and we can already say that they are fully productive.²²

In short, the three children follow a similar pattern, beginning by marking the plural in nominal categories, and afterward also in verbs.

5.2. *The development of agreement: person vs. number*

5.2.1. **Development of agreement**

As we have seen at the “extension markers” stage, the child is stimulated by the input to produce more than one marker to express plurality. Our hypothesis is that the use of these redundant and semantically unnecessary markers forces the emergence of agreement as a syntactic mechanism for constituent identification. The child begins to use plural morphemes that are not really necessary for plurality meaning, which makes them to look for another “reason”, a grammatical one. Agreement is there to identify and legitimize constituents.

Nevertheless, the data show that the development of agreement is gradual. Firstly, plural is marked on the relevant element, the noun or the determiner, discovered as another place to mark plurality. At this moment, we could expect most of the D+N plural utterances should be marked for plurality in both elements. But it is not the case: plurality is marked in only one element (single marker stage); sometimes the relevant morpheme is on the noun, and sometimes on the determiner²³.

At this moment, there are no syntactic requirements forcing the child to mark plurality on more than one element. Since the relevant semantic information can be expressed with only one marker, the child will normally use only one.

Most of the utterances that contain plural elements are nominal phrases (NP) or determiner phrases (DP). Consequently most of the agreement

errors produced are due to a lack of plural markers in the noun or in the determiner. They are agreement errors inside the NP (Det – N).

At the end of this phase, plural verbal forms emerge and we can find examples where the only element that shows plurality is the verb:

- *MAG: la [*] nube [*] queman. 'the cloud burn' (1;10)
- *MAG: este [*] papato [: zapato] [*] son mío yo tuyo. (1;10)
'this shoe are mine (not) yours'
- *MAR: [% tarareando] Se cayó, e [= el] patito, se rompieron. (2;0)
'(singing) (it) fell down, the little duck, (they) broke-pl.'

As we have already shown, at the next stage ("markers extension"), plurality is marked in more than one element and agreement begins to develop. The result is a dramatic decrease in agreement errors (see Fig. 3).

By this time plural verbal forms begin to be productive and agreement mistakes involving subject-verb are frequent. These new mistakes also decrease progressively, but a number of them remain for a long time.

We consider that agreement is acquired at this stage, for the following reasons: First, the absence of markers is progressively less frequent (see Fig. 1 and 2); second, the rate of agreement errors decrease considerably; Magín, for instance, goes through 87% of agreement errors at 1;11 to 47% at 2;0; 3.- self-corrections show that the child already knows that agreement is a syntactic requirement, though he fails in many circumstances to achieve it.

Whether agreement errors are performance errors or are produced because the child's grammar permits him to leave this category without specification in one or more elements is a question that we will discuss in the next section.

5.2.2. Person agreement vs. number agreement

As we have seen in the Introduction, most of the Spanish acquisition studies concerning this problem maintain that there is a period in which person is acquired when number is not yet operative. Fernández (1994) and Ezeizabarrena (1997) reported the first contrastive use in verbs appearing in person (first person singular/third person singular). Within the generativist framework, Bel (1998) and Grinstead (2000), working on Catalan and Spanish data, propose that person agreement is present from the very beginning in the verbal system acquisition while number can be absent; i.e., it can be underspecified (person agreement is always present if a finite verbal form appears).²⁴ Bel only considers real agreement mistakes errors on number agreement, because they are produced by the absence of number morphology. By contrast, person agreement errors are only apparent, a kind of deictic or reference mistake.²⁵ The absence of relevant plural morphology has not any syntactic consequence for this author, considering that person agreement is enough to project AGR.

Grinstead claims that the three inflectional elements (Tense, Number and Person) must be present to make nominative Case assignment possible. In his opinion, overt subjects can be only used when all the three categories are acquired.

Nevertheless, the early acquisition of person is not supported by all researchers. More detailed studies of the acquisition of verbal morphology show that, even though first and third person singular verbal tokens are present in early child language, the contrast in the same lemma can not be really generalized. In table 6 we have seen that, at 1;9 Magin has 27 tokens from the first person singular, 113 from the third person singular and 15 from the first person plural.²⁶ We could say that person agreement is already present, but Aguirre (in press) analyzed the tokens and found a morphological contrast only in one lemma and a lot of agreement mistakes. In this sense we can hardly speak about person acquisition. One month later the contrast between first and third person begins to appear in more lemmas, but there is contrast in number, as well.

Mueller Gathercole, Sebastian and Soto (1999) claim, with regard to person, tense and number, that it is impossible to say that one emerges (is learned or filled) before the others. Similar data are reported in Aguirre (in press), giving us the conclusion that we do not find any period in which person is acquired, but number is absent. The higher rate of plural errors versus agreement errors can be due to the much less frequent use of plurals in the input, making necessary more time to master plural morphology. Therefore, we support the position that person agreement and number agreement develop together.

Agreement errors can be considered the effect of a lack of agreement acquisition in the pre-morphological and in the proto-morphological (Dressler & Karpf 1995) stages (“one marker stage”, for number). In the morphological stage (“extension markers stage”, for number) the child begins to acquire person and number agreement. At this point we can consider that the sentence begins to develop and projects Agr positions.

As we have seen, there is a period (2;0 for Magin and María) in which the children successfully make agreement requirements in many situations, but fail in many others. We claim that the child develops the sentence structure up to AgrP, when person and number morphemes are present, otherwise the sentence structure remains inside VP.²⁷ During this period the child grammar permits both options. Once the rate of errors decreases dramatically the second option is not available anymore and the remaining errors could be considered as performance mistakes.

6. Quantitative analysis

This section will show the quantitative data from a great Spanish database, not considered in the previous discussion. In the whole sample, (almost 500.000 children's words), 12.5% of children's utterances appear in the plural. But if we look at the *types* and the amount of *different* words, this percentage is duplicated (21.2%). That means that plural is used with many lexical items, in a diverse and productive way.

In general, as we have seen, we find more plurals in nominal (58%) than in verbal categories (42%). This difference arises just in children's speech, not in the utterances that adults direct to the children, as Table 8 shows.

Table 8: Plurals in Child and Child-directed speech

CHILDREN	% plural	% singular
Nominal	12.78	87.22
Verbal	9.82	90.18
CHILD-DIRECTED-SPEECH		
Nominal	13.23	86.77
Verbal	11.96	88.04

As a pattern of plural development, its use increases progressively, from the beginning of language until five years old (when this database ends), but the main step takes place between 1;6 and 3 years (specially 2 – 2;6), as shown in Figure 4.²⁸

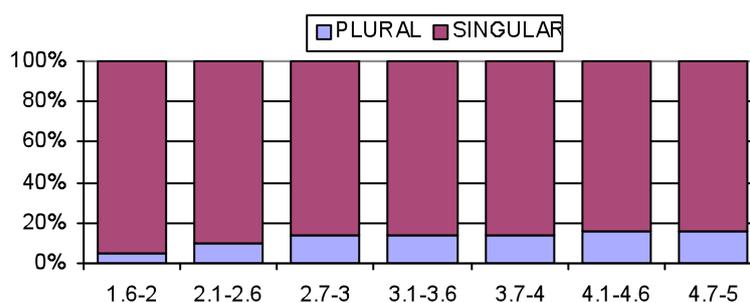


Figure 4: Plural development from ages 1;6-5;0

6.1. Plural in nominal categories

The noun is the category that appears more frequently with the plural marker. Nevertheless, its preponderance decreases as the child's language is enriched: from 78% at the first months, to 34% a year later (with an 40-45% as stable state at the end). The article follows in frequency, but with an inverse tendency: it increases progressively in its plural form, going from 11% between 1;6-2 to 25-30% from the 3rd year. The plural in adjectives does not have in our data a clear development. The rest of the nominal categories, determiners (DET) and pronouns (PRO PER and PR NO P), reach their biggest increase in the 2;7-3;00 age group. Then, they stabilize between 5 and 10%.

Looking at these data, we can establish the threshold for plural Spanish development in the second half of the second year: at this point children begin to apply it in categories other than the simple couple "article + noun". It appears in pronouns, numerals, indefinites, demonstratives, and even in personal pronouns. This trend is shown in Figure 5.

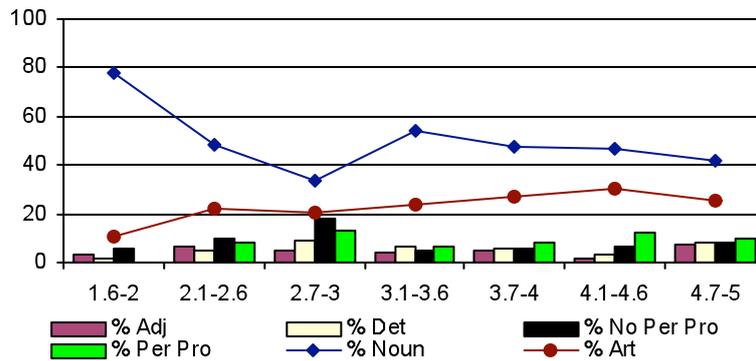


Figure 5: Development of the plural in Noun Phrases

Plural can be found in masculine as well as in feminine categories. The difference that we find favoring masculine (61%) over feminine (39%) in plurals also appears in singulars: children use more masculine (58%) than feminine (42%). The group in which we find the biggest difference (31% feminine plural vs. 69% masculine; in singular there are 41% feminine and 59% masculine) is the 2;7-3;0 age group.

6.2. Plural in verbal categories

Most of the plural verbal forms appear in present tense indicative mood. This is not surprising if we consider that those are the most frequent verbal forms in children's speech. In our sample, 60% of the children's verbal forms are present of indicative (10.665 over 17.868).²⁹ It is in the most usual form where plural begins to develop.

Past-tense forms follow the present, beginning its development from age 2;6. The future tense has only a very reduced use (between 2%-4%), but in singular its use is even lower. Figure 6 shows the development of plural in verbs.

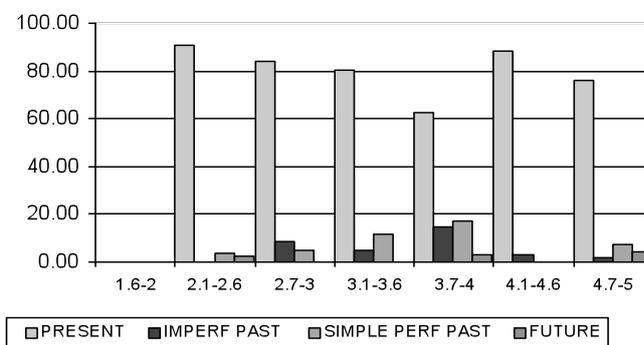


Figure 6: Verbal plural development by tense

With respect to mood, the subjunctive reaches only 7% of the plural verbal forms. Their use increases from 3%, at 2 years, to 10% at five years.

As for person, before 2 years we do not find plural persons in child morphology.³⁰ After that, only the 1st and the 3rd person, in verbs as well as in pronouns, have a high use frequency. The 3rd person clearly predominates in all groups and both paradigms (see footnote 29). The second person plural appears only 2 times in pronouns and 11 in verbal forms (over a total of total de 332 y 1284 respectively). 1st person-pl. appears more frequently in verbs than in pronouns, and tends to grow according to age (see the line on graph).³¹This is shown in Figures 7 and 8.

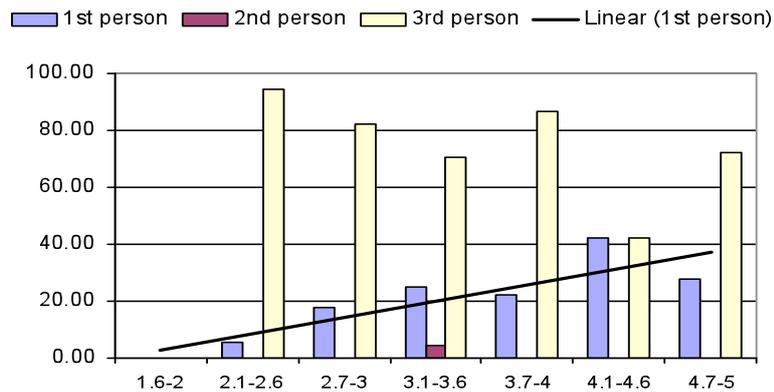


Figure 7: Plural pronouns

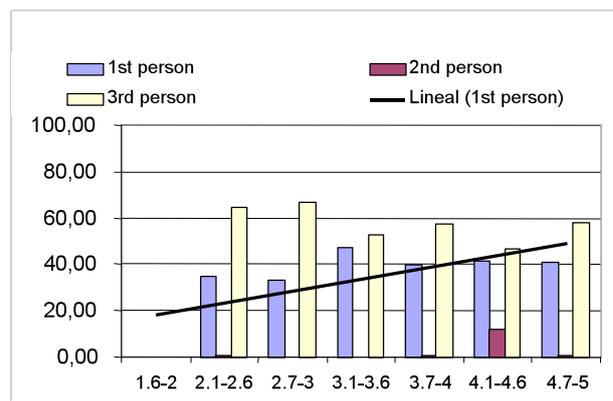


Figure 8: Plural person morphology in verbs

7. Conclusion

Our data shows the emergence of plural in Spanish firstly in nominal classes, in which the frequency of use is also higher. Generalizations to other grammatical categories coincide with a morphological general

development, shown also on pronoun emergence and agreement phenomena.

Concerning the relationship between number and person, our qualitative analysis does not show a significant delay in number vs. person acquisition. The quantitative analysis presents a high frequency of the 3rd person, while the 1st appears more frequently in verbs than in pronouns.

The developmental pattern that we propose includes three phases:

- 1) Premorphological stage: no plural uses, only some isolated plural forms (if they appear), used in an unanalyzed way.
- 2) “Single marker” stage: when plural really emerges, the child chooses only one of the possible markers in the utterance, according to phonological restrictions or personal preferences.
- 3) “Markers extension” stage: the plural begins to generalize to two (article + noun) or more places; verbal plural arises and agreement begin to be acquired. We find also self-corrections and overregularizations and the rules develop.

Nevertheless, the stages do not have clear boundaries and they are not closed compartments. They show development strategies and pertinent variables, under a general strategy of economy: to obtain the biggest results with the smallest means.

Notes

¹ It is not the case for some of the corpora analyzed (e.g., Linaza data, one of the corpora used by Bel (1998) and the only one examined by Grinstead 2000).

² Exceptions are: the *pluralia tantum* (*gafas* ‘glasses’, *tijeras* ‘scissors’, *babas* ‘spittle’...), that are used only in plural, and some forms which the linguistic use limits to the singular (*salud* ‘health’).

³ In continuous or abstract nouns, the plural produces semantic recategorization, and in other cases, the plural mark has only stylistic effects. We will not enter into these semantic considerations, because they do not affect early child language (Ambadiand 1999).

⁴ If the noun ends in an stressed vowel, the plural mark can vary between –s or –es: *esquí* / *esquís* – *esquís* ‘ski/s’. This fact, linked to the higher saliency of “0/-es” paradigm, can be the reason of its overuse, reported in many regions of American Spanish: *cafeses*, *papases*, *pieses*, *sofases*, instead of *cafés* ‘coffees’, *papás* ‘daddies’, *pies* ‘feet’, *sofás* ‘sofas’, etc. (Vaquero, 1998: 15)

⁵ In general, Spanish tends to simplify this highly redundant system, mainly in regions where final –s is lost or aspirated: Andalusia and America. In eastern Andalusia, the omission of plural –s has produced a reduplication of the vocalic system, with the emergence of open vowels to mark plural, and closed vowels for singular. In Latin America, the following strategies show plurals (López Morales, 1983):

a) use of numerals: *tiene sei nieto* ‘he/she has six grandsons’, or nouns with inherent plurality: *grupo* ‘group’

b) absence of article in contexts where is required: *uno se busca problema* 'people looks for problems' or use of plural unambiguous contexts: *una institución para niño* 'a children establishment'.

⁶ We include the MLU corresponding to the first and last samples.

⁷ Even if there is a chronological gap between Idaira and Magin or María, in verbal development they are comparable, if we look at the MLU.

⁸ "Protoarticles" (Mariscal 1996)

⁹ We can note that Idaira is from Canary Islands, and the canarian dialect doesn't maintain the Castilian -s; this can influence her preference for this kind of marking. In the cases where context or feminine do not permit the use of e/o, she can mark the plural by means of an aspiration, instead of -s:

*CHI: y camelos [% 's' aspirada]. [...]

*INV: está guardado el qué?

*CHI: ese cammelo. [...]

*CHI: la(s) galletas [% 's' final aspirada].

*CHI: ése no camelo, ése e(s) chocolate.

¹⁰ The girl following the first pattern (e/o) shows an article system more consistent than María's, whose "protoarticles" are frequently neutral and invariable vowels like /e/, /a/.

¹¹ He also uses *son* 'are', as opposed to *es* 'is'.

¹² The blue columns contain the whole plural tokens; the red one shows the part corresponding to multiple marks.

¹³ We must consider that not all the plural utterances need to have more than one marker; that is the case when the plural noun is in object position. For example, at 2;0 Magín's plural utterances are 74, but 32 need no more than one mark.

¹⁴ At this stage Magín begins to pronounce the plural marker -s. Sometimes he exaggerates his pronunciation, as if he wanted to make evident that this is a morphological plural mark:

MAG: la [] llaves.

%com: la s está aquí muy marcada.

¹⁵ Determiners are productively used long before the achievement of plural agreement.

¹⁶ In this example, the communicative pressures seem to push the girl to improve the utterances.

¹⁷ We will not enter here on the explanations for children's overregularizations; but our data seems to be consistent with the proposal of Clahsen, Avelado and Rocca (2002) considering a "syntactically triggering" for this phenomenon, more than phonological transparency reasons.

¹⁸ We exclude the case of "(o)bibis" (special child form for "muñeco/s" 'toy/s').

¹⁹ At 1;10 Magín extends this imperative value to other verbs that cannot have this value in adult speech (*tiramos* 'throw', *cogemos* 'take', *arropamos* 'wrap').

²⁰ Bernhardt & Stemberg (1998) claimed that final consonant elisions are frequent in early child speech in all kinds of words. Recently, Lleó et al (1996) has examined longitudinal studies of Spanish children and reported

that codas elision are much more frequent in Spanish children than in German children, and are produced over a long period of time.

²¹ Other plural nouns found in this period, at 1;10 are *balone(s)* 'balls', *luce(s)* 'lights' and, at 1;11 *flore(s)* 'flowers'.

²² We have already spoken about the early use of the first person plural *vamos*, the first plural form used for all the three children. This form has an imperative or exclamative value and cannot be considered as a real plural form, because it does not show plurality from the child's point of view.

Magín extends this imperative value to other verbs that cannot have this value in adult speech: *tiramos*, *cogemos*, *arropamos* (1;10)

²³ Individual variations between children are very marked. María marks plurality much more often in nouns, because her determiner system is not sufficiently developed. Determiner omission and protodeterminers (Mariscal 1996) are very frequent. Magín's determiner system is much more consistent and he uses determiners, as well as nouns, to mark plurality. Idaira prefers determiners.

²⁴ Bel also analyzes López-Ornat's corpus.

²⁵ Bel (1998) argues that most of the person agreement errors are produced by an overuse of the third person singular. The child uses the third person singular to address himself, but the subject is omitted and the child could refer to himself thinking in his name.

²⁶ All of them are examples of *vamos*.

²⁷ A similar proposal (the *Truncation* hypothesis) has been made by Rizzi (1994) to explain the optional infinitives in languages as German, French, etc.

²⁸ It is important to take into account that all the comments we can make on the two older groups (4 year) are relative, because the number of subjects in this section is very much lower than the others.

²⁹ As noticed by previous studies (Clahsen, Avelado and Rocca 2002), present tense, specially 3rd person singular, "may serve as a kind of default form in children's Spanish".

³⁰ Just one *nosotros* "we", one *bañarnos* 'swim', and 14 uses of *vamos*, mostly with a value of interjection.

³¹ The exception in group 4;1-4;6 is not significant, because of the poverty of the sample: 16 utterances.

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