Early verb development in one Spanish-speaking child

Carmen Aguirre

0. Introduction

This paper studies the acquisition process of Spanish verbal morphology in a monolingual child. The study examines the first 50 verb lemmas and covers the period from age 1;7 to 1;10. During this period the child enters the proto-morphological stage and builds the first mini-paradigms.

The data shows that this Spanish child follows two main stages during the verb acquisition process:

1. A pre-morphological stage in which verbs are only acquired as lexical elements.They are treated as structureless words and become the main element in the development of thematic and semantic relations. Grammatical features and meaning linked to verbal morphology are still absent. This pre-morphological stage lasts until 1;8 in our data.
2. A morphological stage in which verb suffixes begin to be analyzed as separate units. At this stage, the relationship between form and meaning begins to be established and the categories linked to the verb (tense, aspect, agreement, mood etc.) begin to be acquired. At this moment, the first mini-paradigms appear, which suggests that the acquisition process of verb morphology has started. At 1;9, the child enters the proto-morphological stage.

1. Description of Spanish verbal morphology

1.1. Productive categories

- Non-finite forms: infinitive, gerund and past participle.
- Finite forms represent five verbal categories: Tense: present, past and future.
- Mood: indicative, subjunctive, conditional and imperative.

- Aspect: perfect and imperfect.
- Person: 1, 2 and 3.
- Number: singular (s) and plural (p).

Indicative mood patterns with four simple tense categories: one present, one future and two past tenses: perfect and imperfect. Subjunctive has one tense category for the present, one for the past and one for the future (unproductive). Imperative has two forms: one for the second person singular and one for the second person plural. There are also two grammatical periphrases commonly used: the continuous present (*estoy comiendo* 'I am eating') and the periphrastic future, which is used much more than the synthetic one, *voy a comer* 'I am going to eat').

1.2. Spanish base and verbal suffixes

Normally, the base of a Spanish verbal form is a stem (the root plus the thematic vowels: *a*, *e* or *i*). Therefore, verbal forms consist of:

$$[\text{ROOT} + \text{THEMATIC VOWEL}]_{\text{STEM}} + \text{SUFFIX}_1 + \text{SUFFIX}_2$$

The first suffix (suff_1) carries tense, mood and aspect information. The second suffix (suff_2), the agreement suffix, refers to person and number. Changes in the thematic vowel also have a morphosemantic value.

1.3. Verb macroclasses

There are two macroclasses, signaled by the thematic vowels (*a* vs. *e* / *i*):

1st macroclass	*cantar*	'to sing'			
2nd macroclass	*temer*	'to be afraid'	/	*partir*	'to leave'.

The first macroclass (*-ar* verbs) has the highest type frequency (more than 90% of verbs). It is the only productive class.

The degree of congruity of the different classes is very high: the *er/ir* macroclass does not differ much from the dominant macroclass *ar*. Most of the tense, aspect, mood markers (suff_1) and the agreement markers (suff_2) are superstable markers (Dressler et al. 1987) because they hold throughout the conjugation.

Microclassses are mainly formed by alterations in the root. There are only some cases of alterations in suffixes in the case of verbs like *dar* 'give', *estar* 'be' (1s *doy*, *estoy* instead of **do*, **esto*), in the strong perfects (*anduvo*, *supo* instead of **andó*, **sabió*) and participle (*hecho*, *abierto* instead of **hacido*, **abrido*) and in the short imperatives (*sal*, *ven*, *di* instead of **sale*, **vene*, **dice*)

Spanish verbal morphology is highly iconic (Dressler et al. 1987), firstly because the most frequent and semantically least marked categories are encoded featureless (pres, 3s, and imp) and secondly because suffixes are more or less the only markers. There is almost no syncretism; homophony is rare (e.g. 3s.pres.ind and 2s.imp are homophonous).

1.4. Model paradigms (*cantar* 'to sing', *temer* 'to be afraid' and *partir* 'to leave')

Present

SG	1	canto	temo	parto
	2	cantas	temes	partes
	3	canta	teme	parte
PL	1	cantamos	tememos	partimos
	2	cantáis	teméis	partís
	3	cantan	cantaron	parten

Simple perfect past

SG	1	canté	temí	partí
	2	cantaste	temiste	partiste
	3	cantó	temió	partió
PL	1	cantamos	temimos	partimos
	2	cantasteis	temisteis	partisteis
	3	cantaron	temieron	partieron

Imperative

SG	2	canta	teme	parte
PL	2	cantad	temed	partid

Analytic past perfect (auxiliary + participle)

SG	1	he	cantado / temido / partido
	2	has	cantado / temido / partido
	3	ha	cantado / temido / partido
PL	1	hemos	cantado / temido / partido
	2	habéis	cantado / temido / partido
	3	han	cantado / temido / partido

Suppletives
Ser 'be': soy, eres, es, somos, sois, son.
Ir 'go': voy, vas, va, vamos, vais, van.

2. Data base

2.1. General data base

This study is based on the longitudinal spontaneous speech data of one Spanish boy, Magín.[1] This boy is the third and youngest child of a couple living in Madrid. The mother, who was the researcher, recorded him regularly in everyday situations. Data collection started at 1;7, when he was beginning to build up two-word utterances and it ended when the child was 2;7. Table 1 shows the period under study.

Table1. Investigated data of Magín

Age	MLU (in words)	Time of recordings (in minutes)	Number of analyzable utterances
1;7	1.2	30	182
1;8	1.4	60	392
1;8.15	1.4	45	234
1;9	1.8	30	105
1;9.15	1.7	60	310
1;9.27	1.7	60	477
1;10	1.8	90	748
1;10.16	2.0	60	350
1;10.20	2.0	45	278
1;10.27	2.3	60	366

3. Magín's verbal production

3.1. Quantitative data of verbal production

Table 2. Number of verb lemmas, types and tokens from 1;7 to 1;10 (without repetitions and frozen forms, percentages with respect to the number of analyzed utterances)[2]

Age	Lemma	New Lemma	Types	Tokens	Tokens %	Morph. Errors	Errors %	Analyzed Utter.
1;7	8	8	13	81	44	21	26	182
1;8	25	19	33	206	33	57	28	626
1;9	35	12	57	278	31	49	18	892
1;10	58	24	108	677	38	90	13	1742

The phases during this period are:

Pre-morphology: 1;7 – 1;8
Proto-morphology: 1;9 – 1;10

Proto-morphology begins with the emergence of the first verbal mini-paradigms.

3.2. The pre-morphological stage

3.2.1. Emergence of the first verbal forms

As shown in the table above, Magín uses a high percentage of verbs from the very beginning. As he enters the two-word stage at 1;7, we find that almost 40% of the utterances produced include a verb and a lot of these utterances consist of just a verb. At this moment Magín's MLU is only 1.2 and most of the expressions are one-word utterances.

Before the first tape was recorded, there were diary notes made of the first words acquired by Magín in the one word-stage. At the very beginning he uses only a few words. Some of them are verbs. At 1;4 he employs *ma* for *quema* 'it burns' in any dangerous situation or *apapa*, for *apaga* 'switch off!', when he wants to switch the light on or off. One month later, at 1;5, he begins to use the imperative *abre* 'open' and a formulaic utterance *be abá* instead of *quiero beber agua* 'I want to drink water'. He seems to have amalgamated the verb *beber,* which he has truncated to *be*, with *agua,* possibly taken from the frequent adult question addressed to the child: *¿quieres beber agua?* 'do you want to drink water?'. At 1;6 he employs *quere* and *quero* (3s and 1s, respectively of 'want') and the imperative *quita* 'keep away'.

The high number of verbs documented in the data from the very beginning (see table 2) shows that predication is essential in Magín's first verbal communication and he does not have any problem in using verbs to make these predications.[3] This characteristic of Magín's early acquisition of verbs explains why we find almost no precursors of verbs made with onomatopoeic elements or with nouns. Only one onomatopoeic element, created by the child, is found: *ufu*. He employs it like an imperative when he wants to blow up a balloon; but it appears at 1;9, when the child is already in the proto-morphological stage.

Word combinations and context adequacy indicate that Magín knows about the meaning of the verbs. At the same time, the syntax begins to develop and the child uses the small set of verbs that he has in his repertory in thematic relations with the appropriate nouns in the appropriate context. The following examples show some multi-word utterances where the verb appears in thematic relations with nominal phrases:

Verb + Object

(1) *Nariz moja.* 'nose wet' (1;8.15)

(2) *Zapato toma.* 'shoe take' (1;8.15)

Subject + Verb

(3) *Agua quema.* 'water burns' (1;7)

(4) *Mamá cae.* 'mummy falls down' (1;7)

3.2.2. *Emergence of verbal categories*

Table 3. Emergence of verbal categories (number of tokens)

Age	Pres. Ind.	Imp.	Inf.	Past Part.	Gerund	Synth. Perfect Past	Anal. Perfect Past	Pres. Subj.	Pres. Progr.	Imperf. Past
1;7	28	13	23					7		
1;8	94	56	24	25		1		8		
1;9	199	12	16	29		7	14	1		1
1;10	414	101	97	29	5		20	11	2	

Repetitions and frozen forms have been excluded from the analysis in all the tables.

Table 4. Development in the use of grammatical persons (number of tokens per month)

Age	Utter.	Present forms (tokens)						Past forms (tokens)					
		Singular			Plural			Singular			Plural		
		1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
1;7	182	1		25			2						
1;8	626	4		62			28						
1;9	892	27		113	15		45			8/14			
1;10	1742	45	1	299	24		32			–/17			

In the 3s column, the first number corresponds to the synthetic past and the second number to the analytic past. In the 3p column, almost all the occurrences correspond to the forms *no (es)tán* and *se van.* Most of them are agreement errors. Not taking these forms into account, we only have a single 3p form at 1;8, seven at 1;9, and nine at 1;10.

At the pre-morphological stage (1;7 and 1;8), Magín uses mainly three verbal forms: 3s.pres.ind, 2p.imp and infinitives (see tables 3 and 4). The verbal form most often employed is the 3s.pres.ind. Twelve verb lemmas appear in this form (*quema* 'it burns', *cae* 'it falls down', *pincha* 'it pricks', *moja* 'it wets', *sabe* 'he knows'). Imperatives are also very much employed. We find eight verb lemmas in imperative form (*abre* 'open', *echa* 'throw', *quita* 'take away'). Magín uses also six verb lemmas in infinitive form. They appear very often with the preposition *a*, as it normally appears in adult speech when addressing the child to give an imperative meaning (*a mir* – instead of adult *a dormir* – 'to sleep', *abrir* 'to open', *ver* 'to see').

Magín also uses:

First singular present forms with 3 verb lemma: *quito* 'take off' and *pongo* 'I put it', but they are always used with imperative value and *quemo* 'I burn'.[4]

3s.pres of subjunctive forms: *abra* 'open (subjunctive)' and *eche* 'throw (subjunctive)', that are always employed instead of the imperative, and one correct use of the subjunctive *de* 'give' in the imperative negation (*no de*[5] 'give not').

Two verbs in the 3p.pres form[6], *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 used to express non-existence.

And finally, we find at 1;8 two change-of-state verbs in participle form. These verbs are *asustar* 'frighten' and *romper* 'break'. They are only produced in these perfect forms and the auxiliary is always absent:

(5)	*Tutado avón* (*asustado avión*)	'frightened plane'
(6)	*Tutado po allí* (*asustado por allí*)	'frightened there'
(7)	*Ta toto* (*está roto*)	'(it) is broken'

The lack of productivity suggests that these participle forms are still unanalyzed (morphologically and syntactically) and that this kind of predication is very close to adjectival predication.

As we have seen, different verbal forms have been used, but morphological rules are not operative at this stage and the verbal forms produced are rote-learned. Consequently most of the verbs are used in only one form. This gives rise to a lot of agreement errors. The rate of agreement errors is 26 % and 28% at 1;7 and 1;8 respectively.

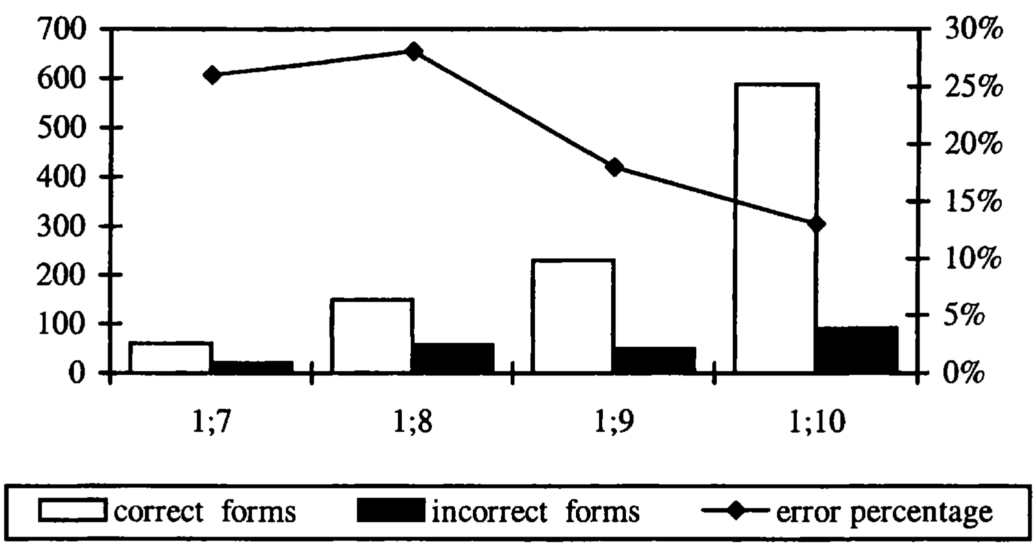

Figure 1. Magín: Development of agreement errors

Some of these errors are produced in question-answer structures, where it is easy to see that the child is not able to change the person that he has heard in the question in order to arrive at the correct form in the answer:

(8)	*MOT:	*¿Te lo abro?*	'Shall I open it?'
	*CHI:	*Abro.*	'I open' (instead of imperative)
(9)	*MOT:	*¿Que lo eche?*	'Shall I throw (3s.subj)it?'
	*CHI:	*Eche.*	'Throw (3s.subj)'

Absence of productivity in the use of the verb forms is observed in the difference between lemmas and types presented in table 2 and 3. At 1;7 the number of verb lemmas used by the child is 8 while the number of verb types is 13. The same difference is found at 1;8, where we find 25 verb lemmas and 33 verb types.

Mueller Gathercole, Sebastián, and Soto (1999) examine verb-by-verb the Maldonado-Vidal's corpus reporting on a similar acquisition process. These authors find that their two subjects produce several verbal forms very early on, but only a single form per verb. Similarly, they observe a relatively high frequency of errors in both children before the contrastive use of verbal forms is acquired. These authors claim that each error involves the use of a single or earlier-acquired form instead of the necessary construction (Mueller Gathercole, Sebastián, and Soto 1999: 145, 148).

Magín sometimes appears to have stored just the most frequent input form; for instance, he uses the verb *dormir* 'sleep' in the infinitive because his mother says often *a dormir* when she wants the baby to go to sleep. In some cases the child may pick up a less frequent form and may overgeneralize its usage by chance. This seems to be the case with the 3p *no (es)tán* 'they are not', a form that he uses to express non-existence. He has picked up this verbal form while looking at, and playing with, a drawing book together with his mother. This book was especially designed for learning the numbers, so it had many balloons, dolls, etc.[7]

Nevertheless, as we have seen at the beginning of this section, most of the verbs are used in 3s.pres.ind or in the homophonous 2s.imp. These forms are the simplest because they are morphologically featureless. They are only built with the stem (root + thematic vowel), without any suffix. 3s.pres.ind can also be seen as the semantically least marked form and the most frequent. In this respect it will be the best candidate in Spanish to be taken as a default form in verbal morphology acquisition. A very similar situation is found in Finnish, Lithuanian and Croatian (see Laalo; Wójcik; Katičić this volume).

In tables 3 and 4, we see that the development in the use of verbal forms shows a great increase in the 3s.pres.ind and a progressive decrease of the other forms. The child uses the old verbs that he already knows in their rote-learned forms, but the new lemmas are mostly acquired in 3s.pres.ind which begins to be a default form. The initial phase of proto-morphology is characterized by a considerable overuse of this form. We will return to this in the next section.

3.2.3. Emergence of mini-paradigms – pre-paradigm step[8]

Table 5. Magín's variation in inflectional forms at 1;7 and 1;8

Age	Lemma		Infl. class	Form	Category
1;7	abrir	'open'	class 3	abrir*	inf.
				abre	imp.
				abra*	1/3s.pres.sub.
	estar	'be'	class 1	(es)tá	3s.pres.ind.
				(es)tán*	3p.pres.ind.
	quemar	'burn'	class 1	quemo	1s.pres.ind.
				quema	3s.pres.ind.
1;8	abrir	'open'	class 3	abrir*	inf.
				abre	imp.
				abren*	3p.pres.ind.
	estar	'be'	class 1	(es)tá	3s.pres.ind.
				(es)tán*	3p.pres.ind.
	echar	'throw'	class 1	echa	imp.
				eche*	1/3s.pres.sub.
	ver	'see'	class 2	ver	inf
				ve	3s.pres.ind.
	caer	'fall down'	class 2	cae	3s.pres.ind.
				caía	3s.imp. past.ind.
	ir	'go'	suppletive	va	3s.pres.ind.
				van*	3p.pres.ind.

The asterisk means that there is an agreement, tense or mood error.

The verb *abrir* 'open' is the only one that appears in different verbal forms. Judged from the adult targets, it appears with a lot of agreement and mood mistakes. This shows that the child is only aware of the fact that some words have different endings. Accordingly, we find a very interesting sequence of words in the first recording session, in which Magín wants his mother to open a bag, but she does not open it. The child gets increasingly anxious and, instead of repeating the imperative form *abre* (also 3s.pres) he tries to reach his objective by using various forms that he is hearing, at this moment, from his mother. One of them is an immediate repetition (*abro* 1s.pres.). All the others (*abra*[9] with imperative tone, *abrir* infinitive) cannot be considered repetitions. The child has picked them up during the conversation and he uses them incorrectly.

At the end of the pre-morphological period (1;8) some two-member paradigms develop but not enough correct morphological variety is available yet for the child to engage in morphological analysis.

We claim that all these different forms are rote-learned and therefore, part of his lexicon. Magín does not identify the suffixes as morphological elements that semantically and syntactically encode distinct categories linked to the verb (person, tense, mood etc.). The use of these endings in verbal forms does not reveal any procedure based on processing. That is to say any procedure in which the child is applying morphological rules. As a result, these different ending forms are not productive, yet. For this reason we cannot consider this case a real mini-paradigm.

Two main reasons lead us to this conclusion. The first one is quantitative. At this stage the child still has too few examples of different verb forms for one single verb. Most of the verbs are used in only one grammatical person and one single tense. However, a sufficient number of elements are needed for developing morphology. The second reason is qualitative. The high level of agreement and mood errors produced leads us to conclude that these different verbal suffixes are still unanalyzed, they are different variants of one single form and one single meaning. Nevertheless, these inflectional forms can be considered as precursors of the development of verbal morphology.

3.3. The proto-morphological stage

At this stage, the child begins to go beyond the lexical verb meaning and he acquires the categories agreement and tense.

For the first time, we find evidence that Magín analyzes the verbal suffixes as verb elements that convey information about tense and person (subject of the predication). This discovery is triggered by the lexical acquisition of the first different verb forms. Once it is produced, it also triggers the quick acquisition of the agreement morphology of Spanish and, thus, initializes proto-morphology with the emergence of the first mini-paradigms.[10]

3.3.1. Emergence of mini-paradigms in proto-morphology

Table 6. Magín's true mini-paradigms and two-member mini-paradigms at 1;9

Lemma		Infl. class	Form	Category
ir	'go'	suppletive	va	3s.pres.ind
			van	3p.pres.ind
			vamos	1p.pres.ind
			ido	past.part
caer	'fall down'	class 2	cae	3s.pres.ind
			caía	3s.past.imperf.ind
			cayó	3s.synt.past.perf
quitar	'take off'	class 1	quita	3s.pres.ind./imp
			quito	1s.pres.ind
estar	'be'	class 1	(es)tá	3s.pres.ind
			(es)tán*	3p.pres.ind
asustar	'frighten'	class 1	asusto	1s.pres.ind
			asustado	past.part
pinchar	'prick'	class 1	pincha	3s.pres.ind
			pinchan	3p.pres.ind
querer	'want'	class 2	quiere*	3s.pres.ind
			quiero	1s.pres.ind
romper	'break'	class 2	rompe	3s.pres.ind
			roto	past.part

Table 7. Magín's true mini-paradigms and two-member mini-paradigms at 1;10

Lemma		Infl. class	Form	Category
ir	'go'	suppletive	va	3s.pres.ind
			vamos	1p.pres.ind
			ido	past.part
			ve	imp.
hacer	'make'	class 2	hace	3s.res.ind
			haces	2s.pres.ind
			haga	3s.pres.sub
			hagas	2s.pres.sub
estar	'be'	class 1	(es)tá	3s.pres.ind
			(es)tán	3p.pres.ind
			estoy	1s.pres.ind
asustar	'frighten'	class 1	asusta	3s.pres.ind
			asuste*	3s.pres.sub
			asustado	past.part

Table 7. continued

Lemma		Infl. class	Form	Category
mojar	'wet'	class 1	moja	3s.pres.ind
			mojan	3p.pres.ind
			mojado	past.part
quitar	'take off'	class 1	quito	1s.pres.ind
			quite	3s.pres.sub
			quita	imp
abrir	'open'	class 3	abrir	inf
			abre	imp
			abro	1s.pres.ind
venir	'come'	class 3	viene	3s.pres.ind
			venir	inf
			ven	imp
pasar	'pass'	class 1	pasa	3s.pres.ind/imp
			pasado	past.part
picar	'bite'	class 1	pica	3s.pres.ind
			picado	past.part
pillar	'catch'	class 1	pilla	3s.pres.ind
			pillar	inf
pinchar	'prick'	class 1	pincha	3s.pres.ind
			pinchan	3p.pres.ind
quemar	'burn'	class 1	quema	3s.pres.ind
			quemamos	1p.pres.ind
caer	'fall down'	class 2	cae	3s.pres.ind
			cayó	3s.synt.past.perf
coger	'take'	class 2	cojo	1s.pres.ind
			cogiendo	gerund
poder	'take'	class 2	puedo	1s.pres.ind
			puede*	3s.pres.ind
querer	'want'	class 2	quiere	3s.pres.ind
			quiero	1s.pres.ind
ser	'be'	class 2	es	3s.pres.ind
			son	3p.pres.ind

The mini-paradigms formed as a result of unmotivated phonological variations have not been considered in the table. Since the number of mini-paradigms attested in a corpus depends on sample size, we propose two sample-size independent values for investigating the development of the paradigm formation capacity in a child. The first value, P (utter.), is calculated by dividing the number of mini-paradigms by the number of analyzed utterances per month. The second value, P (lem.), which serves as an index for the paradigm formation capacity of the child in relation to his verb lexicon: it is calculated by dividing the number of mini-paradigms by the number of verb lemmas per month. The paradigm values P (utter.) and P (lem.) are intended to provide an objective base for the comparison of mini-paradigms across corpora and languages (see also Klampfer and Katičić this volume).

Table 8. Emergence of mini-paradigms

Age	True mini-paradigms all/new parad.	2-member mini-paradigms all/new parad.	Mini-paradigms per month	Paradigm values P(utter.)	Paradigm values P(lem.)
1;7	–/–	1/1	1	0.5%	12.5%
1;8	–/–	5/4	5	0.9%	20%
1;9	2/2	7/6	9	1,0%	25%
1;10	8/8	10/6	18	1,0%	32,7%

The strongest evidence showing that Magín has entered the proto-morphological stage is the emergence of mini-paradigms in verb acquisition. But also, at the same time, the first auxiliary verbs appear with the first periphrastic verb constructions: analytic past perfect, at 1;9 and, later on, at 1;10, the first present progressive forms (*estar* 'to be' + *gerund*). At 1;10, we can also find the first modal verb *poder* 'can'. We do not find any plural variation in names yet, subject pronouns are not documented in the data and articles are very often replaced by fillers. Therefore, we can conclude that the acquisition of verbal morphology is the first step for morphological development in Spanish.

Our data shows a real spurt in the mini-paradigms' emergence (see tables 5, 6, 7 and 8). Magín reaches the barrier of three true mini-paradigms (Kilani-Schoch and Dressler 2000) at the onset of proto-morphology (1;9), and one month later, Magín has already built 2 four-member mini-paradigms, 6 three-member mini-paradigms and 10 two-member paradigms.

This stage is also very important for the acquisition of verb vocabulary (see table 3). The increase in the number of verbs used is dramatic. The number of verb lemmas in Magín's vocabulary is only about 27 when he is 1;8, 39 at 1;9 and it reaches 63 at 1;10.[11] We are justified in saying that a verb spurt takes place at this stage. The MLU, which reveals the syntactic development, increases in the same striking way (see table 1), from 1.4 at

1;8.15 to 1.7 at 1;9.27 and to 2.3 at 1;10.27. The moment of identification of verbal categories, when verb morphology starts to develop and the child enters the proto-morphological stage, is also a key moment in the acquisition of verb vocabulary and syntax.

It seems that a sufficient number of lexical verbs must be stored so that the child begins to build up the first mini-paradigms. This "sufficient number" seems relatively low in the case of Spanish if we compare it with other languages under study, like German (Klampfer 2000, this volume; Bittner this volume), English (Gülzow this volume) and French (Kilani-Schoch this volume)

As we have seen, we find the first three-member mini-paradigms in Magín's data at 1;9 when he has only about 40 verbs in his lexicon. When a sufficient number of different verb forms for the same lemma are acquired, the child begins to discover morphological regularities and the verbal suffixes begin to be analyzed as separate elements that encode related, though independent, meanings. Suffixes are now linked to the verb in order to add new semantic and grammatical information. They can be seen as independent meaningful elements. This discovery accelerates the acquisition process of the Spanish verb morphology.

At this stage, the development of morphology is initiated with the emergence of the first mini-paradigms. Nevertheless, we claim that they are still stored in the lexicon, element by element and together with the verb. The child must have stored an important number of verbs, each of them in different forms, in order to begin to build a system. The development of morphological rules presupposes a high number of verbal forms. It should be mentioned that the first overgeneralizations, a proof of the presence of morphological rules, will appear one month later.

López Ornat (1994) also reports on the delay in Spanish acquisition overgeneralizations. This author establishes four phases for verbal morphology acquisition and overgeneralizations take place at phase 3, the "rigid rules" phase. In the same line, Mueller Gathercole, Sebastián, and Soto (1999) consider that over-regularized forms do not emerge until well after the relevant forms become contrastive.

As mentioned above, the development of mini-paradigms is the strongest argument in support of the claim that the child is entering the proto-morphological stage. Another argument that supports this claim has to do with the mistakes concerning the development of agreement errors. During this period the child begins to use the verbal forms more accurately and the rate of errors decreases in this period (see figure 1), from 28% at 1;8 to

18% and 13% at 1;9 and 1;10 respectively. We can also see an interesting change of error type. Before proto-morphology, most of the errors were produced because the verbs were used in a single form or, when we found more than one form, they were unmotivated phonological variations. In the proto-morphology stage, however, the overuse of the 3s.pres.ind provokes most of the mistakes. The old errors appear as a consequence of the lack of morphology, but the new ones show that the child has taken a form as default form.

3.3.2. Verb categories in proto-morphology

Magín's entry into the proto-morphological stage shows an interesting increase of the 3s.pres.ind forms (see tables 4, 5, 6 and 7). 30% of the verb tokens belonged to this form in pre-morphology and they reach 43% at this stage. It should be remembered that this is the morphologically simplest form (the root + thematic vowel) and the only homophonous one (3s.pres = 2s.imp).

Most of the new lemmas appear for the first time in this form and many agreement errors are produced because the 3s is used instead of any other person.[12] 2s.ind (the marker is an *-s*) is absent and the child uses a 3s in its place. In this period, 1s of indicative begins to appear properly sometimes, but very often is replaced for 3s. Finally, we find some occurrences of 3s instead of 3p. The overuse of this verbal form leads us to maintain that it has been taken as a default form that the child uses when he does not master the target form. Mueller Gathercole, Sebastián, and Soto also report a clear overabundance of 3s for one of their two subjects. They affirm that this form acts as the unmarked form and appears to be a "default" form for this subject (1999: 152)

The entrance into the proto-morphological period is also characterized by the productive use of past participle in analytical past perfect constructions. This new form causes the emergence of some new mini-paradigms at 1;9 and 1;10 (see tables 9 and 10).

At 1;10, the infinitive also starts to be used as a complement to modal verbs (*querer* 'want' and *poder* 'can'); the first gerund forms appear with the first uses of the present progressive (*estar* 'be' + gerund) and the pres. subj. is now correctly used in negative orders (*no haga(s)* don't make, *no toque(s)* don't touch). At the same time, new verbs (not only *estar* 'be', *ir* 'go' and *pinchar* 'prick') can be seen in 3p.pres.ind.

According to Magín's data until 1;10, the order of acquisition of verbal categories in Spanish is the following: 3s.pres.ind > imp > inf > past participle > 1s.pres.ind > 3s.pres.subj > 3p.pres.ind > gerund.[13] All of these verbal categories are present in the mini-paradigms (tables 8, 9, and 10).

3.4. Tense-aspect and agreement distinction in the same verb lemma

Looking at the first mini-paradigms we can observe that there is not just one pattern. Regarding morphology acquisition, the child seems to be acquiring the tense-aspect distinction first and, a little bit later, agreement, as well as some other distinctions that do not fit these two main groups, namely infinitive – present, imperative – present and indicative – subjunctive (only for prohibitive at this stage).

Tense-aspect distinction:
Present / Past Perfect

ir 'go':	3s.pres	*va*	–	3s.past perfect	*se ha ido*
romper 'break':	3s.pres	*rompe*	–	3s.past perfect	*se ha roto*
caer 'fall':	3s.pres	*cae*	–	3s.synthetic past perf.	*cayó*
			–	3s.past imperf	*caía*
asustar 'frighten':	1s.pres	*asusto*	–	past participle (the auxiliary is absent)	*asustado*

Present / Gerund

coger 'take':	1s.pres	*cojo*	–	gerund	*cogiendo*

Agreement distinction:
Singular – Plural

ir 'go':	3s.pres	*va*	–	3p.pres	*van*	–	1p.pres	*vamos*
pinchar 'prick':	3s.pres	*pincha*	–	3p.pres	*pinchan*			
ser 'to be':	3s.pres	*es*	–	3p.pres	*son*			

1st – 3rd person singular

querer 'want':	3s.pres	*quiere*	–	1p.pres	*quiero*
poder 'can':	3s.pres	*puede**	–	1s.pres	*puedo*
estar 'be':	3s.pres	*está*	–	1s.pres	*estoy*

3rd – 2nd person singular

hacer 'do':	3s.pres	*hace*	–	2s.pres	*haces*
hacer 'do':	3s.pres.sub	*haga**	–	2s.pres.sub	*hagas*

Similar findings are reported by Mueller Gathercole, Sebastián, and Soto (1999). With regard to person, tense and number, they argue that it is impossible to say that one of these categories emerges or is acquired before the others. In this respect, they support that the child gains a command of aspects of the paradigm in a piecemeal fashion (Mueller Gathercole, Sebastián, and Soto 1999: 146).

Other researchers on Spanish verb morphology acquisition defend the earlier acquisition of agreement vs tense-aspect. Grinstead (2000) examines Linaza's corpus and considers that person agreement, but not number or tense, is used contrastively in the early stage. However, Linaza's corpus is relatively poor on data as not enough verbs are documented to be able to make such a generalization. Also, a contrastive use of the same lemma is not presented in Grinstead's analysis either. Fernández (1994) analyzes López Ornat's corpus and finds that this subject make the first verb contrast in person (1s.pres – 3s.pres) but this contrast cannot be regarded as fully productive because it only occurs with a couple of verbs.

3.5. Inflectional classes

The mini-paradigms show that there is no preference for the first macroclass in the first verbs acquired by the child. During the pre-morphological stage, there is a predominance of verbs from the *er* class. This fact is not striking: there may be few verbs in the second macroclass, but some of them are among the most token-frequent in Spanish. At this stage, the verb is only a lexical element and the class system has not begun to develop, thus token frequency is of paramount importance.

At the proto-morphological stage, the tendency is reversed and most of the new verbs learned belong to the first macroclass. It is likely that, once class formation has started, the verbs belonging to the first macroclass are easier to acquire.

4. Conclusions

4.1. Developmental stages

In Magín's data, the acquisition of Spanish verbal morphology shows two main stages. A pre-morphological stage that lasts till 1;8 and a proto-morphological one that begins at 1;9. During the pre-morphological stage the verbs are learned as structureless lexical elements. At 1;7 verbs begin to be the main component in predication structures in which thematic relations are involved. At 1;9, the child enters the proto-morphological stage and the verb endings begin to be identified as meaningful elements. At that moment the morphological component starts to develop and the first mini-paradigms emerge.

4.1.1. The pre-morphological stage

During this period, when using verbs, the child pays attention only to their lexical meaning. He uses inflected forms, but they are still unanalyzed. That means that it is rote-learned. The only category present is the verb itself, other categories linked to the verb (tense, person, mood etc.) do not yet appear to be identified.

We have seen in our data that, at this stage, different verbal forms of the same verb are not normal and if they appear, they are context-bound or unmotivated phonological variants. This situation results in a lot of mistakes since the used form is not adequate to most contexts.

The most frequently chosen verbal form in Spanish is the 3s.pres. ind or the homophonous 2s.imp. form. They are the morphologically simplest (only the stem), the most frequent and the semantically least marked forms. The number of verbal items that appear for the first time in this form increases gradually when we approach proto-morphology.

Some other verbs are only used in infinitive, past participle, 1s.pres.ind. and 3p.pres.ind. These are normally cases in which the child has fixed the most frequent form for a particular verb in adult speech when addressing the child (infinitives like *dormir* 'sleep' or past participles like *roto* 'broken') or not very frequent verbal forms "captured" by the child in a given context. That is the case with the 3p.pres.ind. forms *no (es)tán* 'are not' *y se van* 'they go' that appear only in negative contexts, when something disappears. Preferences for certain phonological patterns are also important for a given form to be fixed.

4.1.2. The proto-morphological stage

During this period the verbal suffixes start to be analyzed as meaningful elements and paradigms are gradually constructed. That can be seen as an intermediate stage in which morphology begins to develop, but morphological rules are absent and verbal forms are still rote-learned.

The use of the 3s.pres.ind increases dramatically. It is found in most of the mini-paradigms and it begins to be a default form. Most of the agreement errors involve its overuse. At 1;9 the first true mini-paradigms appear. One month later we can find a real mini-paradigm spurt. Overgeneralizations are not yet found.

The proto-morphological stage can be said to coincide with an intensive development in verb lemma acquisition and in syntax.

4.2. Concluding remarks

During the pre-morphological stage, the child does not analyze the end of the verb as a suffix at all. This is because the acquisition of verbal morphology has not yet taken place.

An economy consideration, one form – one meaning, corresponding to the preference for an invariant relation between form and meaning, predicts the tendency that the child will choose one form and only one for every verb. Normally the form will be context-bound, in the first uses. This main assumption helps to explain why Magín normally has, in this first period, only one form for every verb.

An interesting problem is why the child chooses one form from the set of potential paradigmatic forms rather than another. In general, Magín chooses a given form because:

a) it is the simplest morphological form (the base form if it is a standard form in the target language);
b) it is the most frequent morphological form;
c) it is the most frequent form for a particular verb in child-directed speech;
d) it is perceptually the most salient form for any child and the easiest to produce.
e) it is the form "captured" by the child in a given context; after which he fixes it.

We claim that at the pre-morphological stage, one of these factors or a combination of them can explain the first verbal forms used by the child. Simplicity and frequency underlie all these conditions. Frequency is important in the morphological verbal system (b) and in the specific verbal forms (c). Simplicity predicts in the morphological level (a) that stem forms will appear earlier than inflected forms. On the phonological level, saliency is understood as phonological simplicity (d). The easier the form is to perceive and to produce, the more salient it is.

Considerations (a), (b), and (d) explain why 3s.pres.ind (the most frequent form) is the first to appear when it is a stem. It is morphologically simplest because there is no suffix, and easy to perceive and to produce because it ends in a vowel.[14] In this respect, it is noteworthy that this form is the first to be acquired, not only in Spanish but also in the other languages discussed in this volume in which we find this particular fact; namely Finnish, Lithuanian and Croatian.

2s.imp. is among the first forms to appear when it is also a stem form. That is the case in Spanish in which 3s.pres.ind is homophonous with the 2s.imp. In Magín's data, 2s.imp. is also a very frequently used form. A similar situation is documented in Finnish (see Laalo this volume).

Homophony, related to frequency (homophonous forms are more frequent than not homophonous ones), has been an argument to explain the overuse of infinitives in German and French (see Klampfer; Kilani-Schoch this volume). This can also be a further argument to explain the early emergence of these two verbal forms in Spanish.

Point (c) predicts that we will find also some diversity of verb-forms in first verb-vocabulary. This assertion is corroborated by Magín's data (e.g. *dormir* 'sleep' infinitive, *asustado* 'frightened' past participle).

Consideration (d) helps also to predict that we will find differences between languages. For example, 3s.pres.ind is very salient in Spanish because it ends in an open syllable, but not in German because it ends in a stop [*t*]. This difficulty of perceiving and producing this last consonant explains why this very frequent form appears so late in some German speaking children, although German is a relatively rich inflected language (cf. Klampfer this volume).[15]

The final point (e) predicts that we will find differences between the children that acquire the same language. We have taken into consideration the data of only one child, but we find some verb forms used, like the already discussed 3p.pres.ind of verb *estar* 'to be', *están*, that should not be expected in other children because it is not frequent in input data and it is morphologically marked.

In summary, this period should generally be characterized by diversity among acquisition processes of different languages (inter-lingual diversity) as well as diversity among children learning the same language (intra-lingual diversity). At the proto-morphological stage, the child discovers morphology. Verbal suffixes are understood as meaningful elements and the verbal paradigms begin to develop. We hold that the entrance into this stage will be triggered and guided by the morphological characteristics of the language the child is exposed to and, hence, naturalness considerations and typological constraints may predict the acquisition process of verb morphology across languages. We expect that a language with rich verbal inflection, like Spanish, will favour the discovery of verbal morphology. The high diversity of verbal forms with which the child is confronted will make morphological structure much more evident. That is borne out in Magín's data. Proto-morphology begins very early on and paradigm construction shows an early and clear spurt.

The high degree of universal naturalness of Spanish verbal inflection leads us also to predict that the proto-morphological stage will begin early in the process of acquisition compared to other languages. Neither the number of errors in the same process nor the number of overgeneralizations will be very high. This prediction is corroborated by our data where the proto-morphological stage develops early on, the number of errors is not high at this stage, and overgeneralizations are sparse and occur relatively late.

Naturalness considerations predict that the child will start with the least marked form: the 3s.pres.ind, in Spanish, as we have already discussed. Therefore we expect that this form will be the first one to appear. This prediction, in fact, is borne out in our data. As we have seen that 3s.pres.ind can be regarded as a default form in Magín's data and that this form is one of the components in almost all mini-paradigms.

Notes

1. The data presented in this study are included in Aguirre's Ph.D. dissertation (Aguirre 1995).
2. To qualify as an utterance, a production has to include at least one meaningful unit resembling a Spanish word in form and meaning. Babbling, vocalizations and completely incomprehensible strings were not considered utterances. Citations (e.g. nursery rhymes and songs) and direct imitations were excluded from the analysis.
3. We find in the data an apparently strange decrease in the use of verbs (from 39% utterances with verb at 1;7 to 28% at 1;8). The development of syntax,

during the two-word stage, may cause a paradoxical phenomenon. It may be the case that limitations in processing capacity make it very difficult to form utterances with more than two words. This leads the child to omit the verb when two other elements take part in the thematic relations. That is the case with the utterances involving locative relations that we find at 1;8: *(Es)t(r)ella arriba* 'star up'. *Avión po(r) ahí* 'plane there'. *Aba tacita* 'water little cup'.

4. We find also *quiero (quiero aba.* 'I want water'), in diary notations.
5. There is an agreement error: 3s instead of 2s.
6. Nearly all of these occurrences of 3p are agreement errors. The subject normally appears in singular. At that moment the child is not able to use the plural in nouns.
7. This generalized use of the third person plural can also be due to a phonological preference. Magín likes to pronounce words finishing in a stressed vowel plus an *n*, especially after a dental. He always pronounces this final *n* in nouns (*avión* 'plane', *tatón* for *ratón* 'mouse' and for *caracol* 'snail') with strength and he often uses this phonological sequence babbling when he plays with sounds.
8. Cf. Kilani-Schoch and Dressler (2000).
9. In this case the child either added, erroneously, the thematic vowel *a* of the first conjugation, instead of using the appropriate thematic vowel *e*, or he selected the prohibitive form of subjunctive *no abras.*
10. A similar proposal has been made in syntax to explain the acquisition of functional categories: the Lexical Learning Hypothesis (Clahsen and Penke 1992; Meisel and Müller 1992). Under this assumption, it is only when the child learns the lexical elements that new projections are added to existing phrase-structure representations. Clahsen, Eisenbeiß, and Penke (1996) defend "Morphological Bootstrapping". Their idea is that functional categories such as IP, AGRP, etc. or syntactic features may come into the child's phrase structure as a consequence of the child's learning a regular inflectional paradigm.
11. Although the number of analyzed utterances is much higher in the last recordings there are some diary notations that show that Magin's verb vocabulary is not higher during the time of the first recordings.
12. Only the old agreement mistake, already discussed in 3.2.3., *(es)tán* 'are' for *(es)tá* 'is', is still abundant.
13. For some categories the proposed order of acquisition may need refinement because they can be acquired rather simultaneously (see tables 3, 4, 8–10).
14. In the first stages, syllables finishing in a vowel (CV) are preferred over syllables finishing in a consonant (CVC, VC). Final consonant elisions are frequent in early child speech in all kinds of words (Bernhardt and Stemberg 1998).
15. We find also cases in which this final *t* is produced very early. Anna, the German child studied by Bittner, produced very early 3s.ind. In these cases we can consider that input frequency is more powerful than saliency.

References

Aguirre, Carmen
1995 La Adquisición de las Categorías Gramaticales en Español. Ph.D. dissertation, University Autónoma of Madrid.

Bernhardt, Barbara H., and Joseph P. Stemberg
1998 *Handbook of Phonological Development: From the Perspective of Constraint-based Nonlinear Phonology.* San Diego/London: Academic Press.

Clahsen, Harald, and Martina Penke
1992 The acquisition of agreement morphology and its syntactic consequences: New evidence on German child language from the Simone-corpus. In: Jürgen M. Meisel (ed.), *The Acquisition of Verb Placement*, 181–223. Dordrecht: Kluwer.

Clahsen, Harald, Sonja Eisenbeiß, and Martina Penke
1996 Lexical learning in early syntactic development. In: Harald Clahsen (ed.), *Generative Perspectives on Language Acquisition: Empirical Findings, Theoretical Considerations, Crosslinguistic Comparisons*, 129–159. Amsterdam: John Benjamins.

Dressler, Wolfgang U., Willi Mayerthaler, Oswald Panagl, and Wolfgang U. Wurzel
1987 *Leitmotifs in Natural Morphology.* Amsterdam/Philadelphia: John Benjamins.

Fernández, Almudena
1994 El aprendizaje de los morfemas verbales: Datos de un estudio longitudinal. In: López Ornat, Susana (ed.), *La adquisición de la lengua española*, 29-47. Madrid: Siglo XXI.

Grinstead, John
2000 Case, inflection and subject licensing in child Catalan and Spanish. *Journal of Child Language* 27: 119–155.

Kilani-Schoch, Marianne, and Wolfgang U. Dressler
2000 The emergence of verb paradigms in two French corpora as an illustration of general problems of pre- and protomorphology. Poster presented at the 9th International Morphology Meeting, Vienna, February 2000.

Klampfer, Sabine
2000 Early verb development in one Austrian child. In: Dagmar Bittner, Wolfgang U. Dressler, and Marianne Kilani-Schoch (eds.), *First Verbs: On the Way to Mini-paradigms*, 7–21. (ZAS Papers in Linguistics 18.) Berlin: Zentrum für Allgemeine Sprachwissenschaft, Typologie und Universalienforschung (ZAS).

López Ornat, Susana (ed.)
1994 *La adquisición de la lengua española*. Madrid: Siglo XXI.

Meisel, Jürgen, and Natascha Müller
1992 Finiteness and verb placement in early child grammar. In: Jürgen M. Meisel (ed.), *The Acquisition of Verb Placement*, 109–138. Dordrecht: Kluwer.

Mueller Gathercole, Virginia C., Eugenia Sebastián, and Pilar Soto
1999 The early acquisition of Spanish verbal morphology: Across-the-board or piecemeal knowledge? *International Journal of Bilingualism* 3: 133–182.