

THE ACQUISITION OF BASQUE ERGATIVE CASE AN EXPERIMENTAL STUDY

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Basque children omit ergative case markers for about five months before the production of this case mark becomes adult-like. This has been considered a problem in the acquisition of Basque and has been related to the ergative character of the language. The aim of this work is to present the results of a picture selection task done by 24 Basque bilingual children which show that the comprehension of Basque case marking and, more precisely, of the ergative case precedes the production of it.

Based on production data, Basque acquisitionists have pointed out that children have some trouble in acquiring the case marking system of the language. The difficulty would be induced by the ergative character of the language. However, and from a Universal Grammar point of view, the type of language to be acquired should not impose any extra burden on the learner. In other words, from a learnability perspective, both accusative and ergative languages should be equally difficult or simple to acquire. So, what is the problem? Is it really that ergative languages are more complex to acquire or is it just a matter of how to look at the data?

The goal of this paper is to present the comprehension data of 24 bilingual children, data which will show that children have internalized Basque case marking system long before they are able to produce case marks in an adult manner. In order to do so, first, I will explain the features of Basque case marking, and then, in section two, the findings in the acquisition of Basque on which I base my study. Next, in section three, I will outline Gerken and McIntosh (1993), another study that informs mine. Finally, in section four, I will present the experimental task designed to isolate what has been considered a problem in the acquisition of Basque, as well as the results and some discussion of these.

1. Basque is an ergative language from the point of view of morphology

Languages can be accusative or ergative. Being accusative at the morphological level implies that both the subjects of transitive and subjects of intransitive verbs bear

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the same case, *nominative*, whereas the object of transitive verbs is assigned a different case, *accusative*. English is an example of a morphologically accusative language:

- (1) a. He_{NOM} left b. He_{NOM} phoned him_{ACC}

Basque is an ergative language at the morphological level and assigns different cases to both types of subjects. Subjects of intransitive sentences, as well as objects of transitive sentences, bear *absolutive* case. Subjects of transitive sentences are, in turn, assigned *ergative* case. Finally, second objects are assigned *dative* case. The null morpheme $-\emptyset$ corresponds to the absolutive case, $-k$ morpheme corresponds to the ergative case and $-(r)i$ corresponds to dative case. All these morphemes are attached at the end of the argument phrase bearing case, as the table and examples in (2) illustrate:

(2) **Table 1**

	<i>Subject</i>	<i>Direct Object</i>	<i>Second Object</i>
a. Intransitive V	$-\emptyset$ abs	—	—
b. Transitive V	$-k$ erg	\emptyset abs	—
c. Ditransitive V	$-k$ erg	\emptyset abs	$-(r)i$ dat

- (3) a. Mutil-a- \emptyset bizikleta-z etorri da
 Boy-det-abs bike-by come INT-aux
The boy came by bike
- b. Krokodilo-a-k oinetako-a- \emptyset jantzi du
 Crocodile-det-erg shoe-det-abs put on TRA-aux
The crocodile put on the shoe
- c. Krokodilo-a-k mutil-a-ri oinetako-a- \emptyset jantzi dio
 Crocodile-det-erg boy-det-dat shoe-det-abs put on DIT-aux
The crocodile put the shoe to the boy

The verbal system in Basque also reflects agreement with the three types of DP arguments. The verb, depending on its argument structure, selects an intransitive, a transitive or a ditransitive auxiliary. The verb bears aspectual markers whereas the auxiliary is specified for the person and number of the arguments in the sentence as well as for tense information. Since the focus of this paper is on case marking of DPs and, more specifically, on ergative morphemes, I will not give a detailed description of how Basque verbal system works. Let us now turn to how the case system is acquired.

2. The acquisition of Basque case marking system

The data I will present first was collected for the research project HEGEHJ-BUSDE, conducted by the University of the Basque Country in cooperation with the University of Hamburg.¹ The project aimed to describe how monolingual and

¹ HEGEHJ stands for *Haur Euskaldun eta Gaztelaniadun Elebidunen Hizkuntz Jabekuntza* 'The acquisition of language by Spanish and Basque bilinguals'. BUSDE stands, in turn, for *Baskisch und Spanisch: Doppelter Erstspracherwerb* 'Basque and Spanish: the acquisition of two first languages'.

bilingual children acquired Basque, Spanish, or both languages simultaneously. In order to do this description, one Basque monolingual child and three bilingual children were video-taped while playing either with their peers or with their parents. The recording sessions lasted 30 minutes and had a frequency of every other week since children were 1,07 until they were 5,00 years of age. Some years later, Zubiri (1997) added to the description the study of another two Basque monolingual children. Before I go on to explain how these children develop Basque, I would like to draw the reader's attention to the fact that the bilingual children studied developed the language in the same way as the monolingual children.²

2.1. Stages in the acquisition of Basque case marking

As happens with the acquisition of other languages, Basque children, too, seem to go step by step in showing their competence in the language. All authors agree in stating that Basque children go through three different stages in acquiring case marking.

The productions from the first stage are characterized as being two-worded and caseless. All the words used in this stage belong to lexical categories, that is, children use adjectives, nouns, verbs or even adverbs but do not produce functional elements yet: there are no case morphemes; no aspect morphemes (born by verbs) and no auxiliaries are used:³

- | | |
|---------------------------|------------------------|
| (4) Jurgi atara | (5) Aitita aputu |
| Jurgi take out | Granpa break |
| <i>Jurgi takes it out</i> | <i>Granpa broke it</i> |
- (6) (*Adult*) Ta hemen zeñek itten do lolo?
And who sleeps here?
 (*Child*) Egos
Egoitz- erg missing (Egoitz is a Basque masculine name)
- (7) (*Adult*) Ta nori esango dotseu etortzeko gurekin
And who will we ask to come with us ?
 (*Child*) Amane-datibe missing
To Amane (Amane is a girl's name)

In example (4), *Jurgi*, the subject of the transitive verb 'take out', should bear the ergative morpheme but the child has not produced the case mark. In the same man-

² In all the longitudinal studies conducted by HEGEHJ-BUSDE, it was concluded that the monolingual and bilingual children developed Basque in the same manner. All kids went through the same stages with some differences in the time of appearance of certain structures. However, and due to the small amount of children studied, these differences could be paired more with individual differences (found in the course of acquisition of all languages) rather than be taken to be caused by the different modes in the acquisition of Basque (bilingual or monolingual). A recent study carried out by Ezeizabarrena et al (2005) confirms the diagnosis that Basque monolingual children and Basque dominant bilingual children have a parallel development in the process of acquisition of the lexicon, and also, of the grammatical cases: absolutive, dative and ergative.

³ I will interpret the examples and assign cases where children have not produced them based on the context where these have been uttered.

ner, *Aitita* in (5), which is the subject of the transitive verb ‘break’ *apurtu* should be marked with the ergative case but the child has not produced it. The answer to the question posed by the adult in example (6) requires the ergative case mark but the child produces the name without any morpheme. In (7), the answer to the question ‘who will we ask to come with us’ needs to be marked with the dative morpheme. However, the child produces the answer without the dative marker.

The turning point in the acquisition of case marking in Basque comes when children are around 2,04 years of age. From a morphological point of view, children’s productions are longer and also more complex. Kids combine more than two words in their productions and also start using case marks though not in all the contexts where these are needed. Many of the contexts that require the use of a case morpheme (ergative, mostly) remain unmarked in children’s productions. Because Basque is a pro-drop language, not all arguments need to be overtly produced. However, whereas transitive subjects are left unmarked in many contexts during this second stage, whenever an argument requiring dative case is produced it is also overtly marked, as opposed to what happens with the ergative case. Let us analyze some examples:

- | | |
|--|---|
| <p>(8) eba(g)I nik
cut I-erg
<i>I cut it</i></p> | <p>(9) Asunek ekarrita
Asun-erg brought
<i>Brought by Asun</i></p> |
| <p>(10) Egoitzeri emaman hau
Egoitz-dat bring this
<i>Bring this to Egoitz</i></p> | <p>(11) Ni jan dut
I-erg-missing eat TRANSaux
<i>I have eaten</i></p> |
| <p>(12) Ni ez to bota
I-erg-missing neg TRANSaux throw
<i>I have not thrown it</i></p> | |
| <p>(13) Ni kantatuko dut
I-erg-missing sing-fut TRANSaux
<i>I will sing</i></p> | |

Whereas in examples (8-9) children produce the ergative morpheme required by the transitive subjects (*ni-k*, *asun-ek*), in the same stage, other transitive subjects (examples 11-13) are not properly marked. In contrast, children properly mark all overt arguments needing the dative morpheme [ri].

It is important that I bring here the conclusions drawn by the acquisitionists who studied the development of Basque. First, these authors found out that, whereas children frequently omit the ergative mark on transitive subjects, they rarely use the ergative mark on other arguments requiring either the absolutive or the dative case. Therefore, the errors made are errors of omission but never of commission (at least not at a significant level). In addition to this, if any error is to be found in the corpora, the error is always related to the ergative case, no dative or absolutive cases are mis-assigned by the children studied. As we will see, these data are extremely relevant so as to test the hypotheses that have been proposed in order to explain the ‘ergative dance’. But let us first describe the third stage in the acquisition of case marking.

Five or six months after the first case mark is produced, and following Brown’s criterion of 90% use, children’s use of grammatical cases increases and reaches adult

levels.⁴ The stabilization of the use of grammatical cases limits the beginning of the third stage:

- (14) hori amatxok aukin dau
 that mum-erg have-progress TRANS-aux
 mum has had that
- (15) beste kotxiei ipini bi otzegu pegatina
 other car-dat put must DITR-aux sticker
 We have to put the stickers on the other cars
- (16) amali paxatxen txio hau nahi dula amak
 mum-dat happens INT-aux this want TRANS-aux-rel mum-erg
 what happens to mum is that she wants this

In examples (14) through (16), we can see how children have adequately produced the ergative marks on the DPs. Also, all the DPs requiring dative case have been properly marked with dative case [ri].

Summing up, three different stages have been identified in the acquisition of Basque grammatical cases. In the first stage, children do not produce any case mark. In the second stage, children start using case marks but not in all contexts where these are required. Finally, in the third stage, children's use of grammatical cases reaches adult levels. Let us now turn to how scholars have explained this staged production of the three grammatical cases.

2.2. Explanations to the staged acquisition of case marking

All authors agree on suggesting that the acquisition of the ergative case is problematic for the children observed. This has been explained in two different ways. Barreña (1993, 1999), Zubiri (1997), Ezeizabarrena & Larrañaga (1996), basing their interpretations on the maturational hypothesis of language acquisition (Radford 1986, Meisel 1992), defend the view that the functional projections assigning case may not have been fixed yet during the second stage. Elosegi (1998) suggests that the absence of some ergative morphemes might be explained by the phonological context where they should have occurred.

The problem we face is that there are no data in the corpora favoring one or the other working hypotheses. Let me develop this idea a bit more, starting with the consequences of the first hypothesis, i.e., the syntactic hypothesis. If it were true that at this second stage the functional projections assigning case were not fixed yet, then we would expect that children would use ALL cases in a random way; in other words, we would expect to find commission errors in the corpora. As we have seen, and crucially, during this second stage of their language development, all errors made by the children are errors of omission but never of commission. Furthermore, the omission

⁴ Two criteria have been used in order to assess the acquisition of a certain grammatical case. First the case mark has to be used ON different arguments, i.e., ON different DPs, to avoid the possibility that the DP has been lexicalized together with the case mark. Second, at the time one case mark is found, other different case marks should also be used.

of case marks is restricted to the ergative case and it cannot be assessed for the absolutive case or the dative case.

On the other hand, if the problem were of a phonological nature, then we would expect to find other [k] ending morphemes (such as the one corresponding to plural or the one at the end of the partitive case [rik]) missing in children's productions.⁵ During this stage there are some instances of plural markers but these are certainly not comparable to the number of contexts where an ergative marker is needed. With regard to the partitive case [rik], its usage is not attested until the third stage. Interestingly, and contrary to what is believed to happen with the absolutive, dative and ergative cases, the acquisition of this case mark is not gradual. It is acquired some months later than the other three but its production is error free from the beginning. Therefore, and taking into account that during this second stage we find almost no instances of these phonologically similar markers, the comparison is difficult.

3. Gerken and McIntosh

Already in 1969, Shipley et al. claimed that production patterns do not necessarily reflect children's grammatical knowledge. In other words, these authors defended that the lack of certain elements in children's productions does not necessarily imply a lack of these elements in their grammatical competence.

Gerken & McIntosh (1993) proved that children as young as 2 who do not produce function morphemes are indeed sensitive to the linguistic contexts where these functors occur. This sensitiveness lead them to defend the idea that the functors these children were not producing did in fact belong to their grammatical system since children were using them in sentence processing tasks.

In addition to semantic or prosodic cues, it has been demonstrated that adults use function words to process the incoming speech stream (Greenberg 1963, Clark & Clark 1977). Gerken & McIntosh proposed that children and adults might share the same representation of functors. So if it were the case that children were using these same cues in an adult manner, then children could also be using functors to segment and label the incoming speech stream. Following this assumption, if children were actually using functors for segmentation purposes, then they should be able to identify phrases. Let us imagine, for instance, that children know that "the" and "was" are function words and that functors can either introduce or close phrases. Then the presence of these functors in the input would help them separating the speech stream into phrases. If in addition to this, children distinguished among the different types of functors and were sensitive to the specific contexts where they occurred, then identifying the functor "the" would automatically lead to at least partial recognition of a noun phrase. In the same manner, identifying the functor "was" would lead to the recognition of a verb phrase.

⁵ Even though the discussion of the status of the partitive case is not relevant for the purpose of this paper, I would like to note that some authors (Laka 1995, de Rijk, 1972) consider that the so-called partitive case is just a polar determiner restricted to cases of absolutive case.

These authors designed a picture selection task to test whether children were sensitive to the specific contexts where functors occur. The target words were tested in the following four conditions:

1. presence of grammatical morpheme before the target word
 - a. Find *the* bird for me.
2. presence of a grammatical morpheme but not the one required by the context -ungrammatical from now on
 - b. Find *was* bird for me
3. presence of a nonsense morpheme
 - c. Find *gub* bird for me.
4. no morpheme
 - d. Find * bird for me

16 experimental item types were tested. Each sentence was presented together with a choice of four pictures, one of which was related to the target word, the other three being distractors. The place where the correct picture appeared was balanced across all pages.

Results:

Children chose the correct picture more times when the target word was preceded by the grammatical morpheme “the” than when it was preceded by the ungrammatical “was” or the nonsense morpheme “gub”. The conclusion drawn from these results is that children identify functors and the specific contexts where they occur.

There was nevertheless an unexpected result. Children did not seem to differentiate between the presence of a grammatical morpheme and the absence of it. These authors give two possible explanations to this phenomenon. One reason why children did not make any difference between the two type of sentences could be based on the prosodic similarity between the two conditions (synthesized speech was used to make sentences with words and nonwords as uniform and natural as possible). The second reason they proposed was that it might be the case that the omission of the determiner is not a strong syntactic violation for children. They speculate with the fact that only singular count nouns must be preceded by an article in English and, therefore, children could be treating the determiner as an optional element in the structure.

4. My experimental study

I based my study of Basque children’s ergative markers on Gerken and McIntosh’s (1993) experiment. Recall that Basque and English are different in that the functional elements tested by Gerken and McIntosh were free morphemes, whereas the ones to be tested in Basque are bound morphemes (attached at the end of the argument DP). So, I tested full sentences since this is the context where grammatical cases and the morphemes associated to them occur. The conditions tested were:

1. ERG: a transitive sentence where the subject bears the ergative morpheme [k] -a function morpheme in its corresponding position:
 krokodilo-a-**k** oinetako-a jantzi du
 crocodile-the-**erg** shoe-the put on TRANS-aux
the crocodile put on the shoe
2. ABS: a transitive sentence where the subject bears a grammatical morpheme but not the one required by the context: [-Ø], i.e., the absolutive case marker:
 krokodiloa-**Ø** oinetakoa jantzi du
 crocodile-the-**abs** shoe put on TRANS-aux
the crocodile put the shoe on
3. NONS: a transitive sentence where the subject bears an ungrammatical morpheme: [-l], nonsense morpheme (NONS) corresponding to a sound in the language:
 Krokodiloa-**l** oinetakoa jantzi du
 crocodile-the-**nons** shoe put on TRANS aux
the crocodile put the shoe on

Before I go on, I would like to point out the fact that I am not proposing that children use ONLY syntax to process the information they receive. My sole intention is to show that syntactic competence may be there from the beginning even when children's productions seem to be indicating the opposite. I will be keeping the semantic and prosodic cues constant across experimental sentences. The only information that will vary from sentence to sentence will be the grammatical morpheme used to mark the subject of the sentence. If we find that this minimal morphosyntactic variation has an effect on children's comprehension and depending on the kind of effect we find, we might be in a position so as to defend that the syntactic competence is already there.

The predictions are:

1. Children should perform better on the sentences with a grammatical morpheme (be it the ergative morpheme or the absolutive morpheme) than on those marked with a nonsense morpheme (ERG and ABS conditions tested against NONS condition)
2. Assuming that children are aware of the specific contexts where function morphemes occur, children's performance on sentences with a grammatical morpheme should be better than the performance on sentences with a grammatical morpheme other than the one required by the linguistic context (ERG condition tested against ABS condition)

4.1. Method

Subjects. A total of 29 children all ranging in age from 2,04 to 2,09 years of age were tested at their schools. Five of the children failed to meet the criterion for inclusion so I will be reporting on the results of all other 24 children.⁶

⁶ The second stage in the acquisition of grammatical cases has been taken to start at 2,04. Thus, the subjects of my experiment are right in the middle of this stage when the grammatical system has not been fixed yet. This is why it is so interesting to take a look at how these children behave at the comprehension level.

My observation of these children in their classes supports the claim that they were at the second stage of acquisition reported by Basque acquisitionists. All of these children were Basque-Spanish bilinguals. 16 of them spoke Basque at home with both their parents; the rest acquired the language from just one parent: 4 from their mothers and 4 from their fathers. I won't report on this aspect here, but I would like to underline the fact that there are no differences in these children's responses based on the source of acquisition of the language.⁷

Stimuli. Twelve experimental sentences were created (see appendix 1). The items resulting from applying the ERG; ABS and NONS conditions to the experimental sentences were distributed in three different lists (see appendix 2):

<i>Experimental type:</i>	Krokodiloak oinetakoa jantzi du
<i>ERG condition:</i>	Krokodiloa-K oinetakoa jantzi du → List 1
<i>ABS condition:</i>	Krokodiloa-Ø oinetakoa jantzi du → List 2
<i>NONS condition:</i>	Krokodilola-L oinetakoa jantzi du → List 3

This way, I came up with 4 stimuli marked with the ergative morpheme (grammatical and adequate in the context), 4 stimuli marked with the absolutive morpheme (grammatical but inadequate in the context) and 4 stimuli marked with the invented nonsense morpheme in each of the lists. In addition to this, the subject of the sentence bearing the target case mark preceded a word beginning with a vowel to facilitate children's perception of the case mark. Children were randomly assigned to one of the three lists (eight subjects for each list). Four intransitive filler sentences were added to make sure that the children were paying attention to the task. Whenever a child failed to choose the correct picture after at least three of these four filler sentences, she was rejected. Also, two training sentences were included at the beginning of the battery to make sure that the child understood the task. These training sentences were intransitive too. The training and filler sentences were same for all three lists and occupied the same position in the battery across lists (see appendix 1).

A big book with 4 pictures in each page was presented to the child. The pictures represented in each of the pages corresponded to the following situations, with the target verb always represented:

The crocodile put on the shoe

- target sentence - *the crocodile put on the shoe*
- same subject, different object - *the crocodile put on the glove*
- different subject, same object - *the mouse put on the shoe*
- different subject and different object. - *the mouse put on the glove*

The place on the page where the correct picture appeared was balanced across the 16 pages (experimental + filler). Also, the number of subjects across lists was balanced.

⁷ As it has already been pointed out, although these children are Basque-Spanish bilingual, the dominant language for them is Basque. I find it worth looking at the data from a comprehension point of view also (see footnote 2) to see whether the quantity of the input in a given language has an influence on the comprehension of certain structures which, from a production point of view, have not been accounted for.

Procedure. I spent quite a long time in the schools with the children before I proceeded to do the test. Since the subjects to be included in my study were young, I thought it important to spend some time with them in their classroom, playing and helping in their daily routines, so that these children became familiar with me. Once the children felt comfortable, the task of taking them out of class to do the test wasn't problematic.

Piloting demonstrated that it was important that I took some time to show the testing place to the younger kids, first, to give them the chance to explore the testing room before the real test took place, which would help to avoid distractions on the testing day. Second, by taking children to the testing room, I made sure that the kids got used to being out of class and that they felt comfortable being away from the safety of their teachers. A third goal of these visits was to "train" the instructions I would be using in the test as well as to make children familiar with the task I would be asking from them. Whenever I got the kids to the testing room, I brought a book with me so that I could play a game with them. I told them they had to find what I told them in the book. This way, the day of the test I just had to repeat the same game with the kids. The testing instructions were as follows:

Today I brought a big book with lots of pages, and in each of these pages there are four pictures. Let's count them (the kids are learning to count in class). *And have you noticed that the pictures are different? What's this?* (Signalling to all pictures in the training board)(...)

Once I had made the child realize what was different in each of the pictures I proceeded to explain what I expected them to do). *So, we will be playing the same game we played yesterday: I will tell you something and you will show where this is in the pictures, OK?*

4.2. Results

To begin with, and taking into account that children selected the correct picture on average 72% of the time (chance is at 25%), I would say that these children have performed very well in the task.

Secondly, just looking at the right answers and as happened with English-speaking children, Basque children, too, seem to perform better if the stimulus they hear is the one with the grammatical morpheme in the required context. These are the mean percent correct picture choices:⁸

1. after *-k* ergative morpheme: 84%
2. after *-Ø* absolutive morpheme: 72%
3. after *-L* nonsense morpheme: 59%

Several Wilcoxon's tests reveal that the differences between these means are significant. The difference between children's responses to the sentences marked with the ergative morpheme (1) (grammatical and adequate) and the ones marked with the absolutive morpheme (2) (grammatical but inadequate) is statistically significant ($Z=-2.527$;

⁸ In Huarte (2007), I include data from another 42 children ranging in age from 2;10 to 4;01. See chapters 5 through 7 for further discussion.

$p < 0.05$). The difference between children's responses to the sentences marked with the ergative case (1) and the ones marked with a nonsense morpheme (3) is also statistically significant ($Z = -3.447$; $p < 0.01$). Finally, the difference between children's responses to sentences marked with the absolutive morpheme (2) (grammatical but inadequate) and the ones marked with the nonsense morpheme (3) is statistically significant too ($Z = -2.144$; $p < 0.05$).

The type of list given to the children did not have any significant effect on these children's responses. It is also worth noting that the position of the drawings did not have an influence on how children did the task ($U = 5.121$; $p = 0.163$) either.

5. Discussion

Children's good performance on the test lead to think first that this kind of task is easily carried out by children this young and that it is therefore suitable to test different levels of the acquisition of grammar.

Second, the results of this test show that Basque children who are not reliably producing case markers do actually seem to know where these should occur. The fact that children respond better if the stimulus they hear is marked with a grammatical morpheme (be it ergative or absolutive) than if the stimulus they hear is marked with a nonsense morpheme suggests that kids are able to distinguish between functional elements belonging to their language and nonsensical elements.

Third, the fact that children respond better to stimuli if adequately marked (with the ergative) than if inadequately marked (with the absolutive) suggests, in turn, that children distinguish between these two functional elements.

These results go against the syntactic account of the ergatives missing since the semantic and prosodic information do not vary across sentences, and the only information varying being the morpheme in the sentence (ergative, absolutive or nons), it seems that children already know this syntactic information and also the type of element expected in each context. So, we may conclude that children already have the syntactic competence even though they do not seem to be as good performers as they should be.

In this particular aspect of the language, comprehension precedes production. Now, we are left with the task of explaining why children are not producing ergative morphemes in a consistent manner. The fact that the ergative marker is a word-final voiceless stop, a marked option in the sonority hierarchy and a possibility which is restricted to word-final coda positions suggests that a phonological explanation might be in order.

References

- Barreña, A., 1993, *Haur euskaldunen hizkuntzaren jabeakuntza-garapena: INFL eta KONP funtzio kategorien erabileraz* 'The acquisition and development of Basque. On the use of INFL and COMP categories'. University of the Basque Country: Doctoral dissertation.
- , 1999, «Ausencia de reglas gramaticales en las primeras producciones lingüísticas de los niños vascos», *Infancia y aprendizaje* 86. 91-117.
- , M. J. Ezeizabarrena and I. García, in press, *Influence of the linguistic environment in the development of lexicon and grammar of Basque bilingual children. A portrait of the young in*

- the new multilingual Spain*, ed. by C. Perez-Vidal, M. J. Garau and A. Bel. Multilingual Matters.
- Clark, H. and E. V. Clark, 1977, *Psychology of language. An introduction to psycholinguistics*. New York: Harcourt Brace Jovanovich.
- Elosegi, K., 1998, *Kasu eta preposizioen jabekuntza-garapena haur elebidun batengan* 'The acquisition of case and prepositions by a bilingual child'. University of the Basque Country: Doctoral dissertation.
- Ezeizabarrena, M. J. and M. P. Larrañaga, 1996, «Ergativity in Basque: a problem for language acquisition», *Linguistics* 34. 955-991.
- Gerken, L. A., and B. J. McIntosh, 1993, «Interplay of function morphemes and prosody in early language», *Developmental Psychology* 29. 448-457.
- Greenberg, J. H., 1963, «Some universals of grammar with particular reference to order of meaningful elements». *Universals of grammar*, ed. by J. H. Greenberg, 73-113. Cambridge, MA: MIT Press.
- Huarte, M., 2007, *Ergatiboaren jabekuntza: ikerketa experimental bat eta beraren emaitzak*. University of the Basque Country: Doctoral dissertation.
- Meisel, J. M., and N. Muller, 1992, «Finiteness and verb placement in early child grammar: Evidence from simultaneous acquisition of French and German» in *Bilinguals. The acquisition of verb movement*, ed. by J. M. Meisel, 109-138. The Netherlands: Kluwer Academic Publishers.
- Shiple, E. F., C. S. Smith, and L. R. Gleitman, 1969, «A study in the acquisition of language: Free responses to commands», *Lg* 45. 522-542.
- Zubiri, J. J., 1997, *Izen sintagmaren determinazioa eta kasuen jabekuntza eta garapena hiru urte arte* 'The acquisition and development of cases and NP determination'. University of the Basque Country: Doctoral dissertation.

Appendix 1

Here is the battery presented to the child:

Training sentences:

'Neska zuhaitzaren ondoan dago'	<i>The girl is next to the tree</i>
'Txoria mutilaren eskuan dago'	<i>The bird is on the boy's hand</i>

Filler sentences:

'Mutila puztukiarekin jolasten dabil'	<i>The boy is playing with the balloon</i>
'Neska negarrez dago'	<i>The girl is crying</i>
'Sagarra mutilaren buruaren gainean dago'	<i>The apple is on the boy's head</i>
'Neska bizikletaz etorri da'	<i>The girl came by bike</i>

Experimental sentences:

'Krokodiloak oinetakoa jantzi du'	The crocodile put on the shoe
'Behiak irratia zapaldu du'	The cow stepped on the radio
'Txerriak azenarioa jan du'	The pig ate the carrot
'Tximinoak akordeoia apurtu du'	The monkey broke the accordion
'Elefanteak euritakoa zabaldu du'	The elephant opened the umbrella
'Saguak atea margoztu du'	The mouse painted the door
'Oiloak arrautza ipini du'	The hen laid on the egg
'Sugeak aulkia harrapatu du'	The snake trapped the chair
'Katuak eskularrua izkutatu du'	The cat hid the glove
'Txakurrak hezurra topatu du'	The dog found the bone
'Zaldiak hegazkina ikutu du'	The horse touched the plane
'Pinguinoak etxea egin du'	The penguin built the house

Appendix 2

Here are the three lists children can be assigned to:

<i>First list</i>	<i>Second list</i>	<i>Third List</i>
Neska zuhaitzaren ondoan dago Txoria mutilaren eskuan dago Mutila puztukiarekin jolasten dabil	Neska zuhaitzaren ondoan dago Txoria mutilaren eskuan dago Mutila puztukiarekin jolasten dabil	Neska zuhaitzaren ondoan dago Txoria mutilaren eskuan dago Mutila puztukiarekin jolasten dabil
Krokodiloak oinetakoa jantzi du	Oiloa arrautza ipini du	Oilol arrautza ipini du
Zaldia hegazkina ikutu du	Krokodiloa oinetakoa jantzi du	Katuak eskularrua izkutatu du
Txakurra hezurra topatu du	Txerriak azenarioa jan du	Elefanteak euritakoa zabaldu du
Neska negarrez dago	Neska negarrez dago	Neska negarrez dago
Sugeak aulkia harrapatu du	Elefanteak euritakoa zabaldu du	Tximinoa akordeoia apurtu du
Oilok arrautza ipini du	Katua eskularrua izkutatu du	Txakurrak hezurra topatu du
Katuak eskularrua izkutatu du	Txakurral hezurra topatu du	Zaldia hegazkina ikutu du
Sagarra mutilaren buruaren gainean dago	Sagarra mutilaren buruaren gainean dago	Sagarra mutilaren buruaren gainean dago
Sagual atea margotu du	Behial irratia zapaldu du	Behiak irratia zapaldu du
Elefantea euritakoa zabaldu du	Sugea aulkia harrapatu du	Txerria azenarioa jan du
Tximinoal akordeoia apurtu du	Tximinoak akordeoia apurtu du	Sugeal aulkia harrapatu du
Neska bizikletaz etorri da	Neska bizikletaz etorri da	Neska bizikletaz etorri da
Txerrial azenarioa jan du	Pinguinoak etxea egin du	Krokodiloal oinetakoa jantzi du
Pinguinoal etxea egin du	Zaldial hegazkina ikutu du	Sagua atea margotu du
Behia irratia zapaldu du	Saguak atea margotu du	Pinguinoal etxea egin du