

Anaphora resolution in Basque: null vs. overt subject *hura*

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1. Introduction

In recent years the distribution of null and overt pronominal subjects (NSs and OPSs) in contact situations between a null subject language (NSL) with a non-NSL has received significant attention in different types of developing grammars. An asymmetry has been found in the NSLs between a target-like performance in NSs and a non-target-like one in OPSs, which are overproduced or misinterpreted. Sorace and Filiaci (2006) found a non-native-like interpretation of subject pronouns in near native-like levels of proficiency in L2 Italian and Tsimpli et al. (2004) reported attrition effects in the production of preverbal OPSs and in the interpretation of OPSs in Greek and Italian respectively, both in contact situations with English (a non-NSL). Studies in early bilingual language acquisition have come up with similar pattern of results. Among others, Serratrice et al. (2004) for Italian and Hacoen and Schaeffer (2007) for Hebrew observed that bilingual children produced redundant overt pronouns, which resulted in an overall higher rate of OPSs in bilingual children than in monolinguals.

One of the explanatory factors proposed for the dissimilarities observed between NSs and OPSs in all these bilingual populations has been the influence of the non-NSL in the NSL. Crosslinguistic influence in such cases arises as a result of the overextension of the overlapping construction in the non-NSL to the inappropriate context in the NSL. Based on the naturalistic corpora or off-line grammaticality/acceptability judgment tasks from studies in different bilingual speakers, the overall conclusion drawn is the existence of L1 effects, indeterminacy or optionality in the distribution and interpretation of OPSs (Sorace 2000, 2003, 2005). Notice, however, that some recent studies by Licerias et al. (2008, 2010) have not found an overuse of OPSs in the spontaneous Spanish production of English-Spanish balanced bilingual twins. These children produced many more OPSs in English (28%) than in Spanish (8%) at the stage I (2;4-2;6 in their study).

Target-deviant OPSs are not located at the narrow syntax level, that is, in the syntactic parameter responsible for licensing NSs but at the interface level. More specifically, the distribution of subject pronouns has been regarded as being operative at the syntax-discourse interface, which involves pragmatic conditions that determine appropriateness in context (Tsimpli and Sorace 2006). Redundant pronouns lie in a gradient acceptability violation at the syntax-discourse interface, which contrary to syntax-semantics, causes pragmatic anomaly and not ungrammaticality. Pragmatically illicit uses and interpretations of overt pronouns have been addressed by the Interface Hypothesis, according to which interface properties involving syntax and another cognitive domain may not be acquired yet at the time in which narrow syntactic properties are completely acquired (Sorace and Filiaci 2006).

Processing strategies have gained much attention among the factors that contribute to the instability at the syntax-discourse interface in a linguistic phenomenon such as anaphora. The redundant use and production of an overt rather than a null pronoun to maintain reference, which sometimes leads to inaccurate production and interpretation, can be accounted for under the flexibility of OPSs predicted by Carminati's *Position of Antecedent Strategy* (PAS) (2002, 2005). As stated in such proposal, there is a division of labour between null and overt pronouns in Italian with respect to anaphora resolution, where the prominence of the arguments is determined syntactically. Whereas NSs in a complex sentence have a strong bias towards the most prominent antecedent located in Spec IP i.e. normally a subject, OPSs tend to show more flexibility in their antecedent preferences and select an antecedent lower in the phrase structure i.e. a non-subject antecedent, usually an object. Through different experiments like self-paced reading and questionnaires containing complex sentences with a main clause followed by a subordinate one and vice versa, the validity of the PAS was proved in a variety of sentences. In an ambiguous sentence like (1a), where no clue is offered by the pragmatic content as to which the correct antecedent of the pronoun is –it could equally well be the subject of the subordinate clause *Marta* or the object *Piera*– the PAS applies differently to the null and overt pronoun:

- (1) a. *Marta_i scriveva frequentemente a Petra_j quando ____i /lei_{?i/j} era negli Stati Uniti.*
 ‘Marta_i wrote frequently to Petra when ____i /she_{?i/j} was in the United States’.
 b. *Gregorio_i ha detto che ____i /lui_{?i/k} sarà presente al matrimonio di Maria.*
 ‘Gregorio_i has said that ____i /he_{i/?k} will be present at the wedding of Maria’.

(adapted from Carminati 2002:78, 91)

Carminati observed that in an unambiguous (one-referent) sentence (1b), the overt pronoun in a VP-attached complement clause was in general interpreted as coreferential with the subject of the preceding clause (86%), and hence, the mean number of disjoint reference responses was only 14%. Notice that the overt pronoun preferred to take as antecedent the subject from the preceding linguistic context rather than a referent outside the sentence, even if that meant violating its antecedent biases. Note, nevertheless, that when comparing OPSs with NSs, there still exists a residue of labour between pronoun types: the acceptance rate of the intrasentential coreference was lower in OPSs (85%) than in NSs (96%) and thus, disjoint reference was higher in OPSs (15%) than in NSs (4%).

On the basis of these findings, Carminati concluded that there is a clear asymmetry in the antecedent assignment of null and overt pronouns: a) the preference of the null subject for the subject of the preceding clause is consistent and b) the overt pronoun shows more flexibility as shown in its variability in antecedent choice determined by whether the context is ambiguous or not (in terms of number of referents in the preceding clause). Regarding the bias of the overt pronoun for a non-subject antecedent, the preference is more robust in ambiguous (two referents of the same gender) sentences (1a) than in unambiguous (two sex-differentiated referents or only one referent (1b)) ones because it can be ‘relaxed’ in the latter. That is the reason why Carminati emphasized that one-referent clauses only firmly support the first part of the PAS, i.e the part regarding the strong bias of the null pronoun for the subject of the previous clause.

Studies on Spanish (Alonso-Ovalle et al 2002), Romanian (Diaconescu and Goodluck 2004, Geber 2006) and Croatian (Kras 2006) have demonstrated that the PAS seems to make predictions that apply to languages other than Italian. This goes in line with Carminati’s prediction that the PAS would apply crosslinguistically although there may be microvariation among NSLs in the antecedent assignment possibilities for overt subjects.

Among the different definitions of the term, anaphora has been defined as “...a relation between two linguistic elements, wherein the interpretation of one (called an anaphor) is in some way determined by the interpretation of the other (called an antecedent)” (Huang 2000:1, quoting Lust 1986, Wasow 1986, Huang 1994). Following this idea, and assuming that the linguistic elements mentioned in the definition may have/lack phonological content, *pronominal anaphora resolution* can be considered as the process of assigning an antecedent to pronouns. ‘Desirably’, the result of such a process must be shared by the (majority of?) competent users of a language.

To the best of our knowledge, no experimental work to date has dealt with the interpretation of subjects in Basque. The study presented here is meant to contribute to the ongoing debate on anaphora resolution in NSLs by presenting comprehension data on intrasentential anaphora in one-referent and intransitive sentences with different clause orders (main-subordinate clause and vice versa). Two groups of bilingual native speakers –children and adults– participated in the study, which allowed testing the consistency of anaphora resolution across groups. Two goals are pursued in this paper. First, the current study tests whether the NS and the OPS differ in their antecedent choices in Basque, as predicted in the PAS for Italian by Carminati (2002). Second, it analyses to what extent children’s interpretations of NSs and OPSs resemble those of adults.

The article is organized as follows. Section 2 focuses on a description of the third-person reference in Basque giving special attention to the absence of real third-person pronouns. Section 3 describes the details of the experimental study. This is followed by Section 4, which reports the overall results of the interpretations of null and overt subject pronouns in Basque by children and adults. In section 5 we present a discussion of the results with regard to binding conditions of *hura* ‘that’ and the last section gives some conclusions.

2. Third-person reference in Basque

Basque being a subject-object pro-drop language, subjects and objects are frequently not phonologically realised (2a). This language has been regarded as being a two-person language (Bhat 2004) as in general it lacks true third-person pronouns¹ and demonstratives are used instead when referring to a third person referent (Hualde and Ortiz de Urbina 2003). Basque has a three-term demonstrative system: proximal *hau* ‘this’, mesial *hori* ‘that’ and distal *hura* ‘that’ (over yonder) (2b).

- (2) a. *Jonek dio _____ azkarra dela.*
Jon-ERG. says smart is-that
- b. *Jonek dio hura azkarra dela.*
Jon-ERG. says that smart is-that
- c. *Jonek dio bera azkarra dela.*
Jon-ERG. says the same smart is-that
‘Jon says that he is smart’

Descriptions of standard Basque present the demonstrative *hura* ‘that’ functioning as a third-person pronoun but they also mention the presence of a third-person (pseudo)pronoun, *bera* ‘he (himself)/she (herself)/the same’ (2c) (de Rijk 2008). Both pronouns seem to share some anaphoric and pronominal features although their use varies among dialects. This study will only focus on *hura* ‘that’ (2b), the less deictic demonstrative, which in descriptive grammars is considered to be equivalent to third-person pronouns in other languages with respect to its function.

3. The Study

3.1 Research questions

The aim of this paper is to analyse the interpretation of the NS and the OPS in Basque forward anaphora. More specifically we focused on the three following questions:

1. Do NS and OPS differ with regard to antecedent assignment in Basque?
2. Does the clause order affect antecedent choice in forward anaphora?
3. Do children and adults interpret similarly the NS and the OPS *hura* ‘that’ in forward anaphora?

3.2 Participants

A group of 35 participants were included in the study: 25 typically developing 6-7-year-old children (mean age 6;5) and 10 adults, all of them Basque-Spanish bilinguals, native speakers of the western variety of Basque spoken in the province of Gipuzkoa. Four children were excluded from the analysis because they did not complete the study. The 21 children analysed (9 boys and 12 girls) attended a school where pupils are taught predominantly in Basque and their exposure to Spanish may vary from one child to another depending on the amount of contact with Spanish speakers.

3.3 Materials and design

The data was collected using a Picture Selection Task (PST) designed to test pronominal anaphora in Basque. More precisely, the PST tested the interpretation of null and overt (demonstrative) subjects in the context of forward anaphora. Most previous work on interfaces has dealt with transitive sentences in SVO nominative-accusative languages where subject-case alternation does not occur. However, Basque being an ergative-absolutive language and our focus being on the choice between the preceding subject and the extrasentential referent as antecedent, only intransitive verbs were included in the study. This was made to avoid the possible effect of the overt ergative (-k) vs. the absolutive \emptyset case marking morphology for S and O respectively and also that of a lexical intervener between the potential S antecedent and the S pronoun of the second clause.

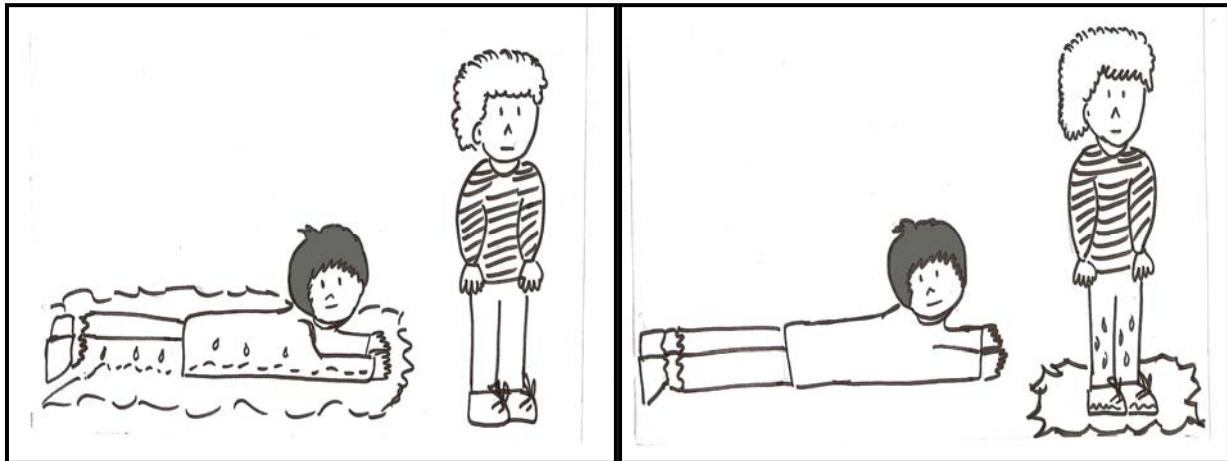
There were 32 experimental items in total for four experimental conditions (8 items per condition). The task included 4 filler items that were only meant to work as distracters. Each item consisted of two pictures of the same shape, representing two male characters involved in 8 intransitive actions such as falling, sitting or lying. Picture A and B are a sample item for the experimental condition *Mikel erori denean _____ busti egin da* ‘When Mikel fell over (he) got wet’. In

¹ There is no gender distinction in the (pro)nominal system.

picture A below, *Mikel* (the boy with straight and dark hair) performs both the action described in the main clause and that described in the subordinate clause. Thus, he is on the floor and wet and *Julen* (the boy with curly hair and a striped pullover) is just standing. In picture B *Mikel* performs the action described in the first clause (being on the floor) whereas *Julen* carries out the action of the second clause (being wet).

Picture A

Picture B



There were two possible interpretations: (1) *coreferential reading*, intrasentential coreference between the pronoun and the subject of the preceding clause (A) or (2) *disjoint reading*, the pronoun's antecedent would be an extrasentential referent (not verbally mentioned but visually present) (B). Pseudorandomized items were balanced for conditions, character, (left /right) location of the character in the picture, etc.

The 4 experimental conditions differing in clause order and type of pronoun are shown in (3). In (3a) and (3b) the subordinate clause precedes the main clause and subject pronoun realization changes from null to overt. In (3c) and (3d) the subordinate clause follows the main clause and the overtiness of the pronouns also differs from (3c) to (3d). The subject of the main clause and the subordinate clause were always matched for number (singular) and case (absolutive).

(3)

a. Subordinate clause [NP] + main clause [..Ø..]
Mikel erori denean _____ busti egin da.
 Mikel fallen has-when *pro* wet got has.
 'When Mikel fell over (he) got wet'.

b. Subordinate clause [NP] + main clause [*hura*]
Mikel erori denean hura busti egin da.
 Mikel fallen has-when he wet got has.
 'When Mikel fell over he got wet'.

c. Main clause [NP] + subordinate clause [..Ø..]
Mikel busti egin da _____ erori denean.
 Mikel wet got has *pro* fallen has-when.
 'Mikel got wet when (he) fell over'.

d. Main clause [NP] + subordinate clause [*hura*]
Mikel busti egin da hura erori denean.
 Mikel wet got has he fell has-when.
 'Mikel got wet when he fell over'.

3.4 Procedure

Children were tested individually at a Basque school in the province of Gipuzkoa. The experimenter introduced the characters *Mikel* and *Julen* showing several pictures of each to ensure that all participants were familiar with them. There was a short training session to check if the child

understood the task. Each experimental sentence recorded by a native speaker of Basque with natural intonation, was introduced together with two pictures which appeared on the screen. Children were asked to point at the picture which showed what they had heard. Once the real experiment started each slide was seen by the child once. Approximately 8 minutes were spent with each child at two different sessions.

All scoring was done from the videotapes and audio recordings. The data was coded according to whether there was intrasentential coreference (the preceding subject as antecedent) or disjoint reference (not verbally mentioned but visually present referent as antecedent). See Figure 1 and 2 below for details. The individual raw numbers were converted into fractions to run the mixed factorial ANOVA and t-tests. The values of the intrasentential coreference were used for the statistical test and its results are represented by figures on the following pages.

4. Results

As a general result, NSs and OPSs were differently interpreted: NSs had an intrasentential antecedent (81.45%) as opposed to OPSs (coreference: 43.15%). These differences were statistically significant, $t(30)=5.5, p<.001$.

Figure 1 shows the distribution of the mean percentages of responses of the intrasentential antecedent, i.e. the antecedent within the clause across conditions and groups. Figure 2 displays the rates of acceptance of the coreferential interpretation for pronoun type in both children and adults. Percentages below 50% refer to the extrasentential antecedent in Figure 1 and 2.

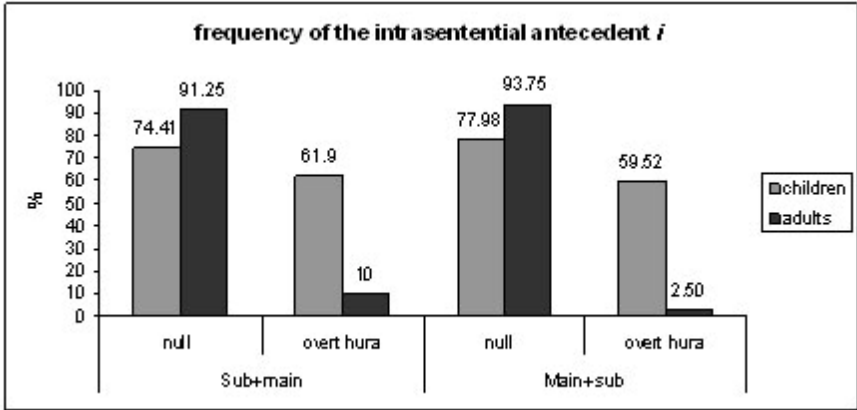


Figure 1. Acceptance rates of intrasentential coreference for group by experimental condition

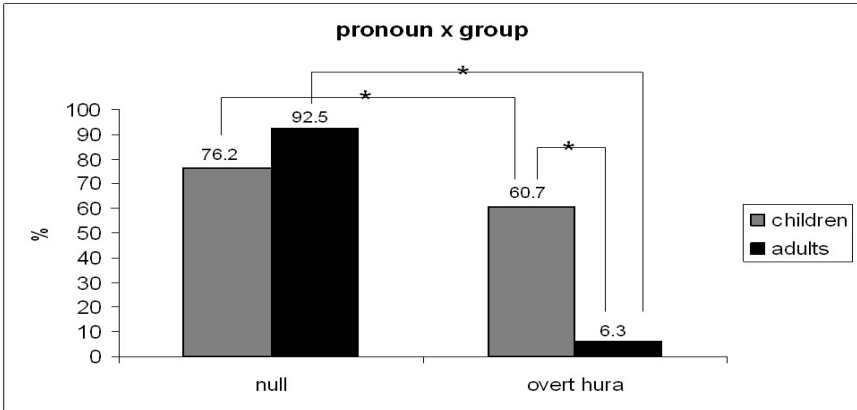


Figure 2. Acceptance rates of intrasentential coreference for group by pronoun type

There was a significant interaction between pronoun type and group [$F(1,29)=88.45, p<.001$]. The within-group comparison in Figure 2 shows that both NSs and OPSs are coreferent with the subject of the preceding clause in children although the percentages are slightly higher in NSs (76%) than in OPSs (60%), [$t(20)=3.71, p=.001$]. In contrast, adults have a clear division in their antecedent

assignment (Fig. 2). Whereas NSs have an intrasentential referent (92%), OPSs are interpreted as disjoint in reference with the preceding subject, as only 6% of the answers referred to the intrasentential referent [$t(9)=15.26, p<0.001$].

As for the between-group analysis, interpretations of NSs are similar between children and adults but the interpretations of OPSs differed greatly between the groups, [$t(29)=7.525, p<.05$]. Thus, the interpretation of pronouns between children and adults differed mainly in OPSs (a difference of 86% vs. 15.5% in NSs). Children preferred the intrasentential coreference both in NSs and OPSs in all experimental conditions (Fig. 1). Results indicate that antecedent assignment in children, in contrast to adults, was not affected to any great extent by pronoun type. Adults overwhelmingly interpreted NSs as coreferent with the subject NP of the previous clause but assigned the disjoint reading to OPSs.

Finally, the three-way interaction (pronoun x clause order x group) resulted non-significant. On the whole, there was a significant main effect of pronoun type $F(1,29)=182.71; p<.001$. The between-group variable, group, showed a significant effect of age indicating that ratings from children and adult participants were in general not the same $F(1,29)=12.17; p=.002, r=.54$. Interactions involving clause order did not result significant.

5. Discussion

The experiment presented was designed to test how overt and null pronouns are interpreted in Basque. Two variables, namely pronoun realization and clause order, were analysed to see their influence on anaphora resolution and whether 6- to 7-year-old children interpret pronouns adultlike. Clause order does not affect anaphora resolution but pronoun type has an effect on the results. NSs have an intrasentential antecedent both in children and adults but antecedent choices differ greatly in OPSs between the groups: children select intrasentential coreference whereas adults choose disjoint reference.

NSs in the second clause of Basque complex sentences corefer predominantly with the subject of the previous clause in both groups (92% in adults and 76% in children). Such results resemble Carminati's findings on NSs in one- (1b) and two-referent clauses (1a) (Carminati 2002). OPSs' antecedent preferences, however, are different for each group. Disjoint reference prevails in adults whereas children show preference for coreference between the OPS and the lexical NP subject of the previous clause. In this regard, Basque children's data (60%), though not Basque adults' (6%), are in line with the Italian OPS' preference for intrasentential coreference (85%) in one-referent clauses (1b) (Carminati 2002). Adults' disjoint reading of OPSs is in accordance with the overall prediction of the PAS that they would choose a non-subject antecedent, i.e. an extrasentential referent. Results in Basque are still more robust than those of Italian in one-referent clauses (15% in adult Italian vs. 40% in child Basque and 84% in adult Basque). Some variability in antecedent choices of OPSs was predicted in the PAS and our results show evidence of this variability in two different domains: in the developmental (children vs. adults) and crosslinguistic domain (Italian vs. Basque adults). Language internal specificities such as properties of the pronoun *lui* 'he' in Italian vs. the Basque demonstrative pronoun *hura* 'that' may hold for explaining differences observed in the two NSLs. For instance, the fact that Italian OPSs are more probable to occur in ambiguous sentences (two referents of the same gender) than in unambiguous ones relates OPSs "redundancy" to their capacity to act as disambiguators. In contrast, OPSs in Basque cannot play such a role in the same situation in a language lacking morphological gender. Moreover, methodological factors such as the experimental paradigm (a questionnaire in the Italian study vs. PST in the Basque one) may have also played a role.

Basque adults interpret the demonstrative *hura* 'that' as non-anaphoric, referring to an extrasentential antecedent. In contrast, children consider it as anaphoric, a property typically associated with pronouns and not usually with demonstratives, which are place or spatial deictics (Diessel 1999). A question on the description of *hura* 'that' arises at this point: does the habitual description of the use of *hura* 'that' support the anaphoric interpretation of children and denies the disjoint interpretation by adults? Let us first take a look at the descriptions offered by descriptive grammars concerning third-person pronouns. Descriptions of standard Basque present the demonstrative *hura* 'that' functioning as a third-person pronoun but they also mention that western varieties have a third-person pronoun, *bera* 'he (himself)/she (herself)/the same' (de Rijk 2008). Both pronouns seem to share some anaphoric and pronominal features although in western varieties, there is a division in the use of *hura* 'that' (deictic by default) and the (more) anaphoric *bera* 'he (himself)/she (herself)/the same'. In fact, the general and common criterion is that *bera* 'he (himself)/she

(herself)/the same’, and not *hura* ‘that’, must be used if the antecedent and the pro-form are in the same sentence (Laka 1996). Being the intrasentential anaphora the focus of this study, coreference is expected with *bera* ‘he (himself)/she (herself)/the same’ and not with *hura* ‘that’ in the western variety under study. Adults’ rejection of the coreferential reading with the demonstrative *hura* ‘that’ converges with what descriptive grammars state. By contrast, children accept intrasentential coreference.

An anaphoric relation between a pronoun and a preceding NP can be established either through *variable binding* or *coreference* (Reinhart 1983, Grodzinsky and Reinhart 1993). *Variable binding* can be obtained when a pronoun is syntactically and semantically bound. There are, nevertheless, other instances in which a pronoun is not interpreted as a bound variable but it still corefers with some expression in the sentence. That is when *coreference* comes to play, cases where two expressions corefer or refer to same individual. In the example of the subordinate-main clause type (3b) *Mikel erori denean hura busti egin da* ‘When Mikel fell down he got wet’, *hura* ‘that or he’ is not syntactically bound to *Mikel* but the question is whether the anaphoric reading/intrasentential coreference is viable through *coreference*. In such a case, Rule I*, taken from Guasti and Chierchia (1999/2000) and inspired by Reinhart’s work, is operative:

(4) Rule I*

If a pronoun is not (semantically) bound by an NP A, it is generally interpreted as non-coreferential with A, unless it appears in an Evans-style context².

(taken from Guasti 2004: 282)

But a different prediction has to be made for the sentence main-subordinate clause type (3d) *Mikel busti egin da hura erori denean* ‘Mikel got wet when he fell over’ where *hura* ‘that’ is syntactically bound and, therefore, Rule I* is not operative. Basque adults behave according to Rule I* in the example (3b), that is, the demonstrative *hura* ‘that’ is unbound and takes the disjoint interpretation instead of the anaphoric one. Adults again select the disjoint reading in (3d), under the binding conditions concerning the demonstrative *hura* ‘that’. Despite fulfilling the role of a third-person pronoun when a third referent is required, *hura* ‘that’ behaves like usual demonstratives with respect to binding. This behaviour is in agreement with Eguzkitza’s proposal that *hura* ‘that’ obeys Principle C and in this respect, it is comparable to R(eferential) expressions (Eguzkitza 1986). Under this assumption, the demonstrative *hura* ‘that’ must be disjoint from any c-commanding antecedent, i.e. it must be free everywhere as opposed to *bera* ‘he (himself)/she (herself)’, which must be disjoint only from local antecedents (Principal B). Demonstratives, contrary to personal pronouns, cannot overrule their disjointness requirement through *accidental coreference*, where principle B is violated by some grammatical process (Cardinaletti and Starke 1999: 284). Based on the generalisation in (5), principle B is assigned to the first available pro-form where personal pronouns are preferred to demonstrative pronouns.

(5) *Repartition of Pro-Form Binding* (adapted from Cardinaletti and Starke 1999: 288)

a. B>C (i.e. Assign Principle B to the first pro-form, C to the rest)

	b. Personal pronouns >	Simple Demonstratives>	Intensified demonstratives
French:	<i>le/lui</i> ‘him’	<i>ce/ça/cela</i> ‘these/that’	
Italian:	<i>loro</i> ‘they’	<i>questi/quelli</i> ‘these/those’	
Basque :	<i>bera</i> ‘(s)he (self)/the same’	<i>hura</i> ‘that’	<i>huraxe</i> ‘(precisely) that’

The distribution in (5) predicts a different interpretation, in comparison to *hura* ‘that’, for the pronoun *bera* ‘he (himself)/she (herself)/the same’. See Iraola (2010) for a study on *bera* ‘he (himself)/she (herself)/the same’ using the same methodology. Adults seem to interpret *hura* ‘that’ as a typical demonstrative (5). In contrast, children select the coreferential reading with OPSs because

² Evans-style sentences, commonly known as *accidental coreference*, refer to contexts like *Goofy admires him* (Guasti 2004:281) where the pronoun him and the nominal expression refer to the same individual although Principle B blocks coindexation.

while processing isolated sentences, the processor may prefer to find an antecedent in the sentence itself regardless of redundancy, rather than resorting to an extrasentential referent as Carminati (2002) postulated. The same results suggest that Basque children's interpretation of *hura* 'that' is closer to a personal pronoun than to a demonstrative in (5). As Wexler (1996) observed for the "delay of Principle B", the problem may arise from Basque children's knowledge that pronouns have to be anchored in context or discourse so that –if an anchor is not immediately obvious– they may look for this anchor in the wrong domain, overriding syntax with pragmatics. The distribution of pro-forms given in (5) shows the differences between Italian and Basque pronouns: the Italian strong pronoun *lui* 'he' obeying Principle B and the Basque demonstrative *hura* 'that' following Principle C. Different behaviours of demonstratives have been observed crosslinguistically. For instance, Greek being a language comparable to Basque in the fact that it also lacks third-person pronouns, the demonstrative *aftos/afti* occupies the role of a third-person pronoun but behaves according to Principle B (Sanoudaki 2003). Thus, Greek *aftos/afti* seems to be closer to *bera* 'he (himself)/she (herself)/the same' than to *hura* 'that' in the distribution shown in (5).

The asymmetry found between target-like NSs and non-target-like OPSs in the current study coincide with prior work in bilingual children acquiring a NSL together with a NSL (Serratrice et al. 2004), in L2 learners (Sorace and Filiaci 2006) and in L1 attrition (Tsimplici et al. 2004). However, between-group differences found in the current study cannot be attributed to bilingualism nor to the influence of the non-NSL in the NSL as both populations are bilingual speakers of two NSLs. Basque children data may back up the Interface hypothesis, which predicts an asynchronous development between narrow syntax (early developed) and syntax-discourse interface (later developed). Basque children's target-like performance in NSs cannot only be explained syntactically as some additional knowledge may be needed for their coreferential interpretation in (3a). In this regard, the non-target-like interpretation of the OPS is better explained due to a non-adultlike knowledge of some of the specific properties of *hura* 'that' than to a non-fully developed syntax-discourse interface. Notice that the percentages for coreference are lower in OPSs compared to NSs in children, which leads to the conclusion that they already distinguish between the two types of pronouns. The question on the age at which children acquire the binding conditions of *hura* 'that' and hence, show adult-like behaviour remains unanswered.

One last observation should be made as for the different antecedent preferences of the null and overt pronoun. The PAS claims that this can be predicted on the basis of a primarily syntactic notion of prominence. Such a statement has its basis in bivalent predicates where the overt pronoun tends to corefer with an argument occupying a position lower than Spec IP in the preceding clause. Testing syntactic predominance hypothesis by Carminati (2002) was beyond the purpose of the present study based on intransitive predicates exclusively. Further research on anaphora resolution in transitive sentences will provide more conclusive results in this respect (Iraola & Ezeizabarrena, in prep).

6. Conclusions

Data on forward anaphora in Basque provides new empirical evidence for the differences in antecedent choice between the NS and the OPS as predicted in the PAS (Carminati 2002). NSs show strong preference for the intrasentential antecedent in children and adults. However, referent choices for the demonstrative OPS *hura* 'that' differed greatly between the groups. This supports Carminati's claim that OPSs's preference for a certain antecedent is more flexible: whereas adults choose an extrasentential referent for *hura* 'that' (Rule I*, Principle C), children favoured the intrasentential antecedent. Non-adultlike interpretations of OPSs by 6- to 7-year-olds indicates that children at this age have still not fully acquired the (non)-anaphoric specific properties of the third-person (demonstrative) pronoun *hura* 'that'.

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References

- Alonso-Ovalle, L., Fernandez-Solera, S., Frazier, L. & C. Clifton. 2002. Null versus overt pronouns and the Topic-Focus articulation in Spanish. *Rivista Linguistica/Italian Journal of Linguistics* 14:151-170.
- Bhat, D. N. S. 2004. *Pronouns*. Oxford: Oxford University Press
- Cardinaletti, A. & M. Starke. 1999. Responses and demonstratives. In Henk van Riemsdijk (ed.), *Clitics in the Languages of Europe*. Berlin/ New York: Mouton de Gruyter, 280-289.
- Carminati, M. N. 2002. The processing of Italian subject pronouns. Unpublished PhD thesis: University of Massachusetts at Amherst, USA.
- 2005. Processing reflexes of the feature hierarchy (Person>Number >Gender) and implications for linguistic theory. *Lingua* 115: 259–85.
- De Rijk R. P.G. 2007. *Standard Basque. A Progressive grammar*. Cambridge, The MIT Press.
- Diessel, H. 1999. Demonstratives: Form, Function, and Grammaticalization. *Typological Studies in Language* 42. Amsterdam: John Benjamins
- Diaconescu, R. & H. Goodluck. 2004. The pronoun attraction effect for d(iscourse)-linked phrases: Evidence from speakers of a null subject language. *Journal of Psycholinguistic Research* 33: 303–319.
- Eguzkitza, A. 1986. Topics in the syntax of Basque and Romance, PhD thesis: UCLA.
- Geber, D. 2006. Processing Subject Pronouns in Relation to Non-Canonical (Quirky) Constructions. *Ottawa Papers in Linguistics* 34: 47-61.
- Guasti M. T. & G. Chierchia. 1999/2000. Reconstruction in child grammar. *Language Acquisition* 8: 129-170.
- 2004. *Language Acquisition: The Growth of Grammar*. Cambridge, MA: MIT
- Grodzinsky Y. & T. Reinhart. 1993. The innateness of binding and of coreference. *Linguistic Inquiry* 24: 69-101.
- Hacohen A. & J. Schaeffer. 2007. Subject realization in early Hebrew/English bilingual acquisition: The role of crosslinguistic influence. *Bilingualism: Language and Cognition* 10: 333-344.
- Huang, Y. 1994. *The Syntax and Pragmatics of Anaphora*. Cambridge: Cambridge University Press.
- Huang, Y. 2000. *Anaphora: A Cross-linguistic Study*. Oxford: Oxford University Press.
- Hualde, J. I. & J. Ortiz de Urbina (eds). 2003. *A grammar of Basque*. Berlin/ New York: Mouton de Gruyter.
- Iraola Azpiroz, M. 2010. Interpretations of null and overt subjects in the acquisition of Basque. *Revista Interlingüística XXII*, 939-950.
- Kras, T. 2006. Interface instability in bilingual language acquisition: in search of the causes. Paper presented at *EUROSLA* 2006.
- Laka, I. 1996. *A Brief Grammar of Euskara, the Basque Language*, available at <http://www.ehu.es/grammar>, ISBN: 84-8373-850-3.
- Liceras, J.M., Fernández Fuertes, R. & R. Pérez-Tattam. 2008. Null and overt subjects in the developing grammars (L1 English/L1 Spanish) of two bilingual twins. In C. Pérez, A. Bel & M. Juan (eds.), *A portrait of the young in the new multilingual Spain*. Clevedon, UK.: Multilingual Matters, 111-134.
- Liceras, J.M., Fuertes Fernández, R., Alba de la Fuente, A., Boudreau G. & E. Avelo. 2010. On the locus and directionality of interlinguistic influence in simultaneous bilingualism: core syntax phenomena and lexical transparency. Paper presented at the *Romance Turn IV*. Tours, 25-27 August 2010
- Lust, B. 1986. *Studies in the acquisition of anaphora. Volume 2: Applying the Constraints*. Dordrecht; Boston: D. Reidel Pub. (Kluwer) Co.; Hingham, MA, USA.
- Reinhart, T. 1983. *Anaphora and Semantic Interpretation*. London: Croom Helm.
- Sanoudaki, I. (2003). Greek 'Strong' Pronouns and the Delay of Principle B Effect. *Reading Working Papers in Linguistics* 7: 103-124.
- Serratrice, L., Sorace, A. & S. Paoli. 2004. Crosslinguistic influence at the syntax-pragmatics interface: Subjects and objects in English-Italian bilingual and monolingual acquisition. *Bilingualism: Language and Cognition* 7: 183-205.
- Sorace, A. 2000. Syntactic optionality in non-native grammars. *Second Language Research* 16: 93–102.

- 2003. Ultimate L2 attainment. In Long, M. and Doughty, C., editors, *Handbook of second language acquisition*. Oxford: Blackwell, 130–51.
- 2005. Selective optionality in language development. In L.Cornips, & K.P. Corrigan (eds.), *Syntax and variation. Reconciling the Biological and the Social*. Amsterdam: John Benjamins, 55–80.
- Sorace, A. & F. Filiaci. 2006. Anaphora resolution in near-native speakers of Italian. *Second Language Research* 22: 339-368.
- Tsimpli, I., Sorace, A., Heycock, C. & F. Filiaci. (2004). First language attrition and syntactic subjects: A study of Greek and Italian near-native speakers of English. *International Journal of Bilingualism* 8: 257-277.
- Wasow, T. 1986. Reflections on anaphora. In B. Lust (ed.). *Studies in the Acquisition of Anaphora, vol. I, Defining the Constraints*. Dordrecht: Reidel, 107-123.
- Wexler, K. 1999. Maturation and growth of grammar. In W.C. Ritchie & T.K. Bhatia (eds.), *Handbook of child language acquisition*, San Diego: Academic Press, 55-109.