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Discursive Feature Specification of the pronoun  
*hura* in Child  
(L1, L2) and Adult Basque

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**Introduction**

The vulnerability of the syntax-pragmatics interface, and more precisely, the distribution and interpretation of null and overt subject pronouns has received much attention in studies of monolinguals and bilinguals acquiring languages with optional vs. obligatory overt subjects. Studies on monolingual adult speakers have reported different biases —*division of labour* (Carminati 2002)— for null and overt pronouns in anaphoric dependencies of null subject languages. Whereas null pronouns are consistently interpreted as coreferent with the preceding subject, overt pronouns do not show a clear preference for a particular referent in many Romance languages (Carminati 2002 for Italian, Alonso-Ovalle, Fernández-Solera, Frazier & Clifton 2002 for Spanish, Mayol 2009 for Catalan, Filiaci, Sorace & Carreiras 2013 for Italian and Spanish). This pattern has been supported by data from bilingual L1 language acquisition of several languages. Bilingual children show a similar use of null subjects to that of monolingual peers, but they tend to overproduce or overaccept overt pronominal subjects referring to pragmatically inappropriate topic subject antecedents when compared to monolingual children (Serratrice, Sorace & Paoli 2004, Haznedar 2010, Serratrice 2007; but see Licerias, Fernández Fuertes & Pérez-Tattam 2008, and Licerias, Fernández Fuertes, Alba de la Fuente, Boudreau & Acevedo 2012 for a non-overproduction of overt pronouns in English-Spanish bilinguals). Similar asymmetric results on anaphoric dependencies have also been observed in other bilingual developing domains like

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adult L2 acquisition (Sorace & Filiaci 2006, Beletti, Bennati & Sorace 2007, Wilson 2009) and L1 attrition (Tsimpli, Sorace, Heycock & Filiaci 2004). The present paper aims to investigate whether the pragmatic deviance consisting in the unidirectional overuse of overt pronouns in bilingual children can be extended to bilinguals of two null subject languages like Spanish and Basque. For that purpose, we will explore the interpretation of the distal demonstrative *hura* ‘that’, which fulfills the function of third-person pronouns in Basque, a language lacking “true” third person pronouns (de Rijk 2008).

Although null and overt pronominal subjects are both grammatical in null subject languages, their distribution depends on discourse-pragmatic factors. It is commonly assumed that in null subject languages with Subject-Verb-Object (SVO) word order, the preverbal position hosts subject topics, normally interpreted as discourse-old, given information (Cardinaletti 1997 for Italian, Philippaki-Warbuton 1987 and Tsimpli 1990 for Greek). In such contexts, the pragmatically felicitous option to mark Topic continuance [or Not Topic Shift; hereafter -TS] is via a null subject. In contrast, Topic Shift [+TS], which requires a change of referent, is typically realized via an overt pronoun. In the example (1) from Carminati (2002: 78), the overt pronoun in the second clause is interpreted as a switch from the previous referent (*Marta*), to the object *Piera*, marking [+TS]. In contrast, the null pronoun leads to a non-shifted interpretation [-TS], its antecedent being the preceding subject *Marta*.

- (1) *Marta<sub>i</sub> scriveva frequentemente a Piera<sub>j</sub> quando \_\_\_<sub>i</sub> /lei<sub>ni/j</sub> era negli Stati Uniti.*  
‘*Marta<sub>i</sub> wrote frequently to Petra<sub>j</sub> when \_\_\_<sub>i</sub> /she<sub>ni/j</sub> was in the United States.*’

In this regard, studies in bilingual populations acquiring a null subject language together with English (Serratrice et al. 2004, Tsimpli et al. 2004) have argued that the underspecification of the interpretable discursive feature [+TS], mapped onto the overt pronoun in the monolingual grammars, leads bilinguals to overproduce/overaccept overt pronominal subjects freely in [-TS] and [+TS] contexts. Here the assumption is that the most economical language (English), influences the language with a more complex interface system (Italian, Spanish), where null subjects are allowed alongside the overt subjects (Sorace 2011). Nevertheless, the fact that late adult bilingual speakers of two null subject languages like Italian and Spanish also show an inappropriate overuse of overt pronouns reveals the limitations of the underspecification account (See Bini 1993

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for L1 Spanish-L2 Italian, Margaza & Bel 2006 for L1 Greek-L2 Spanish, Lozano 2006 for L1 Greek-L2 Spanish and Guido Mendes and Iribarren 2007 for L1 Spanish-L2 Brazilian Portuguese). Similar findings have also been observed in bilingual children acquiring two null subject languages. For instance, Sorace, Serratrice, Filiaci & Baldo (2009) investigated the acceptability of null and overt pronouns in intrasentential [-TS] and [+TS] contexts. English-Italian and Spanish-Italian bilingual children between 6–7 and 8–10 years of age, and Spanish and Italian age-matched monolingual children and adults were tested in an elicited acceptability judgment task. Results showed that younger monolinguals (age 6-7), Italian-English bilinguals and Italian-Spanish bilinguals accepted significantly more overt subjects referring to topic antecedents than both older (age 8-10) monolingual peers and adults. Additionally, in contrast to previous findings, where target-deviant patterns were only found in overt pronouns in [-TS] contexts, bilingual children also accepted some infelicitous null subject pronouns in [+TS] contexts regardless of age and language combination.

Recently, acceptance of “redundant” overt pronouns has also been reported in intersentential [-TS] contexts in 6-7 year old Mexican-Spanish monolingual children resembling Sorace et al. (2009)’s results. Shin and Cairns (2012) presented brief stories to children and teenagers between 6 and 15 years of age and observed that the preference for overt pronouns in [+TS] contexts develops earlier (around age 8) than the preference for null pronouns in [-TS] contexts: teenagers as old as 14 still overaccepted overt pronouns in such contexts. According to the authors, children begin to select overt pronouns in [+TS] contexts when they familiarize themselves with perspective taking in complex linguistic tasks. On the other hand, the overacceptance of overt pronouns in [-TS] contexts was interpreted as a tolerance for redundancy, which persists well into adolescence. Thus, their findings suggest that the ability to reject pragmatically inappropriate null pronouns in [+TS] contexts increases with age and reaches stability at an earlier stage than the ability to reject overt pronouns in [-TS] contexts, in line with Sorace et al. (2009).

The division of labour between null and overt pronouns is not restricted to two-referent sentences like (1), since a sign of residue of the division of labour has also been observed in one-referent sentences like (2). Italian monolingual adults showed a preference for both the null pronoun and the overt *lui* ‘he’ to be interpreted as coreferential with the preceding subject. However, such preference

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was statistically larger for null than overt pronouns, suggesting the presence of different biases for the two pronominal forms.

- (2) Gregorio<sub>i</sub> ha detto che \_\_\_<sub>i</sub> /lui<sub>i/?j</sub> sarà presente al matrimonio di Maria.  
'Gregorio<sub>i</sub> has said that \_\_\_<sub>i</sub> /he<sub>i/?j</sub> will be present at the wedding of Maria.'  
(adapted from Carminati 2002: 91)

Based on the correlation found by Ariel (1994) between the form of a referring expression with regard to the salience of its antecedent and the notion of syntactic prominence, the distinct antecedent choices of null and overt pronouns were formulated under the *Position of Antecedent Strategy* by Carminati (2002, 2005). She analyzed Italian null and overt pronouns in a variety of sentences in intrasentential anaphora context, using varied methodologies such as self-paced reading and sentence completion tasks. The results revealed that the null pronoun has a very strong bias towards the most prominent antecedent located in the specifier position of the inflectional phrase (Spec IP) of the preceding clause (typically the subject). On the contrary, the overt pronoun shows more flexibility tending to select a referent lower in the phrase structure, typically a non-subject antecedent. However, contextual factors may alter speakers' preferences for the overt pronoun, since its bias for a non-subject antecedent is stronger in ambiguous contexts (two-referent sentences (1)) than in unambiguous sentences (one-referent (2) or gender mismatch sentences).

Later off-line studies on adults have extended the validity of the Position of Antecedent Strategy beyond Italian to more Romance null subject languages (See Alonso-Ovalle et al. 2002 for Spanish, Diaconescu & Goodluck 2004, Geber 2006 for Romanian and Mayol 2009 for Catalan) and to non-Indoeuropean languages (Ok Kweon 2011 for Korean, Iraola 2011, Iraola & Ezeizabarrena 2011 for Basque). In some of these studies, results have confirmed the predictions of the Position of Antecedent Strategy in intersentential anaphora context, where null pronouns show a stronger bias for the subject than the overt pronoun for a non-subject antecedent. Interestingly, the variability of the overt pronoun is not limited to an intralinguistic pattern, as there seems to be interlinguistic differences between null subject languages. Online comprehension evidence by Filiaci, Sorace & Carreiras (2013) on monolingual Italian and Spanish adults indicate that whereas the intrasentential Italian overt pronoun *lui* 'he' marked [+TS], the Spanish overt pronoun *él* 'he' showed no clear bias towards a specific antecedent, although there

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was a trend for a [-TS] reading. Thus, the Spanish overt pronoun was interpreted as being closer to the properties of weak pronouns like the Italian weak pronoun *egli* as opposed to strong Italian overt pronouns like *lui* based on Cardinaletti and Starke's typology of pronouns (Cardinaletti & Starke 1999). Note however that Mexican Spanish adult speakers accepted overt pronouns in intersentential [+TS] contexts 83% of the cases (Shin & Cairns 2012). The different anaphoric contexts under study (intrasentential vs. intersentential anaphora), method (online vs. off-line) as well as some dialectal divergence (Spain vs. Mexico) may account for the apparent contradictory results regarding Spanish anaphoric pronouns.

The fact that even monolinguals show indeterminacy or optionality in structures sensitive to interface conditions has been explained more recently in terms of processing strategies in relation to executive function (Sorace & Serratrice 2009, Sorace 2011). Under this processing account, bilinguals and (to a lesser degree) monolinguals adopt the overt pronoun as the default form due to the processing costs at the interface level (Sorace 2011). In addition, extralinguistic factors like the input received by bilingual speakers, both in terms of quantity and quality has also been pointed out as the possible source of the overgeneralization of the overt pronoun. However, a unified explanation for the asymmetry between a native-like performance in null subjects and a non-native like one in overt pronominal subjects in all cases of developing grammars is still to come. This issue remains as the main challenge of 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 & Filiaci 2006). As Sorace (2011) notes, different factors may interact in a cumulative way without necessarily cancelling out each other, which could offer a complete explanation for linguistic phenomena at interfaces in bilingual language development.

It is plausible to wonder whether the antecedent biases of pronouns are likely to be affected by the different clause order while processing complex sentences. Studies on adult English not directly addressing pronoun interpretation converge in demonstrating that main and subordinate clauses are processed differently (Clark & Clark 1968, Kornfeld 1973, Bever & Townsend 1979), but the differences do not always point in the same direction. Bever & Townsend (1979) tested English speaking adults' semantic and lexical accessibility to main and subordinate clauses using probe latency tasks. English adults had better accessibility to main clauses (shorter reaction times) when asked the semantic content of clauses. On the other

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hand, such main clause superiority was not found in a lexical probe latency task. Rather, they found a non-significant tendency for subordinate clauses to be accessed better in the lexical probe latency task. This pattern was thought to reflect the fact that main clauses are processed directly to a semantic level of representation, whereas subordinate clauses are held relatively verbatim for a period of time during processing.

To sum up, although the studies carried out so far on anaphora resolution display variation in (intrasentential vs. intersentential) anaphora context, clause types (adverbial complex sentences, VP-complement clauses), and methodology (from online self-paced reading tasks to off-line grammatical judgement tasks), the overall conclusion we can draw is that there is a crosslinguistic validity of the null subject bias towards the subject but there exist both intralinguistic and crosslinguistic differences in the biases that guide the resolution of overt pronouns. This is not surprising since Carminati (2002) already anticipated that there may be microvariation among null subject languages in the antecedent assignment possibilities for overt pronouns. Thus, null subject languages may vary with respect to the division of labour, the distance between each form's function. In the case of one-referent sentences, the case at hand, crosslinguistic variation may in fact lie in the distance between coreference and non-coreference interpretation with the preceding subject.

As the interpretation of pronouns in bilingual children has been tested in genetically and typologically related null subject languages like Italian and Spanish (Sorace et al. 2009), the current study pursues this line of inquiry and seeks to expand the scope of the topic by examining a pair of genetically unrelated and typologically distant null subject languages like Basque and Spanish. It extends the sample of L1-Basque (adult and child) from Iraola & Ezeizabarrena (2011) by adding a new group of L2-Basque children and a new methodology. By presenting the results of two off-line tasks, three main goals are pursued in this study a) to test whether the null and the overt (demonstrative) pronoun *hura* 'that' differ in their antecedent choices, b) to analyze whether the interpretation of the null and the overt pronoun differ between native adults and children, and between child groups (L1-Basque and L2-Basque), and c) to check whether Basque also fits in the patterns observed crosslinguistically: null pronouns being coreferent with the preceding subject, specified as [-TS], and overt pronouns referring to a non-subject antecedent marking [+TS]. At the same time, extralinguistic factors such as biological age, age of acquisition and amount of exposure will be taken into

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account to see whether they have any effect on the results. The article is organized as follows. Section 1 focuses on the different use of overt and null pronouns in Basque. Section 2 describes the details of the two experimental studies and reports the overall results of the interpretations of null and overt pronominal subjects in Basque. Finally, Section 3 presents a discussion of the results and Section 4 the conclusions.

### 1. Overt and null subject pronouns in Basque

Basque is an SOV and morphologically ergative language with a very rich person marking in the verb, which can agree with up to three arguments, the subject, the direct-object and the indirect-object. Null subjects are allowed in Basque, which is consistent with the properties traditionally attributed to pro-drop languages with rich (and/or regular) person marking (Jaeggli & Safir 1989, Rizzi 1982, 1986). Thus, subjects are frequently omitted in non-contrastive non-emphatic contexts since their referents can be recovered directly from the morphology of the verb. Person marking is overt for 1<sup>st</sup> and 2<sup>nd</sup> persons in pronouns and in the person affixes on the verbal inflection, and a partial homophony exists between both paradigms (3). In contrast, the 3<sup>rd</sup> person does not have a lexical representation as personal pronoun and the subject-agreement marking on the verb<sup>1</sup> is considered to be zero. Hence, it has been regarded as a *two-person language* (Bhat 2004).

- (3)a. Ni n-ator 'I come'  
b. Zu z-ato-z 'You come'  
c. — Ø-dator 'He/she/it comes'

However, when an overt third person pronoun is required, descriptive grammars of standard Basque present the originally distal demonstrative *hura* 'that (over yonder/over there) meaning remoteness from the speaker and the addressee' as the neutral form, which may compete with the *quasipronoun bera* '(s)he (him/herself)' (De Rijk 2008: 795). Both forms have been described as being equivalent to third

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<sup>1</sup> The existence of a zero/overt third person morpheme has become a controversial issue in Basque linguistics. Whereas some scholars analyse *d-* (as in *d-ator*, "he comes") as a tense marker (Trask 1981), Albizu (2002: 3) claims that there is no third person marking for ergative and absolutive.

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person pronouns of other languages (de Rijk 2008: 209). However, they differ in their use. The general and common use criterion is, as Saltarelli (1988: 97) explains, that “third person pronouns (*hura* ‘that’) take a special form (*bera* ‘(s)he, (him-/herself’) when the antecedent, which refers to a person or an object, has been only mentioned before”. More specifically, Laka (1996) states that contrary to the quasipronoun *bera*, the demonstrative *hura* ‘that’ cannot appear in the same sentence as its antecedent, which is consistent with saying that Principle C discards the possibility of having an intrasentential antecedent (Eguzkitza 1986).

- (4) a. Nere senarra<sub>i</sub> etxeratzen denean berak<sub>i;j</sub> garbitzen ditu ontziak.  
‘When my husband<sub>i</sub> comes home he<sub>i;j</sub> washes the dishes.’  
b. Nere senarra<sub>i</sub> etxeratzen denean hark<sub>j</sub> garbitzen ditu ontziak.  
‘When my husband<sub>i</sub> comes home he<sub>j</sub> washes the dishes.’  
(Saltarelli 1988:97)

Whereas *berak* (the ergative form of *bera*) behaves as an anaphoric pronoun in (4a), being coreferential with the subject of the preceding clause, *hark* (the ergative form of *hura*) in (4b) functions as an obviative pronoun avoiding intrasentential coreference. Based on these differences, Ortiz de Urbina (1989: 147) describes *hura* as the *obviative/neutral* pronoun and *bera* as the *proximate/intensive* pronoun (see Iraola 2011, Iraola & Ezeizabarrena 2011 for more details on *hura/bera*). Both overt pronominal forms are marked for person, case and number (3<sup>rd</sup> person absolutive singular), but lack the gender feature since there is no gender distinction in the Basque (pro)nominal system.

## 2. The Study

The current study deals with the interpretation of the overt demonstrative pronoun *hura* ‘that’ in comparison to the null pronoun in subject position in forward anaphora conditions. Using two different experimental methodologies, we check empirically the discursive feature of the overt demonstrative pronoun *hura* and we investigate to what extent it is equivalent to third person pronouns in other null subject languages as described by Basque descriptive grammars. Literature on discursive features that constrain the distribution of overt and null pronouns and more syntactically-based approaches like Carminati’s (2002) lead to the following predictions:

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- a) null pronouns will be interpreted as referring back to the subject of the preceding clause in all groups of participants.
- b) topic maintenance contexts will favour the preference for null subjects.
- c) overt pronouns may not show a clear preference for a referent and the groups of participants may vary based on previous findings in monolingual and bilingual language development (Sorace et al. 2009, Shin & Cairns 2012).
- d) topic shift contexts will favour the preference for overt pronouns.

## **2.1 Experiment 1: Picture Selection Task**

Experiment 1 was designed to analyse whether participants preferred the coreferential reading (having the preceding subject as antecedent) or the disjoint reading (the antecedent being a non-mentioned antecedent in the discourse, i.e. an extrasentential referent) for null and overt pronouns in direct speech context.

### **2.1.1 Participants**

A group of 50 children participated in the study: 25 Basque-Spanish bilingual children (L1-Basque), and 25 Spanish-Basque bilingual children (L2-Basque). However, four L1-Basque and three L2-Basque children did not complete the study and were excluded from the analysis. Thus, a total of 21 L1-Basque bilingual children (age range 6;1-7;0, mean age 6;5) and 22 L2-Basque bilingual children (age range 6;4-7;2, mean age 6;8) were included in the final analyses. Additionally, 10 L1-Basque adults participated in the experiment as control group. The two groups of children were recruited in two schools located in different geographic areas where Basque is the vehicular language except for the Spanish and English classes. L1 children live in a Basque-speaking area in the province of Gipuzkoa, a central province in the Spanish-Basque speaking area and their parents are L1 speakers of Basque. L2 children, instead, come from an almost monolingual Spanish-speaking area in the province of Navarre and according to parental reports, most of them were descendants of L1 Spanish parents. Despite a very early regular exposure to the Basque language since kindergarten (in immersion programs), at the age of 2 or 3, these L2 children's exposure is virtually restricted to school time.

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### 2.1.2 Materials

The data was collected using a Picture Selection Task in a PowerPoint 2003 presentation designed to test the interpretation of null subjects and the overt demonstrative subject *hura* '(s)he' in the context of forward anaphora and backward anaphora condition in Basque. Due to space limitations, this paper only reports results of forward anaphora sentences for a convenient comparison between Experiment 1 and 2. The task included 32 experimental items in total for 4 experimental conditions (8 items per condition) plus additional 8 fillers that were only meant to work as distracters. The four different structures including an unaccusative verb pair like *igo* (lit. 'go up', but 'get-on' in the context of 5a-d sentences) and *haserretu* ('get angry') differed in clause order and type of pronoun as shown in (5). The first subordinate or main clause introduces a male individual in subject position and the second clause with a null or overt pronoun contains a statement which is not pragmatically biased to refer to the referent in the preceding clause. The subjects of both clauses were always matched for number (singular) and case (absolutive).

- (5) a. Subordinate clause [NP] + main clause [..Ø..]  
Mikel igo denean \_\_\_\_\_ haserretu egin da.  
*Mikel get on has-when angry got has.*  
'When Mikel got on (the bus), (he) got angry.'
- b. Subordinate clause [NP] + main clause [*hura*]  
Mikel igo denean hura haserretu egin da.  
*Mikel get on has-when he angry got has.*  
'When Mikel got on (the bus), he got angry.'
- c. Main clause [NP] + subordinate clause [..Ø..]  
Mikel haserretu egin da \_\_\_\_\_ igo denean.  
*Mikel angry got has get on has-when.*  
'Mikel got angry, when (he) got on (the bus).'
- d. Main clause [NP] + subordinate clause [*hura*]  
Mikel haserretu egin da hura igo denean.  
*Mikel angry got has he get on has-when.*

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‘Mikel got angry, when he got on (the bus).’

Visual items consisted of two pictures of the same shape, representing two male characters *Mikel* and *Julen* involved in 8 intransitive actions such as falling, sitting or getting angry. Picture A and B in Figure 1 are a sample item for the experimental condition *Mikel igo denean\_\_\_/Hura haserretu egin da* ‘When Mikel got on (the bus)\_\_\_/he got angry’. In picture A, *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 bus and angry 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 bus) whereas *Julen* carries out the action of the second clause (being angry).

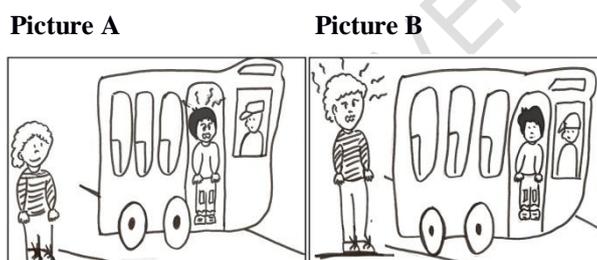


Fig.1. An instance of the picture pair presented at the Picture Selection Task in Experiment 1.

There were two possible interpretations: *coreferential reading*, intrasentential coreference between the pronoun and the proper noun functioning as the subject of the preceding clause (5) represented in Picture A or *disjoint reading*, the pronoun's antecedent would be an extrasentential referent (not verbally mentioned but visually present) (see Picture B). Pseudorandomized picture pairs were balanced for conditions, character and location of the character in the picture (left /right).

### 2.1.3 Procedure

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The participant and the experimenter sat together in front of a laptop computer in a quiet room. Before the actual experiment began, the experimenter introduced the two male characters *Mikel* and *Julen* showing several pictures of each to ensure that all participants were familiar with the characters. Afterwards, there was a short training session of four trials where participants were simultaneously presented with an auditory sentence and two pictures on the screen depicting two possible interpretations of the sentence. Participants were instructed to point to the picture they thought better matched the sentence they had heard. During the training session, two characters which were different from the ones of the actual experiment performed transitive actions in a coordinated sentence. Next, the experimental session started. Each slide was shown once to the child. Participants were individually tested. Children were tested during school hours. Each session lasted around 10 minutes.

#### **2.1.4 Data analysis**

Results were analysed using a mixed-effects regression model (Baayen 2008, Jaeger 2008). A binomial model with the dependent variable coreference was created (the participants' preferences for coreference or disjoint reference). Clause order (main+subordinate vs. subordinate+main) and pronoun type (null vs. overt) were defined as fixed factors and participants and items as crossed random factors.

#### **2.1.5 Results**

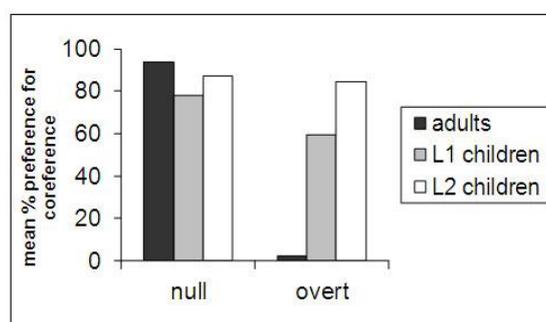
Fig 2 shows the rates<sup>2</sup> of preference for intrasentential coreference for each group with sentences containing null and overt pronouns. Note that the mean number of times disjoint reference (i.e. the extrasentential referent as antecedent) was selected is simply the inverse of the results reported in Fig.2.

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<sup>2</sup> The descriptive statistics shown in the figures are not exactly the same as the estimates derived from the statistical model, as the model adjusts for differences across subjects and items.

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**Fig.2. Preference rates for intrasentential coreference by pronoun type**



Clause order (subordinate-main vs. main-subordinate) had no effect on the results for any of the groups since the interaction between clause order and pronoun type was non-significant for adults ( $\beta= 1.96, z= 1.79, p=0.07$ ), for L1 children ( $\beta= 0.33, z= 0.92, p= 0.36$ ), and for L2 children ( $\beta= 0.1375, z= 0.337, p= 0.7362$ ). The significant main effect of pronoun type observed in adults ( $\beta= -7.24, z= -7.51, p<0.001$ ) indicates that coreference rates were significantly lower in overt pronouns (6%) than in null pronouns (93%). As for L1 children's results, data analysis revealed a highly significant main effect of pronoun type suggesting that coreference rates were significantly lower in overt pronouns (62%) than in null pronouns (76%;  $\beta= -0.97, z= -3.82, p<0.001$ ). Regarding L2 children, pronoun type had no effect since there was a general preference for coreference regardless of pronoun type (81% vs. 84% for overt and null pronouns, respectively;  $\beta= -0.24, z= -0.77, p=0.44$ ).

When comparing the results of adults and L1 children, there was a main effect of pronoun type ( $\beta= -6.99, z= -7.51, p<0.001$ ) and group ( $\beta= -1.58, z=-2.59, p<0.01$ ). In addition, the interaction between pronoun and group was significant ( $\beta=6.01, z=6.24, p<0.001$ ), which revealed different preference patterns between groups in null and overt pronoun conditions. In the case of null pronoun contexts, although both adults and L1 children showed preference for intrasentential coreference, such preference was larger for adults than for children ( $\beta=-1.44, z= -3.32, p<0.001$ ). However, the reverse pattern was observed in overt pronouns, where adults showed a clear preference for the disjoint reading and L1 children

To appear in J. Costa, A. Fiéis, M. J. Freitas, M. Lobo, & A. L. Santos (Eds.) *New Directions in the Acquisition of Romance Languages. Selected Proceedings of The Romance Turn V*. Newcastle, UK: Cambridge Scholars Publishing.

showed again preference for coreference with the overt *hura* despite the percentages being lower than in null pronouns ( $\beta= 3.91, z= 6.45, p< 0.001$ ).

As for the comparison between the results of adults and L2 children, there was a main effect of pronoun type ( $\beta= -6.65, z= -7.48, p<0.001$ ) and a significant interaction between pronoun and group ( $\beta= 6.41, z= 6.80, p<0.001$ ). The significant interaction revealed different preference patterns between groups in null and overt pronoun conditions. In null pronoun contexts, although both adults and L2 children showed preference for intrasentential coreference, such preference was larger for adults than children ( $\beta= -0.90, z= -2.55, p<0.05$ ). In contrast, the opposite pattern was attested in overt pronoun contexts, where adults showed a clear preference for the disjoint reading and L1 children showed again preference for coreference with the overt *hura* ( $\beta= 4.85, z= 9.06, p<0.001$ ).

Finally, when comparing the results of L1 children and L2 children, a significant main effect of pronoun type ( $\beta= -0.95, z= -3.78, p< 0.001$ ) and a marginally significant interaction between pronoun type and group ( $\beta= 0.71, z= 1.75, p=0.08$ ) were observed. Although L2 children showed significantly higher intrasentential coreference rates than L1 children for both null ( $\beta= 0.46, z= 1.90, p=0.05$ ) and overt ( $\beta= 1.11, z= 3.88, p<0.001$ ) pronouns, such difference was marginally larger in overt than in null pronouns.

## 2.2 Experiment 2: Acceptability task

Similar to Experiment 1, Experiment 2 also analysed the antecedent preferences of null and overt pronouns, but from a different perspective. Participants' preferences for null and overt pronouns were investigated in topic shift and topic maintenance discursive contexts. In contrast to Experiment 1, the experimental items were presented in indirect (reported) speech context.

### 2.2.1 Participants

A group of 48 children participated in the study, different from Experiment 1: 20 Basque-Spanish bilingual children (L1-Basque), and 28 Spanish-Basque bilingual children (L2-Basque). However, one L1 child and five L2 children were excluded from the analysis because the correct responses on the filler items did not reach 50%. Thus, a total of 19 L1-Basque bilingual children (age range 6;1-7;0, mean 6;4), a group of 23 L2-Basque bilingual children (age range 5;11-7;0, mean 6;5), and a control group of 14 Basque-Spanish bilingual adults (age range 18;0-20;0

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mean 19;0) were included in the final analyses. See 2.1.1 for more details concerning the sociolinguistic profiles of the groups. The adult controls were recruited among university students at the University of the Basque Country (Vitoria-Gasteiz, Spain).

### 2.2.2 Materials

The materials and the methodology used in the acceptability task used by Sorace et al. (2009) for Italian were adapted into Basque. There were 16 experimental items and 10 fillers. Each item consisted of a short video clip showing four characters (Mickey Mouse, Minnie Mouse, Donald Duck and Daisy). In the experimental items, one character performed a one-participant action like falling or crying, which was commented upon either by the character himself ([-topic shift] [-TS] context) or by a second character that witnessed the action but was not involved in it ([+topic shift] [+TS]) condition. The focus then shifted to a pair of characters in the background who would repeat one after the other the sentence just uttered. One of the characters in the background uttered the experimental item with the null pronoun (6a,7a) and the other with the overt pronominal subject (*hura* '(s)he') (6b,7b).

(6) Topic maintenance context [-TS]

Minnie falls and says: I've fallen! (*Erori egin naiz!*)

a. Donald: Minnie<sub>i</sub> has said that \_\_\_<sub>i</sub> has fallen. (*Minnie-k<sub>i</sub> \_\_\_<sub>i</sub> erori dela esan du*).

b. Mickey: Minnie<sub>i</sub> has said that she<sub>i</sub> has fallen. (*Minnie-k<sub>i</sub> hura<sub>i</sub> erori dela esan du*).

(7) Topic shift context [+TS]

Daisy falls and Minnie says: Daisy has fallen! (*Daisy erori egin da!*)

a. Donald: Minnie<sub>i</sub> has said that \_\_\_<sub>i</sub> has fallen. (*Minnie-k<sub>i</sub> \_\_\_<sub>i</sub> erori dela esan du*).

b. Mickey: Minnie<sub>i</sub> has said that she<sub>i</sub> has fallen. (*Minnie-k<sub>i</sub> hura<sub>i</sub> erori dela esan du*).

In Basque, as there is no grammatical gender, the demonstrative *hura* in the absolutive case could ambiguously refer to any of the two foreground characters (these were always of the same gender: e.g., Minnie and Daisy or Mickey and

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Donald). The filler items had the same structure as the experimental ones, but one of the sentence pairs uttered by one of the characters was ungrammatical (i.e. with wrong subject–verb agreement, wrong verb-auxiliary selection, etc.). The aim of these items was to make sure that the participants had understood the task and were focused on the structure of the sentences that were presented to them.

### **2.2.3 Procedure**

Participants were asked to perform an acceptability judgment task following the same stories and short animations used by Sorace et al. (2009). The materials embedded in a PowerPoint presentation were presented on a laptop and the child participants' responses were recorded on an answer sheet by the interviewer. Adult participants filled in the sheet themselves. The participants were told that the characters were learning Basque and were instructed to decide which character of the last two spoke 'better' Basque. The experimental session was preceded by a short training session of two trials that was repeated until participants understood the task. Next, the experimental session started. Trials were pseudorandomized for each participant so that no more than three experimental trials and no more than two trials of the same experimental condition were presented in a row.

### **2.2.4 Data analysis**

Similar to Experiment 1, a mixed-effects regression model was carried out. We created a model with a binomial dependent variable (the participants' preference for null vs. overt pronouns), context variable ([-TS] vs. [+TS]) as a fixed effect, and subjects and items as random effects.

### **2.2.5 Results**

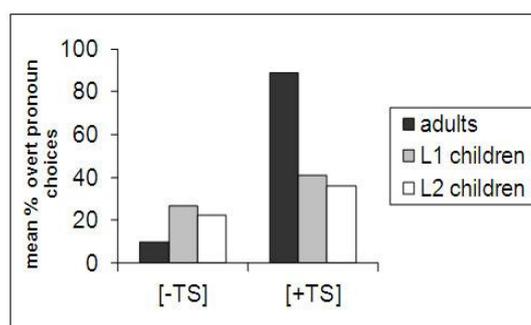
Fig.3 reports the mean percentage<sup>3</sup> of overt pronoun choices in [-TS] and [+TS] contexts. The missing percentages up to 100% refer to the preference for null pronouns in each discourse context.

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<sup>3</sup> Two adults and two L2 children chose a character which had not reported on the action, hence their responses were coded as missing data. One adult participant chose the logically impossible option twice whereas the other participants did so only on one occasion. Only valid data was taken into account for the mean percentages shown in Fig.3 and for the statistical analyses.

To appear in J. Costa, A. Fiéis, M. J. Freitas, M. Lobo, & A. L. Santos (Eds.) *New Directions in the Acquisition of Romance Languages. Selected Proceedings of The Romance Turn V*. Newcastle, UK: Cambridge Scholars Publishing.

**Fig.3. Overt pronoun choices of *hura* in [-TS] and [+TS] contexts.**



A significant main effect of context ( $\beta = -4.31$ ,  $z = -9.06$ ,  $p < 0.001$ ) was found in adults since they preferred the overt pronoun *hura* in [+TS] (89%) than in [-TS] contexts (10%). As for L1 children, there was also a main effect of context, with participants preferring the use of overt pronoun *hura* in [+TS] than in [-TS] contexts (41% vs. 27%, respectively) ( $\beta = -0.78$ ,  $z = -2.75$ ,  $p < 0.01$ ). Regarding L2 children, they also showed a preference for the use of overt pronoun *hura* in [+TS] than in [-TS] contexts (36% vs. 22%, respectively), but in this case the main effect of context was only marginally significant ( $\beta = 0.85$ ,  $z = -1.96$ ,  $p = 0.05$ ).

The comparison between adults and L1 children showed main effects of context ( $\beta = -4.01$ ,  $z = -9.82$ ,  $p < 0.001$ ) and group ( $\beta = -2.66$ ,  $z = -5.72$ ,  $p < 0.001$ ), and a significant interaction between context and group ( $\beta = 3.87$ ,  $z = 7.21$ ,  $p < 0.001$ ). Such an interaction revealed the existence of different patterns of overt pronoun preferences by adults and L1 children in [-TS] and [+TS] contexts. More precisely, in [-TS] contexts adults showed a smaller preference to select overt pronouns than L1 children ( $\beta = 2.33$ ,  $z = 2.32$ ,  $p < 0.05$ ), but in [+TS] contexts such an effect was reverse as adults showed a larger preference to select overt pronouns than L1 children ( $\beta = -4.20$ ,  $z = -4.33$ ,  $p < 0.001$ ).

The comparison between adults and L2 children showed main effects of context ( $\beta = -4.76$ ,  $z = -8.98$ ,  $p < 0.001$ ) and group ( $\beta = -3.02$ ,  $z = -5.81$ ,  $p < 0.001$ ), and a significant interaction between context and group ( $\beta = 3.96$ ,  $z = 6.27$ ,  $p < 0.001$ ). Such an interaction revealed similar patterns as those reported for the comparison between adults and L1 children. In [-TS] contexts adults showed a marginally

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significant lower preference for overt pronouns than L1 children ( $\beta = 1.90$ ,  $z=1.93$ ,  $p=0.05$ ), but in [+TS] contexts such an effect was reverse as adults showed a higher preference for overt pronouns than L1 children ( $\beta = -4.36$ ,  $z= -4.82$ ,  $p<0.001$ ).

Finally, the comparison between L1 and L2 children only revealed a significant main effect of context ( $\beta = -0.80$ ,  $z= -2.12$ ,  $p<0.05$ ). More specifically, they both accepted fewer overt pronouns in [-TS] contexts (below 28%) than in [+TS] contexts (over 35%). The interaction between context and group was not significant, which suggests the existence of a similar pattern for both child groups.

### 3. Discussion

Two off-line experiments were conducted to test how null pronouns and the overt pronoun *hura* 'that' are interpreted in child (L1 and L2), and adult Basque. In Experiment 1, two variables, namely pronoun realization and clause order were analysed to see their influence on anaphora resolution and whether L1 and L2 children at age 6-7 interpret pronouns adultlike. Pronoun type (null/*hura*) had an effect in adults' responses and (to a lesser degree) in L1 children's, but not in L2 children's. Both children and adults interpreted null pronouns as coreferent with the only intrasentential referent, the subject of the preceding clause. However, antecedent preferences differed greatly for the demonstrative overt pronoun *hura* between the groups: children (especially L2 children) preferred intrasentential coreference interpretations whereas adults showed clear preferences for disjoint reference interpretations. The results also revealed that the clause order variable (main-subordinate vs. subordinate-main clause order) had no effect on the results of any of the groups of participants since the antecedent choices of all groups remained constant. Thus, the division of labour between null and over pronouns as predicted by the Position of Antecedent Strategy seems to be operative in adults regardless of clause order. In Experiment 2, participants' preferences for null and overt pronouns were analyzed in [+TS] and [-TS] contexts. Null pronouns were clearly preferred in [-TS] contexts by all groups. In the case of [+TS] contexts, adults showed a clear preference for the overt pronoun *hura*, while both child groups (L1 and L2) showed a general preference for null pronouns. In other words, adults showed a clear preference for null pronouns in [-TS] contexts and a preference for overt pronouns in [+TS] contexts, while both groups of children

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showed a general preference for null pronouns despite showing higher preferences for overt pronouns in [+TS] than in [-TS] contexts.

In Experiment 1, null pronouns in the complex sentences were interpreted predominantly as coreferent with the only NP, the subject of the preceding clause in all groups. In the overt pronoun *hura* 'that', disjoint reference prevailed in adults whereas both child groups showed preference for coreference with the subject of the preceding clause. Note that preference rates were significantly higher in L2 children than in L1 children. Adults' disjoint reading preference of *hura* is consistent with the binding properties (Principle C) usually attributed to demonstratives (Cardinaletti & Starke 1999). Under this assumption, the demonstrative *hura* 'that' must be disjoint from any c-commanding antecedent, i.e. it must be free everywhere (Eguzkitza 1986: 32). This could explain the crosslinguistic differences in the interpretation of Basque and Italian overt pronouns where intrasentential coreference is possible for Italian personal pronouns as they obey Principle B (Cardinaletti & Starke 1999).

The results of Experiment 2 confirm the findings of Experiment 1 in another context, namely in reported speech context. Null pronouns were chosen in [-TS] contexts by both adults and (to a lesser extent) by children. That is to say, null pronouns were generally coreferential with the preceding NP subject. In contrast, adults and children differed significantly in the interpretation of the overt pronoun *hura*, which was mostly chosen in [+TS] contexts by adults. In the example (6b) *Minniek hura erori dela esan du* 'Minnie has said that she has fallen', *hura* located in the subordinate clause is c-commanded by the R-expression *Minnie*, hence coreferential reading is not structurally possible and the only possible interpretation of *hura* is as marking [+TS]. On the other hand, such interpretation was favoured by L1 and L2 children only 41% and 36% of the times respectively, with both groups showing a general preference for null pronouns in [+TS] contexts. Additionally, in contrast to previous comprehension studies with bilingual children (Serratrice 2007, Sorace et al. 2009), L2 children do not show a larger preference (an overacceptance) of the overt pronoun *hura* compared to L1 children. Adult results from both experiments strongly support Ortiz de Urbina's (1989: 147) definition of *hura* 'that' as the *obviative/neutral* pronoun. *Hura*'s requirement for a non-topic antecedent is in line with the behaviour of typical demonstratives observed crosslinguistically like in Dutch (Comrie 2000, Van Kampen 1997) in German (Bosch, Katz & Umbach 2007, Diessel 1999 and Zifonun, Hoffmann, & Strecker 1997) and in Swedish (Mörnsjö 2002). In contrast to de Rijk's (2008: 209)

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conception of the demonstrative *hura* as equivalent to third person pronouns of other languages, the present study shows that the Basque (distal demonstrative) *hura* differs from typical third person pronouns with regard to binding conditions, traditionally said to be constrained by Principle B.

In Experiment 1, the preference for a coreferential interpretation of *hura* 'that' showed by L1 and L2 children contrasts with the clear preference of adult speakers for a disjoint interpretation. Such data suggest that both child groups at age 6-7 have still not fully acquired the non-intrasentential anaphoric specific properties (see 4b) of the overt (demonstrative) pronoun *hura*. Additionally, some differences are also reported between L1 and L2 children groups, as L2 children show a larger preference for coreference than L1 children (and adult) participants. In line with previous studies where an inappropriate use of overt pronouns has been observed in bilingual populations regardless of whether bilinguals' L1 is a null subject language or not (Serratrice et al. 2004, Bini 1993, Sorace et al. 2009), L2 Basque-Spanish bilinguals also showed an overextension of the scope of the overt pronoun in Experiment 1. Apparently the discursive distribution of null and overt pronouns seems to operate similarly in Spanish and Basque, but the kind of anaphoric forms for fulfilling the role of third person pronouns differs from Spanish to Basque (in the former being a personal pronoun and in the latter a demonstrative). Based on that, one may think whether L2 children's L1, Spanish, is influencing their performance in their L2, Basque. However, in contrast to previous studies, as even the control groups, L1 (adult and child) participants, were bilinguals, we cannot discard the option that the performance of L1 participants is not under the influence of their L2. In addition, the fact that even L1-Basque children showed a pattern of extension of the scope of the overt pronouns requires another explanation for the child data. The low frequency of overt third person subject pronouns in the input children receive could be a reason for children's non-targetlike patterns since arguments are usually omitted in Basque. In a small corpus-based study that we conducted with 4 readings typically used in the school materials of the child participants under study, we found that the demonstrative pronoun *hura* is really scarce in a narrative context. Out of a corpus of 428 utterances, from which 301 contained a third singular inflected verb, the null subject was the dominant option (39.20%, n=118). Noun or determiner phrases were the most frequent overt subjects (33.55%, n=101), whereas bare pronouns were much less frequent (n=5) and among them *hura* had only one occurrence. From that it may follow that the infrequency of overt subject pronouns in the target

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language has an impact on L1 and L2 children's non-adultlike interpretation of the overt pronoun *hura* in Experiment 1 and their general preference for null pronouns regardless of discursive context in Experiment 2. Null subject languages like Basque, may present an additional challenge for children since there are four options for expressing subjects: lexical NPs, the overt demonstrative pronoun *hura*, which competes with the quasipronoun *bera*, and null pronouns.

The overall uniform findings from different bilingual studies have revealed, as Tsimpli (2011) notes, a discrepancy between the notion of linguistic default (the null pronoun under Cardinaletti & Starke 1999) as opposed to the learner's default (the overt pronoun). Interestingly, Basque data does not face such paradox since the linguistic default and the learner default converge, i.e. the null pronoun. The crosslinguistic differences on the learner-default may be related to the fact that Basque is a threefold pro-drop language, allowing the omission of up to three arguments in contrast to Romance languages where only subjects can be dropped. Finally, it is worth mentioning that in disagreement with the general outcome from different bilingual populations where the non-targetlike performance of bilinguals was restricted to the distribution of the overt pronoun in [-TS] contexts, pragmatically inappropriate null pronouns were also found in [+TS] contexts in Basque. Both child groups showed a non-adultlike significantly higher preference for null pronouns (see Fig.3), which converges with results from Italian (Sorace et al. 2009) and Mexican-Spanish (Shin & Cairns 2012).

#### 4. Conclusions

Experimental data obtained using two different paradigms provide strong evidence for a non-optional use of the null/overt subjects in Basque, a null subject language with rich subject-verb agreement morphology. The interpretation of null and overt pronouns from two different approaches resulted in parallel results. Adult data regarding the acceptance of overt versus null pronominal subjects in one-argument sentences reveal the existence of differences in antecedent choices of the two pronouns, as predicted in the Position of Antecedent Strategy (Carminati 2002). In line with evidence from other null subject languages, the pattern of responses was similar in null pronouns for children and adults, as all groups showed strong preference for the subject of the preceding clause in both experiments. As to overt pronouns, results differed greatly between child and adult groups. Adult results indicated a clear correlation between the [+TS] feature and the demonstrative *hura*.

To appear in J. Costa, A. Fiéis, M. J. Freitas, M. Lobo, & A. L. Santos (Eds.) *New Directions in the Acquisition of Romance Languages. Selected Proceedings of The Romance Turn V*. Newcastle, UK: Cambridge Scholars Publishing.

On the contrary, the interpretable [+TS] feature, mapped onto the overt pronominal *hura* in the adult grammars, is still underspecified in 6-7-year-old children's (L1 and L2) grammars, which is in line with findings from Italian and Spanish (Sorace et al. 2009, Shin & Cairns 2012). Finally, the general preference for the null subject option and the still less adultlike interpretation of overt pronouns by L2 children compared to L1 children is compatible with a) the role of input in the acquisition of the discursive features of pronouns, especially in relation to the low frequency of overt pronouns such as the distal demonstrative *hura* in non-deictic contexts, and with b) the convergence of the null pronoun as the linguistic-default in target Basque and as the learner-default in the developing grammar of Basque.

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