SUBJECTS IN CHILDREN'S OBJECT RELATIVES IN ITALIAN

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Abstract. We first review the results from a number of experiments with Italian children and adults presented in previous work (Belletti and Contemori 2010, Contemori and Belletti, submitted), investigating the production of Subject (SRs) and Object relative clauses (ORs). We confirm passive as the preferred strategy adopted by children from age 5 when ORs are elicited in the production experiments. We then investigate further aspects of children's results that we did not previously address in detail. First, we analyse the ORs produced by children, focusing on the nature (overt/null) and position (pre/post-verbal) of the subject within the relative clause. Furthermore, we explore the emergence of the passive and the decrease of ORs with post-verbal subjects observed at age 5 as two related phenomena. Finally, we present results from a new preference production task which indicate that post-verbal subjects are preferably adopted by children in a felicitous way given the discourse pragmatics of the design. Null subjects are also produced in an adequate way. In the conditions adopted, in which the subject of the relative clause is a 1st or a 3rd person pronominal (active), ORs appear to be relatively easily produced by both younger and older children. We discuss the comparison of these new results with the previous ones and their relevance for the adopted featural approach to locality along the lines of Friedmann *et al*. (2009).

Key words: object relative, intervention, pronominal subject, post-verbal subject, null subject, passive.

1. INTRODUCTION

1.1.

Studies on relative clauses in typical language acquisition have shown that children correctly produce SRs as in (1), very early on, around age 2-3 (Guasti 2002, Labelle 1990, 1996, among others). ORs, instead, are difficult to comprehend and to produce for children across-languages (Adani 2011, Adani *et al.* 2010, Arosio *et al.*2006, 2009, Belletti forthcoming, Belletti and Contemori 2010, Contemori and Garraffa 2010, for recent contributions on Italian; Brown

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1972, Correa 1995, de Villiers *et al*. 1994, Friedmann *et al.* 2009; Friedmann and Novogrodsky 2004, Gordon *et al*. 2004, Håkansson and Hansson 2000, McKee *et al*. 1998, Tavakolian 1981, among others). This SR/OR asymmetry has also been observed in adult parsing (De Vincenzi 1991, Clifton and Frazier 1989, Gibson 1998, Mak *et al.* 2002, Mecklinger *et al.* 1995, among others), aphasic patients (Garraffa and Grillo 2008, among others), and children with language impairment (Stavrakaki 2001, 2002, Friedmann and Novogrodsky 2004, Novogrodsky and Friedmann 2006, Marinis and van der Lely 2007, among others).

(1) This is the girl that is kissing the mother (SR)
(2) This is the girl that the mother is kissing (OR)

The aim of the present article is three-fold. First, we summarize some of the production data illustrated in Belletti and Contemori (2010) and Contemori and Belletti (forthcoming). Secondly, we present new analyses of children's elicited productions, focusing on a novel aspect in the acquisition of ORs in children: the nature (overt vs. null) and the position (pre- vs. post-verbal) of the subject within the relative clause. Finally, we illustrate results from a new elicitation task testing the production of null and pre- or post-verbal pronominal subjects in ORs according to the discourse conditions of the elicitation.

1.2. Background: The production of ORs by Italian children and adults

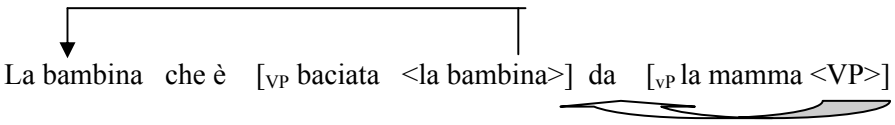
In previous studies by Belletti and Contemori (2010) and Contemori and Belletti (submitted) children aged 3;4-8;10 and adults were tested on the production of SRs and ORs. The studies confirmed that both groups of participants were more accurate in producing SRs compared to ORs. The authors' account of the observed asymmetry has been in terms of the approach of Friedmann *et al.* (2009): the increased complexity of ORs over SRs is attributed to the presence of a lexical subject intervening in the establishment of the dependency between the relative head and the gap in its merge object position within the relative clause, as schematically illustrated in (3). In the configuration of an OR, as in (3), the presence of the intervening lexical subject can be problematic for locality, expressed through a featural approach to the Relativized Minimality principle (Rizzi 1990, 2004). In (3) the feature [+NP] is shared by the lexical head of the relative clause (target) and the lexical subject within the relative clause (intervener). Along the lines of Friedmann *et al.* (2009), the feature [NP] (= lexical restriction) is assumed to be among the attracting features of the relative head; proper inclusion of the [NP] feature of the intervener within the feature specification of the target is assumed to be the main source of difficulty in the computation of ORs in children (R is the relative feature attracting the head within the CP).

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(3) [$_{CP}$ .. the girl that [$_{TP}$ the mother [$_{vP}$ is kissing <the girl>]]
+R +NP + NP +R +NP

Belletti and Contemori (2010) and Contemori and Belletti (forthcoming) found that the production of (headed) ORs is typically avoided by both adults and (older) children, and observed that the privileged way to avoid the production of an OR is by transforming it into a SR in the passive, that we refer to as a Passive Object Relative (POR) (Belletti 2012, forthcoming). In the two studies, PORs were adopted overwhelmingly by adults, and children tended to approach the adults' level of production as they grew older. Following Belletti (2012, forthcoming), the authors have interpreted the use of the passive in relative clauses when an OR is elicited as the most suitable way to avoid the disturbing intervention of the lexical subject illustrated in (3). Belletti and Contemori (2010) and Contemori and Belletti (submitted) assume a derivation of the passive in the terms proposed by Collins (2005), illustrated in (4). According to Collins (2005) and Belletti (2012, forthcoming), a crucial step is involved in the derivation of the passive, to which Collins refers as *smuggling*. The operation consists in taking a chunk of the verb phrase containing (at least) the verb and the direct object, and moving it across the vP-internal subject DP. Given the assumed derivation by *smuggling* in (4), the intervention by the subject is altogether avoided in passive sentences, and the movement of the VP-chunk allows movement of the object into the relative head position in the CP, without any violation of locality, as there is no intervention of the subject from the *smuggled* position.

(4)



As proposed by Belletti and Contemori (2010) and Contemori and Belletti (submitted), along the lines of Belletti (2012, forthcoming), locality is the fundamental principled reason which leads to the use of the passive in the production of ORs across an intervening pre-verbal lexical subject.

In the present paper, we first review the results confirming the use of the passive as the preferred production by adults and older children when an OR is elicited and a lexical subject is present in the relative clause. We then zoom into the subject of the relative clause.

1.3. Outline: ORs and the nature and position of subjects

We investigate more closely the nature of the subject within the relative clause, as a possible factor ameliorating the elicited production of ORs in children.

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In the results collected with a new experimental design, the absence of an overt lexical subject within the relative clause appeared to determine a more accurate performance with ORs in children aged 3;4-7;4. Specifically, children did not appear to have difficulties in producing ORs with either a 1st or 3rd person subject pronoun, which in Italian may be left unpronounced (*pro*) depending on the contextual discourse conditions, given the null subject nature of the language. As discussed in detail in the general discussion, we submit that the facilitation effect is (at least partly) driven by the pronominal nature of the subject within the relative clause, which does not create an intervention effect as lexical subjects do, in the sense of Friedmann *et al.* (2009). The pronominal nature of the subject seems to be the crucial factor, as children were at ease in producing ORs with a post-verbal overt pronominal subject.

Finally, in this paper we examine previous (Belletti and Contemori 2010, Contemori and Belletti, submitted) and new data, focusing on the production of ORs with post-verbal lexical subjects by children in the two different experimental settings presented. One significant aspect of our results in this connection is that children seem to produce ORs with post-verbal lexical subjects consistently around the age of 5-6. However, at this age children also start producing PORs at an increasing rate; accordingly, ORs with post-verbal lexical subjects progressively decrease. We suggest that this distribution is not random and we speculate that there is a complementarity between PORs and ORs with post-verbal lexical subjects. Furthermore, with results of the new experimental design we demonstrate that ORs with a post-verbal pronominal subject are indeed produced by children from early on and up to age 7. We also stress that in the new task several components (e.g., experimental, syntactic and discourse) might facilitate the use of post-verbal and also null subjects in ORs.

2. STUDY 1

The first study illustrates two preference production tasks that we conducted with Italian children aged 3;4-8;10. The results have been discussed in part in previous work (Belletti and Contemori 2010, Contemori and Belletti, submitted).

2.1. Participants

97 Italian-speaking children aged 3;4-8;10 participated in the first study. The children were randomly selected from a public school in Chianciano Terme and Siena. They were divided in 6 age groups. 10 young adults aged 20-30 years volunteered as control participants. Table 1 shows the number and the mean age of each age group of participants.

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Table 1

Description of the participants

Age groups	Nr. of participants	Mean age	SD
3;4-3;11	12	3;6	0;3
4-4;11	14	4;5	0;3
5-5;11	16	5;5	0;4
6-6;11	23	6;3	0;3
7-7;11	12	7;5	0;4
8-8;10	20	8;5	0;3
Adults	10	25	3;0

2.2. Material

Right-branching SRs and ORs were elicited using two preference production tasks adapted from Novogrodsky and Friedmann (2006). The experimenter presented two options and asked the participants to choose one. The two tasks tested the production of subject and object relatives in different number conditions, either with a match or a mismatch between the head of the relative and the subject/object DP within the relative clause. In this paper, we will focus only on a subset of items, those that elicited ORs with a mismatch of number features between the head of the relative and the subject of the relative clause[3].

Sixteen ORs were expected in the two tasks. In 6 items, the head of the relative is singular and the subject (and verb) of the relative clause is plural, as illustrated in (5). In 10 items the head of the expected relative is plural and the subject (and verb) of the relative clause is singular, as in the example in (6). Two conditions for ORs are included: a *subject* and a *verb change* condition. Eight items belong to a *subject change* condition (5) and eight to a *verb change* condition (6). In the first condition, the child has to choose one of the two characters performing an action and in the second condition, one of the two actions performed by the same character.

(5) Elicitation of an OR with singular head and subject (and verb) of the relative plural
Subject change condition

[3] A match in number agreement feature between the relative head and the subject (and the agreeing verb) of the relative clause may lead to ambiguity in Italian. We only focus here on non-ambiguous ORs (see Belletti and Contemori 2010, Contemori and Belletti submitted for relevant further discussion).

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There are two children. The girls are hugging one child, the teachers are hugging the other child. Which child would you rather be? Start with ‘‘I would rather be . . .’’
Target sentence: Vorrei essere il bambino che le ragazze/maestre abbracciano.
‘(I would rather be) the child that the girls/teachers are hugging.’

(6) Elicitation of a OR with plural head and subject (and verb) of the relative singular
Verb change condition
There are two groups of children. The grandpa looks for the children and the grandpa finds the other children. With which children would you rather stay? Start with ‘‘I would rather stay with the children . . .’’
Target sentence: (Vorrei stare con i bambini) che il nonno cerca/trova.
‘(I would rather stay with) the children that the grandpa is looking for/finding.’

2.3. Procedure and coding

Children were tested individually in a quiet room in their school. The experiment was similarly administered to adults in a university testing room. All the participants’ responses were recorded and transcribed after each session. Unintelligible utterances were discarded.
For ORs, we counted as correct relatives with a gap, in which the subject within the relative clause was either pre-verbal, post-verbal or null, as shown in brackets in (7). We also counted as correct those ORs with a clitic pronoun (8) or a DP (9) resuming the head of the relative clause. In ORs with a resumptive DP, the subject of the relative clause is always pre-verbal, as shown in (9), whereas in ORs with resumptive clitics the subject within the relative clause may either be pre-verbal, post-verbal, or null as shown in brackets in (8). Although resumption is not a standard relativization strategy in Italian (Contemori and Belletti (forthcoming), Guasti and Cardinaletti 2003), it is in fact present at a colloquial informal level[4]; it is also attested cross-linguistically in children's production.

(7) Target OR: (Il bambino)[5] che (i nonni) baciano (i nonni)
‘(The child) that the grandparents are kissing.’
(8) (Il bambino) che (i nonni) lo baciano (i nonni)
‘(The child) that (the grandparents) are kissing.’

[4] Clitic resumption is in fact the standard relativization strategy in several dialects/varieties. As for DP resumption, it is never attested in Italian, at any level. See also Contemori and Belletti (submitted) for some discussion.

[5] In the elicitation tasks, for both SRs and ORs, we counted the utterances as target when the head of the relative was overtly realized by the child, non-realized, or realized with a demonstrative pronoun *quello* ‘a’ (that-one-masc/fem).

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(9) (Il bambino) che i nonni baciano il bambino
'(The child) that (the grandparents) are kissing.'

2.4. Results

In section 2.4.1. we present the amount of ORs and PORs produced by adults and children. In section 2.4.2., we analyse the data qualitatively, focusing on the position of the subject in the ORs produced by children.

2.4.1. Quantitative analysis of the results: adults and children

In Table 2, we illustrate the amount of ORs and PORs produced by adults and children in the two tasks with mismatch of number features (Singular Head/subject plural and Plural Head/subject singular)[6].

Table 2

Percentages of structures produced in the elicitation of ORs (out of the total of the relatives expected

	3:4-3;11	**4-4.11**	**5-5;11**	**6-6;11**	**7-7;11**	**8-8:10**	**Adults**
Target OR	66/192 34%	119/224 53%	120/256 47%	205/368 56%	146/192 76%	112/320 35%	12/160 7.5%
POR	-	4/224 2%	31/256 12%	45/368 12%	12/192 6%	159/320 50%	148/160 92.5%

In (10) we present an example of a target OR and in (11) we illustrate an example of a POR.

Target sentence: (Vorrei stare con i bambini) che l'elefante solleva/bagna
'(I would rather stay with the children) that the elephant is lifting/ spraying'
(10) Che l'elefante bagna
'That the elephant is spraying' (L.V. 6;5)
(11) Quelli che vengono sollevati
'The-ones that have been lifted' (F.C. 5;11)

As clearly emerges from Table 2, the performance of adults is poorer than that of children in the elicited production of ORs. The difference between children and adults is due to the high use of passive in the latter group with respect to the former.

In the next section, we take into consideration the correct ORs produced by children, focusing on the position of the lexical subject within the relative clause.

[6] For the other types of productions of the two groups, see Contemori and Belletti (forthcoming).

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2.4.2. Qualitative analysis of ORs: the subject within the relative clause

In Table 3, we present the type of correct ORs produced by children, with either a pre or a post-verbal or a null subject within the relative clause[7].

Table 3

Number and percentages of pre- and post-verbal subjects produced in the elicitation of ORs (out of the total of the relatives produced)

Mismatch conditions	**3 -3;11**	**4-4;11**	**5-5;11**	**6-6;11**	**7-7;11**	**8-8:10**
Pre-verbal subject	30/66 45%	61/119 51%	26/120 22%	87/205 42%	102/146 70%	59/112 53%
Post-verbal subject	25/66 38%	39/119 33%	43/120 36%	89/205 43%	27/146 18%	38/112 34%
Null subject	11/66 17%	19/119 16%	51/120 42%	29/205 14%	17/146 12%	15/112 13%

We focus our attention here on the pre- or post-verbal location of the subject, and briefly take up the possible use of null subjects again in the general discussion; notice that the eliciting conditions of Study 1 make the production of a null subject unlikely (especially in the subject change condition), as a lexical subject is present in the introductory story given by the experimenter. Indeed, it is the least adopted option in all ages, in this experimental setting[8]. (12)-(13) exemplify the use of a pre- and a post-verbal subject, respectively.

Target Sentence: Vorrei stare con i bambini che il dottore/l'infermiera visita
'(I would rather stay with) the children that the doctor is examining.'
(12) Sentence produced: Che il dottore visita.
that the doctor examines
'(The children) that the doctor is examining.' (F.B. 6;0)
(13) Sentence produced: Che visita il dottore.
that is examining the doctor
'(The children) that the doctor is examining.' (C.S. 4;8)

The results in Table 3 suggest a preference for pre-verbal subjects in children of all ages, except for 5 and 6 year-old children. While 5 year-old children produced post-verbal subjects to a higher extent than pre-verbal subjects, 6 year-old children used both options to an equal extent. Interestingly, the increase in post-verbal subjects observable in 5 year olds is followed by a decrease in the older children, aged 7 and 8.

[7] Data includes ORs with resumptive clitics/DPs within the relative clause.
[8] With the exception of 5 year-old children, as clearly emerges from Table 3.

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To examine the nature of the post-verbal subjects produced by the different age groups, we analysed this phenomenon further, checking whether the higher number of post-verbal subjects in 5-6 year olds was consistent with the two conditions included in the test (*verb* and *subject change*). We remind the reader that in the *subject change* condition, the child has to choose one of the two characters performing an action and in the *verb change* condition, she has to choose one of the two actions performed by the same character. The participants could then be more prone to use a post-verbal subject in the *subject change* condition, providing thus the new information which is (implicitly) required by the eliciting question. For convenience, the general discourse conditions regulating the location of subjects in Italian are briefly reviewed in the following section 2.4.3.

In Table 4, we illustrate the amount of pre- and post-verbal subjects produced by children in the two conditions. Data are grouped by age group.

Table 4

Number and percentages of pre- and post-verbal subjects produced in subject and verb change conditions (out of the total of the relatives produced).

Mismatch conditions	**3 -3;11**	**4-4;11**	**5-5;11**	**6-6;11**	**7-7;11**	**8-8:10**
Pre-verbal subject Subject change	13/66 20%	29/119 24%	17/120 14%	45/205 22%	53/146 36%	27/112 24%
Pre-verbal subject Verb change	17/66 26%	32/119 27%	9/120 7.5%	42/205 20%	49/146 33,5%	32/112 28%
Post-verbal subject Subject change	12/66 18%	26/119 22%	26/120 22%	54/205 26%	17/146 12%	22/112 20%
Post-verbal subject Verb change	13/66 20%	13/119 11%	17/120 14%	35/205 17%	10/146 7%	16/112 14%

As clearly emerges from Table 4, 3 and 4 year-old children had a preference for pre-verbal subjects independently of the condition. 5 year-old children produce more post-verbal than pre-verbal subjects in both conditions, whereas 6 year olds use both types of subjects to an equal extent, distributing them in a consistent way through the conditions (more pre- than post-verbal subjects in the *verb change* condition and more post- than pre-verbal subjects in the *subject change* condition). Finally, in 7 and 8 year olds we observe a pattern similar to that of younger children, with more pre-verbal subjects independently of the condition.

Even though our results cannot support firm conclusions, given the relatively small amount of data collected on pre- and post-verbal subjects, the tendencies observed suggest a development of children's abilities at the syntactic and discourse level. We would like to speculate that from age 5-6, children's responses start being pragmatically more appropriate, and more post-verbal subjects are produced in those contexts where they are most felicitous. However, from the age of 6 onward, the passive starts being used in the same preference task. We propose

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that from this age a tension emerges between the need of being appropriate at the discourse level and the need of avoiding the syntactic complexity due to intervention (Friedmann *et al.* 2009). The use of the passive in the ORs allows for satisfaction of both needs, as there is no intervention and the *by*-phrase, if pronounced, can express the same new informational value as a post-verbal subject (see also Belletti 2012)

To support our hypothesis, in section 2.4.4. we analyse the amount of post-verbal subjects and passives produced by children in the two tasks, exploring the possibility that the amount of post-verbal subjects produced by children in ORs in the preference tasks be complementary to the emergence and development of passives.

2.4.3. An interlude on post-verbal subjects in Italian

Let us briefly review the basic conditions licensing a post-verbal subject in Italian. They are both formal and discourse related. The null-subject property of Italian makes the possibility of locating the subject in a post-verbal position formally available (see the classical literature on the null-subject parameter, Rizzi (1982), Jaeggli and Safir (1989), Belletti (2004 and references cited there). As there is no lexical or morpho-syntactic constraint regulating this option, the general possibility of post-verbal subjects across verb classes in null-subject languages of the Italian kind has been often referred to as "free inversion". However, inversion is not optional as the term "free inversion" might suggest. As discussed at length in Belletti (2004, and related work), the post-verbal occurrence of the subject is not "free", but it is discourse related: the post-verbal location of the subject correlates typically with new information focus.[9] Characteristically, a subject is post-verbal in question-answer pairs as in (14)-(15):

(14) Q: Chi ha parlato/è arrivato? A: Ha parlato/è arrivato Gianni
who has spoken/is arrived has spoken/is arrived Gianni
Q: Chi ha diffuso la notizia? A: L'hanno diffusa i giornalisti
who has spread the news It(cl) have spread the journalists

Also in all new sentences, the subject is characteristically post-verbal[10]:

[9] With no special prosody implied. With a downgrading prosody, a post-verbal subject can also express given/old information. See Belletti (2004) for detailed discussion on the low periphery of the clause, and the discourse related positions of Focus and Topic it may be assumed to contain in cartographic terms, correlating also with prosodic properties (Bocci 2009).

[10] With transitive verbs all new sentences preferably display the SVO order:

Q: Che cosa è successo/What happened ? A: I giornalisti hanno diffuso la notizia/The journalists spread the news.

Although not totally natural, the order VOS is also possible (Hanno diffuso la notizia i giornalisti/ Have spread the news the journalists). See the discussion in Belletti (2004), where this order is derived through movement of the VO chunk past the post-verbal subject. An operation that with Collin's subsequent terminology we would refer to as *smuggling*. See also Rizzi (2005) for relevant discussion on the SVO order in all new contexts.

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(15) Q: Che cosa è successo? A: Ha parlato Gianni/E' arrivato Gianni
what happened has spoken/is arrived Gianni

In sentences with the verb in the passive voice, the *by*-phrase can express new information focus as much as a post-verbal subject does in active sentences with a transitive verb (16); indeed, given its post-verbal location, the *by*-phrase can be naturally assumed to fill the same position in the clause structure related to new information focus as a post-verbal subject:

(16) Q. Da chi è stata diffusa la notizia/? A: La notizia è stata diffusa dai giornalisti
by whom has the news been spread the news have been spread by the journalists

These essential formal and interpretive properties of post-verbal subjects (and *by*-phrases) in Italian should suffice to appreciate the results on children's location of the subject from the experiments under review.

2.4.4. The decrease of post-verbal subjects and the emergence of passive in the relative clause

In Table 5, we present the amount of post-verbal subjects produced by children in ORs, and the amount of PORs used. Data are grouped by age group.

Table 5

Number and percentages of postverbal subjects in ORs and PORs produced in the elicitation of ORs (out of the total of the relatives expected)

Mismatch conditions	**3 -3;11**	**4-4;11**	**5-5;11**	**6-6;11**	**7-7;11**	**8-8;10**
Postverbal S	25/192 13%	39/224 17%	43/256 17%	89/368 24%	27/192 14%	38/320 12%
POR	-	4/224 2%	31/256 12%	45/368 12%	12/192 6%	159/320 50%

We used the Spearman correlation to analyse the relation between the post-verbal subjects produced by children and the emergence of passive. A negative correlation emerged between the two variables (Spearman's rho: -0.368, $p<0.0001$), with the number of post-verbal subjects decreasing at the increase of passive in the relative clause.

In the next section we discuss the main results of Study 1.

2.4.5. Interim discussion

In Section 2.4.1. we observed that adults produce ORs to a lower extent than children aged 3;4-8;10. The analysis of the productions showed that the difference between children and adults is due to the high use of passive in the latter group with respect to the former.

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In our results, the passive is also attested in children. It gradually emerges around the age of 5 and remains rather constant until the age of 8, when it drastically increases. Interestingly, the production of the passive in ORs becomes the most widespread strategy as an alternative to active ORs in the adult age, resulting in a lower accuracy for ORs in adults with respect to children.

In Section 2.4.2. we made a qualitative analysis of the responses, focusing on the amount of pre- and post-verbal subjects produced by children in the *verb* and *subject change condition*. We observed that the use of pre- and post-verbal subjects is not uniform across the age groups. In particular, we noticed that 3 and 4 year olds have a preference for pre-verbal subjects and 5 year olds for post-verbal subjects in both conditions. 6 year-old children, instead, use both pre- and post-verbal subjects to an equal extent, but distributing them in a more consistent way through the subject and verb change conditions. Finally, in 7 and 8 year olds a pattern similar to that of younger children emerged, with a higher production of pre-verbal subjects independently of the condition.

We put forward the hypothesis that the use of pre- and post-verbal subjects by children is not accidental and is indeed coherent with the development of their syntactic and discourse abilities. Around age 5-6, children produce a higher amount of post-verbal subjects in the contexts in which they are most felicitous. Given this observation, we propose that by this age children's answers are best consistent with the discourse pragmatics of the task. At age 5, we noticed a slight overuse of post-verbal subjects over pre-verbal ones and, by the age of 6, children's pattern was more congruent with the type of condition (subject vs. verb change). However, 5 and 6 is also the age in which children start producing passives. As the discourse function of a *by-phrase* in PORs is comparable to that of a post-verbal subject in (active) ORs (Belletti 2012), we argue that from age 7-8, (active) ORs with a post-verbal subject decrease according with the increase of passive in the relative clause. The results of a correlation analysis seem to confirm this hypothesis.

In the general discussion section, we will take up the issue of the complementarity between PORs and active ORs (with post-verbal subjects) further, explaining how the use of passive meets the discourse requirements of the context, simultaneously eliminating intervention in an optimal way, given the conditions set in Study 1, where the subject of the relative clause was always a lexical subject.

3. STUDY 2

In the second study we illustrate data collected with a new preference production task. In this task, a post-verbal (pronominal) or null subject within the ORs are felicitous and likely to occur.

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3.1. Participants

69 Italian-speaking children aged 3;4-7;4 participated in the second study (Table 6). The children were randomly selected from two public schools in Siena. They were divided in 5 age groups. The participants in Study 2 form a subset of those who participated in the Preference production tasks illustrated in Study 1.

Table 6

Description of the participants

Age groups	Nr. of participants	Mean age	SD
3;4-3;11	12	3;6	0;3
4-4;11	14	4;5	0;3
5-5;11	16	5;5	0;4
6-6;11	16	6;6	0;3
7-7;11	11	7;2	0;2

3.2. Material

In the new task, the aim was to elicit ORs with a null or a post-verbal subject within the relative clause. The experimenter presented two options and asked the participants to choose which one they preferred. The task was constructed in a way that the choice would be formed as an OR with either a null or a post-verbal subject. All items contained irreversible sentences.

The task was composed by two conditions, a 1st person and a 3rd person condition. In the 1st person condition, the child identifies herself with the subject of the action (17), in the 3rd person condition, she has to choose the action performed by some other child (a boy or a girl), (18). The two conditions were included in the task to investigate two types of null subjects: ORs where a null subject is a pronoun (1st person condition) and ORs where the null subject corresponds to a full DP of the eliciting question (3rd person condition). Each of the two conditions aimed at eliciting 10 ORs. They contained similar trials, which include the same verbs and NPs. The head of the ORs produced was always inanimate.

(17) Experimenter: Ci sono due palloni. Una pallone l'hai comprato e un pallone l'hai vinto al Luna park. Con quale pallone vorresti giocare?
'There are two balls. You bought one ball and you won the other ball at the Luna Park. With which ball would you like to play?'
Target sentence: (Vorrei giocare con La palla/Quella) che *pro* ho comprato/vinto.
'(I would play with the ball/the one) that I bought/won.'

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(18) Experimenter: C'è una bambina e ci sono due canzoni. Una l'ha sentita alla televisione e l'altra l'ha imparata a scuola. Secondo te la bambina quale canzone vorrà cantare?
'There is a girl and there are two songs. The girl heard one song at the television and she heard the other song at school. Which song do you think she would like to sing?'
Target sentence: (Vorrà cantare La canzone/Quella) che *pro* ha sentito a scuola / alla televisione.
'(She would sing the song/the one) that she heard at school / at the television.'

In the 1st and 3rd person condition, 5 items aimed at eliciting ORs with a null subject, as illustrated in examples (17) and (18) above, and 5 items included the possibility of using a post-verbal overt pronominal subject within the relative clause, as illustrated in (19).

In (19), the situation presented to the child contains an overt (pronominal) subject, leading to a strong preference for the production of an overt post-verbal (pronominal) subject within the relative clause. However, as illustrated in (20) and (21), two possible answers can in principle be produced, depending on whether the participant choose the first (*ricevere* 'receive') or the second verb (*prepare* 'prepare') of the introductory story. If the verb *ricevere* 'receive' is chosen, for which there was no overt subject in the introduction (indicated as V [-S]), the production of an OR with null subject is the most felicitous answer, as exemplified in (20). Instead, if the verb *preparare* 'prepare' is chosen, for which there is an overt (pronominal) subject in the introduction (indicated as V [+S]), the production of an OR with post-verbal (pronominal) subject is the most felicitous and expected answer, as exemplified in (21) (both (20) and (21) are from the 3rd person condition):

(19) Experimenter: C'è un bambino e ci sono due panini. Un panino l'ha ricevuto e un panino l'ha preparato *lui*. Secondo te il bambino quale panino vorrà mangiare per primo?
There is a boy and there are two sandwiches. A sandwich, it-CL has received and a sandwich it-CL has prepared *him*. In your opinion, the boy which sandwich want-fut eat-inf first?
'There is a boy and there are two sandwiches. The boy received one sandwich and he prepared the other sandwich. Which sandwich do you think he would like to eat first?'

Verb [- S]

(20) Vorrà mangiare il panino che *pro* ha ricevuto.
want-fut eat-inf the sandwich that *pro* has received
'He will want to eat the sandwich that he received.'

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Verb [+ S]

(21) Vorrà mangiare il sandwich che *pro* ha fatto *lui*.
want-fut eat-inf the sandwich that *pro* has prepared *he*
'He will want to eat the sandwich that he prepared.'

3.3. Procedure and coding

The children were tested individually in a quiet room in their school. All the participants' responses were recorded and transcribed after each session. Unintelligible utterances were discarded.

The 1st and the 3rd person condition of the task were tested in different experimental sessions, with (at least) a week interval. For ORs, we counted as correct those relatives, with either a post-verbal or null subject and a gap, as shown in brackets in (22). We also counted as correct those ORs with a clitic pronoun (direct or indirect object) resuming the head of the relative clause, as in (23).

There is a boy and there are two sandwiches. The boy received one sandwich and he prepared the other sandwich. Which sandwich do you think he would like to eat first?

(22) Correct OR: (Vorrà mangiare il sandwich/quello)[11] che ha ricevuto/preparato (lui).
(want-fut eat-inf the sandwich/the one) that *pro* has received/prepared (he)
'(He will want to eat the sandwich/the one) that he received.'

There is a girl and there are two songs. The girl heard one song at the television and she heard the other song at school. Which song do you think she would like to sing?

(23) Correct OR: (Vorrà cantare la canzone/quella) che *pro* l'ha sentita a scuola / alla televisione.
(want-fut sing-inf the song/The one) that she it-CL heard at the television / at school"
"(She will want to sing the song/The one) that she heard on television / at school.'

3.4. Results

In Table 7, we illustrate the amount of correct ORs produced by children in the two preference tasks with a 1st and a 3rd person subject. Data are grouped by age group.

[11]In the elicitation task, we counted the utterances as target when the head of the relative was overtly realized by the child, non-realized, or realized with a demonstrative pronoun *quello* 'a' (that-one-masc/fem).

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Table 7

Number and percentages of post-verbal subjects in preference tasks with 1st and 3rd person (out of the total ORs expected)

1st person	**3 -3;11**	**4-4;11**	**5-5;11**	**6-6;11**	**7-7;11**
OR	77/110 70%	117/140 83%	121/140 86%	148/160 92.5%	104/110 94%
No answer	2/110 2%	8/140 6%	2/140 1.5%	5/160 3%	1/110 1%
Declarative	2/110 2%	-	3/140 2%	-	-
OR>SR	3/110 3%	3/140 2%	2/140 1.5%	-	-
DP	19/110 17%	2/140 1%	2/140 1.5%	-	-
AP	2/110 2%	1/140 1%	4/140 3.5%	2/160 1%	1/110 1%
PP	1/110 1%	8/140 6%	6/140 4%	3/160 2%	1/110 1%
Other	4/110 3%	1/140 1%	-	2/160 1%	3/110 3%
3rd person					
OR	64/110 58%	116/140 83%	116/140 83%	149/160 93%	97/110 88%
No answer	4/110 4%	6/140 4%	4/140 3.5%	3/160 2%	-
Declarative	2/110 2%	3/140 2%	6/140 4%	-	-
OR>SR change of verb	4/110 5%	2/140 1.5%	2/140 1.5%	-	-
POR	-	-	1/140 1%	-	-
DP	23/110 21%	-	-	-	-
AP	6/110 5%	2/140 1.5%	5/140 3%	4/160 %2.5	5/110 4.5%
PP	2/110 2%	9/140 6.5%	5/140 3%	-	1/110 1%
Other	4/110 4%	2/140 1.5%	1/140 1%	4/160 %2.5	7/110 6%

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In (24)-(30), we present examples of the productions of children when an OR is expected. In (24)-(27), we give an example of a DP[12], a declarative clause, an AP and a PP, respectively. Sometimes, children transformed the target OR into a SR by changing the verb, as illustrated in (28) or they produced sentences that are not related to the target (labelled "other"), as in (29).

Experimenter: C'è un bambino e ci sono due panini. Un panino l'ha ricevuto e un panino l'ha preparato lui. Secondo te il bambino quale panino vorrà mangiare per primo?
'There is a boy and there are two sandwiches. The boy received one sandwich and he prepared the other sandwich. Which sandwich do you think he would like to eat first?'
(24) DP: Quell'altro
the other
'The other sandwich.' A.G.(4;2)

Experimenter: C'è una bambina e ci sono due torte. Una torta l'ha comprata e una torta l'ha preparata lei. Secondo te la bambina quale torta vorrà mangiare per prima?
'There is a girl and there are two cakes. The girl bought one cake and she prepared the other cake. Which cake do you think she would like to eat first?'
(25) Declarative: Una l'ha comprata
one it-CL has bought
'One she bought.'
(26) AP: Comprata
bought
'(The one) bought' A.C.(3;11)
(27) PP: Con le mele
with apples
'(The one) with apples' D.P (3;6)

Experimenter: Ci sono due gomme da masticare. Una l'hai trovata per terra e l'altra l'hai avuta dalla mamma. Quale vorresti mangiare?
'There are two chewing gums. You found one on the floor and you got the other chewing gum from your mum. Which chewing gum would you like to eat?'

[12] Notice that sometimes the DPs produced by children are modified by a PP, as in (a):
Experimenter: Ci sono due gomme da masticare. Una l'hai trovata per terra e l'altra l'hai avuta dalla mamma. Quale vorresti mangiare?
'There are two chewing gums. You found one on the floor and you got the other chewing gum from your mum.Which chewing gum would you like to eat?'
(a) Quella di mamma
the one of mum
'Mum's chewing gum' S.F. (4;3)

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(28) OR>SR verb change: Quella che è caduta per terra
'The one that fell on the floor.' C.F (3;8)

Experimenter: Ci sono due gomme da masticare. Una l'hai trovata per terra e l'altra l'hai avuta dalla mamma. Quale vorresti mangiare?
'There are two chewing gums. You found one on the floor and you got the other chewing gum from your mum. Which chewing gum would you like to eat?'
(29) Nessuna delle due
none of the two
'None of them' L.P. (7;1)

As clearly emerges from Table 7, children from age 3 to 7 produce a fairly high amount of correct ORs. When a target OR is not produced, children tend to answer with a DP, a PP or an AP. PORs are not attested in these conditions, except for one case in the 5 years old group.

In the next section, we illustrate the qualitative analysis of the responses, focusing on the post-verbal and null subjects produced by children in the different elicitation conditions.

3.4.1. The use of post-verbal and null subjects

In Table 8, we illustrate the amount of post-verbal and null subjects produced by children in those items where the subject is given by the experimenter. We remind the reader that in five items the experimenter presented two choices to the child and in one of them the pronominal subject was overtly realized.
The results are grouped by age group, and according to the verb chosen by the participants ([+S], [-S]).

Table 8

Number and percentages of post-verbal/null subjects in items in which the subject is given: 1st and 3rd person tasks (out of the ORs produced)

Verb [+ S]	**3 -3;11**	**4-4;11**	**5-5;11**	**6-6;11**	**7-7;11**
Post-verbal subject	15/23 65%	28/38 74%	54/60 90%	68/75 91%	49/53 92.5%
Null subject	8/23 35%	10/38 26%	6//60 10%	7/75 9%	4/53 7.5%
Verb [- S]					
Post-verbal subject	3/49 6%	5/76 7%	5/61 8%	2/78 3%	1/49 2%
Null subject	46/49 94%	71/76 93%	56/61 92%	76/78 97%	48/49 98%

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In (30)-(33) we present children's productions of ORs with either a null or a post-verbal subject within the relative clause, in the two contexts presented by the experimenter. The child might (Verb [+ S]) or might not (Verb [-S]) choose the verb containing the subject. Furthermore, the child could either produce a post-verbal or a null subject in the answer, coherently with the situation presented by the experimenter. Notice that the sentences in (31)-(32) are syntactically correct but not equally felicitous given the discourse situation of the two contexts presented.

Experimenter: C'è un bambino e ci sono due panini. Un panino l'ha ricevuto e un panino l'ha preparato lui. Secondo te il bambino quale panino vorrà mangiare per primo?
'There is a boy and there are two sandwiches. A sandwich, it-CL has received and a sandwich it-CL has prepared him. In your opinion, the boy which sandwich want-fut eat-inf first?'
'There is a boy and there are two sandwiches. The boy received one sandwich and he prepared the other sandwich. Which sandwich do you think he would like to eat first?'

Verb [+ S]
(30) OR with post-verbal subject: Quello che ha fatto lui
the one that has prepared he
'The one that he has prepared' T.S. (5;8)

(31) OR with null subject: Quello che ha fatto[13]
the one that *pro* has prepared
'The one that he prepared' E.D. (4;3)

Verb [- S]
(32) OR with post-verbal subject : Quello che ha ricevuto lui
the one that has received he
'The one that he has received' P.R. (4;3)

(33) OR with null subject: Quello che ha ricevuto
the one that *pro* has prepared
'The one that he has prepared' F.S. (5;8)

In the next section we sum up the results of Study 2.

3.5. Interim discussion

In Section 3.4, we observed that children produce a fairly high amount of ORs from the youngest age, in both 1st and 3rd person condition. Interestingly enough, passives are virtually absent from their productions in these conditions.

[13] This type of answer may not be inappropriate if interpreted as a focalization by the child of the whole verb phrase; even if, given the context, (30) is by far the most felicitous answer, with focus on the subject. See also relevant considerations on this point in the general discussion.

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Following Friedmann *et al.* (2009), we want to propose that the production of ORs is primarily favoured in both young and older children by the nature of the subject within the relative clause in this task[14]. We propose that the (null) pronominal subject, in either 1st or 3rd person, does not act as an intervener in the long distance relation between the head and its merge position as a lexical subject DP does. In the final discussion section we analyse this hypothesis further, taking into account the pronominal vs. lexical nature of the (null) subject.

From the results, we also found that the use of a null/post-verbal subject is generally quite coherent with the context presented by the experimenter. If children chose the verb that has a null subject in the introduction they are more likely to use a null subject in their answer. Similarly, when they used the verb that has an overt subject in the introduction they tended to produce a post-verbal subject in their ORs; thus, in this case, in their answer they also provided the new information subject which is also (though indirectly) required in the experimenter's question.

Interestingly enough, the ORs with a verb [-S] and a post-verbal subject are very limited from the earliest age (6%, 6.5% in 3 and 4 year olds). On the other hand, the ORs with a verb [+S] and a null subject are more numerous up to the age of 5. This seems to suggest that there is some optionality in younger children, and that they also sometimes interpret the question in such a way that the focus is on the verb phrase in their answer (see footnote 11); so, to some extent, they do produce ORs with null subjects in contexts in which, although correct with the focalization on the verb phrase, they are not as felicitous as a post-verbal subject would be. Comparably to the results of the previous Study 1, we observe that from age 5, children consistently use ORs with post-verbal subjects (when the subject is present in the story given by the experimenter). In addition to the previous study, we notice that the ability to use post-verbal subjects improves up to the age of 7.

We speculate that the way in which the task was presented favoured the production of a post-verbal subject, creating a context in which it is highly felicitous. Nevertheless, a development seems to be going on, with a progressively increasing use of post-verbal subjects in those items where they were most felicitous. This is coherent with the results of Section 2.4.2., where children produced more post-verbal subjects as they grew older. However, we also observed there that PORs slowly replaced ORs from age 5, as the task in Study 1 created a context in which a lexical subject was elicited in the relative clause, so that the pressure for a syntactic configuration that eliminates intervention might prevail. Finally, null subjects appear to be properly utilized from very early on in Study 2.

[14] We remind the reader that the head of the expected relative clause is always inanimate in this experiment. We cannot exclude that this could also facilitate the production of ORs in the new task. Data collected by means of a similar experiment with Italian adults did not show any effect of animacy of the head (Belletti and Chesi 2011). However, other studies conducted with young children observed a prevalence of ORs with an inanimate head in children's spontaneous speech (e.g. Diessel 2005). See also Kidd *et al*. (2007) on both spontaneous and experimental data. See the general discussion, where this point is taken up in more detail.

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4. GENERAL CONCLUDING DISCUSSION

The main results of our two studies can be synthesized as follows.

It was known from previous work that both children (developmentally) and adults (overwhelmingly) reacted with a POR to the elicitation of an (active) OR in Italian, in which a lexical subject DP was present in the relative clause (Belletti and Contemori 2010, Contemori and Belletti (forthcoming)). A stage was detected in Study 1 around age 5 in which children tended to locate the lexical subject in post-verbal position in the (limited number of) active ORs that they did produce, in a way which was felicitous in the discourse conditions set by the design[15]. The decreasing production of post-verbal subjects correlated with the increasing use of the passive in the relative clause. Finally, recall that in Study 1 the head of the relative clause was always an animate object (il bambino/i bambini 'the child/the children').

In eliciting conditions such as those of Study 2, in which the discourse pragmatics set by the story given by the experimenter was such that the subject of the OR was a 1st or a 3rd person pronominal subject, children of the same age as those of the previous study up to age 7 were rather successful in producing ORs in these conditions. Moreover, they showed an ability to properly locate the subject in post-verbal position, thus producing a felicitous word order in the relevant discourse conditions set in the experiment. Under these conditions, in the cases in which the pronominal subject was also overtly mentioned in the introductory story by the experimenter, a post-verbal (pronominal) subject in the produced OR was most appropriate as it had the required status of a new information focus subject, which is typically post-verbal in Italian (Belletti 2004 and section 2.4.3). Children also showed a rather adequate mastering of use of null subjects in the elicited ORs, which have been generally produced more in the V [-S] cases of the experiment than in the V [+S], as expected[16]. There were cases in which an overt post-verbal pronominal subject was expected and children rather produced an OR with a null subject; these cases can be valued as relatively well formed nevertheless, as this type of children's answer may be interpreted as focalization of the whole verb phrase rather than just the subject (e.g. (32); see also footnote 11); conversely, those cases (less numerous) in which a null subject was expected and children produced an overt post-verbal subject (e.g. (33)) may suggest an interpretation of the children's answer as an all new focus answer which, as briefly discussed in section 2.4.3, also has the subject preferably in the post-verbal position in Italian. Thus, all in all, children showed a fairly good mastery of the syntax of subjects and

[15] The subject was also null in some children's productions in a way which appeared to be, once again, essentially appropriate. We did not pursue the comparison overt vs. null here, as the experiment was designed to elicit the production of a lexical subject DP in the OR, a most hard structure for children, as we discuss at length in the references quoted; see also Belletti (2012).

[16] Null subjects have also been used in the verb-change condition more than in the subject change condition of Study 1, also a relatively felicitous discourse choice in that design, where an overt lexical subject was the most natural expected production.

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their discourse related properties pertaining to the overt vs. null nature of the pronominal subject and its pre- vs. post-verbal position. As this capacity is manifested rather systematically across all ages of our experiment, it can be concluded that it is in place from very early on in children's development (with some development detected in both Study 1, with a lexical subject in the relative clause, and in Study 2 with pronominal subjects). Finally, recall that in Study 2 the head of the relative clause was always an inanimate object.

Our two studies implicitly suggest an interesting comparison in the domain of the acquisition of ORs in Italian: the virtually complete absence of PORs in the productions elicited by Study 2, in which the subject of the relative clause was expected to be pronominal - overt if post-verbal, null otherwise - , contrasts sharply with the results of Study 1 in which children started producing PORs at age 5 and they did so more and more in the older group, approaching adults. Although for Study 2 we do not have data for the age range 8-8;10, which was the age at which production of PORs exploded in Study 1 approaching the adults' performances on the same task, nor do we have adults' results from the same Study 2, we still think that the results from the younger ages of Study 2 are so neat on the children's capacity to produce active ORs that some crucial factor must be at stake in the conditions of this new study compared to the previous one which may be held ultimately responsible for the sharp difference in the results of the two studies in this domain. We submit that such crucial factor is to be identified in the pronominal nature of the subject in the OR of Study 2, in contrast with the lexical nature of the subject in the OR of Study 1[17].

Before illustrating the theoretical account we intend to propose in terms of locality/RM following Friedmann *et al.* (2009), we want to first turn our attention to another potentially relevant factor distinguishing the elicited ORs of Study 1 from those of Study 2: the fact that head of the relative clause corresponding to the object of the relative clause is always animate in Study 1 and always inanimate in Study 2. In principle the difference in animacy of the relative head could be taken to be crucial in justifying the difference of the two sets of results from the two studies[18]. We want, however, to propose that this is likely not to be the case, despite *prima facie* plausibility of the hypothesis. Although we cannot base our conclusion on the data from our own study, as the conditions of Study 2 did not tease apart the animacy feature of the head of the relative clause from the pronominal vs. lexical nature of the subject of the relative clause thus generating a

[17] This result is then in line with Gordon *et al.* (2004) on adults' parsing in English; see also Warren and Gibson (2005).

[18] This is the conclusion reached by Kidd *et al*. (2007) for similar results from English and German speaking children and corpus studies. However, in these studies, animacy always combined with the presence of a pronominal subject. See also Mak *et al*. (2006) for adult parsing and the role of animacy. For more discussion on the role of animacy and the role of the input in this connection, see Belletti and Chesi (2011).

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confound of the two sets of conditions (as in Kidd *et al.* 2007), we can rely on controlled results from Belletti and Chesi (2011) obtained through an adaptation for adults of the preference task utilized in the Study 1 of the present work. Belletti and Chesi (2011) precisely controlled for the relevance of the animacy feature of the relative head of an OR, keeping the subject of the relative clause constantly lexical (and manipulating its animacy as well). Belletti and Chesi's (2011) results clearly show that manipulation of the animacy feature of the relative head does not affect the performance and does not enhance the production of ORs. Rather, the adults tested have overwhelmingly produced PORs in all conditions, thus confirming the results reviewed in our Study 1, where animacy was not a controlled condition. Hence, putting together Belletti and Chesi's (2011) results with the results from our Study 2, we conclude that the good performance in the production of ORs by children in the latter study is not due to the inanimate nature of the relative head, but rather to the pronominal nature of the subject of the relative clause[19].

In Friedmann *et al.* (2009) it was observed that Hebrew children (age range 5-7;5) could comprehend ORs to a level comparable to their understanding of SRs if the subject of the relative clause was not a lexical DP containing a descriptive lexical noun phrase, referred to as "lexical restriction" in that work, but rather a (silent) pronoun. We want to propose that precisely this very same reason accounts for the good performance of the children of our Study 2. In terms of the system developed in Friedmann *et al*. (2009), a pronominal subject, by definition, does not contain a descriptive lexical noun phrase; hence it has a feature composition that does not include any [NP] = lexical restriction feature. Consequently, there is no [NP] feature in the feature composition of a pronominal subject that would be properly included in the feature composition of the head of the relative clause. As illustrated in 1.2, the set theoretical relation of inclusion is precisely the one that Friedmann *et al.* (2009) singled out to be the one that children have difficulty to process in early stages of development; they have proposed that the capacity to process the inclusion relation develops rather late. Thus, in terms of the notation in Friedmann *et al*. (2009), in an OR with a pronominal subject the dependency between the relative head and its merge position within the relative clause can be

[19] We do not want to rule out in principle the possibility that distinction in the animacy feature between the relative head and the subject of the relative clause might play some role in facilitating the processing of ORs in general – see the references quoted in the preceding footnote and also Arosio *et al.* (2011) on Italian. Possibly, most feature distinctions can have such a general effect – see Belletti *et al.* (submitted) for related considerations on the gender feature. The different morphosyntactic status of different features is crucial though: only those which are formally relevant for the computation of locality matter to make significant distinctions. See Belletti *et al.* (submitted) for detailed discussion on this point. We want to argue that the animacy distinction is not the crucial factor in interpreting our results, for the reason discussed in the text, i.e. animacy is not a feature modulating locality/RM in the sense of Friedmann *et al*. (2009), as shown by the results from Belletti and Chesi (2011) referred to in the text.

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schematically represented along the lines in (34), where the relative head and the subject are distinct in the [NP] feature which is not present at all in the pronominal subject[20].

(34) … la palla che pro ho comprato (io) <la palla>
R +NP D D R +NP

Note the minimal contrast between (34) and (35) following, illustrating the same OR with a lexical (preverbal or post-verbal) subject. In (35) the proper inclusion of the [NP] feature of the subject within the feature specification of the relative head occurs, and this is the (main) source of difficulty for children, according to Friedmann *et al.* (2009)'s system:

(35) … la palla che il bambino ha comprato (il bambino) <la palla>
R +NP D +NP D +NP R +NP

In conclusion, the good performance of (even young) children in the production of ORs with a pronominal subject can be interpreted as a direct consequence of the principle of locality/RM formulated in featural terms, which constrains the proper establishment of long distance dependencies.

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[20] The pronominal subject is represented as D. This might very well be a simplification which does not take into account the 1st vs. 3rd person distinction or the overt vs. non-overt nature of the pronoun. For the sake of concreteness and space, we do not develop this aspect any further in the present paper.

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