

ON SUBJECTS AND BY-PHRASES IN ITALIAN-SPEAKING CHILDREN: EVIDENCE FROM AN ELICITED PRODUCTION STUDY OF OBJECT RELATIVES*

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1. INTRODUCTION

The null-subject property of Italian allows the subject to occupy a post-verbal position (Rizzi 1982)¹. However, in order to locate the subject in the post-verbal position, specific discourse-related conditions are needed (Belletti 2004, and related work). Whereas preverbal subjects normally do not express new information, post-verbal subjects typically do. See the contrasts in examples (1) and (2) from Belletti (2004):

- (1) a. Che cosa ha fatto Gianni?
What has done John
'What did John do?'
- b. Gianni ha parlato
John has spoken
'John spoke'
- c. * Ha parlato Gianni
Has spoken John
'John spoke'
- (2) a. Chi ha parlato?
Who has spoken
'Who spoke?'
- b. * Gianni ha parlato
John has spoken
'John spoke'
- c. Ha parlato Gianni
Has spoken John
'John spoke'

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¹ When the subject is realized post-verbally, a phonetically null pronominal element (*pro*) fills the preverbal subject position (Rizzi 1982).

According to Belletti (2004), new information post-verbal subjects of the type in (2c) fill the new information Focus position of the low periphery of the clause.²

Indirect evidence on the acquisition of these properties of Italian subjects comes from Belletti & Contemori (2012). Building on the results from Belletti & Contemori (2010) and Contemori & Belletti's (2014) studies on the production of relative clauses in Italian-speaking children aged 3;4-8;10,³ they show that from the age of 5 children start to be pragmatically more appropriate in the use of subjects and produce more post-verbal subjects in the felicitous discourse conditions.⁴

The low new information Focus position can also host the *by-phrase* of passive sentences, as the *by-phrase* in passive sentences can indeed express new information (3). When this occurs, given its post-verbal location, the *by-phrase* is assumed to fill the same structural position as the new information post-verbal subject. Whereas a *by-phrase* conveying given information can be either realized or omitted, a *by-phrase* representing new information has to be overtly expressed.

- (3) a. Da chi è stata firmata la lettera?
By whom was signed the letter
'Who was the letter signed by?'
- b. La lettera è stata firmata dal direttore.
The letter was signed by the director
'The letter was signed by the director'

The acquisition of passive has been at the heart of a rich debate since the eighties (Maratsos et al. 1985, Borer & Wexler 1987, Gordon & Chafetz 1990, Fox & Grodzinsky 1998, Hirsch &

² Notice that no special prosody is associated with the examples (1) and (2) in the text. The post-verbal subject in (1c) can also be associated with a downgrading prosody and in this case it refers to given information and fills the low topic position (see example (i) below from Belletti 2004).

- (i) a. Che cosa ha poi fatto Gianni?
What has finally done John
'What did John do finally?'
- b. Ha (poi) parlato, Gianni.
Has (finally) spoken, John
'John (finally) spoke'

In the conversational exchange in (2), (2a) is a simple question not involving any presupposition concerning the subject. See Belletti (2004) for more on these structures, and Bocci (2009) for a discussion on their prosodic properties. The subject can occupy the post-verbal position and express new information also when the whole clause conveys new information (see example (ii) below from Belletti 2004).

- (ii) a. Che cosa è successo?
What happened
'What happened?'
- b. E' partito Gianni.
Has left John
'John left'

We refer the reader to Belletti (1988;2004), and Belletti & Bianchi (2016) for the different status of post-verbal subjects of unaccusative verbs.

³ 97 children randomly selected from public schools in Chianciano Terme and Siena took part in the studies.

⁴ Children acquiring Italian have first to determine the null subject parameter, then the proper use of null/overt, pre/post-verbal subjects with respect to the pragmatics of discourse exchanges. Moreover, they have to know that the distribution of post-verbal subjects interacts with the verb classes. We cannot discuss here all the dimensions involved in the acquisition of Italian subjects. We refer the reader to Belletti & Guasti (2015, chapter 7) for a general discussion of this issue.

Wexler 2006, Manetti 2013, Volpato et al. 2013; 2016, among others). Some studies reported an asymmetry between long and short passives⁵, according to which children encounter more difficulties in the acquisition of long passives compared to short ones (Horgan 1978, Fox & Grodzinsky 1998, Terzi & Wexler 2002, Hirsch & Wexler 2006, Rubin 2009). However, several other studies clearly show that when felicitous experimental conditions are used, 3- and 4-year-old children successfully comprehend and produce both long and short passives (Crain et al. 1987, Pinker et al. 1987, O'Brien et al. 2006, Bencini & Valian 2008, Messenger et al. 2009; 2012, Demuth et al. 2010, Manetti 2013, Volpato et al. 2016). Under an approach to passive involving smuggling along the lines of Collins (2005), long and short passives involve the same derivation: the external argument is always present and active in the syntactic structure, it is overtly realized in long passives, whereas it is left unpronounced in short passives. According to this approach, all things being equal, the acquisition of long/short passives is not expected to take place at different stages of development. As we said above, the distribution of passives interacts with discourse pragmatics. Short passives are more likely to be used when the agent represents given information, while long passives are more felicitous when the agent is new information. Thus, felicitous experimental discourse conditions are needed to adequately explore children's competence in this respect. In order to properly interpret and produce long and short passives, children have to also master the discourse conditions on the realization of the by-phrase.

In this paper, we present new results bearing on these issues, from a study exploring the elicited production of subject and object relative clauses in 3- to 9-year-old Italian-speaking children. The study aimed to investigate certain aspects of the acquisition of relative clauses, bearing on intervention locality (see Friedmann et al. 2009 and references therein).⁶ In the task used in this study, some of the experimental conditions elicited a new information subject, while some others elicited a given information subject. We thus discuss the data collected in this study by looking at the participants' ability to realize the external argument in accordance with its discourse related properties. Looking at the participants' productions, we focus our attention on the realization of the subject within object relatives (henceforth, ORs) and of the by-phrase within passive object relatives (henceforth, PORs). It is indeed well known in the literature that in Italian and in a number of other languages children (old enough to master the passive voice) resort to PORs (/subject relatives in the passive, example 4) when the production of an active object relative is elicited (among others, Contemori & Belletti 2014, Guasti et al. 2012, Adani et al. 2012)⁷. The object in the active OR corresponds to the subject of the POR, and the subject of the OR corresponds to the complement of preposition *by* in the by-phrase of the POR.

- (4) a. *Elicited OR*
 Il gatto che il cane morde.
 The cat that the dog bites
 'The cat that the dog is biting'

⁵ In the text, the terms long/short passives, passives with/without by-phrase (passives with a by-phrase overtly realized/passives with a by-phrase left unpronounced) are used interchangeably.

⁶ See Martini (in preparation) for a discussion of the main findings of the study in terms of intervention locality (Rizzi 1990;2004, Starke 2001, Friedmann et al. 2009).

⁷ The production of passive object relatives when active object relatives are elicited is well attested also in adults (Belletti & Contemori 2010, Adani et al. 2012, Belletti & Chesi, 2014). According to Belletti (2014) and the smuggling analysis of passive (Collins 2005), passive object relatives would be preferred to active object relatives, as they do not involve what makes ORs difficult to compute, namely intervention.

- b. *Produced POR*
 Il gatto che è morso dal cane.
 The cat that is bitten by the dog
 ‘The cat that is being bitten by the dog’

The resort to PORs in the elicitation of active ORs therefore also makes our data interesting with regard to the short/long passive debate.

We will see that children realize the external argument (the subject in ORs and the by-phrase in PORs) in a felicitous way with respect to the discourse pragmatics of the experimental conditions. When producing object relative clauses, they realize the subject in the post-verbal position when it conveys new information, whereas they locate it in the preverbal position when it represents given information. Similarly, children produce passive object relatives without the by-phrase most of the time when the by-phrase refers to given information, but they do produce the by-phrase when it expresses new information.

2. THE STUDY

The study investigated the elicited production of subject and object relative clauses, using an elicitation task inspired by Novogrodsky & Friedmann (2006). In what follows, we will exclusively focus our attention on the elicitation of object relatives. In half of the eliciting conditions of the task, the production of ORs with a post-verbal subject and of PORs with a by-phrase was highly felicitous, as the agent expressed new information; in contrast, in the other half, the agent represented given information and the use of ORs with a preverbal subject and of PORs without a by-phrase was expected. If children master the syntax and the discourse properties of subjects and by-phrases, they are expected to use them in line with these expectations.

2.1. Participants

Sixty-eight Italian-speaking children aged from 3;5 to 10;1 took part in the study. The children were divided into four age groups: the 3 year-old group, the 5 year-old group, the 7 year-old group and the 9 year-old group (see Table 1). The children were randomly selected from public kindergartens and primary schools in Rimini (Italy). They were all monolingual native speakers of Italian, except for nine who were bilingual. All demonstrated typical development.

Table 1. Description of participants

Age Group	No. of Participants	Age Range	Mean Age
3 y.o.	15	3;5 - 4;2	3;8
5 y.o.	17	4;10 - 6;1	5;6
7 y.o.	18	7;3 - 8;1	7;7
9 y.o.	18	9;2 - 10;1	9;7

2.2 Materials and procedure

In order to elicit the production of subject and object relatives, we created a game inspired by Novogrodsky & Friedmann's (2006) preference task. Using a laptop, participants play with Dora the Explorer, a cartoon character well known to children, who speaks to them through the pre-recorded voice of an Italian native speaker. Dora has a mission to complete and she asks the participant for help. She has to find out if children around the world love the same things. In order to do so, she describes situations in which two characters are involved and the participant has to say which one he or she would rather be. In order to properly answer the question, the child is expected to use a relative clause. Items like (5) elicit the production of subject relatives, whereas items like (6) elicit the production of object relatives:

(5) *Elicitation of Subject Relatives*

Ci sono due bambini. Un bambino filma un ragazzo, l'altro bambino fotografa un ragazzo. Tu quale bambino preferiresti essere?

'There are two children. A child films a boy, the other child photographs a boy. Which child would you rather be?'

Expected answer: Il bambino che filma/fotografa il ragazzo.
The child that films/photographs the boy
'The child that is filming/photographing the boy'

(6) *Elicitation of Object Relatives*

Due bambini si sono nascosti. Un amico cerca un bambino, un amico trova l'altro bambino. Tu quale bambino preferiresti essere?

'Two children hid. A friend looks for a child, a friend finds the other child. Which child would you rather be?'

Expected answer: Il bambino che l'amico cerca/trova.
The child that the friend looks for/finds
'The child that the friend is looking for/finds'

4 subject relatives and 16 object relatives were elicited (20 test items in total). In the OR condition, half of the items elicited a preverbal subject (lexical (6) or null (7)) and the other half elicited ORs with a post-verbal subject (lexical (8) or pronominal (9)).

(7) *Elicitation of Object Relatives with null subject*

Una mamma fa i dispetti a due bambine. Solletica una bambina, pizzica l'altra bambina. Tu quale bambina preferiresti essere?

'A mom teases two girls. *Pro*_{3SG} tickles a girl, *pro*_{3SG} pinches the other girl. Which girl would you rather be?'

Expected answer: La bambina che solletica/pizzica.
The girl that *pro*_{3SG} tickles/pinches
'The girl that she is tickling/pinching'

(8) *Elicitation of Object Relatives with a lexical post-verbal subject*

Due bambine giocano in giardino. Una mamma rincorre una bambina, un'amica rincorre l'altra bambina. Tu quale bambina preferiresti essere?

'Two girls play hide and seek in the garden. A mom chases a girl, a friend chases the other girl. Which girl would you rather be?'

Expected answer: La bambina che rincorre la mamma/l'amica.
The girl that *pro*_{3SG} chases the mom/the friend
'The girl that the mom/the friend is chasing'

(9) *Elicitation of Object Relatives with a pronominal post-verbal subject*

Un'amica vorrebbe acchiappare due bambine. Le due bambine però scappano in due direzioni diverse e l'amica non può inseguire entrambe. Allora lei acchiappa una bambina e qualcun'altro acchiappa l'altra bambina. Tu quale bambina preferiresti essere?

'A friend wants to catch two girls. But the two girls run in different directions and the friend cannot catch them both. So, she catches a girl and someone else catches the other girl. Which girl would you rather be?'

Expected answer: La bambina che acchiappa lei.
The girl that *pro*_{3SG} catches she
'The girl that she is catching'

As examples (6) and (7) show, in the items eliciting ORs with a preverbal subject, the two situations described to the participant involved the same character performing two different actions (*verb change* condition in Novogrodsky & Friedmann 2006); in the expected answer the agent was therefore given information. In contrast, in the items eliciting ORs with a post-verbal subject (examples (8) and (9)), the two situations involved two different characters performing the same action (*subject change* condition in Novogrodsky & Friedmann 2006); the agent thus represented the relevant new information conveyed by the answer to the elicitation question.

The experiment also included 10 fillers eliciting SVO sentences⁸. A between items and within-subjects design was used. The order of the items was randomized and each session started with a warm-up phase in which the child saw 2 practice trials. Each participant was tested in a separate, quiet room in his school/kindergarten. No time limit was imposed during testing, and no response-contingent feedback was given by the experimenter. All the responses of the participants were tape-recorded and subsequently transcribed.

⁸ Filler items were included to introduce some variability in the structures. We decided to elicit simple sentences, so as not to make the task too demanding. An example is given in (1).

(1) *Elicitation of fillers*

Il babbo sta aiutando il bambino a colorare un quaderno, ma sbaglia a colorare una pagina. Secondo te cosa fa il bambino? Strappa il foglio o strappa tutto il quaderno?

'The dad is helping the child to color a book, but he is wrong to color a page. What do you think that the child does? Does he rip out the page or the whole book?'

Expected answer: (Il bambino) strappa il foglio/strappa tutto il quaderno.

(The child) rips out the page/the whole book

'(The child) rips out the page/the whole book'

2.3 Coding

We counted as ORs with a preverbal subject both ORs with a lexically restricted preverbal subject (10) and ORs with a null subject (11).⁹ In Italian, a null subject corresponds to given information, similarly to an overt lexical preverbal subject. We do not therefore distinguish here between the two cases, as we are only interested in comparing given information to new information subjects. As example (11) shows, in Italian when the relative head and the subject share the same number feature, ORs with null subject are ambiguous between an OR and a SR reading (see also Belletti & Guasti 2015). We tried to disambiguate children's productions, by asking them to paraphrase their response or answer a question about who performed the action. Only those ORs that were successfully disambiguated were taken into account.¹⁰

(10) La bambina che l'amica saluta
The girl that the friend greets
'The girl that the friend is greeting'

(11) La bambina che saluta
The girl that *pro*_{3SG} greets
'The girl that she is greeting'

Similarly, we counted as ORs with post-verbal subject the ORs produced with a lexical or pronominal post-verbal subject (12). Also ORs with post-verbal subject are ambiguous between an OR and a SR reading in Italian, when the arguments share the same number feature (see Belletti &

⁹ The participants did not produce ORs with an overt pronominal preverbal subject. This was expected since, in a null subject language like Italian, pronominal subjects are left unpronounced if their overt realization is not required by the discourse context. They produced a few ORs with plural null subject (2), even if both arguments were singular in the eliciting conditions. As in ORs with singular null subject, these ORs were coded as ORs with a preverbal subject.

(2) La bambina che applaudono.
The girl that *pro*_{3PL} applaud
'The girl that they are applauding'

It is plausible that here the plural null subject has a generic interpretation, even if a specific agent is present in the given context. The use of a plural null subject can be seen as a strategy to avoid the production of a lexically restricted intervener and at the same time to introduce a number feature mismatch (see Friedmann et al. 2009, and also Belletti & Manetti 2017 on similar evidence in clitic left dislocated structures).

¹⁰It was not always possible to disambiguate children's productions, because they did not always answer the comprehension question or give a clear answer. Table (i) shows the percentage of structures that we could not disambiguate between an OR with null subject reading and a SR reading. It is plausible that some of these productions are ORs with null subject and some other SRs with reversal of the head (as well attested in the acquisition literature). Still, the reasoning and the conclusions we will develop in the following sections holds.

Table i. % of ambiguous relative clauses produced, out of the total number of ORs elicited.

	AMBIGUOUS RC	
	new info agent condition	given info agent condition
3yo	(8/120) 7.1%	(10/120) 8.9%
5yo	(9/136) 6.6%	(37/136) 27.2%
7yo	(3/144) 2.1%	(14/144) 9.7%
9yo	(0/144) 0%	(11/144) 7.6%

Guasti 2015). We succeeded in disambiguating all the ORs with post-verbal subject produced, by using the same procedure described above.¹¹

- (12) La bambina che saluta l'amica/lei.
The girl that *pro*_{3SG} greets the friend/she
'The girl that the friend/she is greeting'

Object relatives with a clitic pronoun (13) or a DP (14) resuming the head of the relative clause were coded as target productions. The use of resumptive pronouns in relative clauses is indeed cross-linguistically attested in children. Whereas in Italian this strategy is associated with a substandard register, in several varieties of Italian and in some Italian dialects this strategy is productive also in the adult grammar, as it is the case for other languages (Guasti & Cardinaletti 2003, Utzeri 2007, Volpato & Vernice 2014, on Italian; Labelle 1990, Guasti & Cardinaletti 2003, on French; McDaniel et al. 1998, Pérez-Leroux 1995, for English; Ferreiro et al. 1976, on Spanish).

The use of resumptive DPs is ungrammatical in Italian, but it is attested in children's production and in some adult languages (Cinque 2011 and references cited; see Contemori & Belletti 2013 on the different status of ORs with a resumptive clitic or a resumptive DP in Italian).¹²

- (13) La bambina che la musica la sveglia.
The girl that the music her_{OBJ CL} wakes up
'The girl that the music is waking up'
- (14) La bambina che la musica sveglia la bambina.
The girl that the music wakes up the girl
'The girl that the music is waking up'

For the purpose of the present discussion, we coded as PORs the passive object relatives with copular passive (with both *essere* and *venire* auxiliary) (15) and si-causative passive (16), and the reduced passive object relatives (17). We only distinguished between PORs with and without by-phrase.¹³

- (15) La bambina che è/viene filmata (dall'amica).
The girl that is/comes filmed (by the friend)
'The girl that is being filmed (by the friend)'
- (16) La bambina che si fa filmare (dall'amica).
The girl that si-cl makes film (by the friend)
'The girl that gets filmed (by the friend)'
- (17) La bambina filmata (dall'amica).
The girl filmed (by the friend)
'The girl filmed (by the friend)'

¹¹ All verbs in the task were transitives. Thus, the particular case of unaccusatives is excluded.

¹² We do not distinguish here between ORs with a lexical head (*the girl that...*) and ORs with a pronominal head (*the one that...*), as it is not relevant for our discussion.

¹³ All the PORs produced involved unambiguous verbal passives.

All the other structures produced when an OR was elicited (subject relatives, SVO sentences, fragments, etc.) are not relevant here and we do not discuss them.

2.4. Results

The relevant results of Study 1 are shown in tables 2 and 3. We grouped the results by age group and condition, distinguishing between new and given information agent conditions.

Table 2. % of ORs produced with pre/post-verbal subject, out of the total number of ORs elicited.

		OR with pre-verbal subject		OR with post-verbal subject	
3 y.o.	new info agent	(1/120)	1%	(13/120)	12%
	given info agent	(4/120)	4%	(0/120)	0%
5 y.o.	new info agent	(17/136)	12%	(32/136)	23%
	given info agent	(8/136)	6%	(0/136)	0%
7 y.o.	new info agent	(6/144)	4%	(22/144)	15%
	given info agent	(11/144)	8%	(2/144)	1%
9 y.o.	new info agent	(6/144)	4%	(16/144)	11%
	given info agent	(14/144)	10%	(2/144)	1%
TOTAL	new info agent	(30/544)	5%	(84/544)	15%
	given info agent	(40/544)	7%	(4/544)	1%

Table 3. % PORs produced with/without by-phrase, out of the total number of ORs elicited.

		POR without by-phrase		POR with by-phrase	
3 y.o.	new info agent	(0/120)	0%	(5/120)	4%
	given info agent	(2/120)	2%	(0/120)	0%
5 y.o.	new info agent	(1/136)	1%	(11/136)	8%
	given info agent	(8/136)	6%	(1/136)	1%
7 y.o.	new info agent	(4/144)	3%	(58/144)	40%
	given info agent	(40/144)	28%	(7 /144)	5%
9 y.o.	new info agent	(3/144)	2%	(110/144)	76%
	given info agent	(74/144)	51%	(12 /144)	8%
TOTAL	new info agent	(9/544)	2%	(206/544)	37%
	given info agent	(137/544)	24%	(26/544)	5%

As Tables 2 and 3 show, the elicited active ORs were produced to a small extent (158 ORs produced out of 1088 ORs elicited in total, 14%) and the resort to PORs emerged (378 PORs

produced out of 1088 ORs elicited in total, 35%).¹⁴ When a new information subject was elicited, children of all ages produced ORs with a post-verbal subject most of the time (84/544, 15%, in total) and they realized the subject in the preverbal position far less often (30/544, 5%, in total). In contrast, when in the eliciting conditions the subject conveyed given information, the participants, across all ages, hardly ever located the subject in the post-verbal position (4/544, 1%, in total) and they rather produced ORs with a preverbal subject (40/544, 7%, in total). As for the production of PORs, children across all age groups overtly realized the by-phrase when the agent represented new information in the discourse context set by the experimental conditions (206/544, 37% vs. 9/544, 2% of omitted by-phrases, in total), whereas they tended to omit it when the agent represented given information (137/544, 24% vs. 26/544, 5% of overtly realized by-phrases, in total).

3. DISCUSSION AND CONCLUSIONS

The results from the present study clearly show that children are sensitive to the discourse related properties of pre/post-verbal subjects from very early on.¹⁵ In producing the ORs, the participants realize the subject in the pre-verbal position when the subject expresses given information, whereas they realize it post-verbally when it conveys new information, in compliance with the syntax of Italian subjects. Indeed, in Italian, new information subjects tend to occur in the post-verbal position, whereas given information subjects fill the preverbal position (Section 1 and Belletti 2004 and related work). These data add a piece of evidence to Belletti & Contemori (2012), who show that Italian-speaking children are pragmatically appropriate in the use of pre/post-verbal subjects at the age of 5, and to Manetti (2017), in which (4 to 9 year-old) children are shown to be very appropriate also in the use of overt/null Italian preverbal subjects, confirming previous results from spontaneous production (Lorusso 2003, Lorusso et al. 2005, Serratrice 2005).¹⁶

Our results also reveal that children master the syntax of both short and long passives, and that they use them in a felicitous way with respect to the discourse context. In the elicitation of ORs, the participants resort to PORs without a by-phrase when the agent represents given information, whereas they produce PORs with a by-phrase when the agent refers to new information. Whereas the non-overt realization of the by-phrase is fully felicitous when the agent is given in the discourse, the by-phrase has indeed to be overtly realized when it introduces new information. Therefore, no special difficulties with long passives emerge in our results. This is expected under an approach to passive involving a smuggling derivation as in Collins (2005), according to which long and short passives are derived in the same way: the external argument, merged as the complement of the by-phrase, is overtly realized in long passives, whereas it is left unpronounced in short passives, as illustrated in (18).

¹⁴ See Martini (in preparation) for a discussion of this result in terms of intervention locality and for other issues concerning the PORs produced by the participants.

¹⁵ Even if the amount of data available on the 3-year-old group is small, the tendencies are indeed quite clear and seem to suggest that 3 year-old children are already felicitous in the use of pre/post-verbal subjects.

¹⁶ Note that the results we presented on the appropriate use of the new information post-verbal subject by children, also suggest that young children master the syntax and the discourse properties of the low peripheral positions of the clause. We indeed assumed, following Belletti (2004), that the new information post-verbal subject fills a position dedicated to the new information focus interpretation in the low periphery of the clause (Section 1). This is in line with Belletti & Manetti (2017) which shows that 4 and 5 year-old children master the syntax and the discourse properties of the left peripheral positions of the clause.

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