ON THE ROLE OF LEXICAL RESTRICTION AND INTERVENTION IN PRODUCTION: A NEW ANGLE ON THE SUBJECT-OBJECT RELATIVES ASYMMETRY

Karen Martini (karen.martini@unige.ch)
Adriana Belletti (adriana.belletti@unige.ch)
Carla Contemori (cuc29@psu.edu)
Luigi Rizzi (luigi.rizzi@unige.ch)

1. INTRODUCTION

A robust finding from acquisition, adult processing and pathological populations is that object A'-dependencies are harder to parse and comprehend than subject A'-dependencies (among others, Tavakolian 1981, Yoshinaga 1996, De Vincenzi et al. 1999, Avrutin 2000, Friedmann & Novogrodsky 2004 on acquisition; Hakes et al. 1976, Frauenfelder et al. 1980, King & Just 1991, Kuhn 1993, Schlesewsky et al. 2000, Gordon et al. 2004 on adult processing; Caramazza & Zurif 1976, Schwartz et al. 1980, Hickok & Avrutin 1996, Friedmann & Novogrodsky 2004, Grillo 2008, Garraffa & Grillo 2008, Friedmann et al. 2010 on pathology). The featural Relativized Minimality approach (henceforth, fRM, Rizzi 1990, 2004, Starke 2001) ascribes this asymmetry to the grammatical locality constraint bearing on intervention configurations (Friedmann et al. 2009). Under fRM, a movement relation between two elements X and Y is disrupted if an element Z structurally intervenes between X and Y and matches the specification of X in relevant features:

(1)   X… Z… Y…
        Y is in a local configuration with X if there is no Z such that
        - Z structurally intervenes between X and Y;
        - Z matches the specification of X in relevant morphosyntactic features.

Z structurally intervenes between X and Y if Z c-commands Y and Z does not c-command X.[1] Since we are looking at movement relations, the features relevant for the computation of intervention are the morphosyntactic features that participate in triggering movement (Belletti et al. 2012, Friedmann et al. 2017 and references therein). A local relation between X and Y properly holds if the feature specifications of X and Z are in a disjunction or intersection relation. The local relation also holds when the feature specification of Z is included in the feature specification of X.[2] However, according to Friedmann et al. (2009), the inclusion configuration is harder to compute for speakers and its computational cost exceeds the capacities of the child's system. These facts are summarized in the following schema, where A, B and C are morphosyntactic features relevant

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[1] An element α c-commands an element β when β is contained within the sister node of α.
[2] See Rizzi (forthcoming) for a further distinction among the possible intervention configurations, accounting for the fully acceptable status of object relatives and the marginality of other structures (such as weak island environments) seemingly involving the same intervention configuration, in healthy adults' judgements.

for the calculation of intervention.

(2)

		X	Z	Y		CHILDREN	ADULTS
	a.	+A	+A	<+A>	identity	*	*
	b.	+A,+B	+A	<+A,+B>	inclusion	*	ok but harder
	c.	+A,+B	+A,+C	<+A,+B>	intersection	ok	ok
	d.	+A	+B	<+A>	disjunction	ok	ok

Subject and object A'-dependencies crucially differ in the position from which the movement to the left periphery of the clause takes place. Taking relative clauses as instantiations of A'-dependencies, in object relatives (henceforth, ORs) the object moves from its external merge position to the beginning of the sentence, crossing over the preverbal subject (example (3)). In contrast, in subject relatives (henceforth, SRs) the subject can move from its external merge position without crossing any potential intervener (example (4)).

(3)   OR: The girl that the friend pushes <the girl>.
                  +R +NP   +NP   +R +NP

(4)   SR: The friend that <the friend> pushes the girl.
                  +R +NP   +R +NP   +NP

Thus, in object relatives like (3) the preverbal subject intervenes in the establishment of the dependency between the relative head and the gap in the internal argument position. In particular, an inclusion relation is present between the subject, specified by the lexical restriction feature +NP, and the relative head, characterized by the +NP feature and the relative +R feature.[3] In contrast, no intervention is present in subject relatives. The difficulties that speakers experience in the computation of object relatives like (3) (and other object A'-dependencies)[4] are therefore traced back to the presence of an inclusion relation between the feature specifications of the two lexical nominal expressions (Friedmann et al. 2009). As grammar is involved in both comprehension and production, under the fRM approach difficulties in the computation of these structures are expected to show up in both modalities.

Alternatively, the subject-object asymmetry in A'-dependencies has been analyzed as a parsing problem. The Dependency Locality Theory (henceforth, DLT, Gibson 1998, 2000, Warren & Gibson 2002, 2005), for instance, ascribes the difficulties that adults experience in the on-line processing of object A'-dependencies to the presence of a new discourse referent that linearly intervenes in the establishment of the dependency. In an activation-based framework, the integration of a new element H2 with a previous syntactic category H1 involves the reactivation of

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[3] See Friedmann et al. (2009) and the results in De Vincenzi et al. (1999), Arnon (2010) and Bentea (2017) on the relevance of the lexical restriction in modulating intervention. See also Rizzi (forthcoming) for a recent discussion on the nature of the NP feature as attractor of movement.

[4] The same hypothesis accounts for the difficulties that speakers encounter in the computation of which-object questions with a preverbal subject (1), compared to which-subject questions (2):

(1)   Which girl does the friend push <which girl>?
                  +Q +NP   +NP   +Q +NP

(2)   Which friend <which friend> pushes the girl?
                  +Q +NP   +Q +NP   +NP

H1 to a target threshold of activation. When new intervening input is processed, H1's activation decays, because of the limited resources of the system. The more resources the processing of the intervening material requires, the more the activation of H1 drops, making the computation of the dependency more complex. The difficulty in processing an NP depends on the accessibility of the referent of the NP in the discourse. While pronouns require a small amount of resources, proper names and definite descriptions are quite costly to process. In object relative clauses, integrating the verb into the sentence involves integrating the relative head as the object of the verb, across the new discourse referent represented by the subject. Therefore, under DLT, object relatives with a lexical subject are expected to be more difficult to process compared to object relatives with a pronominal subject. In contrast, in subject relative clauses all integrations are local (in the relevant sense).

Even though both approaches ascribe the difficulties that speakers encounter in the computation of object relatives to intervention, the notion of locality crucially differ in the two theories. In DLT, locality is measured as the number of new discourse referents linearly intervening between the two elements of the dependency, whereas in fRM locality is defined in terms of hierarchical intervention and feature specifications of the target and intervener. Crucially, unlike fRM, the DLT approach makes no prediction about parallel difficulties in comprehension and production, as the problem is identified as a specific parsing difficulty.

Much recent literature on acquisition has shown that problems also arise in the production of certain relative clauses, with selective effects that are expected under fRM. Children perform very well in the elicited production of SRs, whereas they avoid the production of ORs involving both a lexically restricted head and a lexically restricted preverbal subject. When such ORs are elicited, children produce structures in which the inclusion configuration between the feature specifications of the two lexical nominal expressions is modulated or eliminated. They produce, for instance, free object relatives and object relatives with a null pronominal arbitrary subject (Friedmann et al., 2009; examples (5a-b)), in which the lexical restriction of the head and the subject, respectively, is manipulated (disjunction configuration); passive object relatives (Belletti & Contemori 2010, Contemori & Belletti 2014, Martini in preparation, Guasti & Cardinaletti 2003; example (5c) and the derivation below), in which the intervention is eliminated through the use of the passive derivation[5]; and various types of subject relatives (Belletti & Contemori 2010, Contemori & Belletti 2014, Martini in preparation, Guasti & Cardinaletti 2003, Zukowski 2009; example (5d-g)), in which no intervention is present.[6]

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[5] Following Belletti (2014), based on the smuggling analysis of passive by Collins (2005), in passive object relatives the internal argument crosses over the intervening external argument as part of the chunk of the verb phrase attracted by the passive voice; then, from this position, the internal argument moves to the left periphery of the clause. In such a derivation, the external argument does not therefore represent an intervener in the movement of the internal argument. See Belletti (2014), Contemori & Belletti (2014) for more on this.

[6] See Friedmann et al. (2015) for similar evidence on SLI children, and Friedmann et al. (2009), Belletti & Contemori (2010) and Belletti & Chesi (2014) for the resort to passive object relatives in healthy adults.

For convenience, the examples in (5) report the English glosses of structures produced by children in experiments run in different languages.

(5)   Target OR: …the girl that the friend pushes.

    a.   Free OR: …who the friend pushes.
                    +R   +NP

    b.   OR with a null pronominal arbitrary subject: …the girl that *pro$_{3p.pl}$* push.
                    +R +NP

    c.   Passive OR: …the girl that is pushed by the friend.
                    the girl that [is [$_{vP}$ pushed <the girl>] by [$_{vP}$ the friend <VP>]]

    d.   SR head reversal: …the friend that pushes the girl.

    e.   SR role reversal: …the girl that pushes the friend.

    f.   SR verb change: …the girl that falls.

    g.   Reflexive SR: …the girl that pushes herself.

These results can be captured under fRM: children have selective difficulties with headed ORs involving an intervening lexical subject also in production and they resort to strategies that allow them to overcome the problematic intervention configuration.

Building on the elicited production data gathered by Belletti & Contemori (2010) and Contemori & Belletti (2014) (henceforth, B&C 2010, C&B 2014), in this paper we propose a new way of highlighting the problematic nature of the production of ORs with two lexically restricted nominal expressions, compared to the production of minimally different SRs. If subject and object relatives are roughly on a par in production, a lexically restricted object and a lexically restricted subject should be produced at a comparable rate by children, in subject and object relatives respectively. On the other hand, if headed ORs with a preverbal lexical subject are difficult also in production, as predicted by the fRM approach, one would expect that children would try to overcome the problem by avoiding the critical intervention configuration in ORs, e.g. by pronominalizing the intervening subject or changing the problematic structure in other ways. In contrast, in SRs children would modify much less the nature of the lexical object, which does not intervene in the subject dependency.

2. A NEW COUNTING BASED ON B&C 2010, C&B 2014

We discuss from a new angle the data from a number of experiments by Belletti & Contemori (2010) and Contemori & Belletti (2014), whose main results are presented in the quoted work.

2.1. Participants

96 Italian-speaking children aged 3;10-8;9 took part in the studies. The participants were all typically developing children, randomly selected from public schools in Chianciano Terme and

Siena (Tuscany).

2.2. Methods

The production of subject and object relative clauses was elicited using a preference task (adapted from Novogrodsky & Friedmann 2006) of the kind illustrated in (6) and (7). In this task, the participant is presented with two situations in which two children are involved and she/he has to choose which child she/he would prefer to be. The task is constructed in a way that the production of a relative clause is expected.

(6)   Elicitation of subject relatives:

   a.   Preamble: Ci sono due bambini. Un bambino cerca un amico, l'altro bambino trova un
                amico. Quale bambino preferiresti essere?
                'There are two boys. A boy looks for a friend, the other boy finds a friend.
                Which boy would you rather be?'

   b.   Target: (Preferirei essere) il bambino che cerca/trova l'amico.
                '(I would rather be) the boy that looks for/finds the friend'

(7)   Elicitation of object relatives:

   a.   Preamble: Ci sono due bambini, un maestro fotografa un bambino, un nonno fotografa
                l'altro bambino. Quale bambino preferiresti essere?
                'There are two boys. A teacher photographs a boy, a grandpa photographs
                another boy. Which boy would you rather be?'

   b.   Target: (Preferirei essere) il bambino che il maestro/il nonno fotografa.
                '(I would rather be) the boy that the grandpa/teacher photographs'

20 SRs and 26 ORs were elicited. In all the items, the two arguments were lexically restricted (as in the examples above). In 10 SRs and 10 ORs the subject and the object matched in number, whereas in 10 SRs and 16 ORs they were in a number mismatch condition.[7]
     We counted the proportion of lexical objects and lexical subjects produced in the elicitation of SRs and ORs, respectively: how many times did children reproduce the lexically restricted object of the preamble in SRs? and how many times did they pronominalize it, or modify the preamble in other ways? Similarly, how many times did children reproduce the lexically restricted subject of the preamble in ORs? and how many times did they pronominalize it, or modify the preamble in other ways? The rationale behind this counting is that if SRs and ORs are on a par in production, children should preserve the lexically restricted objects and subjects to roughly the same extent. If instead the presence of an intervening lexical subject makes the computation of headed ORs

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[7] Moreover, in half of the items the two situations presented to the participant involved the same character performing two different actions (*verb change* condition, as in the example (6) in the text), and in the other half the two situations differed in the embedded noun phrase (the subject in ORs, the object in SRs; *NP change* condition, as in (7)). We do not distinguish here between the V and NP change conditions because children's responses in the two conditions do not differ in a way relevant to our discussion.

difficult also in production, as predicted by the fRM approach, children are expected to avoid the problematic intervention configuration in ORs, by modifying the nature of the subject or the whole structure in some ways. In contrast, since no intervention effect is induced by the object in SRs, children are expected to produce the elicited SRs preserving the lexical object without any particular difficulty.[8]

2.3. Coding criteria

Since we were interested in comparing how many times children reproduced the lexical nominal expressions of the preamble in subject and object relatives, we coded their productions looking at the realization of the object within the SRs and at the realization of the subject within the ORs.

As for the SR condition, we distinguished between SRs produced with a lexically restricted object (8), SRs with a clitic object (9) and SRs with an unrealized object (10).

(8)   lexical obj: Il bambino che trova l'amico.
                  The boy that finds the friend
                  'The boy that finds the friend'

(9)   clitic obj: Il bambino che lo trova.
                  The boy that obj-cl finds
                  'The boy the finds him'

(10)   unrealized obj: Il bambino che trova.
                  The boy that finds
                  'The boy that finds'

As for the OR condition, we distinguished between ORs with a lexical preverbal subject (11), ORs with a lexical post-verbal subject (12) and ORs with a null pronominal subject (13). ORs with or without a resumptive clitic pronoun were coded in the same way. The use of resumptive pronouns in relative clauses is indeed cross-linguistically attested in children. And whereas in Italian this strategy is associated with a substandard register, in several varieties of Italian, in some Italian dialects and in other languages it is productive also in the adult grammar (Guasti & Cardinaletti 2003, Utzeri 2007, Volpato & Vernice, 2014 on Italian; Labelle 1990, Guasti & Cardinaletti 2003 on French; McDaniel et al. 1998, Pérez-Leroux 1995 on English; Ferreiro et al. 1976 on Spanish).

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[8] We did not focus our attention on the realization of the head in the subject and object relatives produced by children, as the distinction between relative clauses with a lexically restricted head (3) and relative clauses with a demonstrative pronominal head (4) is not relevant for the present discussion. We assume, indeed, in line with Sanfelici & Poletto (2015), Bentea (2017), that also the demonstrative pronominal head involves a lexical restriction. Moreover, the task itself prompts the use of a demonstrative pronominal head, and children realize the head with a demonstrative pronoun to same extent in subject and object relatives (Martini in preparation).
(3)   Il bambino che trova l'amico.
                  'The boy that finds the friend'
(4)   Quello che trova l'amico.
                  'The one that finds the friend'

(11)   preverbal lexical subj:

    a.   Il bambino che il maestro fotografa.
        The boy that the teacher photographs
        'The boy that the teacher photographs'

    b.   Il bambino che il maestro lo fotografa.
        The boy that the teacher obj-cl photographs
        'The boy that the teacher photographs him'

(12)   post-verbal lexical subj:

    a.   Il bambino che fotografa il maestro.
        The boy that *pro* photographs the teacher
        'The boy that the teacher photographs'

    b.   Il bambino che lo fotografa il maestro.
        The boy that *pro* obj-cl photographs the teacher
        'The boy that the teacher photographs him'

(13)   null pronominal subj:

    a.   Il bambino che fotografa.
        The boy that *pro* photographs
        'The boy that he photographs'

    b.   Il bambino che lo fotografa.
        The boy that *pro* obj-cl photographs
        'The boy that he photographs him'

As examples (12a) and (13a) show, when the subject and the object share the same number feature, ORs with a lexical post-verbal subject and ORs with a null pronominal subject are ambiguous in Italian between an OR and a SR reading (see also Belletti & Guasti 2015). This is also the case for ORs with a null pronominal subject and a resumptive clitic (13b), whereas the presence of a resumptive pronoun disambiguates ORs with a lexical post-verbal subject (12b[9]). In contrast, the same sentences are clearly unambiguous in Italian when the subject and the object do not match in number, thanks to the number agreement information on the verb (examples (14) and (15)).

(14)   Il bambino che fotografano i maestri.
        The boy that *pro* photograph the teachers
        'The boy that the teachers photograph'

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[9] In this word order (example 12b in the text), the nominal expression *il maestro* (*the teacher*) could in principle be interpreted as a right dislocated object of a subject relative. But in this case the sentence would require a special prosody (characterized by the obligatory presence of an intonational break following the verb), which is not the one used by the participants. Only fully unambiguous ORs with a post-verbal subject and a resumptive clitic were counted.

(15)   a.   Il bambino che fotografano.
               The boy that *pro* photograph
               'The boy that they photographs'

       b.   Il bambino che lo fotografano.
               The boy that *pro* obj-cl photograph
               'The boy that they photograph him'

As only unambiguous ORs were taken into account, all the ORs produced in the number mismatch condition were counted, whilst several of the children's responses in the number match condition were discarded (see footnote 9 for the criteria used). It is however very plausible that children produced some ORs with a post-verbal subject and no resumption and some ORs with a null subject (with or without resumption) also in the number match condition, even if we cannot unambiguously see it in the results.

       All the other structures produced in the elicitation of subject and object relatives (simple sentences, fragments, passive object relatives, ambiguous relative clauses, etc.) were coded as "other", as not relevant to the present discussion.

2.4. Results

As Figures (1) and (2) show, the asymmetry between subject and object relatives is apparent. The participants produced the elicited SRs most of the time, almost always preserving the lexical object of the preamble. SRs with a lexically restricted object are produced in 84,5% and 87,7% of the cases (in the number mismatch and match conditions, respectively), whereas there are very few cases of SRs with a cliticized or unrealized object (0,6% and 0,6% of clitic objects and 1,1% and 1,7% of unrealized objects, in configurations of number mis/match, respectively). In contrast, important difficulties emerge in the OR condition. Children produced the elicited ORs with a lexically restricted preverbal subject to a small extent, compared to SRs, and they modified the position or the nature of the lexical subject of the preamble much more often. They produced only 15,1% and 12,7% of ORs with a preverbal lexical subject (in the number mismatch and match conditions, respectively). In addition, they produced ORs with a post-verbal lexical subject (20,5% and 8,5% in configurations of number mis/match, respectively) and ORs with a null subject (5,5% in the number mismatch condition).[10]

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[10] As we saw in section 2.3, it is plausible that some ORs with a post-verbal subject and no resumption and some ORs with a null subject were produced also in the number match condition. Therefore, the proportion of modified subjects in the OR condition is probably higher than that.
Notice that in the number mismatch condition there is a slightly higher proportion of ORs with a lexical preverbal subject and a more substantive decrease of "other" responses, compared to the number match condition (Figure 2). This can be traced back to the presence of a mismatch in the number feature, which modulates the problematic intervention configuration. Nonetheless, eliminating intervention is better than modulating it, thus in production children exploit the possibility of using structures not involving intervention at all (subject relatives, passive object relatives, etc.) also in the number mismatch condition (as adults do; see the results from the control group in Belletti & Contemori 2010, Contemori & Belletti 2014).

Fig.1: % of structures produced in the elicitation of SRs with respect to the nature of the object
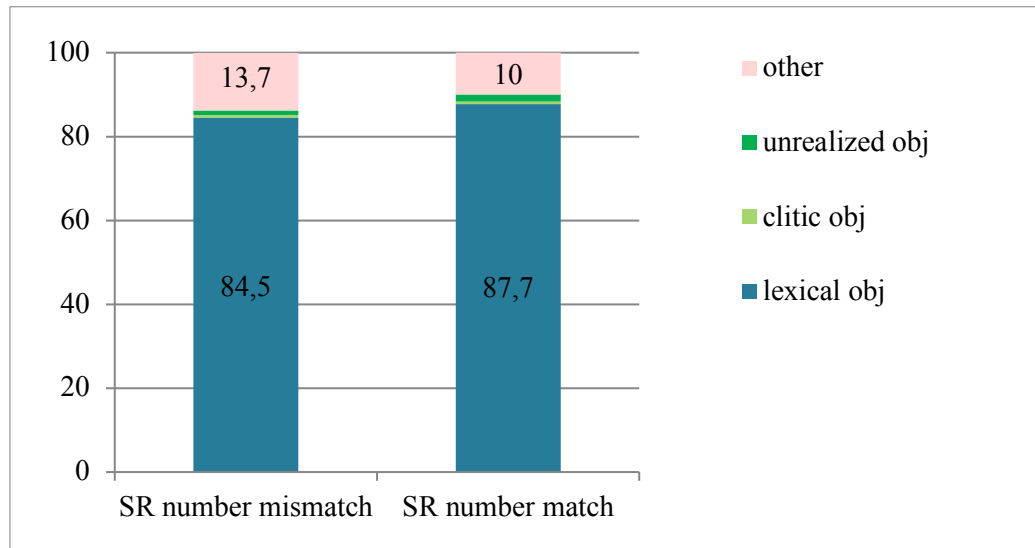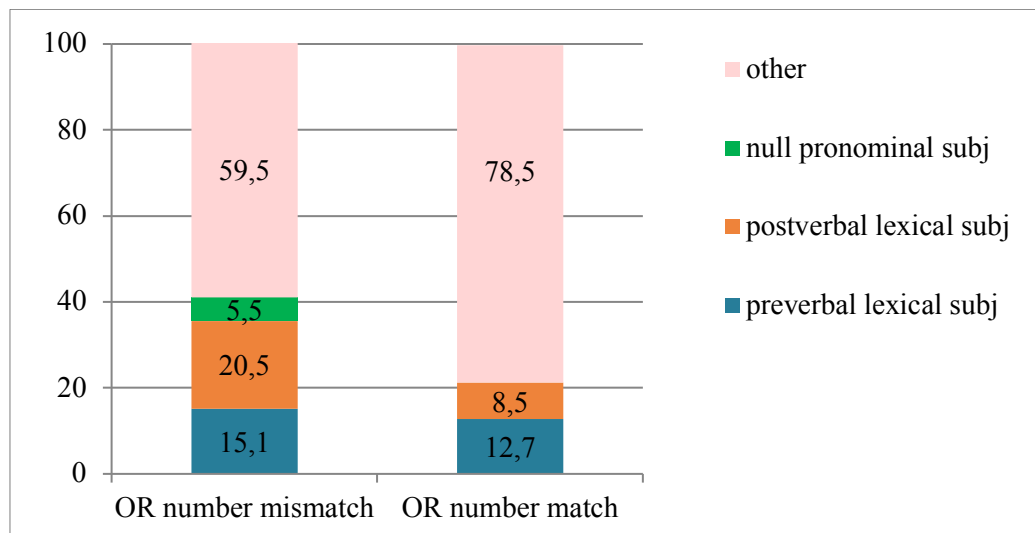

Fig.2: % of structures produced in the elicitation of ORs with respect to the nature of the subject

3. DISCUSSION

In the production of subject relative clauses, the presence of a lexical object does not create any difficulty for children. The elicited SRs are correctly produced in the majority of cases and the lexical object of the preamble is nearly always preserved. In contrast, the presence of a preverbal lexical subject creates important difficulties in the production of headed OR clauses. The elicited ORs are produced at a very low rate, compared to SRs, and in most of the cases the position or the nature of the preverbal lexical subject of the preamble are modified. In addition to some ORs with a lexical preverbal subject, the participants produced ORs with a post-verbal subject and ORs with a null subject.

In line with the fRM approach, we trace back the difficulties that emerge in the production of ORs with a lexical preverbal subject to the particular intervention configuration that these structures involve. In ORs like (3) (repeated here as (16) for convenience), the lexical object moves from its clause-internal merge position to the beginning of the sentence, crossing over the preverbal lexical subject. In such a structure, the feature specifications of the two lexical nominal expressions are in a configuration of inclusion, which is assumed to be particularly hard to compute for children (Friedmann et al. 2009).

(16)   OR: The girl that the friend pushes <the girl>.
                 +R +NP   +NP   +R +NP

We suggest that, in producing the elicited ORs, children modify the lexical subject of the preamble in order to avoid the problematic intervention configuration. They realize the lexical subject in the post-verbal position or pronominalize it. We assume, in line with Belletti & Contemori (2010) and Belletti & Chesi (2014), that in ORs with a post-verbal subject (example (17a)) intervention is eliminated through smuggling, in a way parallel to the one assumed for passive object relatives (see the derivation in (17b) and section 1).[11]

(17) a.   Il bambino che trovano gli amici.
            The boy that *pro* find the friends
            'The boy that the friends find'
      b.   Il bambino che [$_{TP}$ *pro* trovano [$_{VP}$ <V> <il bambino>] ... [$_{vP}$ gli amici <VP>]]

As example (18) shows, in ORs with a null pronominal subject, the critical intervention configuration is modulated by the absence of the lexical restriction feature on the subject. The relativized lexical object is indeed in a disjunction configuration with the intervening non-lexically restricted subject. Resorting to a pronominal subject in the elicited production of structures involving intervention is also well attested in the literature on typical and atypical acquisition (Friedmann et al. 2009, Belletti & Manetti 2017, Friedmann et al. 2015).

(18)   Il bambino che trovano.
            The boy that *pro* find
            'The boy that they find'
            +R +NP

In contrast, in SRs, the lexical subject can move from its external merge position to the left periphery of the clause, without crossing any potential intervener (example (4) repeated here as (19)). No intervention of the lexical object arises, therefore children do not need to modify the nature or the position of the object to succeed in the computation of the structure.

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[11] As Belletti & Contemori (2010) pointed out, in configurations not involving smuggling, the post-verbal subject would act as an intervener in the movement of the object to the left periphery of the clause much as the preverbal subject does, regardless of the precise position it occupies.

(19)   SR: The friend that <the friend> pushes the girl.
                   +R +NP   +R +NP   +NP

To sum up, the presence of a lexical nominal expression creates difficulties for children in production only when it intervenes in the establishment of the A'-dependency. This state of affairs matches what has been observed in comprehension (among many others, Tavakolian 1981, Yoshinaga 1996, De Vincenzi et al. 1999, Avrutin 2000, Friedmann & Novogrodsky 2004). Whereas models treating the difficulty with object relatives in comprehension as a mere parsing problem make no predictions on the parallelism between comprehension and production, a grammar-based model such as fRM captures these results because the grammar is part of both comprehension and production systems.

3.1.Confirming evidence from a new study

These findings are confirmed by a new study on the elicited production of relative clauses in 3;5-10;3 year-old Italian-speaking children. The study aimed to investigate different aspects of the production of relative clauses, but it provides us with data accessible to the same quantitative analysis carried out on the data from B&C (2010) and C&B (2014). 93 typically developing children, randomly selected from public kindergartens and primary schools in Rimini (Emilia-Romagna), were tested. 16 SRs and 16 ORs were elicited using another adaptation of Novogrodsky & Friedmann (2006)'s preference task. In all the items, the subject and the object were lexically restricted and matched in number. Children's productions were coded by following the same criteria as in section 2.3. The relevant results are given in Figures (3) and (4).[12]

Fig. 3: % of structures produced in the elicitation of SRs with respect to the nature of the object

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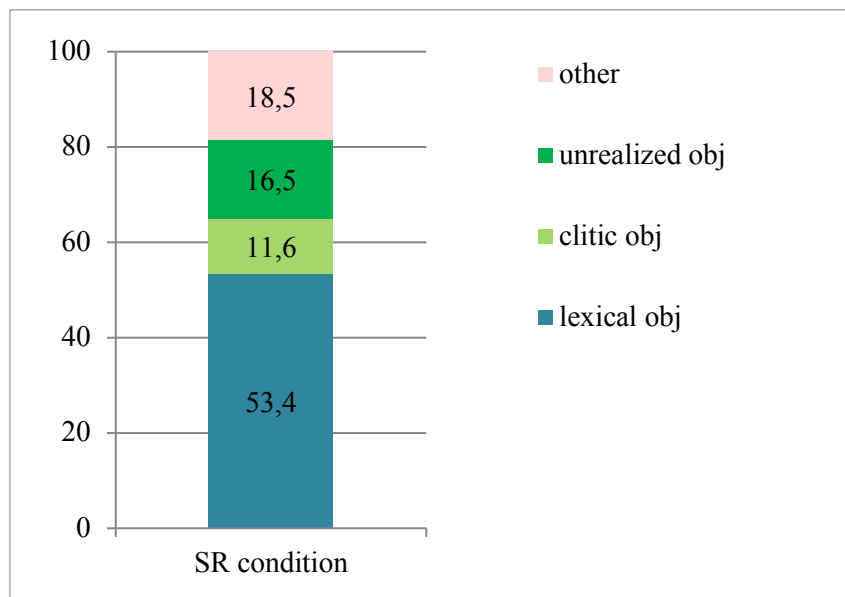
[12] For all the other results of this study see Martini (in preparation).

Fig. 4: % of structures produced in the elicitation of ORs with respect to the nature of the subject
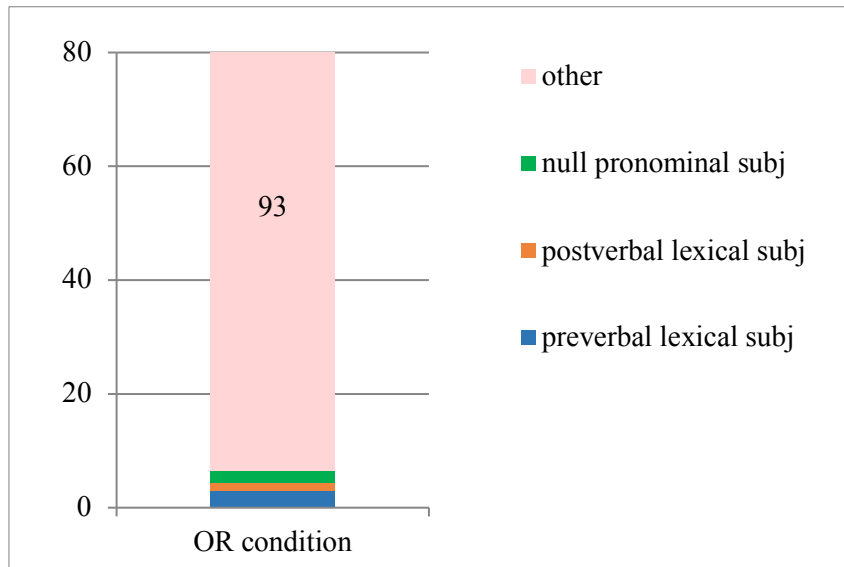
In this study, the participants produced OR clauses in very few cases, and the resort to other strategies (subject relatives, passive object relatives, simple sentences, etc.) clearly emerged. Still, the asymmetry between subject and object relatives is apparent. Children produced the elicited SRs preserving the lexical object of the preamble most of the time (53,4%). In contrast, among the few ORs produced in the OR condition, use of the post-verbal subject and the null subject emerges (3% of ORs with a preverbal lexical subject, 2,2% of ORs with a null pronominal subject, and 1,4% of ORs with a post-verbal lexical subject). These results mirror the state of affairs found in the data collected by B&C (2010) and C&B (2014).

4. CONCLUSIONS

In this work we proposed a new way of exploring whether a lexical nominal expression that intervenes in an A'-dependency creates difficulties in production as it does in comprehension, as predicted by the featural Relativized Minimality grammar-based approach. Building on the data gathered by Belletti & Contemori (2010) and Contemori & Belletti (2014) on the elicited production of relative clauses in Italian-speaking children, we compared how many times children produced the lexical object in subject relatives and the lexical subject in object relatives. The lexical object in SRs does not intervene in the subject A'-dependency, thus it should not create difficulties in the computation of the structure. In contrast, the preverbal lexical subject in headed ORs does intervene in the establishment of the object A'-dependency and should give rise to a configuration that is hard to compute for children. If a lexical nominal expression creates selective difficulties in production when it intervenes in the dependency, we expect children to have problems in the production of ORs with a preverbal lexical subject and they try to modify the nature or the position of the subject in some way; in contrast, they are expected to produce SRs with a lexical object without any difficulty. The prediction was born out: SR clauses are produced preserving the lexical object most of the time, whereas ORs are hardly produced and the nature/position of the preverbal lexical subject is most of the time modified, in a way to avoid the problematic intervention configuration. We saw that the same asymmetry emerges in the results from another more recent

study on the elicited production of relative clauses in Italian-speaking children (Martini, in preparation).

Thus, to conclude, in production a lexical nominal expression creates selective difficulties in object relative clauses, where it structurally intervenes in the dependency, but not elsewhere. This selective difficulty mirrors the state of affairs observed in comprehension. This is captured by the fRM approach: if the asymmetry arises from a grammatical principle, it is expected to manifest itself in parallel ways in both comprehension and production.

ACKNOWLEDGMENT

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