Subject-object relative clauses asymmetry: the role of the lexical restriction in production

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INTRODUCTION

A robust finding in language acquisition, adult processing and populations with language pathologies is that object A'-dependencies (1b) are harder to parse and comprehend than subject A'-dependencies (1a) (see Friedmann et al., 2009, Belletti, Guasti, 2015 for relevant references).

1) a. Subject Relative: The elephant that is washing the lion
b. Object Relative: The lion that the elephant is washing

Mainly in connection with the acquisition results, the featural Relativized Minimality approach (fRM, Rizzi, 1990, 2004, Starke, 2001, Friedmann et al., 2009) ascribes the problem to a grammatical constraint bearing on intervention configurations.

2) *fRM: given three elements X, Z and Y, Y is in a minimal configuration with X if there is no Z such that (i) Z hierarchically intervenes between X and Y and (ii) Z is of the same structural type/shares relevant features as X.*

In object A' dependencies the embedded subject always intervenes between the moved element and the gap in the original merge position. In contrast, no such intervener is present in subject A' dependencies. The presence of an intervention configuration is what makes object relatives harder to compute. We assume a nominal feature (+NP) expressing the lexical restriction to be among the features relevant in the computation.

3) a. SR: the elephant that __ is washing the lion.
[+R +NP] [+NP]
b. OR: the lion that the elephant is washing __.
[+R +NP] [+NP] [+R +NP]

Not all the object A' dependencies are equally difficult for the computational system. Friedmann et al. (2009) suggest that the inclusion relation of relevant features is the most difficult one to compute among the possible intervention configurations:

4)	X	Z	Y	
a. Identity:	+A ...	+A …	<+A>	*
b. Inclusion:	+A,+B ...	+A ...	<+A,+B>	?
c. Intersection:	+A,+B…	+A,+C…	<+A,+B>	√
d. Disjunction:	+A …	+B ...	<+A>	√

As grammar is involved in both modalities of performance, this approach predicts parallel difficulties in production and comprehension. Much recent literature on acquisition has indeed confirmed that problems also arise in the production of certain object relatives, with selective effects that are expected under fRM (Friedmann et al., 2009, Belletti, Guasti, 2015).

Alternatively, the problem has been analyzed as a parsing problem in the comprehension of object A'-dependencies (e.g. in Gibson & Warren's 2002 Dependency Locality Theory based on self-paced reading experiments with adults). This alternative makes no prediction on parallel difficulties in comprehension and production.

A NEW COUNT ON PRODUCTION DATA

Building on the elicited production data gathered by Belletti, Contemori, 2010, 2012, and Contemori, Belletti, 2013, we propose a new way of highlighting the problematic nature of the production of object relatives with a lexically restricted subject in the relative clause, compared to the production of minimally different subject relatives.

The elicitation procedure involved a preference task (adapted from Friedmann, Novogrodsky, 2006 under COST/A33) of the kind illustrated in (5) and (6). Right-branching subject and object relatives in both number match and mismatch condition were elicited. 96 Italian-speaking children aged 3;10-8;9 were tested.

(5) Elicitation of subject relatives: (There are two boys)
a. Preamble: A boy meets a friend. A boy meets a teacher.
Which boy would you rather be?
b. Target: I would rather be the boy that meets a friend (or …the boy that meets a teacher)

(6) Elicitation of object relatives: (There are two boys)
a. Preamble: The neighbor combs a boy. The father combs a boy.
Which boy would you rather be?
b. Target: I would rather be the boy that the father combs (or …the boy that the neighbor combs)

We counted the proportion of lexical subjects and lexical objects produced in the target relative clauses reproducing the preambles in (6) and (5) :

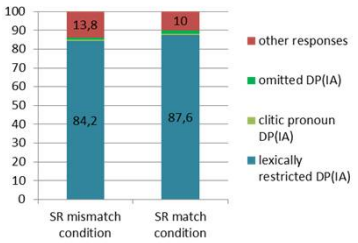
(i) how many times would children reproduce the lexically restricted object of the preamble in the elicited SR (5)? and how many times would they pronominalize it, or modify the preamble in other ways?

(ii) how many times would children reproduce the lexically restricted subject of the preamble in the elicited OR (6)? and how many times would they pronominalize it, or modify the preamble in other ways?

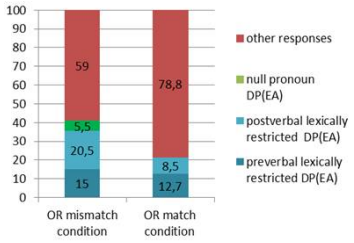
If subject and object relatives were roughly on a par in production, lexically restricted subjects and objects should be preserved at a comparable rate in the sentences produced by children. On the other hand, if object relatives across a lexically restricted subject are difficult also in production, as predicted by the fRM approach, one would expect that children would try to overcome the problem by avoiding the critical intervention configuration, e.g. by pronominalizing the intervening subject (disjunction configuration (4d)) or changing the preamble in other ways. In contrast in subject relatives children would modify much less the lexically restricted object of the preamble, which does not intervene in the subject dependency.

Figures 1 and 2 show the results of our count. The asymmetry between SRs and ORs is apparent.

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



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



PROPOSED ANALYSIS

We propose that the asymmetry between SRs and ORs in children productions can be attributed to the locality effects involved in object relatives and not in subject relatives, as predicted by the fRM approach. Object relatives across a lexically restricted subject are difficult to produce because they involve an intervention configuration (inclusion relation (3b)). In contrast, in SRs the lexically restricted object does not intervene in the A' dependency (3a).

SRs are produced reproducing the lexically restricted direct object of preamble (5a) in most cases. In contrast, in ORs the preverbal lexically restricted subject of preamble (6a) is hardly ever reproduced. Children try to overcome the problem by pronominalizing the intervening subject (disjunction configuration (9), by realizing the intervening subject in the post-verbal subject position (no intervention (10), see Belletti, Chesi, 2011 for an analysis of ORs with post-verbal subject through smuggling) and by producing non target structures.

9) OR: Il leone che lavano.
The lion that pro_{3pp} $wash_{3pp}$.

10) OR: Il leone che lava l'elefante.
The lion that the elephant washes.

CONCLUSIONS

In production, a lexical noun phrase creates selective difficulties in object relative clauses where it structurally intervenes in the dependency, but not in subject relative clauses where it is not an intervener. This selective effect mirrors the state of affairs observed in comprehension. This is predicted by the fRM approach: if the problem arises from a grammatical principle, it is expected to manifest itself in parallel ways both in comprehension and production.

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