

# ELICITED PRODUCTION OF CLEFT SENTENCES IN 6-10 YEAR-OLD ITALIAN-SPEAKING CHILDREN

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## 1. Introduction

Literature on the acquisition of cleft sentences is still scarce. The acquisition of cleft structures should, however, deserve more attention: they involve the same type of antecedent-gap relation as relative clauses, for which a huge amount of acquisitional data are available, contain cleft constituents, which are typically focalized, and require special discourse conditions to be used. As far as we know, there are no studies on child production of cleft sentences in Italian. In what follows, we report the findings from an elicited production task carried out with school-aged, Italian-speaking children, eliciting subject (SC) and object (OC) contrastive cleft sentences like (1) and (2); these findings are compared with the results from a preference task eliciting relative clauses, run with the same children.

(1) E' la CAPRA che tocca la mucca! (non la rana)  
*It is the GOAT that is touching the cow!* (not the frog)

(2) E' la CAPRA che il gatto spinge! (non il pulcino)  
*It is the GOAT that the cat is pushing!* (not the chick)

Research on relative clauses has repeatedly shown the existence of a marked subject-object asymmetry both in production and comprehension (on Italian, Guasti & Cardinaletti 2003, Utzeri 2007, Belletti & Contemori 2010, Volpato 2010, Guasti et al. 2012), with object relatives (ORs) being frequently replaced by other types of sentences in production and reaching lower degrees of accuracy in comprehension, compared to subject relatives

(SRs). More specifically, a number of gap ORs with lexical embedded subjects is attested in Italian-speaking children's productions, together with some ORs containing resumptive pronouns (3) and resumptive DPs (4). However, in most cases, the targeted object relatives are turned into subject relatives, either by changing the relative head (5) or by using a causative construction (6), or through passivization of the relative head (7). Differently from children, adults and adolescents hardly ever produce object relative clauses: they extensively use passive relatives instead.

- (3) Mi piace il gatto che i bambini lo accarezzano.  
I like the cat that the children him-ACC caress.  
*I like the cat that the children are caressing.*
- (4) Mi piace il gatto che i bambini accarezzano il gatto.  
I like the cat that the children caress the cat.  
*I like the cat that the children are caressing.*
- (5) Mi piacciono i bambini che accarezzano il gatto.  
I like the children that caress the cat.  
*I like the children that are caressing the cat.*
- (6) Mi piace il gatto che si fa accarezzare dai bambini.  
I like the cat that himself makes caress by the children.  
*I like the cat that gets himself caressed by the children.*
- (7) Mi piace il gatto che viene/è accarezzato dai bambini.  
I like the cat that comes/is caressed by the children.  
*I like the cat that is being caressed by the children.*

The few data available on the acquisition of clefts recall the subject-object asymmetry found with relatives. Observations from young children's samples of spontaneous language have shown that clefting emerges around the age of 2 (Demuth 1984, Labelle 1990, Santos 2006) and that subject clefts are produced earlier and more often than object clefts (Santos 2006). Experimental research has reported a subject-object asymmetry in both comprehension and production: Lempert & Kinsbourne (1980) found that SCs are accurately comprehended 96% of times by English-speaking children, while "inverted clefts" (OSV) are comprehended at the rate of 71%. Studying on-line processing and accuracy levels in the comprehension of complex sentences in English-speaking children and adolescents, Dick et al. (2004) reported the

following hierarchy of difficulty, measured through reaction times: Actives = Subject Clefts > Passives > Object Clefts; they also pointed out “the longest and steepest developmental trajectory” for OCs, as shown by performance accuracy. Regarding production, Hupet & Tilmant (1989) elicited considerable percentages of SCs in French children aged 4 to 10 years, but only a few OCs (on average, 58% vs. 9%). More recently, Santos, Lobo, Soares (2013) found almost no production of object and adjunct clefts vs. production of subject clefts in European Portuguese-speaking young children and adults. When a patient has to be contrasted, both French children and Portuguese speakers from the age of around 5 years largely prefer to use simple SVO sentences instead of object clefts.

In this study, we aim at uncovering the strategies employed by Italian-speaking school-aged children and adults when contrasting an agent-subject and a patient-object constituent; in addition, a comparison between the production of cleft and relative clauses is provided within participants. Indeed, by virtue of the syntactic similarities shared by the two constructions, specifically A’ movement of the subject in the subject condition and A’ movement of the object across an embedded subject in the object condition, one would expect participants to perform similarly across the two structures.

## 2. Methods

### 2.1 Participants

Fifty-five typically developing children aged 6;3 to 10;2 took part in the production experiment. All children were native speakers of Italian, living and attending primary school in Venice. Seven adults (age range 19-30) from Venice and its surroundings volunteered as control participants:

Age Groups	No. of Participants	Mean Age	SD (months)
6-Year-Old	8	6;6	2
7-Year-Old	15	7;5	3,5
8-Year-Old	14	8;4	3,4
9-Year-Old	18	9;6	4
Adults	7	23;1	41,2

Table 1. Participants across age groups

## 2.2 Design and Materials

Participants carried out an elicited production task forcing cleft sentences (section 2.2.1) and a preference task forcing the production of relative clauses (section 2.2.2). Children's productions were assessed in two separate sessions (half Cleft Task + half Preference Task in each session). Adults' productions were assessed in one single session. A delayed-repetition task of object-extracted cleft sentences and relative clauses concluded the second experimental session (section 2.2.3).

### 2.2.1 The Cleft Task

The task was based on the elicited production experiment carried out by Hupet & Tilmant (1989) on French. For each participant, 12 subject-extracted cleft sentences and 12 object-extracted cleft sentences were targeted as means to contrast, respectively, agents and patients involved in events described by two puppets. The experimental trials were descriptions of depicted events constructed with transitive verbs (*touch, pull, look at, chase, beat up, comb, chase, carry away, lift up, wash, scratch, scare, stop, bite, push, hit*). Agents and patients were animal characters. In each picture, one or two animals were performing an action on another one; in order to make the task pragmatically adequate, one or two extra characters were present in the pictures but were not involved in the events. The puppets sometimes described the events by replacing the correct agent or patient with the uninvolved character(s); participants were asked to correct the puppets when they were wrong, because a puppet named Poldo, who was not able to speak Italian and was present in the setting, wanted to listen to the other puppets describing the pictures, in order to learn some Italian language. Children were required to listen carefully to the puppets and to correct them when necessary, in order to help Poldo learn correct descriptions of the events. The following are examples of stimuli that aimed at eliciting subject and object clefts, respectively; the two are coupled with the corresponding pictures (Fig. 1 and 2):<sup>1</sup>

#### *Elicitation of a SC*

PUPPET A: Qui ci sono tre animali giocherelloni: un uccellino, un elefante e una farfalla.

‘Here, there are three playful animals: a little bird, an elephant, and a butterfly.’

PUPPET B: E la farfalla solleva l’elefante!

‘And the butterfly is lifting the elephant up!’

EXPERIMENTER: Ha detto bene?

‘Is he right?’

CHILD: No!

(EXPERIMENTER: Perché no?

‘Why not?’)

TARGET SENTENCE: Perché è l’UCCELLINO che solleva l’elefante!

‘Because it is the BIRD that is lifting the elephant up!’



*Fig. 1. Sample of experimental*

*Elicitation of an OC*

PUPPET A: Qui ci sono degli animali birichini: due scoiattoli, due orsi e una giraffa.

‘Here, there are some funny animals: two squirrels, two bears, and a giraffe.’

PUPPET B: E la giraffa pettina gli scoiattoli!

‘And the giraffe is combing the squirrels!’

EXPERIMENTER: Ha detto bene?

‘Is he right?’

CHILD: No!

(EXPERIMENTER: Perché no?

‘Why not?’)

TARGET SENTENCE: Perché sono gli ORSI che la giraffa pettina!

‘Because it is the BEARS that the giraffe is combing!’



*Fig. 2. Sample of experimental picture*

Eight additional stimuli were included as correct descriptions of events (puppets did not always make mistakes). Moreover, we included eighteen filler items: children had to answer simple questions about what was going on in some pictures. In all, children were exposed to fifty trials. The battery was run on a Power Point Presentation; puppets’ descriptions and

questions were pre-recorded, to ensure that any participant was exposed to the very same intonation patterns.

### **2.2.2 The Preference Task**

A preference task adapted from Novogrodsky & Friedmann (2006) was devised to elicit 12 restrictive subject and 12 restrictive object relative clauses. Differently from the original task designed for Hebrew, a set of pictures were shown to participants; moreover, the head of the target relatives changed in every item and was not restricted to two children performing or undergoing an action. Furthermore, each character involved in the depicted events, and not only the ones between whom a choice had to be made, was introduced just before presenting the relevant picture (see Pivi 2013 for discussion):

PUPPET: ‘There are two monkeys, two mice and two horses. The monkeys are touching one horse, the mice are touching the other horse. Which horse do you like best?’

Characters were animals and human beings. Children were asked to say which character between two options they liked best, starting with *Mi piace ...* ‘‘I like ...’’.

### **2.2.3 The Delayed-Repetition Task**

The delayed-repetition task included 12 object-extracted cleft sentences and 12 object-extracted relative clauses identical to those which were targeted in the two preceding tasks, plus 5 simple SVO sentences and 6 passive sentences. Participants were required to listen to what one puppet said about the pictures they had just seen. They had to repeat the puppet’s utterances after having counted until 3 out loud (as in Friedmann & Szterman 2011). In order not to make the task too long, SCs and SRs were not tested.

## **3. Results**

### 3.1 Cleft sentences

As shown in Table 2, whereas a certain amount of SCs were produced, no OC was produced at all:<sup>2</sup>

Groups	Subject Clefts	Object Clefts
6-Year-Old	20	0
7-Year-Old	39	0
8-Year-Old	38	0
9-Year-Old	49	0
Adults	38	0
Children's Average	36.5	0

Table 2: Percentages of target clefts elicited

A repeated-measure logistic regression analysis (Jaeger 2008; Dixon 2008) revealed no significant effect of age as regards the produced SCs. In what follows, we first report the additional answering strategies used by children in the subject condition; then, we show what children produced instead of using an OC.

Fig. 3 shows all typologies of answers participants used in the subject condition:

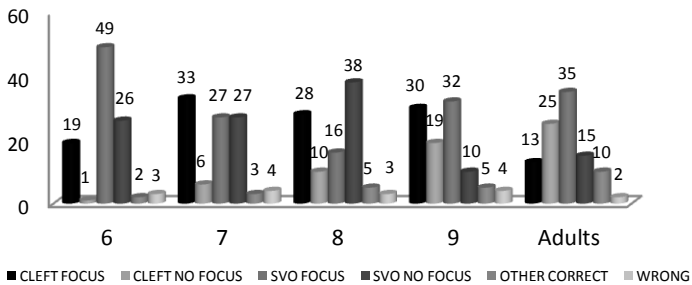


Fig. 3: Percentages of responses in the subject condition

Non-cleft SVO sentences were a very frequent answering strategy (8).

(...) PUPPET B: E la farfalla solleva l'elefante!

'And the butterfly is lifting the elephant up!'

8) CHILD: No, l'UCCELLINO solleva l'elefante!

No, the bird                    lifts up the elephant  
*No, the BIRD is lifting the elephant up!*

In Italian, a contrasted subject in first position has to bear contrastive stress, differently from a contrasted object constituent in its canonical position, which, being placed in the sentential rightmost position, does not have to be emphasized. Not every cleft or simple sentence used to contrast a subject constituent was, however, uttered with a clear contrastive prosodic pattern: in Fig. 3, dubious or flat intonations are represented in the categories “cleft no focus” and “SVO no focus”.

Among SCs, sentences of the infinitive type were counted as target answers (9). The category “other correct” includes some post-copular, focalized subject constituents with omission of the presupposed part of the sentence (10), some alleged presentational clefts, one simple sentence containing a clitic pronoun referring to the patient, (11), and utterances either negating wrong claims or predicating something about the extra-characters. We coded under “wrong” “yes” answers given to the experimenter’s question when the child did not detect the mistake, as well as unclear responses, one omission of the copula before the clefted constituent, as in (12), and dubious intonation patterns:

- (...) PUPPET B: E la farfalla solleva l’elefante!  
   ‘And the butterfly is lifting the elephant up!’
- 9) CHILD: No, è l’UCCELLINO a sollevare l’elefante!  
   No, is the bird                    to lift up    the elephant  
   *No, it is the BIRD that is lifting the elephant up!*
- 10) No, è l’UCCELLINO!  
   No, is the bird  
   *No, it is the BIRD!*
- 11) No, lo solleva l’uccellino.  
   No, it-ACC lifts up the bird-NOM  
   *No, the bird is lifting it up.*
- 12) \* No, l’UCCELLINO che solleva l’elefante.  
   No, the bird                    that lifts up the elephant  
   *No, the BIRD that is lifting the elephant up.*

Fig. 4 shows the typologies of answers participants employed when an OC was elicited:



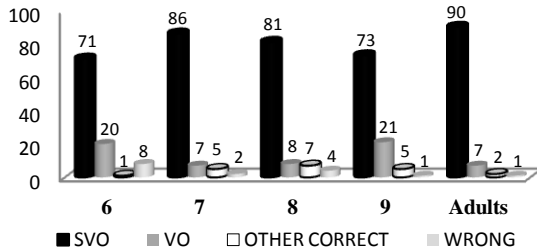


Fig. 4: Percentages of responses in the object condition

Simple SVO sentences as in (13), with or without contrastive stress on the object, were the most frequent answering strategy in each group. Sometimes, participants correctly used a null subject, thus lexicalizing only the verb and its complement (VO). A few bare objects were provided by children as a form for correction: such productions were collapsed into the category VO, because very infrequent. The category “other correct” includes some presentational-like cleft sentences (14), sporadic sentences with right-dislocated subjects like the one in (15), sentences predicating something about the extra characters, (16), and appropriate productions whose deviations from the target were due to flaws in the pictures:

- (...) PUPPET B: E la giraffa pettina gli scoiattoli!  
 ‘And the giraffe is combing the squirrels!’
- 13) CHILD: No, la giraffa pettina gli orsi/gli ORSI.  
 No, the giraffe combs the bears  
*No, the giraffe is combing the bears/the BEARS.*
- 14) No, è la giraffa che pettina gli orsi.  
 No, is the giraffe that combs the bears  
*No, there/it is the giraffe that is combing the bears.*
- 15) No, pettina gli ORSI, la giraffa.  
 No, combs the bears the giraffe-NOM  
*No, the giraffe is combing the BEARS.*
- 16) No, gli scoiattoli sono distanti.  
 No, the squirrels are distant  
*No, the squirrels are distant.*

Incorrect answers were coded under “wrong”: children sometimes failed to notice the puppets’ mistakes; occasionally, they used a wrong intonation pattern; furthermore, a few unclear or irrelevant productions were attested.

### 3.2 Comparison with relative clauses

Our Preference Task basically replicated the most relevant results from previous literature on Italian relative clause production: participants’ performance on SRs was almost at ceiling (98%), while 9% of gap ORs were produced by children in the object condition. When children did not use a target OR, they often produced a passive relative (17) or reversed the relative head (18); they sometimes correctly omitted the embedded lexical subject and used a null subject instead (19):

PUPPET: ‘There are two children and two cats. The children are caressing one cat and kicking the other cat. Which cat do you like best?’

TARGET OBJECT RELATIVE: I like the cat that the children are caressing / kicking.

- 17) Mi piace il gatto che viene accarezzato.  
I like the cat that comes caressed  
*I like the cat that is being caressed.*
- 18) Mi piacciono i bambini che accarezzano il gatto.  
I like the children that caress the cat  
*I like the children that are caressing the cat.*
- 19) Mi piace quello/il gatto che accarezzano.  
I like the one/the cat that caress-3rd-plur  
*I like the one/the cat that they are caressing.*

As for adults, passive relatives were the largely predominant type of response collected when an OR was targeted (94%).

Although a subject-object discrepancy has been found both in the Cleft and in the Preference Task, it appears to be somewhat different across structures: all groups of participants produced less SCs than SRs (around 37% vs. 97%), and children never produced any OCs, while they employed ORs (adults produced neither OCs nor ORs). Moreover, the typologies of answers collected in the Preference Task when an OR was targeted (17-19) were not used when an OC was elicited (except for some presentational-like sentences like the one in (14), which could be

considered instances of “head-reversal”, parallel to (18)). Notice that “passive clefts” (20) and object clefts containing null embedded subjects (21) would be acceptable in the discourse context provided in the Cleft Task:

- (...) PUPPET B: E la giraffa pettina gli scoiattoli!  
‘And the giraffe is combing the squirrels!’
- 20) No, sono gli ORSI che vengono pettinati dalla giraffa!  
No, it is the bears that come combed by the giraffe!  
*No, it is the BEARS that are being combed by the giraffe!*
- 21) No, sono gli ORSI che pettina!  
No, it is the bears that is combing!  
*No, it is the BEARS that (she) is combing!*

Yet, the availability of a perfectly adequate uncleft SVO sentence in the Cleft Task has hindered the production of cleft structures, both in the object condition and, even though to a lesser extent, in the subject condition.

Indeed, findings from the repetition task show that both object-extracted clefts and object-extracted relatives were correctly repeated, reaching high levels of accuracy in each group of participants (on average, 86% and 94% respectively, in the groups of children).

#### 4. General discussion

Children’s accurate performance in the repetition task indicates that Italian-speaking children in their school-age have knowledge of object contrastive cleft sentences. However, OCs were never produced in the elicitation task, differently from SCs. Such a difference recalls the well-known asymmetry characterizing subject and object relatives, which has been explained in terms of intervention effects: restrictive ORs are more problematic to compute than SRs under specific syntactic configurations (Friedmann, Belletti, Rizzi 2009). Given the syntactic similarities that our target clefts share with the restrictive relative clauses targeted in the Preference Task (specifically, A’ movement of a lexically restricted object across a lexical subject in the object condition), it would be tempting to apply Friedmann et al.’s account to cleft sentences as well.<sup>3</sup> Nevertheless, the discrepancy found with clefts looks different in that it is absolute and may stem from independent reasons. Even those children who produced ORs did not use any OCs.

This may partly be explained by considering relevant differences between the tasks: the Preference Task is very effective, because it forces participants to produce, at least, a restrictive relative clause, which starts with “I like”; our Cleft Task is far less stringent, as it leaves available non-cleft types of answers, among which there are simple, unmarked SVO sentences. As pointed out by Santos et al. (2013), the nature and pragmatic function of clefts should also be taken into consideration when accounting for the typology of answers given by participants in place of cleft sentences: our children, just like adults, French-speaking and European Portuguese-speaking children, have preferred to use non-cleft SVO sentences in order to express the same contrastive-corrective meaning conveyed by cleft sentences. This would explain the fact that in our study, even SCs were produced less frequently than SRs (37% vs. 97%). Furthermore, it accounts for the different patterns of answering strategies given by participants in the two tasks when an OC was elicited.

Another point concerns the reasons as to why simple SVO counterparts of cleft structures have been more predominant in the object condition than in the subject one. On the one hand, it is possible that the SVO sentences uttered by the puppets when describing the pictures have primed similar structures in our participants’ responses:<sup>4</sup> this may be particularly true in the object condition. On the other hand, there is evidence that in Italian, a contrastively focalized subject constituent is placed in a dedicated Focus position in the left periphery of the clause even in simple sentences (Bocci 2013). Therefore, SCs and their uncleft SVO counterparts with focalized subjects are comparable structures both involving the left periphery and have indeed been used as alternative answers in our experiment. By contrast, OCs are marked OSV sentences, structurally more complex than their uncleft SVO counterparts, where the postverbal object occupies the rightmost canonical position and gets focused by default. Besides, in OCs, a focalized object constituent in left-peripheral position would cross over a lexically restricted subject, giving rise to problematic computations (in line with Friedman et al. 2009; see also Belletti 2012). It follows that SVO sentences are more preferred in the object than in the subject condition.

Finally, flat intonation patterns collected in the subject condition are to be explained. In these cases, there is no clearly perceptible contrastive stress on the subject constituent, even if this is obligatory in the target language. We suppose that at least some of these flat intonation patterns may be task-induced: participants were told to correct the puppets’ utterances in order for Poldo, who wanted to learn Italian, to hear “correct things” and not “wrong things”. Under such instructions, sentences carrying broad, sentential focus

are admissible, and this would also account for the presentational-like structures produced in the object condition, as in (14).

## Notes

<sup>1</sup> The number features of the DPs in the target sentences were manipulated to obtain two conditions: match singular (singular clefted constituent, singular embedded subject/object; see trial 1) vs. mismatch (plural clefted constituent, singular embedded subject/object; see trial 2). For every participant, half of the targeted subject and object clefts had matching DPs while the other half had mismatching DPs.

<sup>2</sup> Since we did not expect children to produce a consistent number of OCs, a parallel experiment was conducted with other children by introducing a priming device. For reasons of space, we do not describe the priming experiment here in detail; we only observe that by using a priming technique, we managed to elicit more SCs and a few OCs in children.

<sup>3</sup> Our decision to modulate the number features of the DPs involved in the target clefts (see note 1) falls within recent refinements of Friedmann et al.'s (2009) account, claiming that intervention is sensitive to the DP features: matching number features on the subject and object constituents hamper comprehension of ORs, while dissimilar features facilitate their comprehension (Adani et al. 2010). However, mismatch in number features did not have any visible effect on our participants' performance in the Cleft Task.

<sup>4</sup> We thank Kamil Deen for this observation.

## References

- Adani, Flavia, Heather K. J. van der Lely, Matteo Forgiarini, and Maria Teresa Guasti (2010), "Grammatical feature dissimilarities make relative clauses easier: A comprehension study with Italian children", *Lingua* 120, 2148-2166.
- Belletti, Adriana, and Carla Contemori (2010), "Intervention and attraction. On the production of subject and object relatives by Italian young children and adults", *Language Acquisition and Development* 3. Proceedings of GALA 2009, 39-52.
- Belletti, Adriana (2012), "Revisiting the CP of Clefts", in: Günther Grewendorf and Thomas E. Zimmermann (Eds.), *Discourse and*

*Grammar: from sentence types to lexical categories*, 91-114. Berlin: Mouton de Gruyter.

Bocci, Giuliano (2013), *The syntax-prosody interface: a cartographic perspective with evidence from Italian*. Amsterdam: Benjamins.

Demuth, Katherine (1984), *Aspects of Sesotho Language Acquisition*. Indiana University Linguistics Club: Bloomington.

Dick, Frederic, Beverly Wulfeck, Magda Krupa-Kwiatkowski, and Elisabeth Bates (2004), "The development of complex sentence interpretation in typically developing children compared with children with specific language impairments or early unilateral focal lesions", *Developmental Science* 7, 360-377.

Dixon, Peter (2008), "Measures of accuracy in repeated-measures designs", *Journal of Memory and Language* 59, 447-496.

Friedmann, Naama, Adriana Belletti, and Luigi Rizzi (2009), "Relativized relatives: Types of intervention in the acquisition of A-bar dependencies", *Lingua* 119, 67-88.

Friedmann, Naama, and Ronit Szterman (2011), "The comprehension and production of Wh-questions in deaf and hard-of-hearing children", *Journal of Deaf Studies and Deaf Education* 16, 212-235.

Guasti, Maria Teresa, Chiara Branchini, Fabrizio Arosio, and Mirta Vernice (2012), "A developmental study of subject and object relative clauses in Italian", *Revue Roumaine de Linguistique* 78, 105-116.

Guasti, Maria Teresa, and Anna Cardinaletti (2003), "Relative clause formation in Romance child's production", *Probus* 15, 47-88.

Hupet, Michael, and Brigitte Tilmant (1989), "How to make young children produce cleft sentences", *Journal of Child Language* 16, 251-261.

Jaeger, Tim Florian (2008), "Categorical data analysis: Away from ANOVAs (transformation or not) and towards logit mixed models", *Journal of Memory and Language* 59, 434-446.

Labelle, Marie (1990), "Predication, Wh-movement and the Development of Relative Clauses", *Language Acquisition* 1, 95-119.

Lempert, Henrietta, and Marcel Kinsbourne (1980), "Preschool children's sentence comprehension: strategies with respect to word order", *Journal of Child Language* 7, 371-379.

Novogrodsky Rama, and Naama Friedmann (2006), "The production of relative clauses in SLI: a window to the nature of the impairment", *Advances in Speech-Language Pathology* 8, 364-375.

- Pivi, Margherita (2013), *On the Acquisition of Italian Restrictive Relative Clauses in Typical and Atypical Development*, Doctoral dissertation, Università Ca' Foscari Venezia.
- Santos, Ana Lúcia (2006), *Minimal Answers. Ellipsis, syntax and discourse in the acquisition of European Portuguese*, Doctoral dissertation, Universidade de Lisboa.
- Santos, Ana Lúcia, Maria Lobo, and Carla Soares (2013), "Spontaneous and elicited production of European Portuguese clefts", *Proceedings of the 37<sup>th</sup> BUCLD*, Cascadilla Press.
- Utzeri, Irene (2007), "The production and acquisition of subject and object relative clauses in Italian", *Nanzan Linguistics* 3, 283-314.
- Volpato, Francesca (2010), *The acquisition of relative clauses and phi-features: evidence from hearing and hearing-impaired populations*, Doctoral dissertation, Università Cà Foscari Venezia.