Effects of syntactic structure on the comprehension of clefts

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1. Introduction: European Portuguese allows different types of clefts. Among these we find 'é que' clefts, standard it-clefts and pseudoclefts. These three types differ, among other things, in their syntactic structure. Although there is no consensus on the syntactic analysis of these different cleft types, 'é que' clefts have been analysed as monoclausal sentences where the cleft constituent moved to a left peripheral position, standard clefts have been analysed as biclausal sentences where the cleft constituent moved to a left peripheral position in the embedded domain and pseudoclefts have been analysed as biclausal sentences with an identificational structure, the cleft clause being a free relative (Soares 2006; Lobo 2006).

Previous work on the acquisition of clefts (production) has shown that: i) there are differences in the emergence and frequency of different syntactic types of clefts - 'é que' clefts and standard clefts are more frequent and emerge earlier than pseudoclefts; ii) there are asymmetries in the production of subject vs. object clefts – subject clefts are more frequently produced than object clefts both in spontaneous production and in elicited production tasks (Lobo, Santos, Soares-Jesel 2016).

Several studies focusing on the acquisition of structures that involve A-bar movement identified subject / object asymmetries (Friedmann, Belletti, Rizzi 2009; Costa, Lobo, Silva, 2011; a.o.). These have been argued to be the result of intervention effects: children have trouble in the establishment of a chain obtained by movement when an XP with similar features intervenes, i. e. when in a configuration X….Y… Z the head of the chain X c-commands Y and Y c-commands Z, the tail of the chain, and X and Y share features (Friedmann, Belletti, Rizzi 2009, Adani et al. 2010, Costa, Grillo, Lobo 2012, among others). The source of intervention may be due to grammatical restrictions of children immature systems (Friedmann, Belletti, Rizzi, 2009) or to processing constraints (Costa, Grillo, Lobo, 2012).

In order to answer questions left open by previous work on the production of clefts, we designed a comprehension task to investigate whether subject / object asymmetries were present in different syntactic types of clefts. We predict stronger intervention effects in the cleft types involving movement of a clefted object over the subject (namely standard clefts and 'é que' clefts – see 1); weaker intervention effects are expected in the case of pseudoclefts, since the clefted XP is not A'-moved. The same weaker effects are expected in the case of object pseudoclefts, since in the embedded clause only a bare wh-word crosses the subject DP (see 2). In pseudoclefts, however, there is an additional anaphoric relation between the wh-word and the clefted constituent in final position that has to be established.

2. Methodology: Task: The experiment was a truth value judgment task. The participants were asked to evaluate the adequacy of a sentence while looking at a picture. To ensure that the cleft was pragmatically appropriate, two images were presented depicting reversible situations. The researcher described each image with a simple sentence (*Here, the elephant is wetting the lion. Here the lion is wetting the elephant*) and then a puppet pointing at one of the pictures uttered a cleft (e.g. *Here it is the elephant that is wetting the lion*).

The participant was asked whether the sentence was true. The experiment included 42 items, including control items: 6 simple sentences (3) and 6 test conditions considering 2 variables – syntactic structure ('é que' clefts; standard clefts; pseudoclefts) and syntactic function (clefted subject; clefted object) (4).

Participants: 20 children aged 4 (mean age 4;2); 20 children aged 5 (mean age 5;3) and 20 adults.

3. Results and discussion: The results (Figure 1) show a subject / object asymmetry, but restricted to 'é que' and standard clefts. First, a GLMM analysis was performed, taking subject as a random factor, which identified the following predictor variables: subject / object (p <.001), age group (p <.001), cleft type (p <.001) and an interaction Cleft type: subject / object (p <.001). Given the identification of this interaction and given our observation of the data, we performed a second analysis, now only on the pseudocleft conditions. This second GLMM model identified only age group (p <.001) as a predictor variable; the subject / object contrast was not selected in the model. No subject / object asymmetry was found in pseudoclefts. Finally, we wanted to look at the effects of the particular cleft structure, without the effects of the subject / object asymmetry. We thus performed a third analysis, now only on the subject cleft conditions. This analysis confirms an effect of cleft type (GLMM: (random) and age group (p<.001) + Cleft type (p = .05)) and shows that pseudoclefts have a negative effect on the results, contrasting with 'é que' and standard clefts (log-odds: pseudocleft -0.439; 'é que' cleft 0.248; standard cleft 0.192). These results confirm an intervention account of subject / object asymmetries along the lines of Friedmann, Belletti & Rizzi (2009): intervention arises when a DP intervenes between a chain derived by movement and the moved DP and the intervening DP share lexical features. They also confirm that pseudoclefts are more problematic than 'é que' and standard clefts, a fact attributed by Lobo et al. (2016) to a difficulty caused by the additional anaphoric relation between the wh-word and the clefted constituent.

(1) *É a vaca que __ está a morder a zebra.* subject standard cleft
Is the cow that is biting the zebra
É a vaca que a zebra está a morder __ object standard cleft
Is the cow that the zebra is biting
A vaca é que __ está a morder a zebra subject 'é que' cleft
The cow is that is biting the zebra
A vaca é que a zebra está a morder __ object 'é que' cleft
The cow is that the zebra is biting

(2) *Quem __ está a morder a zebra é a vaca* subject pseudocleft
Who is biting the zebra is the cow
Quem a zebra está a morder __ é a vaca object pseudocleft
Who the zebra is biting is the cow

(3) *O elefante está a molhar o leão* – 6 items (True and False)
The elephant is wetting the lion.

(4) i) 6 'é que' subject clefts (2 True items and 4 False items):
O anão é que está a filmar o príncipe
the dwarf is that is filming the prince
ii) 6 'é que' object clefts (2 True items and 4 False items):
O anão é que o príncipe está a filmar
The dwarf is that the prince is filming
iii) 6 standard subject clefts (2 True items and 4 False items):
É o menino que está a empurrar o cão
Is the boy that is pushing the dog
iv) 6 standard object clefts (2 True items and 4 False items):
É o menino que o cão está a empurrar
Is the boy that the dog is pushing
v) 6 subject pseudoclefts (2 True items and 4 False items):
Quem está a pintar o médico é o soldado
Who is painting the doctor is the soldier
vi) 6 object pseudoclefts (2 True items and 4 False items):
Quem o médico está a pintar é o soldado
Who the doctor is painting is the soldier

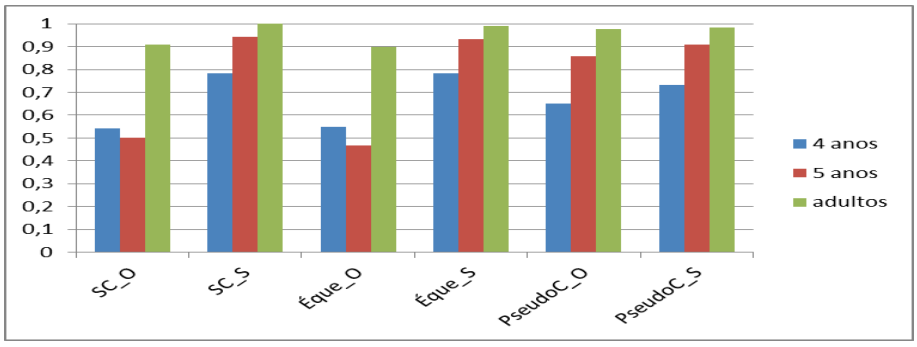

Figure 1. Mean percentages of correct answers

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