

# ASPECTS OF THE ACQUISITION OF CONTROL AND ECM-TYPE VERBS IN EUROPEAN PORTUGUESE<sup>1</sup>

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## 1. Introduction

### 1.1. The raising / control debate

There is a long tradition of research into children's interpretation of control in infinitival complements (Chomsky 1969; McDaniel, Cairns & Hsu 1991 a.o.), and also significant work on children's comprehension of A-movement/raising (Borer & Wexler 1987; Hirsch, Orfitelli & Wexler. 2008; Orfitelli 2012a, b; Becker 2005, 2006; Kirby 2011). This research gave rise to what we might call the 'raising / control debate': some researchers claim that raising (but not control) is problematic for children, others that raising is not problematic and may even correspond to a default analysis of novel verbs.

Based on comprehension results, Hirsch & Wexler (2007) and Hirsch, Orfitelli & Wexler (2008) suggest that raising is problematic for children (although they offer an explanation that differs from the initial approach by Borer & Wexler (1987), who took all types of A-movement as problematic); Orfitelli (2012a,b) suggests that only raising over an intervener (experiencer) may cause comprehension difficulties. Landau & Thornton (2011) base their conclusions on production data (diary data from one child) and analyze the development of the complements of *want*: they claim that R(aising)-t(o)-O(bject) with *want* emerges later than subject control structures with the same verb.

As opposed to these results, Becker (2005, 2006) argues that children comprehend raising and that they can take a raising analysis as the default analysis of a novel verb. Along the same lines, and focusing specifically

the case of RtO, Kirby (2011) argues that children perform better earlier on raising than on control and that they may even misanalyze control structures as involving raising.

Actually, the arguments for a control first or a raising first position explore different components of the problem of acquisition of raising and control. First, raising implies movement (and a particular definition of phases), an approach explored by Wexler and collaborators. Moreover, complements of raising verbs are defective complements and more defective complement clauses may be acquired later. This is the explanation given by Landau & Thornton (2011) for the later emergence of RtO with *want* as compared to subject control: children start by assuming that the complement of *want* is a CP and only produce RtO when they are able to truncate the embedded CP.

Arguing for early acquisition of RtO structures, Kirby considers a different component of the problem: argument structure. She suggests that the reason for the initial raising preference is that RtO verbs carry fewer internal theta-roles than object control verbs (“(...) for both children and adults, Raising is the ‘elsewhere case.’ R structures, which entail fewer theta-roles, carry a lower cognitive load than C structures.” Kirby, 2011: 2).

In this paper, we are interested in the acquisition of complements of object control and perception and causative verbs (verbs licensing RtO) in E(uropean) P(ortuguese). We present the results of an exploratory research on young children’s preferences in an elicited production task. We take into account the two components of the problem outlined here (number of theta-roles and defectiveness of the complement) and suggest that both play a role in explaining children’s initial preferences.

## **1.2. Testing ground: EP perception and causative verbs vs. control verbs**

The testing ground in this study includes complements of perception and causative verbs and complements of object control verbs. All these verbs may occur with uninflected infinitive complements, where a DP alternates with an accusative clitic hosted by the main verb (cf. (1) to (3)) - see Raposo (1989), Duarte (1993), Gonçalves (1999), Gonçalves (2002), Gonçalves & Duarte (2001).

- (1) A mãe viu-os / os miúdos comer bolos.  
 the mother saw CL.Acc the kids eat.INF cakes  
*The mother saw them / the kids eating cakes.*
- (2) A mãe deixou -os / os miúdos comer bolos.  
 the mother let CL.Acc the kids eat.INF cakes  
*The mother let them / the kids eat cakes.*
- (3) O Manuel proibiu-os / os meninos de visitar  
 the Manuel forbade CL.Acc the kids PREP visit.INF  
 a Maria.  
 the Maria  
*Manuel prohibited them /the kids from visiting Mary.*

However, the fact that equivalence between active and passive in the embedded clause holds in the case of perception and causative verbs but not in the case of object control verbs shows that the embedded DP is generated as subject of the lower clause in the case of complements of perception and causatives (Rosenbaum 1967) (see 4a and b, which are semantically equivalent, vs. 5a and b, not semantically equivalent).

- (4)a. Deixei / vi o João convencer o Paulo.  
 let.1SG / saw.1SG the João convince.INF the Paulo  
*I let / saw João convince Paulo.*
- b. Deixei / vi o Paulo ser convencido pelo João.  
 let.1SG / saw.1SG the Paulo be.INF convinced by the João  
*I let / saw Paulo be convinced by João.*
- (5) a. Proibi o João de convencer o Paulo.  
 prohibited.1SG the João PREP convince.INF the Paulo  
*I prohibited João from convincing Paulo.*
- b. Proibi o Paulo de ser convencido  
 prohibited.1SG the Paulo PREP be.INF convinced  
 pelo João.  
 by the João  
*I prohibited Paulo from being convinced by João.*

Moreover, both perception / causative and object control verbs allow for inflected infinitival complements (see Raposo, 1989 for the inflected infinitive in EP). But whereas complements of perception and causative verbs license a nominative subject, the DP occurring after an object control verb must check Accusative Case (see (6) to (8)).

- (6) A mãe viu eles comerem bolos.  
 the mother saw they eat.INF.3PL cakes  
*The mother saw them eating cakes.*
- (7) A mãe deixou eles comerem bolos.  
 the mother let they eat.INF.3PL cakes  
*The mother let them eat cakes.*
- (8) O Manuel proibiu-os / \*eles de visitarem  
 the Manuel forbade CL.Acc they PREP visit.INF.3PL  
 a Maria.  
 the Maria  
*Manuel prohibited them from visiting Mary.*

These facts show that despite superficial similarity perception and causative verbs and object control verbs are different verb classes. Object control verbs take two internal arguments, an object DP and a clausal non-finite complement, which may take an uninflected infinitive (the canonical object control structure, see (3) above) or an inflected infinitive (8). Perception and causative verbs may occur in several different types of structures: finite complements (indicative with perception verbs; subjunctive with causative verbs) (9); inflected infinitives ((6) and (7) above); uninflected infinitives in so-called ECM structures ((1) and (2) above); the P(repositional) I(nfinitival) C(onstruction), only in the case of perception verbs (see 10); complex predicates (11) (Raposo 1989, Duarte 1993, Gonçalves 1999, Gonçalves 2002, Gonçalves & Duarte 2002, Barbosa & Cochofel 2005).

- (9) a. A mãe viu que a Maria lavou o carro.  
 the mother saw that the Maria washed.IND the car  
*Mummy saw that Maria washed the car.*
- b. A mãe deixou que a Maria lavasse o carro.  
 the mother let that the Maria washed.SUBJ the car  
*Mummy let Maria wash the car.*
- (10) A mãe viu os miúdos a comer(em) o gelado.  
 the mother saw the kids PREP eat.INF.3(PL) the ice cream  
*Mummy saw the kids eating the ice cream.*

- (11) a. A mãe viu saltar os miúdos.  
 the mother saw jump the kids  
*Mummy saw the kids jump.*
- b. A mãe deixou saltar os miúdos.  
 the mother let jump the kids  
*Mummy let the kids jump.*
- c. A mãe deixou comer o gelado aos miúdos.  
 the mother let eat the ice cream to.the kids  
*Mummy let the kids eat the ice cream.*

According to Chomsky (1981), the structures in (1) and (2) are instances of ECM, a case in which the embedded subject does not get its Case within the clause it belongs to; it is the matrix verb that assigns accusative Case to this DP. However, Postal (1974), Lasnik & Saito (1991), and Chomsky (2008) claim that the DP raises to the relevant object position of the main clause in order to get (accusative) Case, the construction known as Raising-to-Object (RtO). In this paper, we are assuming the RtO analysis, on the basis of facts such as the impossibility of the infinitival complement to be clefted as a whole, which may indicate that the DP has been raised out of this complement (see (12a)). This contrasts with what happens in PIC (12b) or in inflected infinitive complements (12c): in these cases, the complement surfaces as a single constituent and may be clefted. These facts are also in agreement with the assumption that PIC involves Control *and* ECM, but not RtO (Raposo, 1989; Barbosa & Cochofel, 2005). Finally, inflected infinitives are full CPs where the embedded subject is licensed (see Gonçalves, Santos & Duarte, submitted).

- (12) a. \*Ele viu foi [os meninos sair de casa].  
 he saw was the children leave.INF PREP home
- b. Ele viu foi os meninos *a* sair de casa.  
 he saw was the children PREP go.INF out from home
- c. Ele viu foi os meninos saírem de casa.  
 he saw was the children go.INF.3PL out from home.

In light of the properties of object control and perception and causative verbs described so far and also in light of the literature on acquisition of control and raising, we intend to answer the following questions:

1. Do children show evidence of RtO in their production of causative and perception verbs? (see Kirby 2011 vs. Hirsch & Wexler 2007)

2. Do children prefer to produce less defective complements (e.g. more inflected infinitives than raising to object)? (in line with Landau & Thornton 2011)
3. Do children produce object control structures?

## 2. The study

### 2.1. Method

We report here the results of an elicited production task in which the child is asked to help a puppet by completing what he says about a story that the experimenter acts out. We tested 58 children and 24 adults with no background in linguistics (further information on the child groups is provided in table 1). The test included five conditions, provided in table 2. In (13) we present an example of a test item; in all items the lower subject or the DP object in the target object control structure is plural, making visible the contrast between inflected and uninflected infinitives.

Table 1. Children

Age (in years)	Range (Mean)	Number
3	3;5 – 3;11 (3;8)	16
4	4;0 -4;11 (4;5)	21
5	5;0 – 5;10 (5;5)	21

Table 2. Conditions

Condition	Verb class	Verbs tested
1	Causative	<i>mandar</i> ‘make’; <i>deixar</i> ‘let’
2	Perception	<i>ver</i> ‘see’
3	Object Control	<i>ensinar a</i> ‘teach’; <i>proibir de</i> ‘forbid’
4	Subject control verbs (in subject control contexts)	<i>querer</i> ‘want’; <i>conseguir</i> ‘be able to’
5	Subject control verbs (with disjoint reference of the main and the embedded subject in finite complements)	<i>querer</i> ‘want’; <i>conseguir</i> ‘be able to’

## (13) Item in condition 1

Policeman: *My car doesn't work, I need your help.*

Big elephant: *I'm big and strong and my kids are small but they are strong too. Push. Come on.*

Small elephants: *Yes, dad, we can do it.*

Experimenter: O pai é que manda nos elefantinhos.

*Dad is the one who gives the orders to the little elephants.*

Puppet: **O pai mandou o quê? O pai...**

the father ordered what? The father...

## 2.2. Results

In this paper, we discuss results in conditions 1 to 3 and will only refer to results in the other conditions when relevant. Conditions 1 to 3 directly address the research questions formulated in section 1. Figure 1 presents the results for matrix causative verbs (condition 1).

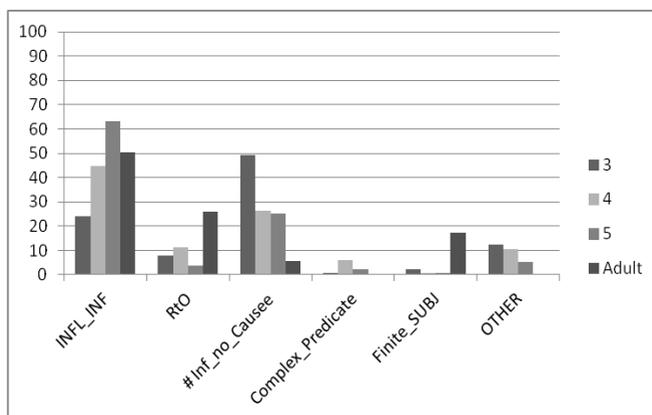


Figure 1 – results in Condition 1

For all groups except the 3 year-olds, the most frequent answer in Condition 1 is the inflected infinitive (INFL\_INF in the graph). The 3-year-old group, and the other child groups to a lesser extent, also produce a structure that is not completely felicitous in the context: an infinitive without an overt Causee (# Inf\_no\_Causee in the figure), illustrated in (14). Such a structure is possible with an arbitrary reading, but this was not the relevant reading in the context. Some adults also produced this

structure, however the rate at which adults and children produced this type of answer differed significantly (Mann-Whitney,  $U = 356.500$ ,  $p < .001$ ).

(14) mandou dormir. (3;9:09)  
 ordered sleep

Another relevant result concerns the low production of RtO structures in this condition. Even though some children, including 3-year-olds, do produce them, the rate of RtO in children and adults is significantly different (Mann-Whitney,  $U = 1,024.000$ ,  $p < .001$ ). Complex predicates are residually produced and finite subjunctive complements are produced almost exclusively by the adult group.<sup>2</sup>

Figure 2 presents the results in Condition 2 (perception verbs). In this condition, PIC (either with uninflected infinitive or with inflected infinitive) is the option preferred by all groups, especially adults. Children, mainly 4 and 5 year-olds, also resort to the finite indicative complement, a residual strategy for adults. RtO is rarely produced by children and adults.

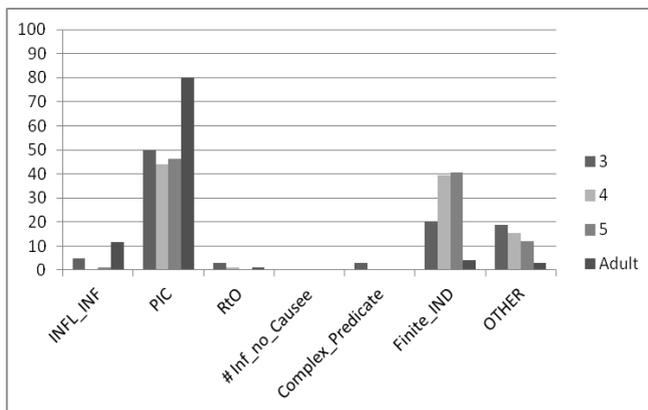


Figure 2 – results in Condition 2

The results for object control items (condition 3) are presented in Figure 3.

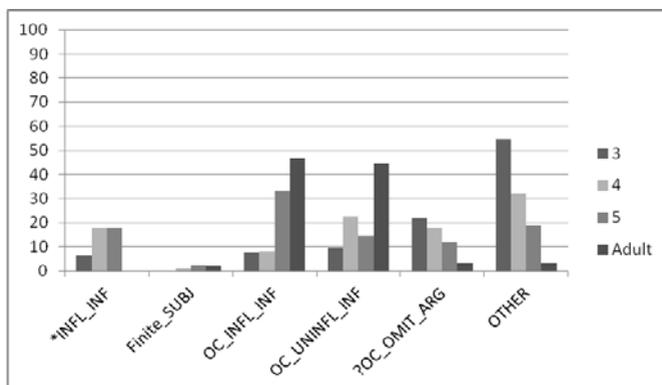


Figure 3 – results in Condition 3

Even though all groups produce object control with uninflected infinitive (OC\_UNINFL\_INF in the figure), it is more frequent in the adult group (there is a significant difference between the rate of object control in children and adults (Mann-Whitney,  $U = 1,100.000$ ,  $p < .001$ )). The adult group is split between object control with uninflected infinitive and object control with inflected infinitive (OC\_INFL\_INF); both these structures are also produced by children, but at lower rates. Low production of object control structures in this condition contrasts with high rates of target production of subject control structures in Condition 4. Children produce between 75% (3 year-olds) and 86.9% (5 year-olds) target subject control structures in Condition 4, but not in Condition 5, where it would not be an adult option. These facts confirm that children at these stages have no difficulty with control *per se* and produce target subject control restricted to subject control contexts, but may have a problem with *object* control structures.

Returning now to Condition 3, we can show that children differ from adults in other respects. First, they produce object control with an omitted (implicit) argument (?OC\_OMIT\_ARG in figure 3), as illustrated in (15). But most importantly they produce ungrammatical inflected infinitives (\*INFL\_INF in the figure), illustrated in (16).<sup>3</sup> These sentences can be analyzed as having a single internal argument [os gansos saltarem], with the DP [os gansos] licensed as the subject of the inflected infinitive.

- (15) ... ensinou a balançar. (3;8.23)  
 taught to swing

- (16) \*... ensinou [os gansos saltarem]. (4;5.12)  
 taught the geese jump.INF.3PL  
 (vs. ... ensinou os gansos *a* saltar(em) )

### 3. Discussion

The first general result obtained in this experiment is that RtO is rare in child production (both with perception and with causative verbs). Children produce RtO verbs (perception and causatives) but not RtO structures. This must be interpreted as meaning that they know the verb, but they avoid RtO. In the case of perception verbs, the scarce production of RtO contrasts with high rates of PIC, which involves true ECM and control but not RtO (see Barbosa & Cochofel, 2005). In the case of causative verbs, the scarce production of RtO contrasts with high rates of inflected infinitives. Inflected infinitives have been argued to be complete functional domains in which a subject is internally licensed. We thus interpret this preference for inflected infinitives not only as a way of avoiding RtO, but also as an early preference for complete functional complements. Note also that the infinitives without an overt causee (illustrated in (14) above), which children produced in Condition 1, may correspond in the child's grammar to a complete functional complement, namely a CP with an arbitrary PRO in subject position (see (17)).

- (17) [<sub>CP</sub> PROarb V]

Therefore, we suggest that RtO is not the preferred structure when a complete functional complement is an alternative (namely, inflected infinitives in European Portuguese). This is compatible with the hypothesis that children assume that all complements of RtO verbs are functionally complete before they disrupt them (i.e. through raising out of the clause) (see analysis of the acquisition of *want* by Landau & Thornton, 2011).

Let us now turn to results concerning object control verbs. The results obtained in the task show that children produce object control structures, but not at the adult level. We have observed (i) scarce production of object control, especially among younger children, (ii) argument omission among younger groups, (iii) ungrammatical production of bare inflected infinitival domains, which behave as a single argument. These three facts conspire to suggest that children first take object control verbs as selecting a single internal argument (which is a complete functional complement).

This results in structures such as (16) above, which are ungrammatical in the adult grammar: in this case, the argument structure of the verb is interpreted as corresponding to a single clausal complement, containing a subject DP which is internally licensed. This is in line with Kirby (2011) and assumes that children prefer structures with fewer theta-roles. Although control verbs select a CP complement (which children prefer over truncated structures), object control verbs also select a second internal argument and this is the source of the problem. Children may initially assume that a verb selects only a single (propositional) argument – the ‘single argument selection hypothesis’ (SASH). In this sense, children initially take object control verbs as equivalent to perception or causative verbs.

As a final note, we should add that inflected infinitives in EP offer a particularly relevant insight into children’s first analysis of these verbs. By our hypothesis, inflected infinitives are preferred with RtO verbs and emerge in non-target structures with object control verbs because they are complete functional complements in which the DP and the infinitive function as a single internal argument.

## 4. Conclusion

Although they do not provide a complete answer to the questions raised earlier, these data suggest that:

1. Children do produce RtO verbs (e.g. causative and perception verbs), but generally not RtO structures. In fact, the results show that children avoid RtO whenever a complete functional complement is available (namely, in inflected infinitives in EP). This is in line with the hypothesis that children assume that all complements of RtO verbs are CPs before they truncate them (cf. analysis of the acquisition of *want* by Landau & Thornton, 2011).
2. Object control is produced, although not at the adult level. We propose that object control verbs are first analyzed by children as selecting a single internal argument (SASH), resulting in ungrammatical productions of bare inflected infinitives in this context. Inflected infinitives emerge in these contexts because they are CPs in which the DP and the infinitive are projected as a single internal argument.

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<sup>2</sup> The answers coded as “other” are cases in which the child avoided the target verb and used another verb (e.g. *mandar* ‘make’ replaced by *dizer para* ‘tell’) or answers in which the child used the correct verb but with marginally grammatical / odd structures that did not have a clausal complement.

<sup>3</sup> Children also avoid the use of the target verb (OTHER in figure 3).