What evidence is there for early acquisition of V-to-I in European Portuguese?

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1. Introduction.

Since the seminal work of Emonds (1978) and Pollock (1989), it is known that one aspect in which languages differ is whether they allow verb movement to the inflectional domain. Languages like French display word orders in which an adverb disrupts the adjacency between verb and object, which is impossible in English, as illustrated in (1):

(1)   a.   Jean lit souvent ce livre.
              Jean reads often this book
        b.   *Jean souvent lit ce livre.
        c.   John often reads this book.
        d.   *John reads often this book.

This contrast between pairs of languages like English and French has been explained in the literature in terms of verb movement to the inflectional domain. Moving the verb to the head of the inflectional phrase, as depicted in (2), enables positioning the verb to the left of a VP-adjoined adverb.

(2)　　IP
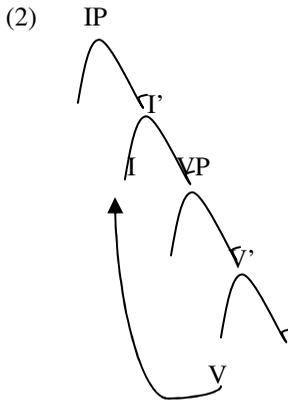
This movement is, however, subject to parametric variation. Accordingly, it is only available in some languages: French has V-to-I movement, while English does not. As noted by many authors, the diagnoses for V-to-I movement vary crosslinguistically, but it is relatively easy to detect whether a language sets a positive or a negative value for the V-to-I parameter.

The research on language acquisition in the last two decades converges on showing that the setting of syntactic parameters takes places very early. In fact, as summarized in Guasti (2002), it appears that many syntactic parameters have been set at a pre-syntactic stage, that is, even before children start producing combinations of words. This accounts for the fact that children do not hesitate in producing many structures according to the parameter value of the language they are acquiring. This is an important result for the innatist and generative framework for language acquisition, since it provides an interesting piece of evidence for the autonomy of grammar with respect to other areas of cognition and to the astonishing speed in the process of acquiring a language. As for verb movement, research on the acquisition of V-to-I and V-to-C converges on showing that the parameters regulating

verb movement are set quite early. The consensus around these results is based on evidence given by the distribution of negation in English, French and German and by verb movement in V2 languages (Pierce 1989, Clahsen 1990 / 1991, Meisel & Müller 1992, Harris & Wexler 1996, Poeppel & Wexler 1993).

The purpose of this paper is to discuss what kind of data can be taken as evidence for the early setting of V-to-I by European Portuguese children. It will be shown that, *prima facie,* we are dealing with contradictory evidence, since experimental data and naturalistic data may indicate that children have trouble placing the verb in V-Adv-O orders, whereas they do not have troubles performing VP-ellipsis, for which V-to-I movement is required. The main goal of the paper is twofold. On the one hand, we make a methodological point, showing that VP-ellipsis is a more reliable clue than positional data for detecting V-to-I movement in children's early productions. On the other hand, we provide an analysis based on Costa and Friedmann (2009) for why children produce V-to-I in VP-ellipsis contexts, but not in V-Adv-O orders.

The paper is organized as follows: in section 2, we provide some background on the acquisition of V-to-I in European Portuguese; in section 3, we compare the data from spontaneous production with those from elicited production, showing that only the VP-ellipsis facts in spontaneous production are reliable evidence for the early setting of V-to-I. In section 4, we provide an explanation along the lines of Costa and Friedmann (2009) for children's preference for V-to-I in VP-ellipsis contexts. Finally, in section 5 some conclusions are presented.

2. Acquiring V-to-I in European Portuguese: background.

As mentioned in the introduction, several researchers have shown that young children's productions provide positive evidence in favor of the idea that V-to-I movement is available from very early on. More precisely, the fact that

children produce V-to-I in expected environments and consistently leads to the idea that children have set the relevant parameter correctly.[1] The evidence for early setting of V-to-I comes from data of the following type: in French, Pierce (1992) found a correlation between position and finiteness. As in adult French, it was found that finite and non-finite verbs are placed in different positions with respect to negation. Finite verbs precede negation, signaling movement, whereas non-finite verbs follow negation. This indicates that, like adults, very young children know that only finite verbs move to I in French. In other words, French children know the correct setting of the V-to-I parameter in their language. Similar positive evidence for the setting of V-to-I was found for Italian. Assuming that the position of clitics in proclisis and enclisis depending on finiteness can be explained in terms of verb movement, Guasti (1993/1994) claims that Italian children have correctly set the V-to-I parameter, since they do not make mistakes in clitic placement.

The literature on adult syntax discusses other facts as relevant evidence for detecting the existence of V-to-I movement. These facts include the following constructions: orders V-Adv-O, as illustrated above for French (Emonds 1978, Pollock 1989), orders V - floating quantifiers - Object (as in 3) (Koopman and Sportiche 1990), and constructions signaling two positions for the subject in between CP and VP (as in 4) (Bobaljik 2000):

(3)   Les enfants   lisent tous le   livre.
       the children read all   the book

(4)   O que tinham já   os alunos provavelmente todos
       what had   already the students probably   all

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[1] For the purposes of this paper, it is irrelevant to assume a feature over a parametric view of the crosslinguistic difference underlying the effects of V-to-I. The former is the one adopted in more recent minimalist terms. It is a crosslinguistic difference that children must determine, independently of the specific formal account.

estado a ler?
been reading

VP-ellipsis is another construction in which V-to-I is involved. In languages with V-to-I movement, this movement operation precedes ellipsis, and the verb is stranded after ellipsis. V-to-I is a prerequisite for VP ellipsis, even though not all V-to-I languages display VP ellipsis (French, for instance, is a V-to-I language but it does not allow for VP ellipsis, VP ellipsis being itself the result of parametric variation). A clear example is English, a language in which only auxiliaries and the copula *be* move to I: in English, only these verbs (but not main verbs) may be stranded in VP ellipsis. Another example of a VP-ellipsis language is European Portuguese – see (5), a case of VP ellipsis licensed by an auxiliary in I in the context of an answer to a yes-no question. We refer to this type of context as a verbal answer in European Portuguese:

(5)　　A:　　O João tinha lido o livro?
　　　　　　　João had read the book
　　　　B:　　Tinha$_i$ [$_{VP}$ t$_i$ lido o livro]
　　　　　　　had
　　　　　　　"Yes, he had."

VP-ellipsis therefore is interesting, since it goes hand in hand with V-to-I. V-to-I movement is one of the required ingredients for mastering VP-ellipsis. Thus, attesting VP-ellipsis is also attesting mastery of V-to-I movement.

Let us now focus exclusively on European Portuguese. In this language, the V-to-I parameter value is positive, since there is V-to-I movement. However, the array of unambiguous structures involving V-to-I is limited (Costa 1998, Loureiro 2008). Let us consider the problems involved in detecting V-to-I in unambiguous terms:

a) V-adv/FQ-O coexists with adv/FQ-V-O:

As shown in (6) and (7), the verb may precede or follow an adverb or a floating quantifier.

(6)   a.   Os meninos leram todos o livro.
             the children read all the book

       b.   Os meninos todos leram o livro.
             the children all read the book

(7)   a.   Os meninos leram ontem o livro.
             the children read yesterday the book

       b.   Os meninos ontem leram o livro.
             the children yesterday read the book

Only a limited subset of very low VP-adverbs is necessarily postverbal (Costa 1998, 2004), like 'muito' *much,* 'bem' *well,* 'mal' *badly* or 'completamente' *completely* . As such, only those adverbs could be taken as reliable evidence for signaling V-to-I movement, since only these provide clear evidence that there is non-optional V-to-I movement, and that it is the floating quantifier/adverb placement that is variable in examples like (6) and (7).

b) Negation is clitic on the verb (Matos 1999):

Unlike in other languages, the position of the verb with respect to negation is not a good diagnosis for detecting verb movement either, because negation is (a syntactic) clitic on the verb. In other words, negation is where the verb is. As shown in Matos (1999), in I-to-C contexts, in which the verb moves all the way up to C, negation goes along with the verb, as shown in (8):

(8)   O que não tinhas tu lido?
       what not had you read

As such, unlike French negation, the sentential negation in European Portuguese is not a valid diagnosis for detecting V-to-I movement.

c) Intermediate Spec position is parasitic on wh- and I-to-C and can only be traced with some adverbs (Costa 2003):

As discussed in Bobaljik (2000), if a language has two positions for the subject in between C and VP, the language must have V-to-I. Bobaljik's argumentation proceeds in the following manner and derives from assumptions couched in the framework of Distributed Morphology (Halle and Marantz 1993): whenever there is a subject position in between the inflectional node and the verb, affixation must proceed in overt syntax via movement, because the subject disrupts the adjacency between the two heads. Thus, it follows from the presence of the subject position that movement must take place. In Costa (2003), it is argued that the existence of a second subject position in between CP and VP is parasitic on wh-movement, that is, only in wh-questions with I-to-C movement can the subject appear in the lower subject position (in (9), the functional categories able to host the subject are labeled as FP1 and FP2). Still, for the difference between the two positions to be visible, it is necessary to add enough adverbials in order to signal the relevant constituent boundaries. The resulting constructions are cases like the one in (9), arguably quite rare:

(9) a.[$_{CP}$ O que tinhas [$_{FP1}$ já [$_{FP2}$ ontem tu   contado
      what   had   already yesterday you told

    [$_{VP}$ completamente à   Maria?[2]
        completely   to+the Maria

    b.[$_{CP}$ O que tinhas [$_{FP1}$ já tu [$_{FP2}$ ontem   contado
      what   had   already you yesterday told

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[2] FP stands for F(unctional) P(rojection).

[$_{VP}$ completamente à   Maria?
     completely   to+the Maria

d) VP-ellipsis is not always unambigous.

Unlike English, for instance, European Portuguese displays verb movement with all verbs, including main verbs. This means that, being a VP ellipsis language, European Portuguese presents VP ellipsis with stranded auxiliaries (as in English) as well as VP ellipsis with stranded main verbs (unlike English, but as in Hebrew or Irish[3]). But European Portuguese also allows for other null anaphora, in particular, Null Object (Raposo 1986), a case in which an internal argument is omitted or Null Complement Anaphora, a case of a null sentential complement (Matos 1992, Cyrino & Matos 2006). Therefore, VP ellipsis with stranded main verbs or modals in European Portuguese must be distinguished from Null Object or Null Complement Anaphora (Matos 1992, Santos 2006 / 2009). Sentences (10) and (11) illustrate a case that can be taken as Null Complement Anaphora and a case of a Null Object respectively. Sentence (12) illustrates a case of ambiguity between VP ellipsis and Null Object.

(10)   A Maria quer sair   mas não pode [~~sair~~].
       the Maria wants go out but not can   go out
       'Maria wants to go out but she can't do it.'

(11)   Tirei os óculos   da   gaveta
       took the glasses out of the drawer
       e   pus [~~os óculos~~] no   bolso.
       and put the glasses in the pocket
       'I took my glasses out of the drawer and put them in my pocket.'

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[3] See Doron (1999), McCloskey (1991), Goldberg (2005).

(12)   Q: Queres o livro?
          want the book?
          'Do you want the book?'
       A: Quero [o livro].
          want
          'Yes.'

Superficially, null object or NCA are quite similar to VP-ellipsis constructions. However, they are different in many respects (sensitivity to islands, lexical restrictions, etc.).[4] A crucial difference is that only VP ellipsis requires V-to-I movement. Given the surface similarity, it may be difficult to detect V-to-I movement in the absence of a lexical VP.

Taking into consideration all this information concerning how difficult it is to find clear evidence for V-to-I movement in European Portuguese, the following question comes up: what kind of data in children's productions may be taken as a good piece of evidence for an early setting of the V-to-I parameter in this language? This is the question we will be answering in this paper.

3. Evidence for setting V-to-I in early Portuguese: spontaneous and elicited production.

The question about what may be evidence for V-to-I acquisition in European Portuguese has been posed in terms that are often intertwined with another question: what may be the triggering experience for V-to-I acquisition in European Portuguese?

Gonçalves (2004) uses production data to discuss what is the relevant evidence to determine whether children have V-to-I movement and she also extends this discussion to the problem of the triggering experience. The author shows that, at the age in which it is assumed that children have set the value of V-to-I, Portuguese speaking children do not yet have

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[4] See Matos (1992) and Santos (2006) for the relevant distinguishing properties.

a steady knowledge of the verbal morphological paradigm. As such, this author argues that verbal morphology cannot be taken as evidence for the early setting of the parameter, and contends that syntax is acquired prior to morphology. She further argues that the fact that orders NEG + SUBJ + V are unattested provides evidence for V-to-I. Note, however, that, even if word orders of this sort were found, this would not be evidence against V-to-I: the subject could be in the specifier of a lower projection of a split IP and negation in the intermediate position between the two functional IP projections.

In fact, as discussed above, syntactic evidence is not easy to detect. As already mentioned, out of the potential diagnostics for V-to-I movement some are not reliable in European Portuguese. First, the order between the negation and the verb is not a trustworthy source of information because negation cliticizes onto the verb. Second, the evidence for finding two positions for the subject in between C and V would depend on the existence of I-to-C movement. However, as shown in Soares (2006), I-to-C is acquired very late in European Portuguese. As such, no evidence for these two positions could be found in children's early word combinations. Clitic placement, which was used as a diagnostic for the acquisition of Italian in Guasti (1993/1994), is not a good source of information for European Portuguese either. On the one hand, clitic placement is acquired late: 6 year olds still overgeneralize enclisis (Duarte and Matos, 2000). On the other hand, clitics are massively omitted in child language, which would make the evidence very scarce (Costa and Lobo 2006, 2007). Evidence for V-to-I movement, and particularly for early V-to-I movement, is therefore scarce in European Portuguese.

Moreover, other studies show us contradictory evidence. A grammaticality judgment task run with Portuguese children aged between 3 and 5 revealed that children are not equally sensitive to all constructions involving V-to-I (Costa and Loureiro 2006, Loureiro 2005, 2008). In fact, children revealed a very high sensitivity to grammaticality contrasts related to verbal inflection, but incorrectly accepted

ungrammatical word orders in which adverbs and verbs were placed in an order expected for a language without V-to-I movement. These perception facts are interesting, since they shed light on what type of evidence may be used by children in order to set the parameter. Loureiro (2008) argues that, on the basis of evidence like this, morphology is more likely to act as a trigger to set the parameter than adverb placement.

If we can learn something from the discussion concerning possible triggers for V-to-I, it is the following: what may be evidence (for a linguist) for the setting of a parameter is not necessarily available as the relevant triggering experience.[5] In this paper, we are not concerned with triggering experience, but, more generally, with evidence that would allow us, as linguists, to determine that V-to-I has been acquired in European Portuguese.[6]

Bearing the difficulties previously stated in mind, we are left with two potential sources of evidence in children's productions for tracing V-to-I movement:

a) Unambigous adverb placement or floating quantifiers in V-Adv/FQ-O (excluding V-Adv orders, which can arguably be analyzed as right adjunction);

b) Unambiguous VP-ellipsis.

3.1. V-ADV-O in children's productions.

Let us start by considering the word order facts. Recall that only V-Adv/FQ-O is relevant. We looked for these word orders in a spontaneous speech corpus of three children aged

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[5] A clear example of this is wh-questions with V-to-I-to-C and containing a post-adverb subject, which are possible in European Portuguese, and very clear evidence for V-to-I and for a layered IP. These structures are very rare in spontaneous adult productions, and cannot therefore be considered triggering evidence.

[6] A discussion of what can be evidence for triggering V-to-I is beyond the scope of this paper. For relevant discussion, see Gonçalves (2004) and Loureiro (2008).

1;5-2;7, 1;6-2;9 and 1;6-3;11 (Santos, 2006). In the following table, we provide information concerning the corpus:

Child	Age	MLUw	Number of files	Number of child's utterances
Inês	1;6.6 – 3;11.12	1.527 – 3.815	21	6591
Tomás	1;6.18 – 2;9.7	1.286 – 2.954	16	6800
InêsM.	1;5.9 – 2;7.24	1.315 – 2.370	15	5101

Table *1* - *Spontaneous production corpus*

We automatically extracted frequent adverbs generally occurring in V-ADV-O position (*muito* "much", *ontem* "yesterday", *hoje* "today", *amanhã* "tomorrow", *bem* "well", *mal* "badly", *rapidamente* "fast", *depressa* "fast", *também* "also", *lá* "there", *cá* "here").[7] It turns out that the relevant word orders are practically inexistent in the corpus, even though some of these adverbs do occur in the corpus (e.g. *muito*, *amanhã, bem, também, lá*, *cá*): only 6 occurrences of V-Adv-O word orders are found in the corpus. Two examples out of the six occurrences are given in (13) and (14):

(13) TOM: eu go(s)to muito do   Paulo .
            I like   much of-the Paulo
            "I like Paulo a lot"   (2;6.6)

(14) INI: e eu c(o)nheç(o) lá   em Belém uma.
            and I know   there in Belém one.
            "and I know one there, in Belém." (3;10.1)

Note that the low rate of adverbs in V-Adv-O orders cannot be attributed to a general low rate of production of these adverbs by the children. In general, these adverbs occur

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[7] We only considered "lá" e "cá" as relevant when they were associated with locative PPs, since when they occur alone, they display a special syntactic behavior undergoing scrambling (Costa & Martins *to appear*).

350 times in children's utterances in the corpus, most of them in isolation or in positions other than V-Adv-O.

Another type of evidence for early V-to-I in spontaneous production is the distribution of the emphatic negation *não… nada*, as noted in Santos (2006 / 2009). In (15) and (16) the second negation word mediates between the verb and the internal argument or the material in the small clause. Since the negation words are base-generated outside the VP, this must be evidence for verb movement. However, again this evidence is rare in spontaneous production. Only 8 cases of emphatic negation with this distribution were found (4 are cases of transitive verbs with *nada* mediating between the verb and the object; the remaining cases are cases of copula structures like 16). Moreover, these productions occur late in the corpus: only 4 occur before 3;0.

(15) MAE: ó Inês # tu   não   vês que aleijas
              Inês   you NEG   see that hurt
              a Bárbara?
              the Bárbara
          'Inês, don't you see that you will hurt Bárbara?'
     MJF: vou tirar este cinto.
               go take this belt
               'I am going to take of this belt.'
     INI: no [: não]   (a)le(i)jo #   nada
            NEG   hurt   NEG
           a Bá(r)bara não.
           the Bárbara NEG
           'No, I won't hurt Bárbara.'   Inês 2;3.8

(16) ALS: +<   então pois   # é uma   bola
                so   indeed   is a   ball
                para os   bonequinhos pequenos.
                for   the dolls   little
          'Exactly, it is a ball for the little dolls.'
     TOM: não   é   nada uma bo(l)a # <é um> [//]
           NEG is NEG a   ball   is a
           é be(rl)inde.
           is marble

'This is not a ball, it is a marble.'   Tomás 2;7.13

It could be that the low representation of this type of structures is just a corpus effect, and that it does not really reflect children's linguistic knowledge. However, it turns out that experimental data confirms the difficulty with V-Adv-O orders. Costa and Friedmann (2009) report a repetition task of V-Adv-O sentences. They tested 10 sentences containing V-Adv-O orders (included in a task with other types of stimuli) with adverbs found in children's spontaneous speech (e.g. *amanhã* "tomorrow"*, muito* "much"). In (17), we provide an example of one of the test items:

(17)   O cão roeu   muito o osso.
         the dog gnawed much the bone

12 monolingual children aged between 2;01 and 2;10 (average: 2;6) participated in the experiment (note that the ages are therefore coincident with the spontaneous production presented here). Each participant was tested individually in a quiet room. No time limit was imposed during testing, and no response-contingent feedback was given by the experimenter. The sentences of the various types were randomly ordered, with no more than two sentences of the same type appearing consecutively. All the tests were tape-recorded and transcribed in full during the testing as well as after the test, by two independent native speakers. A native speaker of European Portuguese said a sentence, and the children were asked to repeat the sentences as accurately as they could. For each sentence they repeated (regardless of their success) they were awarded with a building block which they used to build a building-block tower "way up to the sky". Whenever the child requested, the experimenter repeated the sentence, as many times as the child needed.

As a whole, the rate of successful repetition was only 5.8% (7 out of 120), which indicates that children had a very hard time repeating V-Adv-O sentences. As shown in fig. 1, individual results reflect this generalized difficulty, except for

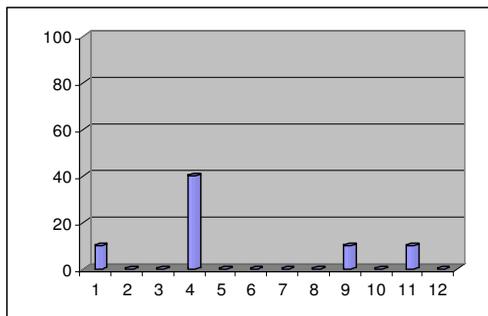one child, who is alone responsible for almost all successful repetitions:

Fig 1. Individual results for repetition task in Costa & Friedmann (2009)

It is also interesting to look at the types of deviant responses children gave. As shown in (18) below, in most cases children give no response or omit the adverb. The fact that the adverb was omitted is relevant since the instruction was to repeat the sentence. The same children, tested in Costa & Friedmann (2009), were able to repeat sentences with the same length, and only performed with omissions in other conditions in which there were difficulties. But there are other interesting patterns of response such as those in which they place the adverb sentence-initially or sentence-finally:

(18) *Errors and numbers in repetition (out of 120 trials):*

Deviant responses	Number
SVO	30
O	18
SV	4
VO	5
OV	1
S	1
ADV SVO	3

S V ADV	2
ADV V O	8
ADV	2
ADV V O	1
No response	38

In order to interpret these data correctly, two notes are important. First, it is important to note that children's bad performance is not due to some kind of inability to repeat – in the same task, children successfully repeat other structures (SV(O) with unergatives, transitives and unaccusatives, and VS with unaccusative verbs), as reported in Costa & Friedmann (2009). It is also relevant that their failure is not due to the length of the sentences. Actually, the type of errors found shows that children's strategy when they do not repeat is the same with shorter sentences. For instance, in Costa and Friedmann (2009), children failed to repeat VS with unergatives, and omitted one of the words or gave no responses, which is a behavior similar to what was found in the repetition of S V-Adv-O. Besides, children correctly repeat PP-V-S sentences with unaccusative verbs with the same length of the relevant sentences, as illustrated in (19). Hence, *prima facie*, the strategy is the same and independent of length.

(19)   *Naquele dia chegou o barco*
         on-that day arrived the ship

Summarizing, on the basis of the type of data observed so far, we have no clear evidence for assuming that the V-to-I parameter is set early in European Portuguese. In fact, both in elicited production and in spontaneous speech, children fail to produce V-Adv-O orders. Moreover, the results of the repetition task and the type of errors found could suggest that children have real problems with V-to-I movement.

3.2. VP-ellipsis in children's productions.

In Santos (2006/2009), it is argued that children's verbal answers in European Portuguese provide unambiguous cases of V-to-I movement, since they require an analysis in terms of VP-ellipsis (VPE), which, in turn, requires an overt verb to be in I (Chao 1987, Lobeck 1995).

Santos (2006/2009) studied a corpus of 3 children, aged between 1;5 and 3;11 (the same corpus we used to extract sentences with adverbs), and counted all verbal answers that could only be analyzed as cases of VPE. Verbal answers are affirmative answers to yes-no questions in which a finite verb is stranded (see example 20, displaying the different types of affirmative answers in European Portuguese). Verbal answers are always compatible with a VP ellipsis analysis, even though some of them are ambiguous between VP ellipsis or other null anaphora, such as null object and null complement anaphora (see Santos 2006/ 2009).

(20) Q: Entregaste o artigo à Maria?
          gave[2sg] the paper to+the Maria
          'Did you give Maria the paper?'
      A: a. Entreguei.   **Verbal answer (VPE)**
             gave[1SG]
          b. Sim.   SIM 'yes' answer
             yes
          c. É./ Foi   SER 'be' answer
             is   was

In order to evaluate children's production of VPE in the context of verbal answers to yes-no questions, we counted all verbal answers and treated as unambiguous cases of VPE only the following cases: cases of auxiliaries licensing VPE; cases of copula verbs licensing VPE; cases in which a VP modifier is omitted; cases in which more than one internal argument is omitted (for arguments showing that these are unambiguous VP ellipsis cases, see Santos 2006 / 2009). All other constructions are ambiguous with other types of

elliptical constructions. Even with this restrictive inclusion criterion, the following numbers emerge. As shown in table 1, the percentages of unambiguous cases of VPE in verbal answers are quite high[8]:

Out of the total verbal answers		Out of all verbal answers excluding the forms "é" (is), "foi"/"era" (was)	
20.6%	(218/1060)	43.7%	(218/499)

Table 2. % of unambigous cases of VPE in verbal answers

In (21) and (22), we provide two examples of verbal answers given by two of the children in the corpus:

(21) MAE: o   cavalo vai   papar?
             the   horse   goes   eat
             'Is the horse going to eat?'
      TOM: vai.
             goes
             'Yes.'   1;9.14

(22) MAE: estás lhe   a   dar   colo?
             are   him-DAT   PREP   give   lap

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[8] In this table, two types of counting are presented, (i) the rate of unambiguous VPE answers out of the total amount of verbal answers and (ii) the rate of unambiguous VPE answers out of the set of answers excluding verbal answers with forms of the verb *ser* 'be' that are also used in SER 'be' answers: *is*, *foi* or *era*. SER 'be' answers are not necessarily ellipsis – as shown in example (20), these occur as answers to questions that do not contain the verb "SER" and behave as frozen verbal forms equivalent to *sim* 'yes' answers. Therefore, the answers with these forms of the verb *ser* 'to be' (which are very frequent) were all counted as ambiguous. For criteria and discussion, see Santos (2006 / 2009).

'Are you putting him in your lap?'

INI: (es)tou.

am

'Yes.'   2;1.10

Summarizing, the spontaneous speech data involving verbal answers provides compelling evidence showing that children master VPE at a very early stage. Since it is known that mastery of VPE requires setting the V-to-I parameter, these data implies that children have set the relevant parameter by the time they are producing verbal answers.

3.3.   Order vs. Ellipsis.

Collapsing the two sources of evidence, we reach a first important methodological conclusion. It appears that VPE is a more reliable source of information than adverb placement in order to assess whether the V-to-I parameter has been set.

In any case, it is important to pose the question of why the two sources of evidence apparently contradict each other. In other words, why does it appear to be easier for children to produce VPE than V-adv-O orders? Note that it is not the source of the data – experimental vs. spontaneous - that is at stake, since the word order facts were investigated in both situations. Therefore, it must be the case that the difference lies in the nature of the constructions. As such, the question must be phrased in the following terms: why do children move the verb to I in VPE environments more easily? We will address this question in the next section.

4. Spell out domains and the preference for ellipsis

In order to account for the apparent contradiction between the two types of data, we endorse the analysis of Costa and Friedmann (2009) for the acquisition of word order and linearization. Costa and Friedmann assume Fox and Pesetsky's (2004, 2005) analysis of linearization based on

spell-out domains. Fox and Pesetsky propose that V-movement out of VP is only possible if it preserves the initial linearization established in the first spell out domain. They further assume that the Spell Out Domain may be subject to crosslinguistic variation (e.g. in V2 languages, the spell out domain is CP). In V-to-I languages, the spell out domain is IP. Costa and Friedmann (2009) assume that stages of linguistic development vary in the same way languages differ: in earlier stages children may assume a spell out domain different from the one of the language they are acquiring. It is assumed that IP is projected from the onset and proposed that, in the initial stage, Portuguese-speaking children assume VP as the spell out domain, preventing V-to-I movement. The acquisition of subject movement will trigger a later extension of the spell out domain to IP.

In the following examples, we illustrate why assuming VP as the spell out domain precludes children from moving the verb to I. Consider the initial structure under (23):

(23)   [$_{IP}$ [$_{VP}$ Adv [$_{VP}$ S V O]]]

This structure and the assumption that VP is the first spell out domain yields the following linear order established at VP: Adv-S-V-O. Suppose V-to-I movement (and A-movement of the subject) takes place, as in (24):

(24)   [$_{IP}$ S V [$_{VP}$ Adv [$_{VP}$ t t O]]]

Note that, now, the effect of subject and verb movement is that the linear order established at the first spell out domain is no longer preserved. Hence, Costa and Friedmann (2009) suggest that these movements are avoided until the spell out domain is extended to IP.

Crucially, these are linearization issues, relevant at PF, and involve only lexical material. Elided and silent categories are irrelevant for linearization purposes. Accordingly, the analysis predicts that there will be a stage in which children are able to produce V-to-I only when linearization is not at stake, i.e., in cases of VPE, but not in cases in which the

linear order established at the first spell-out domain is not preserved, e.g. in V-Adv-O orders. Consider a case of VPE, depicted in (25) and (26). As above, given a structure like (25), the linear order is Adv-S-V-O at VP, the initial spell out domain:

(25)   [$_{IP}$ [$_{VP}$ Adv [$_{VP}$ S V O]]

Movement of the subject and the verb, followed by VPE, destroys the linear order established at the first spell out domain, as shown in (26):

(26)   [$_{IP}$ S V ~~[$_{VP}$ Adv [$_{VP}$ t t O]~~]

However, since elided material is invisible at PF, and does not count for linearization purposes, the fact that the initial linearization is not preserved is not problematic.

This may explain why children will not have problems in moving the verb only in the context of VPE. As argued in Costa and Friedmann (2009), children will allow movement of the verb to the inflectional domain in all contexts as soon as they acquire A-movement and extend their spell out domain to IP.

5. Conclusions.

In this paper, we made a methodological point regarding the type of evidence to look for in order to assess the early setting of V-to-I by children acquiring European Portuguese. It was argued that VPE, which is visible in verbal answers, provides the earliest and most robust evidence for detecting V-movement in child Portuguese. Further, it was shown that a careful examination of different surface manifestations of the setting of a single parameter reveals that it may operate in different ways across structures, depending on its interactions with other constraints.

We further proposed, following Costa and Friedmann (2009), that the differences between data involving V-to-I, in particular children's preference for VPE and their difficulty

with V-Adv-O orders, are better explained as the interaction of the V-to-I parameter and the acquisition of prerequisites for linearization.

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