ADVERBS AND THE SYNTAX-SEMANTICS INTERPLAY

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ABSTRACT: *Recent literature on the placement and interpretation of adverbs has tried to explain crosslinguistic fixed hierarchies on the order of adverbs on the basis of strict syntactic hierarchies (e.g. Cinque 1999). The aim of this talk is to show that, in order to understand the distribution of adverbs, one must take into account information coming from different domains: their (non)inherent semantics, their prosodic structure and their categorial status. Once all these variables are taken into account, one can predict the position of adverbs. These considerations will be compared to strict hierarchical approaches to adverb placement.*

The second part of the talk will be dedicated to show that a less rigid approach to adverb syntax may predict that the same lexical item may acquire distinct meanings and approaches. Special attention will be drawn to adverbs that may function as VP- -domain adverbs and as connective adverbs.

KEYWORDS: *adverb; connective; interface.*

1. Introduction

The goal of this paper is to discuss the limits of purely syntactic analysis for explaining the behavior of adverbs. It is argued, based on evidence put forward in Costa (2004), that an interface approach to adverb placement and interpretation is more appealing, since some aspects of adverb interpretation – namely, their functioning as connective adverbs – falls beyond the scope of syntactic analysis.

The paper is organized as follows:

In section 2, I review some aspects of adverb placement and interpretation that make it difficult to establish direct links between their syntax and their semantics. This type of mismatch between syntax and semantics aims at showing that any approach trying to reduce the interpretation to syntax or vice-versa is very likely to fail.

Section 3 shows that adverbs may function as connective markers, spelling out the fact that most of such adverbs are ambiguous with other readings.

Section 4 reviews current syntactic approaches to adverb placement and interpretation differing on the role played by interfaces (Cinque 1999, Ernst 2002, Costa 2004). It is argued that connective adverbs play a crucial role in the explicit comparison between these analyses.

In section 5, some conclusions are presented.

2. The heterogeneous behavior of adverbs

Although there is little consensus in the literature regarding the analysis of adverb behavior, all authors agree that adverbs constitute one of the most heterogeneous word classes. They are not morphologically uniform, and their meaning and place varies in a significant way.

In the following examples, it is shown that their domain of modification may vary: in (1), the adverb modifies the predicate of the sentence; in (2), it modifies the whole sentence; and in (3), it modifies the PP complement.[1]

Predicate:
(1)   A Maria canta lindamente.
        Maria sings beautifully

Sentence:
(2)   Supostamente, a Maria cantou.
        Arguably, Mary sang
        XP:
(3)   A Maria cantou provavelmente para o patrão.
        Maria sang probably for her boss

Interestingly, these domains of modification do not enable to establish a one-to-one relation between modified element and interpretation for the adverb. Within a single domain of modification, several different meanings for the adverb may obtain. This is illustrated in the following examples:

Speaker-orientation:
(4)   Francamente, eu tenho fome.
        Frankly, I am hungry.

Hearer-orientation:
(5)   Honestamente, diz-me o que achas.
        Honestly, tell me what you think.

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[1] There are well known syntactic arguments showing that the domain of modification is different in the three cases. For instances, predicate adverbs differ from sentence adverbs since only the former are in the scope of negation and participate in clefting constructions, and it is possible to show that, in (3), the adverb *probably* is modifying the PP, since it can be clefted along with the PP or coordinated with another PP containing a different adverb.

Subject-orientation:
(6)   Estupidamente, o João respondeu à pergunta.
        Stupidly, João answered the question.

Domain-orientation:
(7)   Matematicamente, isso é absurdo.
        Mathematically, that is absurd.

Truth-value-orientation:
(8)   Provavelmente, ela é feliz.
        Probably, she is happy.

In sentences (4)-(8), we find adverbs with a similar syntactic behavior, which can be analyzed as adjuncts to the IP-domain, but with very different meanings. This shows that it is hard to establish a one-to-one relation between adjunction site and meaning.

Likewise, it is possible to show that adverbs belonging to the same semantic class, under certain circumstances, exhibit a non-uniform syntactic behavior. This is illustrated in the following examples:

Non-uniform behavior of aspectual adverbs:
(9)   Eu já te tinha dito isso.
        I already you had told that.

(10)   Eu, frequentemente, dizia-te isso.
        I often told you that.

Sentences (9) and (10) both contain an aspectual adverb (*already* and *often*) and, interestingly, their syntactic behavior is different. The adverb *já* (already) is a proclisis trigger, while *frequentemente* (often) is not. Data of this type are relevant to strengthen the idea that the syntactic behavior of adverbs and their meaning are at least partially independent.

3. Adverbs as connective markers

Certain adverbs may function as connective markers. When they assume this type of discourse function, they establish meaning relations based on preceding fragments or discourse units. Naturally, these units often go beyond the sentence. Let us consider some clear examples of adverbs functioning as connective markers:

(11) A Maria está grávida. **Consequentemente**, tem enjoos matinais.
     Maria is pregnant. **Consequently**, she has morning sickness.

(12) **Assim**, chegamos ao fim desta viagem.
  So, we come to the end of this trip.

(13) Compreendo que estejas aborrecido. **Agora**, fazer greve de fome
  não é justificável.
  I understand that you are annoyed. **Now**, to go on hunger strike is
  not justifiable.

(14) Estas são as minhas conclusões. **Bem**, não tenho mais nada a dizer.
  These are my conclusions. **Well**, I have nothing else to say.

A characterization of the type of connection established by each adverb falls beyond the scope of this paper. What is relevant here is the descriptive note on this specific behavior of this word class. Note that I am assuming that their behavior as connective markers has no implication for their classification as adverbs. In order to see the difference between word class and discourse function, it is interesting to observe that certain connective adverbs are traditionally classified as conjunctions. This is the case with the adverbs *porém, todavia* and *contudo*, traditionally classified as adversative conjunctions.[2]

As shown in the following examples, the words *porém, todavia* and *contudo* do not behave as the adversative conjunction *mas*, for two reasons. First, their placement is different. The four words may appear sentence--initially (15), but only *mas*, as any other conjunction, is ruled out in between the subject and the verb (16). Like for other adverbs, this position is available for *porém, todavia* and *contudo*:

(15) Quase todas as aves voam, {mas/porém/todavia/contudo} os
  pinguins não voam.
  Almost every bird flies, but penguins do not fly.

(16) Quase todas as aves voam. Os pinguins,
  {porém/todavia/contudo/*mas} não voam.

Second, the conjunction and the connective adverb may co-occur in the same sentence, as shown in (17). The fact that they are not in complementary distribution shows that they are not competing for the same position:

(17) Quase todas as aves voam, **mas** os pinguins, **porém**, não voam.

This type of data shows that, although connective adverbs and conjunctions may have the same discourse function, they belong to different word classes. This provides a first step to understand the division of labor between the several components of grammar. In this specific case, it

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2 A similar point is made in Matos (2003) and Costa (2008).

becomes obvious that discourse functions and word labels are different matters.

An important aspect of connective adverbs is that most (if not all) adverbs with this discourse function may also appear as modifiers of a predicate. In this case, they typically have a time, location or manner reading. In the following examples, we can see some cases of the same adverb behaving as connective adverb (in the a. examples) and as predicate adverb (in the b. cases):

(18) a. Assim, conseguimos abrir a porta.
        So, we managed to open the door.
    b. Conseguimos abrir a porta assim.
        We managed to open the door this way.

(19) a. Ter enxaquecas é aborrecido. Agora, ficar em casa é bom.
        Having migraines is annoying. Now, staying at home is good.
    b. Fico em casa agora.
        I stay home now.

Acknowledging the existence of connective adverbs, one is led to ask the following questions:

A.   What are adverbs subclasses?

It was observed that there is no one-to-one mapping between syntactic behavior and semantic interpretation for adverbs. Nevertheless, traditionally, adverb subclasses are established according to their meaning. Based on this observation, it makes sense to tackle the issue of subclasses, determining whether it makes sense to establish syntactic adverb subclasses.

B.   Why can the same adverb function as connective and predicate modifier?

As shown above, the same adverb may occur in different positions with different meanings. Any model accounting for the behavior of adverbs must take into account the fact that ambiguity exists.

C.   What do connective adverbs tell us about the syntax-semantics--discourse interface?

As spelled out above, the interpretation of connective adverbs depends on units above the sentence level. As such, they provide a good diagnostic tool for evaluating competing approaches for adverb syntax and interpretation.

In the next section, these questions will be addressed, focusing particularly on the role of connective adverbs as an evaluation tool for competing approaches.

4. Approaches to adverb syntax and interpretation and connective adverbs

4.1. Two approaches to adverb syntax: comparison

Two influential analyses of adverb behavior have been proposed in the recent literature: Cinque (1999) and Ernst (2002).

Cinque (1999) observes that there is a rigid and crosslinguistically robust hierarchy for adverb placement, that is, the relative ordering between adverbs is fixed and found across languages. Moreover, the same type of ordering is independently attested for functional heads, such as aspectual markers or auxiliary verbs. Crucially, the order between adverbs and between these types of heads is the same whenever their meaning is similar. Based on this data, Cinque proposes that adverbs should not be treated as adjuncts, but rather as specifiers of designated functional categories (hosting the correlate heads). According to this view, the meaning of each adverb depends on the semantic content of each functional category. For instances, if an adverb occupies the specifier position of an aspectual functional head, it is endowed with an aspectual interpretation. Assuming that the hierarchy of functional heads is fixed crosslinguistically, the ordering restrictions between adverbs follow straightforwardly.

Ernst (2002), on the contrary, points out that there are several symmetric relations between the left and the right periphery, better accounted for if adverbs are analyzed as adjuncts. Ernst accounts for the hierarchies identified by Cinque, proposing that the inherent lexical semantics of the adverbs – independently needed – and the independent hierarchical relations between semantic notions are mapped onto the syntax.

In Costa (2004), I collected some arguments from previous work, trying to test the predictions of these two approaches, comparing them. Probably, the major difference worth emphasizing between the two approaches has to do with two issues:

a)   How powerful is syntax? Can adverb meanings be predicted from the position of the adverb in the syntax?
      Cinque's approach relates all interpretations of adverbs and heads to the hierarchy and labeling of the functional categories of the clause. This cartographical type of work, developed by many scholars for other domains (e.g. Rizzi, Pollock, Polletto), is subject to criticism, since it is partially circular: an adverb has a specific interpretation because it is the specifier of a designated functional projection, and the label of that specific functional projection is signaled by the interpretation of the adverb.

In contrast, Ernst proposes a division of labor between syntax, semantics and lexico-semantics, reducing the task of syntax to the determination of directionality principles and to the permission for free adjunction. Interestingly, however, Ernst does not completely dispense with some functional categories labeled according to interpretation, although he does not entirely derive the reading of adjuncts from these specific designations.

b)   What do adverbs and adjuncts tell us about clause structure?

In Cinque's analysis, adverbs provide the crucial evidence for drawing conclusions about the structure of the clause, while in Ernst's approach, adjuncts by themselves distribute quite freely in the clause structure, and their distribution can be explained, once we know what the clause structure is like and the correct syntactic--semantics mapping conditions.

Nevertheless, it is interesting to note that both these perspectives lead to a conclusion that challenges most uses syntacticians make of adjuncts. Since Emonds' (1978) and Pollock's (1989) works, adverbs are taken as valid diagnostics for detecting (lack of) movements to designated positions. Both approaches force us to the conclusion that generalizations concerning landing sites for movement based on orderings between (several classes of) adverbs and verbs must be carefully reexamined, taking into consideration what type of adverb class we are dealing with. Perhaps more importantly, it does not follow from any of the analyses that all adverbs are good diagnostics for signaling specific syntactic borders.

Crucially for the purposes of this paper, both analyses deal quite extensively with the relation between the meaning of adverbs and their distribution. In Cinque's work, there is a one-to-one relationship between the meaning of each adverb class and the label of the functional category where it appears. In Ernst's book, the relation between meaning and position is less direct. The position of the adverb is conditioned by its lexico-semantics and mediated by syntax-semantics mapping conditions.

As mentioned above, these two views stem from quite opposite perspectives on the power of syntax for determining meanings. However, both make strong predictions, in the sense that the rigidity of some positions is predicted by both analyses. Let us consider for example a prediction made for sentence adverbs by the two authors: the fact that these adverbs do no surface clause-finally, as originally noted by Jackendoff (1972). This is illustrated in (20):

(20) a. John carefully read the book.
         (= it was careful of John to read the book)
     b. John read the book carefully.
         (≠ it was careful of John to read the book)
         (= John read the book in a careful manner)

Cinque's analysis does not have much trouble predicting the unavailability of the agent-oriented reading in clause-final position. Under his hypothesis, these adverbs are specifiers of a high functional category, and there are no rightward specifiers. The lack of symmetry is thus expected. The major problem for Cinque's analysis is to predict clause-final positions for adverbs independently of their readings. However, this problem is easily circumvented, since there is enough structure to move everything to the left of the clause-final adverb. Hopefully, these movements are independently motivated and not made just to ensure that the attested word orders are met.

According to Ernst's analysis, the more rigid position of the predictational adverbs is a consequence of their lexicosemantics. Ernst analyzes these adverbs as complement-taking semantic heads. Since functional heads uniformly take complements to their right, the complement of these adverbs can never surface to their left, which rules out positioning to the right of the modified constituent.

In earlier work of mine (Costa 1998), I took this asymmetry to signal the lack of right-adjunction, following Kayne's (1994) hypothesis. However, as the fair discussion in Ernst's book shows, a lot of insufficiently motivated syntactic movement was necessary to account for all cases in which adverbs surfaced clause-finally. In this sense, it is fair to acknowledge that Ernst's proposal provides a more elegant and adequate analysis of this asymmetry.

Nevertheless, I would like to add some data from Costa (2004) to show that matters may turn out to be even more complicated. As discussed by many authors, predicational adverbs are often ambiguous between a predicational reading and a manner reading. The high position only triggers the agent-oriented reading, while the low positions trigger manner readings. It becomes an important question to look for predicational adverbs that are not ambiguous. The following set of sentences from Portuguese illustrates the difference between an ambiguous adverb (*estupidamente*/ stupidly) and the behavior of an agent-oriented adverb that is not ambiguous between this reading and a manner reading (*propositadamente* / purposely):

(21)   *Subject-oriented reading (ambiguous adverb)*:
    a. O João estupidamente tinha estado a falar com os amigos.
       the João stupidly had been talking to the friends
    b. ??O João tinha estupidamente estado a falar com os amigos.
       the João had stupidly been talking to the friends
    c. *O João tinha estado estupidamente a falar com os amigos.
       the João had been stupidly talking to the friends
    d. *O João tinha estado a falar estupidamente com os amigos.
       the João had been talking stupidly to the friends
    e. *O João tinha estado a falar com os amigos estupidamente.
       the João had been talking to the friends stupidly

(22)   *Agent-oriented reading (non-ambiguous adverb)*:
   a. O João propositadamente tinha estado a falar com os amigos.
      the João intentionally had been talking to the friends
   b. O João tinha propositadamente estado a falar com os amigos.
      the João had intentionally been talking to the friends
   c. O João tinha estado propositadamente a falar com os amigos.
      the João had been intentionally talking to the friends
   d. O João tinha estado a falar propositadamente com os amigos.
      the João had been talking intentionally to the friends
   e. O João tinha estado a falar com os amigos propositadamente.
      the João had been talking to the friends intentionally

The paradigms in (21) and (22) contrast in an interesting way. While the ambiguous adverb displays different meanings associated with different positions, the adverb *propositadamente,* which also has an agent-oriented reading, distributes quite freely, occupying positions unavailable for the adverb used in (11). This contrast calls for an explanation. In Costa (2004), I suggested that the meaning of an adverb is conditioned by the syntactic structure, only if the adverb does not have an inherent meaning. This suggestion is based upon a proposal made by Ernst in his 1984 dissertation. In Ernst (1984), an interesting discussion of inherent meanings of adverbs is made. The main idea is that the meaning of adverbs may vary in their lexical entries. Some adverbs may have an inherent meaning, while other adverbs may be associated with a meaning depending on their syntactic distribution. The point illustrated for the difference between *stupidly* and *purposely* can be made for other adverb classes. Consider for example a temporal adverb like *yesterday*. Independently of its syntactic placement, *yesterday* has an inherent meaning (something like 'the day before the reference or utterance time'). A different position will not affect its meaning. This difference between inherent meanings and non-inherent meanings is crucial, since it may help understanding the much more general issue concerning the relation between adverb syntax and adverb meaning. If an adverb has an inherent meaning, its position will not affect its interpretation, and it is predicted that it will distribute quite freely. This is indeed the case for an adverb like *yesterday*, as shown in (23):

(23) a. O João ontem tinha estado a falar com os amigos.
        the João yesterday had been talking to the friends
     b. O João tinha ontem estado a falar com os amigos.
        the João had yesterday been talking to the friends
     c. O João tinha estado ontem a falar com os amigos.
        the João had been yesterday talking to the friends
     d. O João tinha estado a falar ontem com os amigos.
        the João had been talking yesterday to the friends
     e. O João tinha estado a falar com os amigos ontem.
        the João had been talking to the friends yesterday

Similarly to the temporal adverb, since *propositadamente* is unambiguous, its lexical meaning is sufficient, and its reading need not be predicted by its syntactic placement.

For an adverb without an inherent meaning, this type of free distribution cannot be reproduced. If one takes the adverb *estupidamente* 'stupidly' in each of its possible readings, it is possible to show that not all positions are available for the two readings. This contrast between ambiguous and non--ambiguous adverbs may shed some light on the differences between the two analyses: first, it seems to favor Ernst's less rigid syntax, since, contrary to Cinque's predictions, it shows that there is no one-to-one association between syntactic placement and meaning. Nevertheless, these data also enable the addition of some complications to the neat syntax-semantics mapping proposed by Ernst: under his analysis, all predicational adverbs were expected to behave alike, independently of the inherent vs. non--inherent lexical meaning, since the interface mapping conditions evaluate whether the syntactic configuration created respects the constraints on adverb semantic licensing. These data show that two adverbs with the same meaning may distribute differently, which may lead to a relaxation of the type of syntax-semantics mapping proposed by Ernst. In particular, it may turn out to be the case that the categorical syntax-semantics mapping is operative only whenever the meaning of the adverb is not sufficiently transparent.

Before shifting to a different type of evidence, let me just comment that the way I am stating the facts calls for some additional considerations. In other words, the difference between inherent and non-inherent meanings cannot be the whole story, since there are many adverbs with an inherent manner reading, and yet this is not enough to license their free distribution: they still resist high positions, as illustrated in (24):

(24) a. *O Pedro bem cozinhou.
        Pedro well cooked
     b. O Pedro cozinhou bem.
        Pedro cooked well

Summing up, the discussion above shows that the relationship between the syntax and semantics of adverbs must take into consideration several types of variables: the type of lexical meaning of each adverb, the way syntax derives meanings, domains of modifications for different adjunct classes.

Another piece of data I would like to bring into the discussion of the syntax-meaning relation concerns the categorical status of adverbs. In Castro and Costa (2003), it is argued that some adverbs display a head-like behavior. One of the facts noted is that these adverbs form a unit with the finite verb, moving together with it in I-to-C contexts, as shown in (25):

(25) a. O que já tinhas tu feito?
      What already had you done
  b. Com quem lá tinhas tu ido?
      With whom there had you gone
  c. O que aqui tinham eles tratado?
      What here had they treated

Interestingly, these adverbs do not form a natural semantic class. As discussed in Castro and Costa (2003), head-like adverbs may include temporal adverbs, locative adverbs and aspectual adverbs. Yet, their distribution is similar.

The reasons why I am bringing these facts into this discussion are the following: first, these adverbs are predicted not to exist under Cinque's analysis, since they would not be able to occur in a specifier position, given their head status. Second, they share the same distribution independently of their meaning. This fact makes it suspicious to derive the meaning of the adverbs entirely from the syntax. Like in the case considered in the previous section, it must be considered that more variables are at stake. In this particular case, it seems that the categorical status of the adverb takes precedence over whatever syntax-semantics mapping condition underlies adverb distribution. Nevertheless, like in the previous case, it seems that Ernst's approach may be easily extended in order to accommodate these data. As emphasized by the author, the head/non-head dichotomy must be relativized. Ernst assumes that some adverbs may behave like semantic heads in spite of being syntactic phrases. Adapting this reasoning to these data, the sole modification needed is to assume that adverbs that behave like syntactic heads may behave as phrases semantically.

Crucially, what the data in Castro and Costa (2003) show is that adverbs with the same interpretation may behave differently from a syntactic point of view, and that adverbs with the same syntax may have rather different interpretations.

In Costa (2004), based on evidence of the type presented here, it is suggested that any approach trying to explain the behavior of adverbs taking into account information from just one of the components of grammar is very likely to fail. Instead, it is proposed that adverb placement and interpretation can be accounted for if at least the following aspects are taken into account:

Information needed in order to determine meaning and placement of adverbs:
    a) Lexical semantics (specified vs. underspecified meaning)
    b) Domains of modification and syntactic correlate (VP, IP, CP, XP)
    c) Categorial status of the adverb (XP vs X°)
    d) Prosodic information on the adverb (monosyllabic vs. heavy adverbs)

4.2. The role of connective adverbs

According to the view defended above, syntax and semantics are quite autonomous. Syntax provides the configurations (adjunction) for placing adverbs, while semantics evaluates/interprets the structures generated by syntax. As such, there is no need for syntax to encode semantic notions. The consequence of this interplay between syntax and semantics is that imperfect mappings are predicted. Such imperfect mappings are desirable, since semantic distinctions are more fine-grained that what can be codified in the syntax. This type of view predicts, then, that from a single domain of syntactic modification, e.g. the sentence level, several meanings for an adverb may derive: speaker-orientation, agent-orientation, truth-value-orientation, etc.

Connective adverbs play a crucial role in comparing analyses for the relation between syntax and interpretation in adverb behavior. First, it is important to note that their meaning is highly dependent on extra-sentential factors. For this reason, it is hard to encode their meaning as a syntactic primitive (contra Cinque). In other words, it is by no means evident why syntax should encode notions that are not relevant for determining syntactic operations. Moreover, the distribution of connective adverbs follows from general principles of adjunction: they are found in places made available for sentential adjuncts, according to general well-formedness conditions on adjuncts and on independent syntactic factors (e.g. V-to-I movement).

As shown above, most connective adverbs may appear as VP-adverbs. This fact also favors a lexical semantic study of these words, since their underspecified meaning may explain their multifunctional nature. As it is the case for other adverbs, a strict syntactic approach would predict a one-to-one relationship between placement and meaning. If the lexical semantics of adverbs is taken into account, ambiguity is predicted. In short, it appears that connective adverbs are a good testing ground for determining what parts of adverb syntax and interpretation are to be explained by syntax alone.

Going back to the questions raised when connective adverbs were presented, it appears to be the case that, in spite of the variation identified, it makes sense to establish adverb subclasses, because their meaning and distribution follow general patterns: VP-adverbs occur in low positions and function as predicate modifiers; sentence adverbs tend to appear in high positions and function as clause-modifiers; connective adverbs appear in the same positions as sentence adverbs, but they do not play a modification role. Note that these classes are quite wide, and they probably establish the limits of syntax. Further details on adverb meaning are to be accounted for taking into consideration their lexical semantics. As a methodological point, the observations made in this paper reinforce the standard view that it does not make sense to assign a subclass to an adverb independently of its context.

5. Conclusions

The argumentation developed in this paper leads to the following general conclusions:

– Syntax, semantics and discourse are autonomous components;

– Their autonomy and their different degrees of complexity derive imperfect mappings;

– Because of imperfect mappings, any analysis of (connective) adverbs may not overlook their discourse function, meaning and placement, and should be aware of the limitations of attempts to derive all properties from a single component.

References

Castro, Ana & João Costa 2003. Possessives and adverbs: weak forms as X^0. In *Selected Proceedings of Linguistic Symposium on Romance Languages* 32. Toronto, Amsterdam: Johns Benjamins, pp. 95-110.

Costa, João 1998. *Word Order Variation. A constraint-based approach.* Doctoral Dissertation, HIL/Leiden University [published by Holland Academic Graphics, The Hague].

Costa, João 2000. Adverbs as adjuncts to non-universal functional categories: evidence from Portuguese. In A. Alexiadou & P. Svenonius (eds.) *Adverbs and adjunction.* Linguistics in Potsdam 6, pp. 19-32.

Costa, João 2004. A multifactorial approach to adverb placement: assumptions, facts, and problems. *Lingua*, pp. 711-753.

Costa, João 2008. *O advérbio em português europeu.* Edições Colibri, Lisboa

Cinque, Guglielmo 1999. *Adverbs and functional heads: A cross-linguistic perspective.* New York: Oxford Studies in Comparative Syntax.

Emonds, Joseph 1978. The verbal complex of V'-V in French. *Linguistic Inquiry* 9, pp. 151-175.

Ernst, Thomas 1984. *Towards an Integrated Theory of Adverb Positions in English.* Ph.D. Dissertation. Indiana University Linguistics Club. Bloomington: Indiana.

Ernst, Thomas 2002. *The syntax of adjuncts.* Cambridge University Press.

Jackendoff, Ray 1972. *Semantic Interpretation in Generative Grammar.* Cambridge, Massachusetts: MIT Press.

Kayne, Richard 1994. *The Antisymmetry of Syntax.* Cambridge, Massachusetts: MIT Press.

Matos, Gabriela 2003. Estruturas de Coordenação. In Mateus *et al. Gramática da Língua Portuguesa.* Lisboa: Editorial Caminho.

Pollock, Jean-Yves 1989. Verb Movement, Universal Grammar and the structure of IP. *Linguistic Inquiry* 20, pp. 365-424.