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Epistemic adverbs, the prosody-syntax interface, and the theory of phases

Alessandra Giorgi

Dept. of Linguistics, Ca' Bembo

Epistemic adverbs in Italian (e.g., *probabilmente* 'probably') can appear in several positions. Cinque (1999) proposed that they always occupy the same position above IP and that the various orders are derived via movement of the other phrases around them. In this paper I consider contrasts between sentences where these adverbs are associated with a "normal intonation" and those where they are associated with a parenthetical (comma) intonation. To provide an account for the distribution of parenthetical adverbs, I appeal to Giorgi (2011, to appear). I consider parentheticals as syntactically *integrated* structures, rejecting adjunction and adopting the cartographic approach, based on Kayne's (1994) Linear Correspondence Axiom. As for the non-parenthetical occurrences, I propose that there are two basic positions for these adverbs, one for each phase: above v*P and above IP (Cinque's position). The existence of a low left periphery above v*P agrees has also been recently hypothesized for other phenomena in Old (Poletto, 2006 and to appear) and Modern Italian (Belletti, 2004).

1. Introduction

The existence of several possible positions for adverbs in a sentence is a long-standing issue in syntax. In some cases, the same adverb can occupy different positions without causing significant changes in the meaning. On other occasions, on the contrary, different positions give rise to different interpretations. Consider for instance the following Italian sentences:

- (1) *Probabilmente Gianni vincerà la gara.*
'Probably Gianni will win the race.'
- (2) *Gianni probabilmente vincerà la gara.*
'Gianni probably will win the race.'

In these cases, *probabilmente* ‘probably’ can appear either before or after the subject without (significant) differences in the interpretation. In particular, in both cases the adverb has sentential scope. Consider however the following case:¹

- (3) *Gianni ha mangiato probabilmente la torta.*
 ‘Gianni ate probably the cake.’

In example (3) the adverb only has local scope over the DP and cannot have sentential scope, meaning that Gianni ate something, which is *probably a cake*. Hence, in this case the location of the adverb in the sentence makes a difference with respect to the interpretation. Moreover, as I will better exemplify below, the kind of intonation associated to the adverb also affects the linear order and the interpretation of the adverb in the sentence.

Cinque (1999) proposed that the basic position of adverbs, when associated with the “normal” intonation, is unique and that the different orders are due to movement of other phrases around them. This solution had a big heuristic impact and proved greatly successful, in that it was shown to be theoretically and empirically adequate for a large set of data in many languages. However, in the light of more recent hypotheses about the structure of clauses and the properties of the interfaces, it can now be revisited to account for more fine-grained phenomena, taking into account prosodic properties as well.

The goal of this work is twofold: on one hand the empirical coverage of the theory of adverbs and clausal structure will be broadened, including an integrated view of parentheticals. On the other, it will provide an argument in favor of the existence of a low left periphery, above *v*P*, according to recent proposal of several scholars, among the others Poletto (2006 to appear).

I analyze here the distribution and properties of epistemic adverbs in Italian, when obtaining sentential scope, contrasting the “flat” with the “parenthetical” intonation, with and without negation. The conclusions might be generalized also to the other kinds of high sentential adverbs, such as evidentials—*allegedly*—and evaluatives—*fortunately*—and to other languages as well.²

This paper is organized as follows: In the second section I present the data, contrasting the *flat*—normal—intonation with the parenthetical one. In the third section I discuss a proposal for parenthetical adverbs, showing how that it can be independently

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1. For a discussion of this and similar cases, see also Tesconi (2013).
 2. As far as the cartographic approach is correct, the syntactic ordering of adverbs is universal, hence cross-linguistic differences are in principle not expected and the results achieved here might hold for other languages as well. However, there might be sources of variation not considered so far. In this paper, I will consider only Italian data and further cross-linguistic study would be required.

motivated on the basis of completely unrelated evidence. In the fourth, I consider the distribution of the adverbs with the non-parenthetical intonation and propose the existence of a second basic position, above the lower phase, v*P.

2. Some data

2.1 The general hypothesis

In this section, I sketch a general outlining for an account of the parenthetical reading of IP adverbs, arguing in favor of an integrated view of parentheticals.

In order to account for the data in Section 4, I resort to the theory of phases, as discussed in Chomsky (2000, 2002). According to this theoretical framework, it is possible to identify two phases: CP and v*P. Interestingly, both projections have the property of being *propositional* (Chomsky 2000). Epistemic adverbs, together with evidential (*allegedly*) and evaluative (*fortunately*) ones, can be defined as *propositional adverbs* in that, by means of their presence, the speaker—or the superordinate subject for embedded contexts—qualifies the whole subsequent domain. I argue therefore that there are two basic positions for this kind of adverbs, one for each phase: one above v*P and a second above IP, in the domain of the C-layer, i.e., Cinque's position. In other words, I argue in favor of the existence of a *low* left-periphery.

This hypothesis accounts for some phenomena concerning the scope of negation and for the different properties found when these adverbs are used parenthetically. A very similar theoretical proposal has been independently argued for by Poletto (2006, to appear) in her account of word order phenomena in Old Italian.

2.2 The data

Let's consider now some relevant data. As noted by Cinque (1999), when giving a judgment, the native speaker must pay close attention to the kind of intonation associated with the adverb, because a slight change might be enough to considerably modify the distributional pattern of the adverb. The first example, concerns the distribution of the epistemic adverb *probabilmente* 'probably', when associated with the *flat* intonation in a simple transitive sentence:

- (4) (*probabilmente*₁) Gianni (*probabilmente*₂) ha (*probabilmente*₃) mangiato
 (*probabilmente*₄ DP-scope only) la torta (**probabilmente*₅)
 (probably₁) Gianni (probably₂) has (probably₃) eaten (probably₄) the cake
 (probably₅)

For simplicity, I associate here every position with a progressive number. The position of *probabilmente*₅ is ruled out, as discussed in Cinque (1999) and the one of

probabilmente4 has only local scope on *la torta* (the cake), as pointed out above.³ Hence, in this case, the rightmost position available for *probabilmente*, retaining sentential scope, is *probabilmente3*, i.e., the one on the left of the participle.

Consider now what happens when the adverb is associated with the so-called *comma intonation*:⁴

- (5) (*probabilmente1*), Gianni (*probabilmente2*), ha (*probabilmente3*), mangiato (*probabilmente4*), la torta (*probabilmente5*).
 ‘(probably1), Gianni (probably2), has (probably3), eaten (probably4), the cake (probably5).’

In this case, all occurrences of the adverb are fully acceptable. Interestingly, *probabilmente* with the *comma intonation* always has sentential scope and cannot be forced in a local scope construction. In other words, the occurrence of *probabilmente4* can never have scope only on *la torta* (the cake).

At first sight, then, it seems that there are some constraints on the position of the adverb with the flat intonation, whereas none can be found with respect to the parenthetical, with the exception of the lack of local scope.

Consider now the following examples, contrasting the flat intonation—example (6)—and the comma one—example (7)—in sentences with sentential negation:

- (6) (*probabilmente1*) Gianni (*probabilmente2*) non ha (*#probabilmente3*) mangiato (*#probabilmente4*) la torta (*probabilmente5*).
 ‘(probably1) Gianni (probably2) NEG has (probably3) eaten (probably4) the cake (probably5).’

The meaning of the sentence with the adverb in position 1 or 2 is, as expected, the following: *what is probable is Gianni NOT eating the cake*, hence *probabilmente* has scope over negation. The interesting issue concerns the sentence with *probabilmente* in position 3. In this case the sentence is judged uninterpretable.⁵ *Probabilmente4* is in general ruled out, even if some speakers seem able to assign it the NEG>prob reading, with local scope of the adverb over *the cake*. When the adverb occupies position 5, sentential negation is impossible, even if it can, marginally, i.e., not for all speakers,

3. See however Tescari Neto (2013) for somewhat different judgments in Brazilian Portuguese.

4. The *comma intonation* is the typical intonation usually associated with parentheticals and has been extensively studied by many scholars. In this paper, I do not have anything to add to the phonological theory concerning these phenomena and refer the reader to the literature on the topic. Among the very many others, see for instance Selkirk (2005).

5. Speakers have a characteristic reaction: they first say that the example is more or less ok—i.e., anyway degraded with respect to positions 1 and 2, but not *ungrammatical*. When asked about its meaning they cannot tell, and say that the sentence is odd, or that it means nothing.

focus the adverb. Hence, 1 and 2 are the only positions truly compatible with sentential negation.⁶

Consider now the example with the parenthetical intonation:

- (7) (*probabilmente*₁,) Gianni (*probabilmente*₂,) non ha (*probabilmente*₃,) mangiato (*probabilmente*₄,) la torta (*probabilmente*₅).
 ‘(probably₁,) Gianni (probably₂,) NEG has (probably₃,) eaten (probably₄,) the cake (probably₅).’

All occurrences of the adverb are grammatical and they share the same interpretation: *probabilmente* has scope over negation and can never have a local scope.

Concluding this section, there is a contrast between examples (4) and (5), and examples (6) and (7) i.e., *probabilmente* with and without the comma intonation, in particular with respect to the occurrences in *probabilmente*₄ and *probabilmente*₅, which are fully acceptable when parenthetical.

There is a contrast between examples (4) and (6) with respect to the scope of negation, in particular with respect to the non-availability of the position 3 in the sentence with negation.

In the following section, I consider the issue concerning the association of the adverb with the comma intonation.

3. Towards a syntax of the comma intonation

3.1 A proposal for parentheticals

As illustrated in the preceding section, the comma intonation makes all occurrences possible, with or without negation.

According to the analysis developed in Giorgi (2011, to appear), these parentheticals—together with several other types of parentheticals—are syntactically integrated and are generated in a position on the left of CP, in a layer called KommaP (KP), where the head K is the feature +comma, hypothesized among the others by Selkirk (2005). In what follows I will briefly summarize this points.⁷

6. I interviewed about 30 speakers. Most of them—about two thirds—are students of linguistics, some of them linguists, and some non-expert native speakers. Judgments were in general quite consistent and uniform.

7. I will not attempt to discuss here the complex characterization of the comma intonation, and I refer the reader to the existing literature, for instance the discussion in Dehé (2007 and 2009) and Döring (2007). Recall also that there is a huge and very interesting literature on parentheticals, which I will not be able to consider in this work. The issue is also especially interesting, because it is highly interdisciplinary, including considerations that go from syntax,

According to Selkirk (2005) a [+comma] feature is responsible for the *comma intonation* in a variety of structures: *as*-clauses, non-restrictive relatives, nominal appositives, etc. *Comma Phrases* are then mapped into *Intonational Phrases*. Selkirk mostly analyzes *as*-parentheticals, assuming for them the syntactic structure proposed by Potts (2005). Consider for instance the following example:

- (8) John, *as everybody knows*, likes to go to parties

As everybody knows, according to Selkirk, is a Comma Phrase, to be mapped into an Intonational Phrase.

From the syntactic point of view, supplements have been analyzed as syntactic units that are to some degree independent from the surrounding sentence. For some important properties, parentheticals can be legitimately analyzed as independent from their host. Consider for instance the following examples:⁸

- (9) She may have her parents with her, in which case where am I going to sleep?
(from Huddleston and Pullum 2002; example quoted in Cinque 2007):
- (10) My friend, who God forbid you should ever meet, ...
(from Andrews 1975; example quoted in Cinque 2007)
- (11) The Romans, who arrived before one hundred AD, found a land of wooded hills
(from Selkirk, 2005, ex. 5)
- (12) The Romans who arrived before one hundred AD found a land of wooded hills
(from Selkirk, 2005, ex. 6)

Examples (9) and (10), as discussed in the cited references, show that parentheticals can be illocutionarily independent from their hosts—one being an interrogative embedded in an assertion, and the other being an exclamative—whereas this is never permitted in a subordination relation. Example (11) shows that the parenthetical might be false, while the sentence remains true. In this example an appositive, parenthetical, relative clause appears, contrasting with example (12), with a restrictive one. In the latter case, there must be a unique truth-value for the whole sentence.

On the other hand, in many cases the parenthetical seems deeply connected to their host, to the extent that several scholars have hypothesized a movement relation, for instance in Ross' (1973) *slifting* analysis, or in Emonds' (1973) hypothesis.⁹

to semantics and phonology. In the literature, the parenthetical is often called the *supplement*, and the sentence in which it is inserted is termed the *host*.

8. For further details, cf. the discussion in Giorgi (to appear).

9. In the same vein, for a different sort of parenthetical constructions, see also Reinhart (1983). For reasons of space, it is impossible to summarize here the relevant arguments

Two main accounts have been proposed in the literature so far: parentheticals are totally external to the syntactic structure of their host, as a sort of three-dimensional tree (cf. among the others Haegeman, 1991; Espinal 1991; Burton-Roberts 2006), or supplements are syntactically integrated and are adjoined to the host, for instance right-adjoined as in Potts (2002, 2005).

However, both views are problematic with respect to a linearization algorithm. The linearization issue concerning three-dimensional trees is self-apparent: such an algorithm would be extremely powerful and therefore not desirable. The right adjunction view, proposed for instance by Potts, is also to be rejected under the cartographic approach. Kayne (1994) excludes the possibility of an adjoined structure on the basis of the Linear Correspondence Axiom, according to which linear precedence reflects asymmetric *c*-command. This principle is the basic notion of the whole cartographic framework and in particular of Cinque's (1999, and subsequent works) syntactic analysis of the position of adverbials.¹⁰

On the basis of this consideration, Giorgi (2011, to appear) proposes that there is no adjunction. *Comma* is not just a feature, but a head, *K*, which projects a constituent. The host is its complement, in a structural sense—and therefore, there is a certain degree of 'permeability' between the host and the parenthetical, for instance, *c*-command relations can be computed across the tree, cf. Dehé and Kavalova (2007), and references there—but, importantly, there is no *subordination* relation, due to the nature of the head *K*, which is *not* a complementizer.

In other words, this proposal consists in an integrated view of parentheticals, where the relevant syntactic heads are prosodic ones, i.e., prosodic features, present in the Numeration, along with the other bundles of features. This approach might have several consequences with respect to the nature of the prosody-syntax interface that will not be investigated here, for reasons of space.

3.2 Free Indirect Discourse (FID) and Quotation

In previous work, I worked out a proposal for the parentheticals introducing Free Indirect Discourse and quotations, and I will briefly summarize that discussion here. Consider the following example, featuring a FID case:¹¹

concerning the typology of parentheticals. I refer the reader to Dehé and Kavalova (2007) and references cited there.

10. It should also be remembered that Kayne's (1994) Linear Correspondence Axiom is amply motivated on the basis of very rich independent evidence, hence worth of being taken seriously, independently of the cartographic approach.

11. Many scholars addressed the issues of FID and Quotation. On the analysis of the introducing predicate, see in particular Banfield (1982) and Guéron (2007). On the analysis of

- (13) The new ration did not start till tomorrow and he had only four cigarettes left, *thought Winston* (adapted, Orwell, 1984, ch. 5)

The postponed introducing predicate *thought Winston* is a parenthetical and has the function, as discussed in Giorgi (2011, to appear) of resetting the speaker's temporal and spatial coordinates in the left-most complementizer position in the C-layer of the host.¹² According to the proposal I sketched above, the comma features project a K constituent. As a result, the KP is projected on the left of the left periphery, and all the possible orders are derived from this basic structure, as illustrated in (3):¹³

- (14) [_{KP} K [*thought Winston* [_{KP} K [_{CP} ..]]]]

Followed by re-merging of the whole CP in KP:

- (15) [_{KP} [_{CP} ..]_i K [*thought Winston* [_{KP} K $\mathcal{E}P_i$]]]

Analogously, in the following case:

- (16) The new ration, *thought Winston*, did not start till tomorrow and he had only four cigarettes left, (adapted, Orwell, 1984, ch. 5)

FID itself, see among the others Doron (1991), Schlenker (2004) and Sharvit (2004). See also Collins and Branigan (1997) for an analysis of *quotative inversion* in these contexts. Though important, I will not pursue this issue in this work.

12. The discussion of this issue is not the main topic of this paper, and therefore will not be addressed here. I dubbed the left-most complementizer C-Speaker and it roughly corresponds to Rizzi's (1997) Force. However, Rizzi collapses both the indicative and subjunctive complementizer in Force, whereas it can be argued that they do not occupy exactly the same position. For an extended discussion, see Giorgi (2010). Hence, C-speaker refers only to the highest, indicative complementizer.

13. Note that on her work, Selkirk (2005, §2) points out: "Root sentences and supplements form a natural class, in that *they both are comma phrases* [italics mine], and so [...] set off by Intonational Phrase edges from what surrounds them." See Dehé (2009) for further discussion. The structure and derivation I propose here comply with Selkirk's observation. According to Selkirk there are two *comma features* in the representation, and in my proposal there are two heads K. Each of them can be realized as a pause, as for instance in the following example:

- i. The new ration, *thought Winston*, did not start till tomorrow and he had only four cigarettes left.

If the parenthetical is in initial or final position, there is obviously no *phonological pause* preceding or following the parenthetical respectively, but the abstract head K is always present, as in Selkirk's proposal.

Followed by remerging of only a portion of the embedded structure:

- (17) $[_{KP} [The\ new\ ration]_i\ K\ [thought\ Winston\ [_{KP}\ K\ [_{IP}\ The\ new\ ration\ did\ not...]]]]$

The following example is a case of quotation:

- (18) I will leave tomorrow, *said John*

The derivation is the same as above. The structure in (19) is the base generated one:

- (19) $[_{KP}\ K\ [said\ John\ [_{KP}\ K\ [_{CP}...]]]]$

Followed by remerging of the CP:

- (20) $[_{KP}\ [_{CP}...]\ K\ [said\ John\ [_{KP}\ K\ \in P]]]$

Note finally that these parentheticals cannot be embedded:

- (21) **Luigi disse che Gianni, pensò Maria, sarebbe partito domani.*
'Luigi said that Gianni, thought Maria, would leave tomorrow.'

We will show that in this respect, parenthetical *francamente* 'frankly' is similar to the un-embeddable parentheticals *thought Winston* and *said John*, as opposed to parenthetical *probabilmente* 'probably', which on the contrary can be embedded.

3.3 Parenthetical probabilmente

In this section I extend the proposal illustrated above to parenthetical *probabilmente*. According to this view, the adverb occupies the Spec position of a K projection, as in the following structure:

- (22) $[_{KP}\ K\ [_{KP}\ probabilmente\ K\ [Gianni\ (non)\ ha\ mangiato\ la\ torta]]]$
'Probably Gianni (NEG) has eaten the cake.'

All parenthetical occurrences are derived from this basic structure, by means of remerging of a constituent in a still higher position. For instance, in example (23), the spec of the higher K is occupied by the subject:¹⁴

- (23) $[_{KP}\ Gianni\ K\ [_{KP}\ probabilmente\ K\ [Gianni\ (non)\ ha\ mangiato\ la\ torta]]]]$
'Gianni, probably, (NEG) has eaten the cake.'

14. The remerging presumably concerns only the phonological features, KP being a phonological constituent. The process might have much in common with ellipsis, but how this idea can be precisely captured is a topic for future research.

In these cases, a K also appears at the left of the adverb, hosting the remerged part. Furthermore, the whole clause might be remerged, giving rise to the order with *probabilmente* in position 5:

- (24) [_{KP} Gianni (non) ha mangiato la torta K [*probabilmente* [_{KP} K [Gianni (non) ha mangiato la torta]]]

Note that a Clitic Left Dislocated (CLLD) phrase can appear on the left of the parenthetical adverb, as in the following case:¹⁵

- (25) *Gianni, probabilmente, lo hai visto ieri*
'Gianni, probably, you him-saw yesterday'

In example (25) the dislocated phrase could either be in the Spec of KP, or in the left periphery in a position higher than the one occupied by the parenthetical. In Giorgi (forthcoming) I argue that these two possibilities can both occur, on the basis of independent evidence concerning CLLD, which I will not discuss here for reasons of space.

Note that it is not possible—or at least only very marginal—for a contrastive focus to intervene between the adverb and the topic, as in example (26):¹⁶

- (26) *?*Gianni, MARIO, probabilmente, lo ha visto ieri (non Paolo)*
'Gianni, MARIO, probably, (he) him-saw yesterday (not Paolo).'
(Mario-FOC probably saw Gianni-CLLD)

In example (26) the topic cannot occupy a position in the left periphery higher than the one of the contrastive focus. The order Topic>Focus is otherwise possible, as in the following case:¹⁷

- (27) *Gianni, MARIO, lo ha visto ieri (non Paolo)*
'Gianni, MARIO, (he) him-saw yesterday (not Paolo).'
(Mario-FOC saw Gianni-CLLD)

Finally, a focus can appear on the other side of the adverb, i.e., between the adverb and the rest of the sentence as in (28):

15. Note that this proposal is compatible with the analyses of CLLD as purely phonological movement, along the line of the base-generated approach by Cinque (1990).

16. The sentence with only the adverb and the Focus is very marginal with the parenthetical intonation and it is much easier to associate it with the flat, non parenthetical, one:

- (i) MARIO, probabilmente incontrerai domani (non Paolo)
MARIO, probably you will meet tomorrow (not Paolo)

17. On the impossibility of the ordering Focus>Topic (CLLD), see Benincà and Poletto (2004), who argue, contra Rizzi, that real dislocated items cannot appear on the left of Focus. I fully endorse their discussion and conclusions.

- (28) *Gianni, probabilmente, MARIO lo ha visto ieri (non Paolo)*
 ‘Gianni, probably, MARIO (he) him-saw yesterday (not Paolo).’
 (Mario-FOC probably saw Gianni-CLLD)

These observations point to the conclusion that parenthetical *probabilmente* appears in the left periphery, in a position higher than contrastive Focus.¹⁸

Note that, since the structure in (21) is the only source for all parenthetical orders, parenthetical *probabilmente* never appears in the scope of negation, nor can it have a non-sentential scope.

Finally, this proposal provides a natural account for the so-called *backtracking phenomena*, which under most account constitute a problem for linearization algorithms.

It often happens that when using a parenthetical, the speaker repeats the same fragment both on the right and on the left of the parenthesis, as in the following examples:

- (29) But a different role ⟨,⟩ uh because **when we get to the time of Ezra**, as with the more classical Wellhausen uh hypothesis, **when we get to the time of Ezra** we have the further narrowing of the office of priest (ICE-GB: s1b-001, #9) (from Dehé and Kavalova, 2007, p. 3)
- (30) But **I believe that if** at this stage, and it isn't too late because it's only what six months since your brother died, **I believe that if** you can bear... (DCPSE: DL-D08, #135) (From Kavalova, 2007, p.160)

The proposal sketched above can easily account for these facts, by simply assuming that in these cases both copies, the one in the Spec of KP and the one on the right of the parenthetical, are spelled out.¹⁹

18. This conclusion is compatible with Benincà and Poletto's (2004) analysis; see fn. 17.

19. In the cases where the adverb occupies the position 3 in examples (4) above, it looks like the sequence on the left of the parenthetical is a non-constituent:

- i. *Gianni ha, probabilmente, mangiato la torta.*
 ‘John has, probably, eaten the cake.’

Constituency can however be recovered by hypothesizing the following derivation: first the VP *eaten the cake* is moved in the left periphery of the host in the spec of a head F, and then remnant movement of the whole clause in KP takes place, in a way analogous to example (23) above:

- ii. [_{KP} Probabilmente K [_{IP} Gianni ha [_{VP} mangiato la torta]]
 ‘Probably Gianni has eaten the cake.’
- iii. [_{KP} Probabilmente K [_{FP} mangiato la torta F [Gianni ha mangiato la torta]]
- iv. [_{KP} Gianni ha K [_{KP} probabilmente [_{KP} K [mangiato la torta Gianni ha]]]

3.4 Embedded contexts

The distribution of *probabilmente* in embedded contexts does not significantly differ from the one in main clauses:

- (31) *Mario mi ha detto che* (*probabilmente*₁) *Gianni* (*probabilmente*₂) *ha* (*probabilmente*₃) *mangiato* (*probabilmente*₄) *la torta* (*probabilmente*₅).
 ‘Mario told me that (*probably*₁) Gianni (*probably*₂) has (*probably*₃) eaten (*probably*₄) the cake (*probably*₅).’
- (32) *Mario mi ha detto che* (*probabilmente*₁) *Gianni* (*probabilmente*₂) *non ha* (*probabilmente*₃) *mangiato* (*probabilmente*₄) *la torta* (*probabilmente*₅).
 ‘Mario told me that (*probably*₁) Gianni (*probably*₂) NEG has (*probably*₃) eaten (*probably*₄) the cake (*probably*₅).’

In embedded contexts, the epistemic state concerns the superordinate subject and *probabilmente* has scope only on the embedded clause. The structure we can hypothesize in these cases is therefore the following one:

- (33) ...that [_{KP} K [*probabilmente* [_{KP} K [_{IP}...]]]]

In this case, the parenthetical appears on the right of the complementizer and takes the IP as its complement.

Probabilmente is not exceptional in this behavior, since other sentential parentheticals exhibit the same one. Consider for instance *as*-clauses (see Potts 2002):

- (34) Alan claimed that cryptography is a blast, as you mentioned
 (Potts 2002, ex.42)
- (35) Alan claimed that, as you mentioned, cryptography is a blast
 (Potts 2002, ex.43)

Interestingly, Potts points out that sentence (34) is ambiguous, whereas (35) is not. This property can be accounted for by hypothesizing the following two structures, according to the theory sketched above:

- (36) [_{KP} K [*as* you mentioned [_{KP} K [Alan claimed that cryptography is a blast]]]]

For reasons of space, I cannot provide here a more detailed discussion on the nature of the landing site of the moved VP and, more generally, about the properties of the derivation sketched in (i)–(iv). I refer the reader on future work on the topic.

The issue concerning the precise derivation is also relevant for sentence (30). However, whatever the derivation, note that in a representation where no spec position on the left of the parenthetical is available, the sentences with backtracking could not be possible at all. Therefore, the hypothesis discussed here seems more adequate with respect to these cases.

- (37) Alan claimed that [_{KP} K [as you mentioned [_{KP} K [cryptography is a blast]]]]

The structure in (36) can undergo the following derivation:

- (38) [_{KP} Alan claimed that cryptography is a blast K [as you mentioned [_{KP} K [~~Alan claimed that cryptography is a blast~~]]]]

This way, one of the two possible interpretations of example (33) is obtained, i.e., the one in which what has been mentioned is the whole sentence. The structure in (36) can stay as it is, yielding therefore the non-ambiguous interpretation of (34), or can undergo the following derivation:

- (39) Alan claimed that [_{KP} cryptography is a blast K [as you mentioned [_{KP} K [cryptography is a blast]]]]

In this case, the second interpretation of (33) is obtained, the one according to which you mentioned only that *cryptography is a blast*.²⁰

Now we can check whether non-embeddable parenthetical adverbs exist, corresponding to non-embeddable sentential parentheticals, such as the *introducing predicates* discussed above. A candidate is constituted by the class of so-called *view-point*—or pragmatic—adverbs, such as *frankly*. These adverbs, according to Cinque (1999), occupy a higher position, preceding evidential, evaluative and epistemic ones:

- (40) *Francamente, probabilmente Gianni ha vinto la gara.*
'Frankly probably Gianni won the race.'
- (41) **Probabilmente francamente Gianni ha vinto la gara.*
'Probably frankly Gianni won the race.'

These adverbs cannot be embedded:

- (42) **Gianni spera che francamente Mario vinca la gara.*
'Gianni hope that frankly Mario will win the race.'

Probabilmente could shift and refer to the embedded subject, as illustrate above. *Francamente* cannot do it and is simply ruled out when not appearing at root level. This adverb, at least in Italian, is only a root one and, coherently with this distributional property, semantically does not contribute the speakers'—or subject's—opinion on the proposition, as *probabilmente* or *fortunatamente* do, but qualifies the relation between

20. For a more detailed discussion, see Giorgi (to appear).

the speaker and her audience, meaning *I am speaking frankly to you*. Hence, it is always *external* to the propositional content.²¹

4. Non-parenthetical *probabilmente*

4.1 An account

In this section, I will propose an account for the distribution of non-parenthetical *probabilmente*, in particular with respect to the distribution observed with negation. Example (4) in fact contrasts with example (6) in the availability of *probabilmente*,³ which turns out to be odd with negation.

As I briefly suggested above, I will assume here Chomsky's Minimalist framework (Chomsky 2000, 2001), according to which there are two *Phases*: CP and v*P. I propose that both of them admit of a left periphery, and that, therefore, there are two basic positions for these kind of adverbs, one for each phase: one above v*P and a second above IP, in the domain of the C-layer, i.e., Cinque's position.²²

A similar hypothesis has been proposed by Poletto (2006, to appear), who claims that phases are built in a uniform way and that they share the formal properties of their functional projections.²³ In particular, Poletto considers in this light Topic and Focus projections in Old Italian, but the theoretical claim can—and presumably must—be generalized to the other projections hosted in the left periphery as well.

Here, I suggest extending this view to epistemic, evaluative, and evidential adverbs, i.e., those adverbs that express the point of view of the speaker on the content of the clause. As I said above, I maintain that *francamente* belongs to a different class, presumably always and only parenthetical. The hierarchy proposed by Cinque (1999) is the following:

- (43) ...[evaluative [evidential [epistemic ... IP

21. We might wonder whether *francamente* is *always* parenthetical. In this sense, it is very similar to the predicates introducing FID and Quotations. Prosodically, it seems to be associated with a special contour, which cannot be integrated in the sentence, contrasting with the one of non-parenthetical *probabilmente*. Further interdisciplinary investigation is however required.

22. A reviewer remarks that technically the phase is the CP, whereas the adverbs in question appear above IP and not above CP. However, the point relevant to this discussion is that the adverbs both in the case of the v*P and in the case of the IP, occupy a structural position on the left of the *external* (subject) argument, taking in their scope the propositional content. I thank the reviewer for this observation.

23. See also Belletti (2004) and references cited there.

Moreover, according to Zanuttini (1997), sentential negation is above T:²⁴

(44) AGR NEG T V

My proposal for epistemics—to be extended to the other left-peripheral adverbs—is therefore the following:

(45) CP Epistemic1 IP NEG T Epistemic2 v*P

In the representation (45) the position of *Epistemic1* is above negation, whereas *Epistemic2* is below it, above the projections of v*.

According to this view, the properties of the non-parenthetical positions are accounted for as follows: positions 1 and 3 are the base-generated in the left periphery of the two phases. The ordering found with position 2—*Gianni probabilmente*—is derived (Cinque 1999) by means of movement of the subject to a higher position on the left of the adverb. Both positions are higher than sentential negation (Zanuttini 1997); hence in both cases *probabilmente* and *non* have sentential scope and *probabilmente* modifies the negated sentence. Position 3 is base-generated and is lower than negation. Therefore, when negation is not there, *probabilmente* retains sentential scope, but when NEG is realized a conflict arises: Negation has scope on *probabilmente*, due to its structural position, but *probabilmente* must have propositional scope, because the position right above v*P is a “propositional” position. On the other hand, negation is part of the propositional content, but *probabilmente* cannot have scope on it; hence a conflict arises. This state of things gives rise to the typical pattern of judgments described above. Simplifying, the sentence is perceived as grammatical, but not interpretable.

When occupying positions 4 and 5 *probabilmente* is in the scope of negation, but it is not generated in a “propositional” position; hence it can have only local scope, which in the case of position 5 is excluded. Therefore, there is no derivation available for them and these positions are available only with the parenthetical intonation.

4.2 Some exceptions

In certain cases, however, the adverb can appear in a position on the right of negation, without giving rise to ungrammaticality. The sentences in (46)–(49) below are in general judged better than those discussed in the previous section. The structures in question are copular sentences or sentences with the verb *have*, where *have* is not an aspectual auxiliary. I will not provide here a full discussion of these phenomena, but only give a few suggestions for further investigation.

24. Here I will disregard the Agreement projection.

Consider for instance the following examples, both with epistemic and evaluative adverbs:²⁵

- (46) (?)? *Gianni non è probabilmente stato felice a Parigi.*
 ‘Gianni NEG has probably been happy in Paris.’
- (47) (?)? *Gianni non ha probabilmente avuto occasione di telefonarle.*
 ‘Gianni NEG has probably had occasion to call her.’
- (48) (?)? *Gianni non è fortunatamente stato malato a Parigi.*
 ‘Gianni NEG has fortunately been sick in Paris.’
- (49) (?)? *Gianni non ha fortunatamente avuto occasione di telefonarle.*
 ‘Gianni NEG has fortunately had occasion to call her.’

In the examples above, the conflict arising from the simultaneous presence of the adverb and negation is much milder, even if not completely absent. Both *probabilmente/fortunatamente* and NEG can have sentential scope, even if for some speaker these sentences retain a significant degree of marginality. On the other hand, these examples are perfect when the adverb is associated to the comma intonation, as expected under to the analysis discussed above.

I follow here the proposal by Kayne (1993) according to which *have* doesn't differ from *be* and is obtained by means of incorporation of an empty P. Hence, *have* is identical to *be*, but for the incorporation of an abstract preposition. According to this view, (46)–(49) share the same syntax.

I suggest that in these cases the structure is impoverished with respect to the other cases, in that there is a small clause—a predicative structure—and not a complete verbal projection. The phasal nature of such a structure might differ with respect to v*P, permitting configurations not otherwise admitted. To account for the improved status of the sentences above, I propose therefore that in these cases only one position is available for IP adverbs, instead of two, and that is the higher one. According to this view, *probabilmente* and *fortunatamente* are generated in the IP position, as hypothesized by Cinque (1999), and consequently, they have sentential scope: the meaning of these sentences in fact, is that what is probable, or fortunate, is the *negative* eventuality. In the basic configuration, no conflict between the adverb and negation arises. The less than perfect status of these sentences might be due to the fact that linear order is reversed, negation preceding the adverb. The ordering in (46)–(49) is a derived one and is not perfectly natural for native speakers. The issue

25. Judgments vary. For some speakers the sentences are quite bad, for other ones they are considerably better than the ones discussed above. It seems to me that in any case, the issue is worth discussing.

concerning the phasal nature of predicative constructions is an important one, and deserves further attention.

5. Conclusions

In this paper I reviewed some phenomena concerning high IP adverbs, which according to Cinque (1999) are base generated in a position above the subject. Cinque (1999) already points out that the kind of intonation associated to these adverbs can affect their distribution. I considered here all the occurrences of these adverbs—when having sentential scope—in a simple transitive sentence, taking into account both the flat and the comma intonation. I proposed an account for the distribution of the adverb associated with the comma intonation, which is independently motivated by the analysis of other parenthetical structures. I also proposed an account for an unexpected contrast found with the non-parenthetical adverb in co-occurrence with negation. I proposed that there is an additional basic position available to these adverbs, above the v^*P . This proposal agrees with recent results by Poletto (2006, to appear) and Belletti (2004), who investigated the properties of Focus and Topic and hypothesized the existence of a low left periphery. According to the view proposed here, such a low left periphery is not limited to dislocated phrases, but includes (sentential) adverbs as well.

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