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***CREDO* (I BELIEVE): Epistemicity and the syntactic representation of the speaker^{*}**

INTRODUCTION

In this paper we consider the dependencies in Italian from forms such as *credo* (I believe) and *dicono* (they say). The main focus will be on *credo*, and only at the end of the discussion we will extend the analysis to cover *dicono* as well. *Credo* (I believe) is the subject-less first person present tense verbal form of the epistemic verb *credere* (to believe). *Dicono* (they say) is the subject-less third person plural present tense verbal form of the verb *dire*.

These verbal forms can be followed by a subordinate clause. However, under certain circumstances – for instance in Complementizer Deletion structures – the (apparently) embedded clause exhibits several properties typical of main clauses, which are incompatible with the syntax of subordinate sentences. Moreover, in these cases, from the semantic point of view, both the main verbal form and the alleged complement clause present some peculiarities, which call for an explanation.

We will argue that the sequence consisting of *credo* or *dicono* followed by a complementizer-less clause should often be seen as a mono-clausal structure and that *credo* (I believe) and *dicono* (they say) are better treated as heads occupying functional projections, expressing an epistemic and an evidential value respectively.

Other verbal forms exhibiting roughly the same properties as *credo* are: *immagino* (I imagine), *suppongo* (I suppose), *penso* (I think). The form *si dice* (impersonal clitic-says, i.e., ‘one says’) exhibits the core properties of *dicono*. Other items sharing the same properties as *dicono*/ *si dice* are *si mormora* (one murmurs) and *si favoleggia* (one narrates).¹

We will not discuss in depth the very nature of the epistemicity and evidentiality. For the sake of this work we will use the term *epistemicity* as referring to the (internal) relationship between a subject and a given propositional content. The term *evidentiality*, on the other hand, refers to the source of the reported content, as known to the speaker. Implicitly, by means of an evidential the speaker often provides an assessment of the reliability of the information.

The fact that *credo* bears first person features, and that *dicono* – or *si dice* – third person ones, is therefore intuitively connected with the distinction between epistemicity and evidentiality: the internal state of the speaker, on one side, and the external source of information on the other one.²

In both cases, a content is presented by the speaker along with what we might call its source. The source, in turn, is somehow responsible for that content, in ways to be better investigated. These constellations distinguish the cases we are about here from the propositional attitudes, or, more properly, attribution of propositional attitudes. In the latter case, in fact, the believer, the person to whom the content is attributed is not the source.

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¹ The first person plural form *speriamo* (we hope) shares (at least some of) the peculiarities of *credo*. With respect to the impersonal forms, alternating with the third person plural ones, we will have nothing special to say, in that we will not consider the properties of *si* cliticization in connection to these structures. Also, the third person plural forms *mormorano* (they murmur) and *favoleggiano* (they narrate) are less commonly used than the impersonal forms, with this particular meaning.

² In section 3.2 below, we will also show that the epistemic state which can be expressed in the sentence is not always and necessarily the one of the speaker, but that in certain cases it can be relativized to the *bearer of the attitude* toward that content.

The notion of source refers to a process of information transmission. With *credo* the source is the speaker and the process is the speech act in which *credo* is used. With *dicono*, the source is undetermined, and the process of information transmission is some communicative process.

The theoretical question we address concerns the architecture of the so-called “left periphery” with respect to the epistemic and evidential projections in the clause. These projections are deeply connected with the speech event in itself and with the role of the speaker in the conversational situation. In this paper we propose that such a role should be further articulated into the speaker’s own psychological epistemic state – the epistemic projection – and her evaluation of the source of evidence – the evidential one.

This issue is particularly relevant in that it contributes to clarifying what the representation of the speaker is in the *syntactic* structure of the sentence. The role of the speaker and the treatment of the conversational background from a *semantic* point of view, are in fact much clearer and have been long since addressed. But the interface level connecting the semantics with the syntactic representation is so far still vague and in demand of a systematic investigation.

Finally, let us stress that the role of the syntactic representation of the speaker has been argued to be crucial in other domains as well, such as sequence of tense phenomena and long distance anaphor binding. In the light of these considerations, it seems desirable to work for a general and comprehensive theory pointing in this direction.

This paper is organized as follows: In the first section we will briefly point out some properties of the first person present tense verbal form *credo* (I believe) with respect to Complementizer Deletion structures. In the second, we will consider the distribution of *credo* in comparison with other adverbs. In the third we will propose a theoretical account and in the fourth we will extend the hypothesis to the verbal form *dicono* (dicono). Finally, we will draw some conclusions and lines for future research on the topic.

1. *Credo* (I believe) and its pseudo-complement clause

1.1. Some properties of Complementizer Deletion in Italian

In this section we will consider the distribution of *credo* with respect to Complementizer Deletion phenomena—henceforth, CD. As is well known – see among the others, Poletto (1995, 2000, 2001), Scorretti (1994), Giorgi and Pianesi (1997, 2004a) – in Italian the complementizer can be omitted under certain conditions. Such conditions are peculiar of Italian, and do not parallel the omission of the complementizer in other languages, e.g., English. Simplifying somehow, the complementizer in Italian can be omitted only if the sentence it introduces features a subjunctive verbal form, but not if the embedded verb is in the indicative mood:

- (1) Gianni ha detto *(che) è partita
Gianni said that she left (IND)
- (2) Gianni crede (che) sia partita
Gianni believes that she left (SUBJ)

Giorgi and Pianesi (1997, 2004a) discuss this paradigm and point out some properties of CD construals. As a first consideration, not every subjunctive clause permits CD. For instance, subordinate clauses of factive verbs disallow it:³

- (3) Gianni rimpiange *(che) sia partita

³ Dislocated construals, either to the left, or to the right systematically disallow CD:

- i. *(Che) sia partita, Gianni lo crede
That she left (SUBJ), Gianni it- believes
‘That she left, Gianni believes’
- ii. Gianni lo crede, *(che) sia partita
Gianni it-believes, that she left (SUBJ)
‘Gianni believes, that she left’

So do focus construals, subject sentences, and so on. We will not consider these cases here. For an analysis, see Giorgi and Pianesi (2004a).

Gianni regrets that she left

The distribution of the embedded subject also shows some peculiarities. Italian speakers divide in two groups: for some speakers CD is compatible with a preverbal lexical subject, for other ones, it is not. This property is not related to the regional/ dialectal background. Consider the following sentences (the symbol ‘#’ signals that the sentence is not acceptable for a group of speakers):⁴

- (4) #Gianni crede Maria sia partita
Gianni believes Maria left(SUBJ)
- (5) Gianni crede sia partita Maria
Gianni believes left(SUBJ) Maria
‘Gianni believes Maria left’
- (6) Gianni crede sia partita
Gianni believes (she) left(SUBJ)

For the second group of speakers sentence (4) is ungrammatical – namely, a preverbal lexical subject is impossible with CD – whereas a postverbal subject, as in (5), or a null subject, as in (6), are grammatical for everybody. The distribution of pronouns follows the same pattern:

- (7) #Gianni crede lei sia partita
Gianni believes she left(SUBJ)
- (8) Gianni crede tu sia partita
Gianni believes you left(SUBJ)

Only the weak pronoun *tu* is acceptable in prenominal position for all speakers; the third person singular pronoun *lei* is acceptable only for the second group.⁵

Another important property is constituted by the distribution of topic and focus projections in the embedded clause. Consider the following examples with a focus projection:⁶

- (9) *Gianni crede A PARIGI che sia andata (non a Londra)
Gianni believes TO PARIS that she went (not to London)
- (10) Gianni crede che A PARIGI sia andata (non a Londra)
Gianni believes that TO PARIS she went (not to London)

As originally proposed by Rizzi (1997), in embedded clauses the focus projection cannot precede the complementizer projection – cf. (9) – and can only follow it – cf. example (10). Giorgi and Pianesi (2004a) pointed out that in CD clauses the presence of a focused phrase gives rise to ungrammatical – or at best very marginal – results:

- (11) *Gianni crede A PARIGI sia andata (non a Londra)
Gianni believes TO PARIS she went (not to London)

Analogously, an embedded topic – i.e., Clitic Left Dislocation – is grammatical on the right of the complementizer *che*, and cannot appear on its left:

⁴ Let us point out that one of the authors of this work finds the preverbal subject in these sentences grammatical, whereas the other one finds it ungrammatical. Both authors are from central Italy.

⁵ For an analysis of subject positions in Italian and the typology of pronominal forms, see also Cardinaletti and Roberts (2002) and Cardinaletti (2004).

⁶ For analyses of these positions in Italian, see among the others Cecchetto (1999), Poletto (2000), Beninca’ (2001), Beninca’ and Poletto (2004).

- (12) Gianni crede che a Parigi, ci sia andata il mese scorso
 Gianni believes that in Paris, (she) there-went last month
 ‘Gianni believes that in Paris she went last month’
- (13) *Gianni crede a Parigi che ci sia andata il mese scorso
 Gianni believes to Paris that (she) there-went last month
 ‘Gianni believes to Paris that she went last month’

Again, Giorgi and Pianesi (2004a), point out that in CD structure the presence of a topic is marginal:

- (14) ?(?) Gianni crede a Parigi ci sia andata il mese scorso
 Gianni believes to Paris (she) there-went last month
 ‘Gianni believes to Paris she went last month’

In this work we are not going to provide a theoretical account for these patterns, and refer the reader to previous works on the topic.⁷ Our goal here is to illustrate the basic properties of CD, so as to be able to emphasize the different behavior of sentences dependent on forms such as *credo* and *dicono*. We will analyze *credo* first.

1.2. *Credo* (I believe) and Complementizer Deletion

Most literature about CD only considers examples where the main verb is in the first person singular, present tense, such as *credo* (I believe), *penso* (I think), *non so* (I do know), *mi domando* (I wonder) etc.

One reason for this choice might be that first person singular main clause verbal forms in the present tense make for very sharp judgments, emphasizing the distinctions between contexts where CD is not possible - as in the sentences containing an indicative - and the contexts allowing it, e.g., some of those featuring the subjunctive. The sharper contrasts are obtained between (ungrammatical) sentences with a third person main verb and (grammatical) sentences with a first person form:

- (15) *Ha detto ha telefonato
 (He) said that he called(IND)
- (16) Credo abbia telefonato
 (I) believe that he called(SUBJ)

in Giorgi and Pianesi (2004a) we already cautioned against this practice, noting that the range of acceptable sentences with CD is much larger when a first person present tense verb is used in the main clause. Therefore, the mentioned procedure might introduce a so-called *systematic error* in the argument. In what follows we will try to show that construals involving a first person verb might have an additional analysis, beside the usual one, which sets these structures aside with respect to the other cases, both syntactically and semantically.

Compare now sentence (16) with the following example:

- (17) Gianni crede che abbia telefonato
 Gianni believes that he called(SUBJ)

The verb *credere* (believe) in the two sentences does not have the same meaning. Intuitively, by means of (17) the speaker is reporting a belief by Gianni – the speaker refers to a psychological state of the subject – known to the speaker on the basis of whatever evidence might be relevant and available. Moreover, the speaker is not committed to the content of the embedded clause. She might very well assert ‘Gianni believes that the earth is flat’, without believing herself the content expressed by the embedded clause.

By means of sentence (16), the speaker – usually – is not reporting a belief by her own, while remaining neutral with respect to it. On the contrary, the speaker asserts the embedded content, providing attenuation, due to the

⁷ See Giorgi and Pianesi (1997, 2004a).

presence of *credo* (I believe). *Credo*, in this case, simply signals that the speaker is not certain about the truth of that content. The same would hold with *suppongo* (I suppose), *spero* (I hope) and similar forms, when followed by CD structures.⁸

In other words, it looks like the full meaning of the verb is expressed in (17) – with a third person verbal form – but not in (16), with the first person one, followed by a complementizer-less clause. We will consider again this issue in the next section, where we will also analyze the role of other characteristics of the verbal form, such as for instance its temporal properties – i.e., past tense vs. present tense – or the presence of an overt subject – as in *io credo* (I believe).

The hypothesis is that in sentences like (16) the head *credo* is not to be analyzed as a main verb followed by a subordinate clause, but as an epistemic head, realized in the left periphery of the sentence. The whole structure therefore, must be analyzed as mono-clausal.

Let us consider now what happens with CD. The first relevant observation is that there is a contrast between ‘ordinary’ sentences with CD and those with *credo* and a preverbal subject:

- (18) #Maria crede Paolo abbia telefonato
Maria believes that Paolo called
- (19) Credo Paolo abbia telefonato
(I) believe Paolo has called

As we discussed above, Italian speakers divide into two groups with respect to (18). Crucially, for one group the sentence is ungrammatical, whereas for the other one is grammatical. This distinction disappears in (19), which is grammatical for all speakers. In this case the subject does not need to be postverbal, or null, as it was the case for speakers of group 2 in (4)-(8).

Consider now the distribution of focus and topic phrases, and contrast the sentences illustrated above (repeated here for simplicity) with the ones featuring the first person verbal form *credo* (I believe):

- (20) *Gianni crede A PARIGI sia andata (non a Londra)
Gianni believes TO PARIS (she) went (not to London)
- (21) (?)Credo A PARIGI sia andata (non a Londra)
(I) believe TO PARIS (she) went (not to London)

The sentence in (21) is almost perfect, sharply contrasting with (20). With a third person main verb, it is very difficult to have both CD and Focus, but this option is definitely more acceptable with a first person verb. The same happens with a topic:⁹

⁸ The sentence therefore means something like: “He called, as far as I know”. Obviously, *credo* can also be used with its literal meaning, under specific circumstances. Consider for instance the following example:

- i. Credo che Dio esista
(I) believe that God exists

By means of this sentence the speaker expresses her own belief, analogously to what happens in example (17) in the text. The sentence could be paraphrased by something such as: ‘I have the belief that God exists’. Notice that the meaning of the following sentence would be very different:

- ii. Dio esiste, credo
God exists, (I) believe

By means of this sentence the speaker asserts a certain content – ‘God exists’ – but then by adding *credo*, she also expresses a doubt about that content. Something like ‘God exists, perhaps’. These post-sentential occurrences of *credo* can be assimilated with the parenthetical usage of *credo*, which we will briefly consider in section 2.2.

⁹ Rizzi (2001) points out that the complementizer *se* (if/whether) of indirect questions occupies a lower position with respect to the complementizer *che* (that). He dubs this position INT(errogative). He convincingly argues that such a position is higher than the focus projection on the basis of examples such as (i).

- i. *Gianni si domanda A PARIGI se sia andata (non a Londra)
Gianni wonders TO PARIS whether she went (not to London)
- ii. Gianni si domanda se A PARIGI sia andata (non a Londra)
Gianni wonders whether TO PARIS she went (non to London)

- (22) ?(?) Gianni crede a Parigi ci sia andata il mese scorso
 Gianni believes in Paris (she) there-went last month
 ‘Gianni believes in Paris she went last month’
- (23) Credo a Parigi ci sia andata il mese scorso
 (I) believe in Paris (she) there-went last month
 ‘I believe in Paris she went last month’

Finally, with a first person main verb, CD improves even with factive verbs, which we showed above to be in general incompatible with CD:

- (24) Gianni rimpiange *(che) sia partita così presto
 Gianni regrets *(that) she left so early
- (25) Rimpiango (che) sia partita così presto
 (I) regret (that) she left so early

Summarizing so far, when the complementizer is omitted, the clause following a first person, present tense (epistemic) verb does not exhibit the syntactic properties that usually characterize Complementizer-less embedded clauses; our proposal is that it is better analyzed as a clause following an epistemic head.

In what follows we will try to provide arguments in favor of the idea that the structure is mono-clausal. One argument is constituted by the interpretation of temporal adverbs (avoiding any special intonation accompanying the temporal locution):

- (26) Ieri alle cinque credo Gianni mangiasse un panino
 Yesterday at five (I) believe Gianni was eating a sandwich

This sentence means that the eating of the sandwich took place at five (according to the speaker’s epistemic state). Consider however the following cases:

- (27) #Ieri alle cinque Paolo crede che Gianni mangiasse un panino
 Yesterday at five Paolo believes Gianni was eating a sandwich
- (28) Paolo crede che ieri alle cinque Gianni mangiasse un panino
 Paolo believes that yesterday at five Gianni was eating a sandwich

With a normal intonation – i.e., without inserting a topic-like or focus-like pause between the temporal locution and the rest of the sentence – example (27) cannot be interpreted in a way analogous to (28). In other words, the temporal adverb in (27) refers to the main verb and cannot specify the time of the embedded event. Since the main verb is a present tense form and the adverb identifies a past time, the whole sentence sounds odd and clearly contrasts with (28). On the contrary, (26) is perfectly grammatical and the adverb simply identifies the time of the eating. This evidence can be interpreted in the light of the mono-clausality hypothesis, suggesting that example (26) has this option, which is absent in (27).

1.3. Other properties

Interestingly, when the first person present tense verbal form is used in the matrix clause, the grammatical status of (i) improves:

- iii. (?)?Mi domando A PARIGI se sia andata (non a Londra)
 I wonder TO PARIS whether she went (not to London)

The same pattern we illustrated for *credo* seems to be involved here.

In this section we will discuss a series of minimal contrasts in order to show that in the structure illustrated above *credo* is a head. When the epistemic head analysis of *credo* cannot be provided, the clause following it must be analyzed as a subordinate one. Consequently, the syntactic and interpretive pattern is the one typical of embedded clauses.

If a complementizer is realized, the distribution of embedded Topic and Focus minimally contrasts with sentences (21) and (23) given above:

- (29) Credo che A PARIGI sia andata (non a Londra)
(I) believe TO PARIS (she) went (not to London)
- (30) *Credo A PARIGI che sia andata (non a Londra)
(I) believe TO PARIS that (she) went (not to London)
- (31) Credo che a Parigi ci sia andata
(I) believe to Paris (she) there-went
'I believe that to Paris she went'
- (32) *Credo a Parigi che ci sia andata
(I) believe to Paris that (she) there-went
'I believe to Paris that she went'

That is, analogously to what we just pointed out above, when the complementizer is overt, topicalized and focused phrases must follow and cannot precede it, as observed by Rizzi (1997, 2002). Therefore, even if the main verb is a first person one, the presence of the complementizer licenses a full embedded structures with positions for topic and focus constituents. In other words, *credo che* ((I) believe that) behaves like *Gianni crede che* (Gianni believes that), and differs with respect to *credo*+ *complementizer-less clause*.

Let us consider now what happens with overt subjects in the main clause – i.e., *io* (I):

- (33) #Io credo Paolo abbia telefonato
I believe Paolo has called
- (34) Io credo abbia telefonato
I believe (he) called

As expected, there is a group of speakers for which CD gives rise to ungrammaticality if the embedded subject is lexicalized in a preverbal position. For these speakers, example (33) contrasts with (34), where the embedded subject is null. Consider also the following examples:

- (35) ?*Io Credo A PARIGI sia andata (non a Londra)
I believe TO PARIS (she) went (not to London)
- (36) ?(?)Io credo a Parigi ci sia andata il mese scorso
I believe in Paris (she) there-went last month
'I believe in Paris she went last month'

In (35) a focused phrase gives rise to ungrammaticality, and in (36) a topic phrase causes marginality, analogously to what we saw above for a third person main verb. Let's consider now factive predicates:

- (37) Io rimpiango *(che) sia partita così presto
I regret (that) she left so early

If we add the lexical subject *io* (I), factive verbs do not admit CD, exhibiting therefore the same properties they show when appearing with a third person ending.

In conclusion, the presence of the overt first person subject forces a verbal analysis of *credo*, and main+subordinate clause structure for the whole sentence.

The other interesting question concerns the presence of tenses other than the present tense. It seems to us that the peculiar epistemic reading is obtained only with the present tense and perhaps marginally with the imperfect. Consider for instance the following cases:

- (38) Credevo Paolo avesse telefonato
(I) believed(IMPF) Paolo had called
- (39) Credevo avesse telefonato
(I) believed(IMPF) (he) called

The contrast, if there is any, between (38) and (39), for the people who do not accept a preverbal lexical subject with CD, is not as sharp as the ones we saw above – cf. for instance (4) vs. (6). The reason might be that the Italian imperfect can be used as a modal (or pseudo-modal), beside expressing a past temporal value. In this sense, it would still be compatible with epistemic *credo*, not as a mark for past-ness, but as a sort of emphazier of its epistemic value. Let's look now at the other past forms of Italian:

- (40) #Ho creduto/credetti Paolo avesse telefonato
I believed (pr perf/simple past) Paolo had called

In these examples the effect is much stronger and the speakers who reject a preverbal subject with CD do not accept them. The reason is that these forms *do* have a temporal value and this fact is incompatible with the head analysis of epistemic *credo*.

Consider also the following cases:

- (41) ?* Ho creduto/credetti A PARIGI fosse andata (non a Londra)
(I) believed(pr perf/simple past) TO PARIS (she) went (not to London)
- (42) ?(?) Ho creduto/credetti a Parigi ci fosse andata il mese scorso
(I) believed(pr perf/simple past) in Paris (she) there-went last month
'I believed in Paris she went last month'

The distribution of topic and focus is closer to that observed with third person main verbs and CD, where their positions – for whatever reason – are not available, or at least very marginal. Consider finally factive predicates:

- (43) Ho rimpianto/rimpiansi *(che) fosse partita così presto
(I) regretted(pr perf/simple past) (that) she left so early

Even in this case, CD is at best very marginal. In the end, the greater freedom in CD that sentences with first person main verb exhibit vanishes when the tense of the main verb is different from the present. These observations follow from the hypothesis that *credo* is a head in a functional position.¹⁰

Let us consider now other possible word orders. Focalization of the subordinate clause is available:

- (44) CHE MARIA SIA PARTITA, credo
THAT MARIA LEFT (SUBJ), (I) believe
- (45) CHE MARIA SIA PARTITA, crede
THAT MARIA LEFT(SUBJ), (he) believes

¹⁰ In English the form *I think* seems to behave very similarly to the Italian *credo*, in spite of the fact that it has a subject. We will not address the comparative analysis of Italian and English in this work. Let us only point out that the form *think* without a subject would not bear any first person specification, which seems a necessary ingredient for a head to be epistemic – as we will better see in section 3.1. We might hypothesize, therefore, that *I think* in these constructions works as a head, incorporating the first person subject. Alternatively, it could be analyzed as a maximal projection, in the Spec of the epistemic projection. We leave this question open for future research.

A focused clause can precede both *credo* (I believe), and *crede* (he believes). Importantly, sentences (44) and (45) have the same interpretation – they merely express a belief by the speaker and the subject respectively. In particular sentence (44) is not expressing an epistemic evaluation by the speaker – i.e., the sentence doesn't mean *probably Maria left*. Notice that the presence of the complementizer is obligatory:

- (46) *MARIA SIA PARTITA, *credo*
 MARIA LEFT (SUBJ), (I) believe

As is well-known, CD is impossible in these cases.¹¹ Therefore, in this case focalization is the crucial property blocking the mono-clausal reading of the structure. If this is the case, a possible interpretation would be to say that no Focus position is available to the left of epistemic *credo*. We will consider again this evidence when discussing the differences between *credo* and *dicono* in section 4. Similar conclusions can be drawn from topicalization:

- (47) Che Maria sia partita, lo *credo*
 That Maria left(SUBJ), (I) it-believe

Analogously to what we saw before, the sentence in (47) has the same interpretation, and the same properties, as the one in (48):

- (48) Che Maria sia partita, lo *crede*
 That Maria left(SUBJ), (he) it- believes

In absence of focus and topic, the complementizer-less structure is available with *credo* (I believe), but not with *crede* (he believes):

- (49) Maria è/*sia partita, *credo*
 Maria left (IND/*SUBJ), (I) believe
 (50) *Maria è/sia partita, *crede*
 Maria left (IND/SUBJ), (he) believes

Notice that sentence (49) has an indicative, and not a subjunctive, contrasting with the cases above. Consider also that, in absence of topic or focus intonation, the complementizer *cannot* be inserted, and the following sentence is ungrammatical:

- (51) *Che Maria è partita, *credo*
 That Maria left(IND), (I) believe.

In other words, in Italian when a complement clause is neither focused nor topicalized, it must *follow* the main verb, and cannot precede it. Sentence (51) is ungrammatical because the presence of *che* forces the structure to be bi-clausal, hence the sentence can only be licensed if the preposed sentential content is interpreted either as a focus or as a topic and the verbal form is in the subjunctive. The grammaticality of (49), is due to the fact that the epistemic projection can appear to the right of its argument.

The data concerning the preposing of the sentential complement seem to go in the direction we are expecting, namely, to show the possibility of a mono-clausal interpretation with *credo*((I) believe) and, conversely, its unavailability with *crede* ((he) believes).¹²

¹¹ See fn (3) above.

¹² Recall also that in Italian the subjunctive is not available in regular main clauses. Indeed (i) is ungrammatical, supporting the idea that the preposed clause is a matrix one, and not derived via movement from the sentential complement position:

i. *Maria sia partita, *credo*.

2. *Credo* (I believe) and the other left-periphery items

2.1. *Francamente* (frankly)

It is well-known that speech act adverbs - see among the others Jackendoff (1972) and Cinque (1999) - such as *francamente* (frankly) cannot be embedded:

- (52) Francamente, Gianni si e' sbagliato
Frankly, Gianni was wrong
(53) *Maria credeva che francamente si fosse sbagliato
Maria believed that, frankly he was wrong

Recall that these adverbs, even in the grammatical cases such as (52), require a long pause before the rest of sentence, signaled in writing by the comma, as in parentheticals (see below). However, various orders are possible, again, provided that a long pause is realized between the adverb and the other constituents (the symbol '#' signals here a long pause):

- (54) Gianni, #francamente#, si e' sbagliato
Gianni, frankly, was wrong
(55) (?)Gianni si e', #francamente#, sbagliato
Gianni was, frankly, wrong
(56) Gianni si e' sbagliato, #francamente!
Gianni was wrong, frankly!

The impossibility of embedding the adverb persists even if it appears in sentence-final position:¹³

- (57) *Maria credeva che si fosse sbagliato, francamente
Maria believed that he was wrong, frankly

The embedding of the adverb doesn't seem to improve with CD (in the relevant reading, where the adverb is referring to Maria's thought):

- (58) *Maria credeva, francamente, si fosse sbagliato
Maria believed, frankly, (he) was wrong
(59) *Maria credeva si fosse sbagliato, francamente

Maria left(Subj), (I) believe.

Finally, one might wonder whether the presence of the complementizer is by itself sufficient for triggering the *real* verbal reading of the verb:

- ii. Credo sia partita alle 5
(I) believe she left at 5
iii. Credo che sia partita alle 5
I believe that she left at 5

The judgment in this case is rather difficult, given that the semantic difference would not be very clear. The following case, however, might provide a better example:

- iv. Credo la terra sia tonda
I believe the earth is round
v. Credo che la terra sia tonda
I believe that the earth is round

It seems to us that there is a contrast between (iv) and (v). In (iv) the speaker – in particular, a speaker not accepting a preverbal subject with CD – is considering as not totally certain that the earth is round. No implication of this sort seems to arise in (v).

¹³ A long pause before *francamente* in this case would make the sentence grammatical. However, the only interpretation would be the one in which *francamente* refers to the speaker, not to Maria, and takes the whole sentence in its scope.

Maria believed (he) was wrong, frankly

As we will better see below in section 3.2, speech act adverbs establish a relation between the speech act and its agent. Therefore, we do not expect them to be acceptable in clauses dependent upon a propositional attitude, such as fearing, believing etc. It makes no sense to attribute to somebody a frank attitude in believing, fearing etc. something. On the contrary, we expect this to be possible with communicative acts:

- (60) Mario disse a tutti che francamente era stanco di ascoltare sciocchezze
Mario told everybody that frankly he was tired of hearing silly things

In sentence (60) the adverb *frankly* can be attributed to the subject *Mario* as well.

Let's compare now these cases with the clauses appearing with complementizer-less *credo*. The following sentence is perfectly grammatical:

- (61) Credo, francamente, si sia sbagliato
(I) believe, frankly, (he) was wrong

As illustrated by the following example, the post-sentential position of the adverb is grammatical as well:

- (62) Credo si sia sbagliato, francamente
(I) believe (he) was wrong frankly

These sentences all mean that the speaker judges frankly that x was wrong. There is therefore a systematic contrast between the *credo* cases and the sentences (53) and (57)-(59) with a third person main verb.

Let us see now if the pattern observed here is the same we illustrated above. First, notice that the grammaticality of the sentence decreases if the complementizer is introduced, either to the right of the adverb or to its left:¹⁴

- (63) (?)Credo che, francamente, si sia sbagliato
(I) believe that, frankly, (he) was wrong
(64) (?)Credo, francamente, che si sia sbagliato
(I) believe, frankly, that (he) was wrong

The contrast with (61) might be not very sharp, but it is still quite systematic. Consider also that as soon as the main verb is a past form, the sentence is strongly degraded:

- (65) ??Ho creduto/credetti, francamente, si fosse sbagliato
(I) believed(pr perf/simple past), frankly, he was wrong

The meaning of (65) is that at utterance time the speaker is frank when he says that he had a belief that such and such. In other words, the sentence is grammatical only if interpreted bi-clausally, where *frankly* modifies the main verbal form and the word order is acceptable only if there is a long pause between the *creduto/credetti* (I believed) and the adverb. Notice that we find a decreased grammaticality even when the subject, *io* (I) is overt, analogously to the cases we discussed in the previous section:

- (66) ??Io credo francamente si sia sbagliato
I believe frankly (he) was wrong

¹⁴ For at least one speaker sentence (64) is better than sentence (63). This might be due to the fact that the embedded clause in both cases contains a subjunctive form, and that the complementizer position with the subjunctive is lower than that of the indicative. However, since Italian speakers do not agree on this judgment, we do not pursue this consideration any further.

These data show that if we have a true main clause propositional attitude predicate, there is no room for an embedded *frankly*. This is not true with *credo* followed a complementizer-less clause.

If this is the case, our hypothesis seems correct: the complementizer-less clause following *credo* does not exhibit the properties of embedded clauses. On the contrary, the grammar for main clauses can accommodate the phenomena just described, under the hypothesis that *credo* occupies a head position in the left, pre-subject, layer of the sentence.¹⁵

2.2. Some remarks on parentheticals

Let us point out that *credo*, together with other similar verbal forms such as *suppongo* (I suppose), *temo* (I fear), *spero* (I hope) can be used as a parenthetical, occurring in various positions inside the clause. The literature on parentheticals is huge and very complex, also because parentheticals come in many varieties. A possible exhaustive analysis and unification of their typology is not our goal here. The kind of parentheticals we are taking into account in this discussion is the one constituted in Italian by a single subject-less verb, as opposed to a whole sentence. Namely, we will very briefly consider *credo* (I believe), but not the so-called *as* parentheticals, such as *come Maria sostiene* (as Maria claims). Moreover, we will not consider the *free indirect speech*, which has sometimes been assimilated to parentheticals.¹⁶

Consider the following example:

- (67) Maria (credo)₁ è (credo)₂ andata (credo)₃ a Parigi (credo)₄
 Maria ((I) believe) has(IND) ((I) believe) gone ((I) believe) to Paris ((I) believe)

The single verb parentheticals, as shown by example (67), can appear in many positions inside the clause. These positions are also available for the left-periphery adverbs in general, such as *probabilmente* (probably), *forse* (perhaps), *sicuramente* (surely), *fortunatamente* (fortunately), *presumibilmente* (presumably), etc.:¹⁷

- (68) Maria (forse)₁ è (forse)₂ andata (forse)₃ a Parigi (forse)₄
 Maria (perhaps) has(IND) (perhaps) gone (perhaps) to Paris (perhaps)

The main differences between the parenthetical *credo* and the left-periphery one, is that the latter triggers the subjunctive mood, whereas all the positions in (67) do not:

¹⁵ Still, the presence of the subjunctive is a phenomenon mostly correlated with embedded clauses. Our position however is that the subjunctive is licensed whenever the relevant syntactic configuration of features is realized. As a matter of fact, the subjunctive is not present just in embedded clauses as shown by the pattern of exlative and imperatives of Italian and other Romance languages. See Zanuttini and Portner (2000, 2003) and Poletto and Zanuttini (2003).

¹⁶ On parentheticals see among the others, Corver and Thiersch (2002), Potts (2002), Stowell (1987), Reinhart (1983), McCawley, (1982). Rooryck (2001a, 2001b) proposes a unification of parentheticals with evidentiality and treats evaluative and epistemic modals on a par with evidentials. In this paper, we consider them as belonging to different groups. The question concerning the similarities and the differences between these categories is an intriguing one, which we are not able to address here.

¹⁷ Consider also that as soon as the head analysis is not available anymore, grammaticality decreases:

- i. ??Maria, Gianni crede, è andata a Parigi
 Maria, Gianni believes, has gone to Paris
- ii. ?*Maria è, Gianni crede, andata a Parigi
 Maria has Gianni believes, gone to Paris
- iii. ?* Maria è andata, Gianni crede, a Parigi
 Maria has gone, Gianni believes, to Paris
- iv. ??Maria è andata a Parigi, Gianni crede
 Maria has gone to Paris, Gianni believes

With respect to these cases, there is a minimal contrast with *as* parentheticals:

- v. Maria (come Gianni crede) è (come Gianni crede) andata (come Gianni crede) a Parigi (come Gianni crede)
 Maria (as Gianni believes) has (as Gianni believes) gone (as Gianni believes) to Paris (as Gianni believes)

- (69) *Maria (credo)₁ sia (credo)₂ andata (credo)₃ a Parigi (credo)₄
 Maria ((I) believe) has(SUBJ) ((I) believe) gone ((I) believe) to Paris ((I) believe)

A possible hypothesis unifying the left-most *credo* structures we saw above, with the parenthetical construals like (67), would be to say that *credo* can occupy various head positions inside the clause, and that they are related through movement. The triggering of the subjunctive only takes place when it lands in the leftmost one. According to Rizzi (2001, 2002), the basic position for adverbs is the one marked in (67) and (68) by subscript 2 – namely, the position inside the main VP. We can say that the position marked with the subscript 3 is inside the participial projection and basically given as well. *Credo* 1 might be in Rizzi's left-periphery position Mod, with topicalization of the subject. Therefore this case would be obtained by means of movement of *credo* to Mod. For the position in 4, various analyses seem to be possible. It might be obtained via movement of the participial projection, followed by movement of the rest of the clause to its left. Conversely, it might also be thought that the rightmost position is a basic position as well conveying a peculiar after-thought meaning. In this perspective, therefore, the parenthetical *credo* would be no parenthetical at all. It is always a functional head allowed to occupy several positions inside the clause.

Consider finally that both parenthetical *credo* and left-periphery *credo* cannot be embedded:

- (70) *Paolo ha detto che Maria, credo, è andata a Parigi
 Paolo said that Maria, (I) believe, went(IND) to Paris
 (71) Paolo ha detto che credo Maria sia andata a Parigi
 Paolo said that (I) believe Maria went(SUBJ) to Paris

Sentence (71) is grammatical only for the speakers who accept a preverbal subject with CD. The question of embedding will be considered again in section 3.2.

2.3. *Fortunatamente* (luckily) and *sicuramente* (surely)

In this section we will analyze the order of left-peripheral adverbs. A *proviso* is in order: judgments in this area are often shaky and unstable. There are many reasons conspiring to this end. One reason was pointed out by Rizzi (2002), namely, the fact that adverbs can be topicalized. Depending on the context, they can appear in many different positions given that topic projections are available at every step in the left periphery. Therefore, a native speaker judging a sentence must avoid the slightest hint of topicalization. Furthermore, it is difficult to classify the various heads. We know for instance that evaluative adverbs precede epistemic ones. This might be clear in prototypical cases, but close attention must be paid to the precise meaning of the various heads, in order not to misclassify them. In a word, judgments about reciprocal order might not be very reliable and we will try to do our best, in order to signal the problems and exclude alternative interpretations. With this in mind, let us move further.

Evaluative and epistemic adverbs – such as *fortunatamente* (luckily) and *sicuramente* (surely) – give rise to an interesting pattern when combined with *credo* and CD. Consider the following paradigm:¹⁸

- (72) Gianni ha fortunatamente vinto
 Gianni has luckily won
 (73) Gianni ha sicuramente vinto
 Gianni has surely won

Notice that the evaluative adverb is higher than the epistemic one, as shown by the following contrast:

- (74) Gianni ha fortunatamente sicuramente vinto
 Gianni has luckily surely won

¹⁸ Many scholars discussed the distribution of these adverbs. Cf. Among the others, Koster (1978), Cinque (1999), Poletto, (2000) and Rizzi (2001, 2002).

- (75) ?* Gianni ha sicuramente fortunatamente vinto
Gianni has surely luckily won

Both adverbs allow a sentence initial position:

- (76) Fortunatamente, Gianni ha vinto
Luckily, Gianni has won
(77) Sicuramente Gianni ha vinto
Surely, Gianni has won

According to Rizzi (2002), the pre-sentential position is derived via movement from the sentence internal one. The position, which he dubs MOD(ifier), is lower than that where *wh*-items and interrogative phrases such as *perché* (why) appear. Rizzi (2002) does not consider epistemic and evaluative adverbs, but it seems to us that the relevant examples can be reproduced in these cases as well:¹⁹

- (78) *Fortunatamente, chi ha vinto la gara?
Luckily, who won the race?
(79) *Fortunatamente, perché Gianni ha vinto la gara?
Luckily, why did Gianni win the race?
(80) Chi fortunatamente ha vinto la gara?
Who luckily won the race?
(81) Perché fortunatamente Gianni ha vinto la gara?
Why did luckily Gianni win the race?

(82) *Sicuramente, chi ha vinto la gara?
Surely, who won the race?
(83) *Sicuramente, perché Gianni ha vinto la gara?
Surely, why did Gianni win the race?
(84) Chi sicuramente ha vinto la gara?
Who surely won the race?
(85) Perché sicuramente Gianni ha vinto la gara?
Why did surely Gianni win the race?

These examples show that the interrogative phrase can precede, but not follow the adverb. We will go back to the reciprocal order of adverbs and interrogatives in the next section.

In embedded clauses the pre-clausal and the clause-internal positions are both available:

- (86) Maria credeva che fortunatamente Gianni avesse vinto
Maria believed that luckily Gianni had won
(87) Maria credeva che Gianni avesse fortunatamente vinto
Maria believed that Gianni had luckily won

(88) Maria credeva che sicuramente Gianni avesse vinto
Maria believed that surely Gianni had won
(89) Maria credeva che Gianni avesse sicuramente vinto
Maria believed that Gianni had surely won

¹⁹ Rizzi (2002) considers the position in Spec,MOD as recursive, in order to permit multiple adverbs to appear. However, this layer must be internally structured in a fixed hierarchical fashion, in order to cope with Cinque's (1999) observations. If we are correct in analyzing *credo* – and *dicono* as well – as heads, presumably Rizzi's suggestion cannot be maintained, given that multiple heads positions are also needed, beside the specifiers. We will not consider this point any further and from now on will take it for granted.

The two positions are available even with CD, as shown by the following examples.

- (90) Maria credeva fortunatamente (#Gianni) avesse vinto
Maria believed luckily (Gianni) won
- (91) Maria credeva (#Gianni) avesse fortunatamente vinto
Maria believed luckily (Gianni) won
- (92) Maria credeva sicuramente (#Gianni) avesse vinto
Maria believed surely (Gianni) won
- (93) Maria credeva (#Gianni) avesse sicuramente vinto
Maria believed that (Gianni) surely won

The notation (#*Gianni*) is adopted here to signal that the preverbal subject is available only for the speakers who generally accept it in CD structures. Recall also that the availability of a preverbal subject, for the group of speakers rejecting it in CD structures, constitutes a test for mono-clausality. I.e., the presence of the preverbal subject makes sure that at least for one group of speaker, the structure, when grammatical, is analyzed as a single clause. We will exploit this property in the discussion. Consider now the following sentences with *credo*, keeping in mind the *proviso* in the opening of this section:

- (94) (?)?Credo fortunatamente Gianni abbia vinto
I believe luckily Gianni has won
- (95) Credo Gianni abbia fortunatamente vinto
I believe Gianni has luckily won
- (96) (?)?Credo sicuramente Gianni abbia vinto
(I) believe surely Gianni has won
- (97) Credo Gianni abbia sicuramente vinto
(I) believe Gianni has surely won

These contrasts show that the complementizer-less clause following *credo* cannot be considered a subordinate one. If this were the case, in fact, example (94) and (96) should be on a par with (86)-(88) and (90)-(92) – namely, with the sentences following a third person verbal form. Moreover, they should not contrast with (95) and (97) – i.e., with the sentences where the adverb occupies a clause-internal position. In third person sentences, in fact, the adverbs in internal position do not give rise to a contrast with the sentences having the adverb in pre-subject position, as shown by the examples (86)-(93).

Analogously to what we saw above, if we introduce the complementizer, the grammatical status of the sentence improves:

- (98) Credo che fortunatamente Gianni abbia vinto
(I) believe that luckily Gianni won
- (99) Credo che sicuramente Gianni abbia vinto
(I) believe that Gianni surely won

Consider also that evaluative adverbs precede the epistemic ones even when they occupy a position in the left layer, as shown by the following contrast:

- (100) Fortunatamente sicuramente Gianni ha vinto
Luckily surely Gianni won
- (101) ?*Sicuramente fortunatamente Gianni ha vinto
Surely luckily Gianni won

We will not address here the question if it is the syntax imposing the hierarchical order, or if the constraints on semantic interpretation do so. Let us only point out that by means of the (unacceptable) linear order in (101), the speaker would be expressing her epistemic status with respect to the fact that the circumstance of Gianni winning the race is lucky, and not with respect to the victory of Gianni itself. In other words, there is a scope effect and the epistemic adverb, in order to have the event – in this case, *Gianni won* – as its argument, cannot precede the evaluative one. As a consequence, example (100) contrasts with (101). Only in (100) in fact the event can be an argument of the adverb *sicuramente*.

Consider now the leftmost position of these adverbs with respect to *credo*:

- (102) Fortunatamente credo Gianni abbia vinto
 Luckily, (I) believe Gianni have won
- (103) Sicuramente credo Gianni abbia vinto
 Surely, (I) believe Gianni have won

The sentences in (102)-(103) are both acceptable – namely, *credo* can follow both the evaluative adverb and the epistemic one.

As we argued above, in Italian a first person singular present tense verbal form can occupy an epistemic head position. The “traditional” epistemic adverbs, such as *probably*, *surely*, etc., according to recent theories on adverb distribution (cf. Cinque 1999, 2002; Rizzi 2001, 2002) are located in the Specifier of an epistemic head.

Note that the possibility of assigning a bi-clausal structure to sentences such as (102) and (103), as well as to the other ones we gave above, is available for the speakers accepting a preverbal subject with CD, but – as we already remarked – this cannot be the case for the speakers rejecting it.

Summarizing, the data in sections 1 and 2 show that the C-less structure embedded under *credo* cannot always be considered as an ordinary subordinate clausal complement, strongly suggesting the existence of an alternative mono-clausal analysis.

Going back to the mono-clausal structure – where the preverbal subject is acceptable for everybody – recall that, given the hierarchical structure, an evaluative adverb must precede an epistemic one. Consequently, the grammaticality of (102) is accounted for, as well as the ungrammaticality of the reverse order exemplified by the example (94).

On the other hand, *credo* and *sicuramente* are both epistemic items, the only difference being that *sicuramente* is a specifier, whereas *credo* is a head. If *sicuramente* is the specifier of the epistemic projection and *credo* is its head, then the order in (102) is predicted to be grammatical, whereas the reverse order, exemplified by (94) is not.²⁰

Consider finally the following pair and compare it with the one in (102)-(103) above:

- (104) Fortunatamente Gianni crede (#Mario) abbia vinto
 Luckily Gianni believes (Mario) has won
- (105) Sicuramente Gianni crede (#Mario) abbia vinto
 Surely Gianni believes (Mario) has won

As far as the semantics is concerned, example (102) contrasts with (104), and example (103) contrasts with (105). Sentence (102) can mean that it was lucky for Gianni to win. This meaning is not available at all in (104), which can only mean ‘it is lucky that Gianni believes that Mario has won’. Analogously, for the pair in (103)-(105). This fact is expected, given the bi-clausal nature of (104)-(105), as opposed to the mono-clausality of the *credo* sentences above.

3. A further look into epistemic adverb syntax and semantics

²⁰ It might be difficult to assign a proper interpretation to (102), so that for some speakers it sounds slightly unnatural. The two epistemic items, in fact, must combine, in order to yield a single epistemic meaning at the maximal projection level and it is not clear to us how this might happen.

In this section we further compare the distribution of epistemic adverbs with that of *credo*. According to our hypothesis, so far the prediction would be that the head *credo* and the adverbs pattern alike, contrasting with the third person verbal form, and in general with *real* main+subordinate structures. We will see that this prediction is only partially borne out and we will show that the differences can be predicted on the basis of the inherent properties of the head *credo*, which are not shared by *probabilmente* (probably), *sicuramente* (surely), etc.

3.1. *Credo* as an epistemic item

Let us observe first that there is no ban against a preverbal subject with an epistemic adverb:

- (106) Probabilmente Paolo è uscito
Probably Paolo left

In this respect, *credo* and *probabilmente* behave alike, as expected. Analogously, the occurrence of topicalized constituents does not constitute a problem either, given that their projections can either follow or precede epistemic adverbs in the syntactic hierarchy:

- (107) Probabilmente, a Parigi c'è già stato
Probably, in Paris, he there-has already been
(108) A Parigi, probabilmente c'è già stato
In Paris, probably, he there-has already been

As we saw above in (23), here repeated, the same pattern is found with *credo*:

- (109) Credo a Parigi ci sia andata il mese scorso
(I) believe in Paris (she) there-went last month
'I believe in Paris she went last month'

Consider also the following word order, which, as expected, is grammatical:

- (110) A Parigi credo ci sia andata il mese scorso
In Paris (I) believe (she) there-went last month
'In Paris I believe she went last month'

Let us consider now the co-occurrence of epistemic items with a Focused phrase:

- (111) A PARIGI, probabilmente Paolo è già stato (non a Londra)
IN PARIS, probably Paolo has already been (not in London)
(112) A PARIGI, credo Paolo sia già stato (non a Londra)
IN PARIS, (I) believe Paolo has already been (not in London)

In these cases there is no difference between *probabilmente* and *credo*, but the opposite ordering does not seem to us to yield identical results in the two cases. Let us reproduce here the sentence with *credo*, given above in (21):

- (113) ??Probabilmente A PARIGI Paolo è già stato (non a Londra)
Probably in Paris Paolo has already been (not in London)
(114) (?)Credo A PARIGI Maria sia andata (non a Londra)
(I) believe TO PARIS Maria went (not to London)

The example (114) is actually better than (113). Consider also that, as pointed out in the first section, this word order does not obtain with *real* CD subordinate clauses:

- (115) *Gianni crede A PARIGI (#Maria) sia andata (non a Londra)
Gianni believes TO PARIS (Maria) went (not to London)

Namely, in a complementizer-less embedded clause a Focus projection in the left periphery position is not acceptable. The word order in sentence (114) therefore, is possible in a mono-clausal structure, and not in a bi-clausal one.

Giorgi and Pianesi (2004a) propose an explanation for the ungrammaticality of (115), which we will not reproduce here. However, it is important to keep in mind that, whatever the explanation might be, it is a fact that there is a contrast between (115) and (114). We will argue that this contrast can be accounted for by means of the hypothesis discussed so far, i.e., that the sentence in (114) is a single clause and not a complex structure as (115). The relevant question now concerns the position occupied by the adverb *probabilmente* and by the head *credo* in these cases. According to Rizzi (2001, 2002) and Cinque (2002), the Modifier position in the left-side layer of the clause should be lower than the Focus position. Suppose that we assign (111) the following analysis:

- (116) [[_{FocP} A PARIGI] [_{ModP} probabilmente] Paolo è già stato (non a Londra)]

Then the status of (113) would follow, as a consequence of a violation of the hierarchical ordering of functional positions in the left field. This account leaves two open problems, though. In the first place, an explanation should be given for the non-fully ungrammatical status of (113). In the second place, if *credo* behaves as an epistemic head that can sit in the same projections whose Spec can be occupied by *probabilmente*, e.g., ModP, then (114) should be on a par with (113) and strongly contrast with (111) and (112). But *credo* is almost perfect in (114).

The hypothesis we will argue for here is that Rizzi's proposal can be maintained, but that *credo* in mono-clausal structures, by virtue of its inherent properties, must move to a still higher position than Rizzi's ModP. Such a movement can be either overt or covert. Hence, both (112) and (114) are (almost entirely) grammatical: in (112) movement takes place covertly and in (114) overtly.

What's the trigger for movement? Morphologically, *credo* is a bi-morphemic verbal form: the verbal root *cred-* and *-o*, which the first person singular ending. Hence, even when it works as an epistemic adverb, it maintains its ordinary phi-features which need be checked/licensed. This cannot obtain, as is normal, in TP structures, because of *credo*'s peculiar syntax. The only possibility, we argue, is that *credo*'s first person singular phi-features are checked in the higher complementizer projection that Giorgi and Pianesi (1997, 2004a) labeled as C, and that is the place where the speaker's coordinates are represented.²¹

Therefore, *credo* is acceptable when preceding the focus projection, as in (114), because it has actually moved to a higher position than Rizzi's Mod (2001, 2002). On the other hand, this suggestion also explains the non full ungrammaticality of (113). In principle *probabilmente*, and epistemic adverbs in general, when referring to the speaker (see the next section), must be interpreted in connection with the speaker coordinate as well. Therefore we suggest that they move covertly to the position where the speaker's coordinate is represented. In sentence (113) such a movement, in itself licit, has taken place overtly. Given that *probabilmente* lacks any feature triggering overt movement the sentence is (mildly) ungrammatical.

Finally this analysis also provides an explanation for the presence of the subjunctive with *credo* only when sentence-initial, but not when used as a parenthetical form.²²

- (117) Credo Gianni sia andato a Parigi
(I) believe Gianni went(SUBJ) to Paris

²¹ See Giorgi and Pianesi (2001, 2003, 2004b) for arguments in favor of the idea that the speaker's coordinate must be represented in the high complementizer C. Giorgi and Pianesi consider C the leftmost complementizer position in the complementizer layer. However, we would not identify *tout court* that position with Rizzi's (1997) Force projection. The question concerning the conceptual correspondence between Giorgi and Pianesi's C and Rizzi's Force deserves further study.

²² See the considerations given in section 2.2 above.

- (118) Gianni, *credo*, è/*sia andato a Parigi
 Gianni, (I) believe, went (IND/*SUBJ) to Paris
- (119) Gianni è/*sia, *credo*, andato a Parigi
 Gianni went(IND/*SUBJ), (I) believe, to Paris

The explanation again resorts to Giorgi and Pianesi's proposal. They argue, on the basis of independent evidence, that the head C is the syntactic location for the features *tau*, which determines the temporal properties of the sentence at the interface.

An epistemic adverb, by itself, does not trigger a special mood. However, *credo* maintains its categorial features, which are verbal, and by virtue of these features ending up in C, it can license a subjunctive.²³

3.2. On the *shifting* of epistemic adverbs

The other important consequence of the fact that the epistemic head *credo* bears first person features is that it is incompatible with questions. Let us see how the reasoning runs.

We showed above in (78)-(85) that coherently with Rizzi's (2001, 2002) predictions, left-peripheral adverbs cannot precede an interrogative phrase, but can only follow it. Let us reproduce here the examples we gave above, together with other ones relevant for the present discussion:

- (120) *Fortunatamente, chi ha vinto la gara?
 Luckily, who won the race?
- (121) *Fortunatamente, perché Gianni ha vinto la gara?
 Luckily, why did Gianni win the race?
- (122) Chi, fortunatamente ha vinto la gara?
 Who, luckily won the race?
- (123) Perché fortunatamente Gianni ha vinto la gara?
 Why, luckily did Gianni won the race?
- (124) *Sicuramente, chi ha vinto la gara?
 Surely, who won the race?
- (125) *Sicuramente, perché Gianni ha vinto la gara?

²³ Notice finally that *credo* as an epistemic head does not exhibit the same properties as the main verb *credere*. In particular, it does not trigger theta-assignment. The internal argument of the *real* verbal form, cannot be omitted:

- i. A: Maria è partita
 A: Maria left
- ii. B: Anche io *(lo) *credo*
 B: I believe (it) as well
- iii. B' Anche io *credo* *(che Maria sia partita)
 B': I believe as well (that Maria left)

In the dialogue in (i)-(iii) the omission of the clitic *lo* (it) would be impossible. If it does not appear, the whole sentence must be repeated. Consider now the following dialogue:

- iv. A: Maria è partita, *credo*
 A: Maria left, (I) believe
- v. B: Non *credo*
 B: Lit. (I) do not believe
 B: 'I'm not sure'
- vi. B': Non (lo) *credo* (che Maria sia partita)
 B?: (I) do not (it) believe (that Maria left)

When the speaker utters A, B is a possible answer, even if neither the clitic nor the sentence are realized. In B', where either *lo*(it) or the sentence are present, we see a different meaning. The answer B, in fact has an epistemic meaning. *I am not certain the Maria left*, but B' means *I do not have the belief that P* – i.e., the person answering expresses her disbelief in what the speaker says.

Surely, why did Gianni win the race?

- (126) Chi sicuramente ha vinto la gara?
Who, surely won the race?
(127) Perché sicuramente Gianni ha vinto la gara?
Why, surely did Gianni won the race?

Credo does not pattern with *sicuramente* with respect to interrogative phrases:

- (128) *Chi credo abbia vinto la gara?
Who do (I) believe won the race?
(129) *Perché credo Gianni abbia vinto la gara?
Why do (I) believe Gianni won the race?
(130) *Credo chi abbia vinto la gara?
(I) believe who won the race?
(131) *Credo perché Gianni abbia vinto la gara?
(I) believe why Gianni won the race?

(128) can only be accepted as an echo question, when endowed with an appropriate intonation. The non-echo reading, in which I ask myself about who I believe has won the race, is syntactically available but semantically phony. As to (129), it can be used again as an echo question, on a par with (128), or as a way to ask the reason why I (the speaker) have that specific belief. Excluding the echo question case, therefore, the only possibility for these sentences to be grammatical consists in assigning them a bi-clausal analysis. Even this possibility, however, is ruled out in examples (130) and (131). Therefore, epistemic *credo* is incompatible with interrogative phrases, independently of linear order.

In order to provide an explanation, it is important to consider more closely the semantics of epistemic structures. Consider the basic cases:

- (132) Probabilmente Gianni è partito
Probably Gianni left
(133) Maria ha detto che probabilmente Gianni è partito
Maria said that probably Gianni left(IND)
(134) Maria crede che probabilmente Gianni sia partito
Maria believes that probably Gianni left(SUBJ)

The adverb *probabilmente* (probably) in sentence (132) expresses the opinion of the *speaker* concerning the embedded event. Namely according to the speaker, the (past) leaving of Gianni is probable. The adverb in the embedded clause in examples (133) does not express the point of view of the speaker, but of the referent of the grammatical subject – that is, Maria. The same holds of (134): the bearer of the attitude with respect to the content expressed by the embedded clause, Maria, is the person whose epistemic point of view is reported by means of the epistemic adverb. On the other hand, the epistemic adverbs in (133) and (134) cannot be used to express the point of view of the speaker. In other words, they are interpreted *locally*, and, to the extent the metaphor goes, they cannot be interpreted *de-re*.

We can express these properties by saying that the epistemic adverb is *anchored* at the interface to the bearer of the attitude. The anchoring has the purpose and the effect of linking the epistemic state to a subject: the speaker in the case of main clauses, and the bearer of the attitude in the case of embedded ones. In a way, this process is analogous to what happens with the temporal interpretation – see Giorgi & Pianesi (2001, 2003, 2004b) – and with the binding of long distance anaphors – see Giorgi (to appear, 2004)

Notice that a sentence featuring an adverb like *probably* is actually ambiguous, in that this adverb can also refer to *objective* probabilities, besides the speaker's opinion:²⁴

²⁴ We thank Jim Higginbotham for pointing out this property to us.

- (135) Probabilmente il lancio del dado darà un numero da 1 a 5
Probably the tossing of the dice will yield a number between 1 and 5

The context in (135) selects for the *objective* reading, even if the epistemic one is not totally excluded. The sentence means that the event of obtaining a number between 1 and 5 is more likely to occur than the other events, namely, number 6. *Credo* (followed by a complementizer-less clause) does not give rise to an ambiguity in this sense:

- (136) Credo il lancio del dado dia un numero da 1 a 5
(I) believe the tossing of the dice will yield a number between 1 and 5

It is impossible—or at least very hard – to assign to (136) the interpretation: “*it is objectively probable that P*” and the only meaning available is the epistemic one.

With these remarks in mind, let us consider what happens in the case of an interrogative sentence:

- (137) Chi probabilmente è andato a Parigi?
Who probably went to Paris?

The adverb *probably* in this case does not refer to the epistemic state of the speaker. It can have the *objective* meaning – i.e., the speaker might be inquiring about the people having an objective probability of having left for Paris. The speaker might also be asking about the person who *probably* left *according to the hearer’s opinion*. Namely, in this case the interpretation is epistemic again and the bearer of the epistemic state is the addressee. Even in this case, therefore, the anchoring of the epistemic adverb is shifted, in the sense that it not referred to the speaker, but to another discourse participant.

This analysis provides an explanation for the incompatibility of *credo* with questions. On the one hand, *credo* has first person singular features that make it *speaker-oriented*. On the other hand, questions are, at least as far as the examples considered here go, hearer-oriented: it is the point of view of the addressee that they ask about. This analysis also predicts that *credo* is incompatible with embedded contexts:

- (138) (*for group 2) Maria ha detto che credo Gianni si sia sbagliato
Maria said that (I) believe (Gianni) was wrong
(139) Maria ha detto a tutti che io credo che Gianni si sia sbagliato
Maria told everybody that I believe that Gianni was wrong

Recall that a preverbal subject in CD structures is acceptable only for a group of speakers, call it group 1. For group 2 it is ungrammatical. For group 2 speakers, therefore, the presence of the embedded subject *Gianni* in (138) is a test for mono-clausality. For these speakers the sentence in (138) is ungrammatical. This piece of evidence can be readily explained on the basis of our hypothesis: if in (138) *credo* is an epistemic head, it needs to check its phi-features against those encoded in the high C position. In this sentence, however, the embedded C encodes the coordinates of the attitude’s subject, Maria. Hence *credo*’s features are non licensed. The sentence in (139), on the other hand, is a normal sentence, in which *credo* heads a VP and takes a CP as a complement – no CD – and is therefore grammatical for everybody.

Compare finally epistemic adverbs with speech act ones. As we pointed out above, *francamente* cannot be embedded. We reproduce here the examples given above in examples (52)-(53):

- (140) Francamente, Gianni si e' sbagliato
Frankly, Gianni was wrong
(141) *Maria credeva che, francamente, si fosse sbagliato
Maria believed that, frankly he was wrong

However, it can appear in interrogative clauses:

- (142) Francamente, chi si è sbagliato?
Frankly, who was wrong?

Interestingly, this sentence is ambiguous. It can have a rhetorical meaning, to convey, e.g., that I, the speaker do not think that anybody was wrong: *Francamente, chi si e' sbagliato? Nessuno!* (Frankly, who was wrong? Nobody!). But if interpreted as a real question, *frankly* necessarily refers to the hearer —namely, the speaker is asking for the hearer's frank opinion: you, the hearer, be frank, and tell me who was wrong. This adverb therefore can shift from the speaker to the hearer, though it cannot shift to the bearer of an attitude. As it seems, the shifting is licensed in (142) because the hearer is supposed to be the performer of the following speech act.

We have therefore a tripartite picture: *Probably* can freely shift, as required by the context. *Credo* never shifts and can only refer to the speaker – as expected, given its first person features. *Frankly* can shift, but only as far as a communicative act is involved.

Speculatively, these facts might be accounted for by claiming that there is a very high left position including the *situation* coordinates where *frankly* ends up.

Concluding, we propose that *credo* moves to a position on the left of the sentence in the complementizer layer, either overtly or covertly. If the resulting surface order violates Cinque's (1999) hierarchy, overt movement is disfavored. This is the case of example (90) above, where *credo* precedes an evaluative adverb: “*??credo fortunatamente...*” ((I) believe luckily) vs. : “*fortunatamente credo...*” (luckily (I) believe). We briefly suggested above that this effect might be due to a scope requirement: evaluative must have scope on epistemics. The same might hold for the focus projection, which tends to have scope over epistemics.

4. *Dicono* ("they" say)

In this section we are going to consider the distribution of the impersonal – or better to say *subject-less* – third person plural form of the verb *dire* (say), *dicono* (they say). We'll argue that, when it is not followed by the complementizer, it can function as an evidential adverbial. In this respect it is analogous to the verbal form *credo*. However, the first person features, which determine an important portion of the syntactic and semantic properties of *credo* do not appear on *dicono*.²⁵

We will show that the distribution of *dicono* contrasts with that of *credo* exactly where those features come into play, constituting therefore a strong argument in favor of our view.²⁶

4.1. *Dicono* as an adverbial head

Dicono shares the same properties of *credo* in complementizer-less structures. Namely, the clause following the verbal form does not exhibit the properties typical of an embedded clause, but those of a main one. Consider the following case, where a complementizer-less clause has a preverbal subject:

- (143) Dicono Gianni sia partito all'alba
They say Gianni has(SUBJ) left at dawn

No anomaly seems to arise in this case, even for those speakers usually rejecting the preverbal lexical subject with CD. Importantly, the verb *say* in this case triggers the subjunctive - analogously to *credo*. This is impossible under the non-impersonal reading:

- (144) Maria dice che Gianni è /*sia partito all'alba
Maria says that Gianni has (IND/*SUBJ) left at dawn

²⁵ For recent extensive reviews on evidentiality, see among the others Rooryck (2001a, 2001b) and Aikhenvald and Dixon (2003).

²⁶ The form *si dice* (one says), with the impersonal clitic *si*, shares the properties of *dicono*. We suggest therefore that it is analyzed as a head as well, analogously to *dicono*, and the clitic is incorporated in the head.

Moreover, only *dicono* can license the subjunctive mood.²⁷

Let us consider now the distribution of this head with respect to topicalized phrases, in comparison with *crede* ((he) believes) and *credo* ((I) believe) – cf. also section 1:

- (145) ?(?)Gianni crede a Parigi ci sia andata il mese scorso
 Gianni believes in Paris she there-went(SUBJ) last month
- (146) Credo a Parigi ci sia andata il mese scorso
 (I) believe in Paris she there-went last month
- (147) Dicono a Parigi ci sia andata il mese scorso
 They say in Paris she there-went(SUBJ) last month

The sentence in (147) does not contrast with (146), and both contrast with (145). Hence, we might conclude that *credo* and *dicono* occupy a similar position – though perhaps not the same, due to the difference in their feature specifications.

Consider however the following data:

- (148) *Gianni crede A PARIGI sia andata (non a Londra)
 Gianni believes TO PARIS she went(SUBJ) (not to London)
- (149) (?)Credo A PARIGI sia andata (non a Londra)
 (I) believe TO PARIS she went(SUBJ) (not to London)
- (150) ?(*)Dicono A PARIGI sia andata (non a Londra)
 They say TO PARIS she went(SUBJ) (not to London)

A focused constituent with *dicono* does not give rise to an acceptable sentence, even if to our ears (150) is slightly better than (148). In this case, *dicono* contrasts with *credo*. The reason for this contrast can be traced back to the different feature specification of the two verbal forms. Recall that, as hypothesized by Rizzi (2001, 2002), the Mod(ifier) position in the CP layer, which is the landing site for preposed adverbials, follows the focus projection. As expected under this hypothesis, the following example is considerably improved with respect to the one given above:

- (151) A PARIGI dicono sia andata (non a Londra)
 TO PARIS they say she went (not to London)

The marginality of (150) can be explained as due to the difficulty for a Mod(ifier) head to occur in pre-focus position, and to the fact that *dicono*, differently from *credo*, cannot rise to the higher C position, given that it is not endowed with first-personal features.

The improved status of (150) with respect to (148) can be explained by means of the idea we already developed above for *credo*: sentence (148) is bi-clausal, whereas the one in (150) is mono-clausal.

We propose therefore to extend to these cases the mono-clausal analysis we gave for epistemic *credo*. According to this hypothesis, in the bi-clausal structure with CD, the clause-initial Focus position in the subordinate clause is not available. On the other hand, such a position is available in structures such as (150). The problem is just that *dicono* cannot move past it, given the lack of a proper trigger.

Finally, the data concerning *dicono* also confirm our hypothesis that the presence of the subjunctive is a function both of the semantics of the head – in this case evidential – and of the fact that the subjunctive is possible when the head lands in the left-most position of the CP-layer – Rizzi's Mod(ifier) projection – but not when it stays in an intermediate, non-CP layer, position. Consider in fact that in the parenthetical usage no subjunctive is triggered, analogously to what we saw for *credo* above:

²⁷ Impersonal *dicono* can trigger subjunctive also in bi-clausal structures, even if the indicative is still available:
i. Dicono che Maria è/sia partita
 They say that Maria left(IND/SUBJ)

- (152) Maria (dicono) è/*sia (dicono) andata (dicono) a Parigi (dicono)
 Maria (they say) has(IND/*SUBJ) (they say) gone (they say) to Paris (they say)

Whatever the position of *dicono* might be when used parenthetically, the subjunctive is not acceptable.

Summarizing so far, the data concerning *dicono* point to the conclusion that the structure is mono-clausal and that *dicono*, analogously to *credo*, is a head with an evidential interpretation. The ordering with respect to the focus projection, which differs from the one observed with *credo*, follows from the different feature specification of the two forms.

Consider now that if the complementizer appears, a bi-clausal structure is projected and therefore the properties we just observed do not hold anymore. Consider the following example, with an overt main subject – i.e., *Loro* (they):

- (153) Loro dicono *(che) Paolo ha/*abbia telefonato
 they say that Paolo has(IND/*SUBJ) called

The first observation is that CD is not available, as we already discussed above. Moreover, as we pointed out above, *dicono*, analogously to other verbs of *saying* in Italian, triggers the indicative and not the subjunctive. Recall also that CD is impossible with the indicative.

As further evidence in the same direction, let us consider now the properties of the past form of *dire*.²⁸

- (154) Hanno detto (che) è/*sia andata a Parigi
 They said (that) she went(IND/*SUBJ) to Paris

We can conclude that, as expected, only the third person plural subject-less present tense, form *dicono* can work as an evidential head.

As a final argument in favor of our analysis of *dicono* as a functional head, note that the verb *dire* can take an indirect object, as in the following sentence:

- (155) Gianni ha detto a Paolo che Maria è partita
 Gianni said to Paolo that Maria has(IND) left

The presence of the dative is totally excluded in the construal under scrutiny here:

- (156) *Dicono a tutti Maria sia partita
 (They) say to everybody Maria has(SUBJ) left
 (157) Dicono a tutti che Maria è partita
 (They) say to everybody that Maria has(IND) left

There is a clear contrast between these examples: the sentence in (157) can only have the literal meaning as a *saying* predicate. Therefore, it must be followed by the complementizer *che* (that) and an embedded indicative verbal form.

4.2. The distribution of *dicono* and the other items of the left-periphery

In this section, we consider the distribution of *dicono* with respect to evaluative and epistemic adverbials.

²⁸ Notice that the imperfect tense gives much better result than the present perfect:

i. Dicevano fosse andata a Parigi

They said she went(SUBJ) to Paris

This fact can be explained by suggesting that the imperfect form can (marginally) be used to strengthen an evidential.

According to Cinque (1999) the evidential projection intervenes between the evaluative and the epistemic projection, as exemplified by the relative orders of adverbs (Cf. Cinque, 1999, Ch.4):

(158) Fortunately_{evaluative} > allegedly_{evidential} > probably_{epistemic}

Let us consider now the distribution of *dicono* with respect to the evaluative adverb. The meaning relevant for our investigation is the one where *fortunatamente* refers to the leaving of Gianni:

(159) Fortunatamente dicono Gianni *è /sia partito
Fortunately (they) say, Gianni has(*IND/SUBJ) left

This sentence shows that *dicono* behaves according to Cinque's hierarchy, following the evaluative. As expected grammaticality requires the embedded subjunctive, whereas the indicative is unavailable. Consider now epistemic adverbs:

(160) Dicono probabilmente Gianni *è/ sia partito
(They) say probably Gianni has(*IND/SUBJ) left

Again, the order of words in (156) is predicted by Cinque's hierarchy, given that the evidential projection precedes the epistemic one. Consistently, the mood appearing in the embedded clause is the subjunctive and cannot be the indicative.

Let us consider the other possible orders, which are not the ones expected under Cinque's analysis. If *dicono* appears on the left of the evaluative adverb, the sentence is still grammatical, even if to our ear slightly marginal:²⁹

(161) (?)?Dicono fortunatamente Gianni *è /sia partito
Fortunately, (they) say, Gianni has(*IND/SUBJ) left

This sentence reminds us of example (150) above, where *dicono* appears on the left of the focus projection. As an account, we suggested that *dicono* can marginally move to a higher position, i.e. in the head C – in Giorgi and Pianesi's terms, roughly equivalent to Rizzi's head Force. As discussed above, the result is marginal, given that the movement is not triggered.

Consider now the following cases, apparently contrasting with the examples we just discussed:³⁰

(162) Credo dicano Maria sia partita
(I) believe (they) say Maria left(SUBJ)

(163) *Dicono creda Maria sia partita
(They) say (I) believe Maria left(SUBJ)

This word order is not predicted by the hierarchy given above. As just discussed, the licit order should be the one in (163), which on the contrary is highly disfavored and contrasts with the example in (160), where the epistemic adverb *probabilmente* (probably) appears. This contrast is predicted by the hypothesis we suggested above: *credo* must move to a higher position, to check its first person, speaker oriented features, whereas *dicono* does not.³¹

²⁹ Let us recall here once more that these sentences might be pronounced with various intonational patterns. This might give rise to a variety of possible judgments. It is extremely important therefore, to keep the intonation as 'flat' as possible, unless differently signaled by punctuation.

³⁰ We thank Memo Cinque for pointing out this contrast to us. Note also that, as expected, the string in (163) has the interpretation in which the verb *believe* expresses its literal meaning: *they say I believe so and so*. The star is relative to the epistemic reading: *they say perhaps (according to my opinion) so and so*. This reading is totally out.

³¹ Notice that in these examples *credo* and *dicono* when preceded by the other head appear in the subjunctive. This means that the subjunctive is triggered in the head in the left periphery, and spread over all the items specified by a verbal feature.

Let us consider the contrast between (162) and (163) more closely. From what we saw up to this point, we can say that *credo* can move overtly, but so far we didn't see cases where it *must* do so. Therefore in principle, (163) should not be that bad, since, after all, the raising of *credo* should not be obligatory. To solve this problem, consider again the semantics of the two heads. *Dicono* means that the speaker takes what she heard from other people as the relevant source of the propositional content and crucially she signals that she is not taking full and direct responsibility with respect to the following content. Consequently, an epistemic adverb following *dicono* cannot be anchored to the speaker, given that she diverts the responsibility from herself. On the contrary, it must be anchored to the source of the evidence. Therefore, an epistemic adverb such as *probabilmente* must shift. It seems to us that as a matter of fact this is precisely the meaning of a sentence such as (160) above. *Probabilmente* (probably) refers to the epistemic state of the generic *they* constituting the source of the information.

We saw however, that *credo*, due to its features, cannot shift. Hence, it cannot stay in the scope of an evidential, but must appear in a position higher than the evidential, so that it can still be anchored to the speaker. The meaning obtained in this way, is that “according to the epistemic state of the speaker – i.e., one lower than absolute certainty – there is evidence – coming from an external unspecified source – that P”.

In a word, the only meaning which can be expressed by means of *credo* is the one roughly equivalent to *probabilmente dicono Gianni sia partito* (probably they say Gianni left), where *probabilmente* precedes, and has scope over, the evidential.

Concluding remarks

In this paper we pursued two goals. The first one is merely descriptive: in Italian – contrary to what assumed so far – it is possible to find evidential and epistemic heads, exhibiting the peculiar distribution predicted by Cinque's hierarchy. These heads are ‘disguised’ as verbs, but do not give rise to a bi-clausal structure and do not provide a regular theta-grid. On the contrary, several arguments show that the structure is a mono-clausal one.

The other goal is theoretical: The analysis of *credo*, contrasted with that of *dicono* shows that there is a *syntactic* position where the speaker coordinate is represented. This result is in line with other achievements, coming from the analysis of the temporal interpretation of embedded clauses and the binding of long distance anaphors. Such a position is in the left-periphery and is the highest one, preceded only by the projection occupied by speech act adverbs, such as *francamente* (frankly). *Francamente* is interpretively connected with the conversational background and we hypothesized that there might be a dedicated position in the syntax. The left-periphery we are arguing for, therefore, is the following:

(164) [Speech act (conversational background) *francamente* [C (Speaker's coordinate) *credo* [INT [FOC [MODIFIER...]

(165) MODIFIER has to be expanded as: [evaluative[evidential[epistemic...]

Credo is moved to C from the epistemic position. This movement can be overt, due to its first person features. *Dicono* can only move covertly, analogously to the other non-first person epistemic, evaluative, and evidential items.

Let us now briefly address a pending question. Sentence (162) in principle should violate the Head Movement Constraint – or whatever equivalent principle – given that the epistemic head *credo* crosses the evidential one occupied by *dicono*. Since the sentence is grammatical, we have to explain why no violation arises. Recall that the sentence (163) is ungrammatical because, as we explained above, *credo* cannot shift – due to its feature specification, which always and only refers to the speaker – and shifting is obligatory. Therefore, the evidential head cannot interfere with *credo* and no violation arises in this connection.

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