

Is topic a root phenomenon?*

Valentina Bianchi and Mara Frascarelli

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Abstract and roadmap. In this paper we discuss the widespread assumption that topics are a root phenomenon. The paper is organized as follows: after some introductory remarks (§ 1), in § 2 we review some current analyses of sentence topics and contrastive topics and consider their role in conversational dynamics (Krifka's 2007 common ground management). We then derive the root restriction on topics from an interface requirement: since they affect the conversational dynamics, they must be hosted in clauses endowed with illocutive force. In § 3 we adopt a threefold distinction of topics (Aboutness-Shift, Contrastive and Familiar/Given Topics), based on Frascarelli and Hinterhölzl's (2007) investigation on the formal and interface properties of dislocated constituents in Italian and German; we then show that the well-known opposition between Italian and English-like topic constructions with respect to embedded realizations only concerns Familiar/Given topics, which do not affect the conversational dynamics at all. Romance Clitic Left Dislocation is therefore not a real counterexample to the root restriction. In § 4, on the other hand, we call into question Büring's (2003) definition of the Contrastive Topic and show the need for a reconsideration of its semantic and formal properties; we provide overwhelming evidence that English Contrastive Topics are not subject to the root restriction, since they have genuinely embedded interpretations and can be found in non-asserted complement clauses. We then propose a novel analysis for this type of topic. In § 5 we reconsider Aboutness-shift Topics, showing that they fully respect the root restriction. However, we argue that Portner and Yabushita's (1988) «root promotion» of embedded topics is incorrect and we discuss Krifka's (2001) suggestion that the A-Topic instantiates an independent speech act. § 6 resumes the problem of root-like clauses and offers a tentative solution for their «quasi-assertive» role. A summary and some conclusions are offered in § 7.

1. Introduction: the root restriction on (English) topics

Since (Emonds 1970, 1976), English left dislocation (LD) and topicalization (TOP) have been analysed as root phenomena: they are restricted to root clauses and a subset of root-like subordinate clauses (cf. among others Emonds 2004, Haegeman 2002, Heycock 2006, Maki et al. 1999). This

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«root restriction» has been connected to the availability of assertive force in these clauses (Hooper and Thompson 1973) and several works have tried to define this subset of embedded contexts and explain their properties (cf. Haegeman 2004, 2007, Gärtner 2001, Meinunger 2004).¹

Hooper and Thompson (1973) make the point that this restriction only relies on semantic/pragmatic requirements and cannot be accounted for syntactically:

As a positive environment we can say that [root] transformations operate only on Ss that are asserted. [...] some transformations are sensitive to more than just syntactic configurations. It does not seem possible to define the domain of an RT in terms of syntactic structures in any general way. However, [...], even if it were possible to define in syntactic terms the conditions under which RTs can apply, [...] the question of why these transformations can apply in certain syntactic environments and not others would still be unanswered (Hooper and Thompson 1973: 495)

This claim is supported by the observation that «root transformations» are actually allowed in syntactically embedded (non-root) clauses whose content constitutes the main assertion:

(1) It appears [that *this book* he read thoroughly] (Hooper and Thompson 1973, 478, (92))

This challenge was then taken up by different authors, who tried to elaborate a syntactic account for the relevant restriction. Emonds (1970, 1976) observed that for many speakers dependent clause contexts mimic the freedom of root structures in indirect discourse. However, root-like indirect discourse embedding is incompatible with most dependent clause positions; as a matter of fact, embedded TOP requires finite clauses (cf. (2a) vs. (2b)); it can be found in complements rather than adjuncts (2c) and excludes N or P governors (2d):

- (2) a. Bill warned us that [*flights to Chicago* we should try to avoid] (Emonds 2004: 77)
b. *Bill warned us [*flights to Chicago* to try to avoid]
c. *Mary used another company since/until [*flights to Chicago* they could avoid]
d. *A warning that [*flights to Chicago* travellers should avoid] will soon be posted

In order to account for this behaviour, Emonds proposes the existence of a Discourse Shell, “a categorically unspecified projection [... that] may immediately dominate only IPs specified as Discourse Projections” (Emonds 2004: 85). The Spec of this projections is proposed as the landing site for root movements like auxiliary inversion, exclamative wh-fronting and, precisely, topicalization. Iterated Discourse Shell Specifiers are also proposed as a natural device to account for the position of

¹ As a matter of fact, Hooper and Thompson (1973) do not provide a clear definition of what constitutes an ‘asserted clause’. They only state that the assertion of a sentence is “its core meaning or main proposition” and that it “may be identified as the part that can be negated or questioned”. Sentences, however, may contain more than one assertion (see coordination, for instance) and, crucially, some subordinate clauses are asserted. They thus provide a five-way division of predicates which has been later resumed by different authors for further discussion and elaboration (cf., among others, Vikner 1994, Reis 1997, Meinunger 2004, Heycock 2006).

LD constituents. As for the latter, Emonds shows they can cooccur with, and must be exterior to, TOP elements – a restriction that the author attributes to trace binding (the Tensed S Constraint):

- (3) a. [my supervisor]_k, [a man like that]_j she_k would never hire t_j (Emonds 2004: 107)
b. *[a man like that]_j [my supervisor]_k, I don't think she_k would hire t_j

Focusing on the root properties of German V2 declaratives, a structural account is also proposed in Gärtner (2002) in terms of a hypotactic analysis involving syntactic variable sharing. Along these lines, the scopal behaviour of the relevant constructions is derived from their 'assertional proto-force'. Meinunger (2004), on the other hand, proposes an extraposition analysis for dependent indicative V2 clauses in German, targeting a quasi-paratactic position from which the relevant clauses act as assertions. These analyses combine Emonds's insight on the «root» nature of certain transformations (including TOP) and Hooper and Thompson's insight that assertive force plays a key role. (This hypothesis will be re-examined in § 6).

2. An interface requirement?

The restriction of topics to «root» or «root-like» clauses which are (at least potentially) endowed with assertive force seems to comply with plausible interface requirements. This can be easily seen by considering the treatment of topics within the tradition of update semantics. The latter endorses a dynamic view of semantic interpretation, whereby the meaning of a sentence is its *update potential*: a function from an input context to an output context. The input context is the set of possible worlds that are compatible with the conversational common ground, i.e. the set of propositions that are taken to be presupposed, up to that point, by all the participants in the conversation. The updating effect of an assertion is that the asserted proposition, when accepted by all the participants, is admitted into the common ground, and thus discards from the input context all the possible worlds that are incompatible with it (technically, by intersection), yielding a «shrunked» output context.

In Stalnaker's (1978) original definition, the common ground was simply the set of presupposed propositions. To this, Heim (1982) added a domain of discourse referents (technically, indices), which constitutes the universe of discourse: at a given point of the conversation, a discourse referent can be newly introduced into the domain (novel) or be already present (familiar). Furthermore, Roberts (1996) has proposed a «question under discussion stack» which keeps track of the questions that are introduced in the course of the conversation. Thus, the conversational context comprises various subcomponents (see Roberts 2004 for an overview). From now on we will use the term «common ground» (CG) in the broader sense, including all these components, and we will dub the first component «propositional CG».

Within this general approach, topics have been analysed as instructions to the hearers on *where* the propositional content expressed by the assertion act should fit in the CG.

2.1. Reinhart’s sentence topic. The first example of this line of analysis is Reinhart’s (1981) definition of sentence topic, which formally expresses the insight that the topic is the entity that the sentence is about. According to Reinhart, the propositional CG is not just an unordered set of propositions, but it is divided into subsets of propositions, which are stored under defining entries; these entries correspond to topic denotations.² Hence, a sentence topic identifies the entry under which the proposition expressed in the sentence should be stored in the CG.³ Consider for instance the two examples in (4a-b), where the sentence topic corresponds to the syntactic subject:

- (4) a. [_{Top} Lou Reed] [met David Bowie in 1971]
 b. [_{Top} David Bowie] [met Lou Reed in 1971]

Since *meet* is a symmetric predicate, the two sentences express equivalent truth conditions; however, in the case of (4a) the proposition expressed will be stored in the CG as information about the entity L. Reed, whereas in the case of (4b), the proposition will be stored as information about the entity D. Bowie.

Reinhart’s approach has been elaborated on by Portner and Yabushita (1998) in their analysis of Japanese *wa*-topics. These authors represent the CG as a set of infinite sequences of pairs, where each pair consists of an entity and a set of possible worlds representing the information we have about that entity.⁴ The information in the CG is thus partitioned into various «file cards» – sets of possible worlds associated to the topic entities.⁵ The updating function is then defined in such a way that the information expressed in a proposition will be stored in the file card corresponding to the topic entity (Portner and Yabushita’s «link»). Even this rough sketch is sufficient to show that the sentence topic is conceived of as an instruction on how to update the CG: it indicates which file card will be modified by the asserted proposition.

² This is obviously reminiscent of the «file card» metaphor by Heim (1982).

³ According to Reinhart, a sentence may have more than one potential (NP) topic, thus yielding multiple potential pragmatic assertions. In her own words (Reinhart 1981, 25):

“To say that a sentence S uttered in a context C is about α_i , i.e. that the pair $\langle \alpha_i, \phi \rangle$ of Possible Pragmatic Assertions_(S) is selected in C, is to say,

(i) first, that if possible, the proposition ϕ expressed in S will be assessed by the hearer in C with respect to the subset of propositions already listed in the context set [sic] under α_i ,

(ii) second, that if ϕ is not rejected it will be added in the context set under the entry α_i . “

(Notice that Reinhart dubs «context set» what Stalnaker (1978) dubs «common ground».)

⁴ “[For any sequence A] Intuitively, for each i , all the pairs $\langle e_{i,A}, I_{i,A} \rangle$ represent the i th file card. Encoded in $I_{i,A}$ are the facts so far established about the i th discourse referent, and $e_{i,A}$ is a candidate for being the actual thing that the discourse referent represents.” (Portner and Yabushita 1998, 141)

⁵ It is still possible to construct a global context set by simply intersecting all the sets of worlds in a sequence A (for every $A \in CG, \bigcap_{j \in N} I_{j,A}$). A consistency requirement makes sure that such an intersection of all the sets of possible worlds in each sequence be non-null: hence, each sequence represents a consistent state of information.

2.2. Büring's (2003) contrastive topic. A different approach to topics has been proposed by D. Büring (1997 and subsequent works).⁶ We focus here on Büring's (2003) analysis of contrastive topics (CT).

This analysis builds on Roberts's (1996) proposal that discourse is guided by strategies of inquiry, i.e. sets of questions hierarchically ordered by entailment relations. To illustrate informally,⁷ a question like (5a) entails the two questions (5b) and (5c); any answer to (5a) will provide a complete answer for both the subquestions that it entails:

- (5) a. What do your siblings do?
- b. → What does your sister do?
- c. → What does your brother do?

The conversational CG keeps track of the questions that are introduced in the discourse: when a question is introduced by a speaker, it commits the other participants to providing an answer, and remains the «question under discussion» (QUD) until it has been answered or it has been shown to be presently unanswerable, at which point it will be removed, along with any subquestions that it entails. (As mentioned above, this is implemented through a QUD stack).

Büring (2003) represents strategies of inquiry by means of d(iscourse)-trees, where the hierarchical (entailment) structure is directly expressed by dominance relations. The function of contrastive topics is to indicate how the asserted proposition fits into a strategy of inquiry.

Within the general framework of alternative semantics, Büring defines the CT-value of a clause with contrastive topic marking as a set of questions. This can be obtained by two steps; consider the example in (6), where the subject is marked as a contrastive topic (by means of the so called B-accent) and the direct object is focussed:

- (6) [FRED]_{CT} ate [the BEANS]_F.

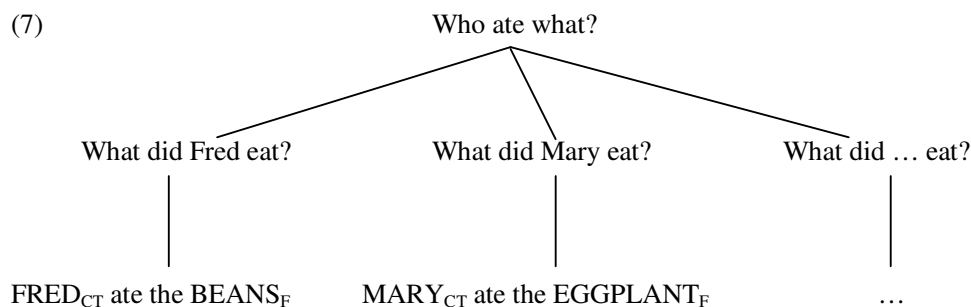
The first step is to replace the focussed term with a wh-word and front the latter, yielding the question: «what did Fred eat?». The second step is to form from this a set of alternative questions by replacing the contrastive topic with some alternative to it: this is a set of questions of the form «what did x

⁶ In Portner and Yabushita's (1998) terms, Büring's approach endorses a question-based view of topics, as opposed to their own (and Reinhart's) entity-based view of topics.

⁷ More formally: Taking a question to denote a set of alternative propositions, a complete answer to a question is one which yields an evaluation (true or false) for all of these alternative propositions, whereas a partial answer is one which yields an evaluation for at least one such alternative. A question q_1 entails another question q_2 iff giving an answer to q_1 yields a complete answer to q_2 . In Roberts's actual implementation, the set of alternative propositions determines a partition of the set of possible worlds into disjoint cells; a partial answer rules out at least one such cell, whereas a complete answer eliminates all but one cell in the partition.

eat?»⁸

The CT-congruence requirement states (roughly) that every declarative clause containing a contrastive topic must be the answer to a question belonging to a set of alternative questions – either explicitly asked or implicitly introduced – which are all part of a strategy to solve a super-question. Thus, a sentence like (6) (with the relevant CT and focus marking) must be part of a d-tree like (7) (Büring’s 2003 (15)):



Once again, this is an extremely reduced synthesis: it is merely intended to show that Büring’s contrastive topic provides an instruction for the hearer on how to relate the asserted proposition to a strategy of inquiry. As Krifka (2007) stresses, when the alternative subquestions are implicit, contrastive topics may effectively be used by a speaker to indicate a strategy of incremental answering to the superquestion. In other cases, a use of CT-marking not related to an already established strategy of inquiry may even induce the hearers to accommodate a strategy, with an indirect but nonetheless substantial impact on the ongoing discourse.

2.3. CG-management and the root restriction. We wish to relate these views of topics to a distinction recently proposed by Krifka (2007) in his overview of information structure phenomena. Krifka distinguishes two dimensions of the CG, which he calls *CG content* vs. *CG management*. Roughly, CG content is the truth-conditional information accumulated up to a given point in the conversation; CG management is the sequence of conversational moves performed by participants (assertions, questions...) that determines the way in which the CG content develops, and the information about these conversational moves that is reflexively stored in the CG.

Recall now that Reinhart’s sentence topic indicates which file card in the propositional CG is going to be updated by the proposition expressed in the assertion act; Büring’s contrastive topic indicates that the proposition expressed directly answers a (possibly implicit) subquestion belonging in a strategy of inquiry. Thus, it is clear that both these notions of topic pertain to the dimension of CG management.

⁸ More precisely: In the alternative semantics view, the focus value of a clause (as well as a question meaning) is a set of alternative propositions varying in the position marked by focus or wh: e.g., the denotation of the question «what did Fred eat?» is a set of propositions of the form «Fred ate y» : {Fred ate y | y ∈ D_e}. Büring’s CT-value is in turn a set of alternative question meanings varying in the CT-marked position, i.e. {{x ate y | y ∈ D_e} | x ∈ D_e}.

Following Krifka (2007) and Frascarelli and Hinterhölzl (2007), we assume that the «aboutness» and the «contrastive» definition of topics are not mutually exclusive, but complementary, as their interpretation is relevant to the dynamic updating of different subcomponents of the CG (the propositional CG and the QUD stack, respectively). In § 3, we will see that the two types of topic can actually co-occur.

At this point we can reconsider the root restriction on the distribution of topics. Under both views, topic interpretation is directly related to a conversational move: it follows that topics are expected to appear only in clauses endowed with illocutive force, which realize a speech act implementing a conversational move:

(8) **Interface Root Restriction (IRR)**

Information structure phenomena that affect the conversational dynamics (Krifka's 2007 CG management) must occur in clauses that express nonreported speech acts. Nonreported speech acts are syntactically unembedded.

In this way, the root restriction can be directly derived from the interpretive properties of topics and the compositional nature⁹ of interpretation.

3. An apparent counterexample: Romance Clitic Left Dislocation

But the empirical data seldom are as neat as our theories. Romance clitic dislocation is known to be a blatant counterexample to the root restriction: it is generally allowed in all finite subordinate clauses (cf., among others, Cinque 1990, Rizzi 1997, Frascarelli 2000, De Cat 2002):

- (9) a. *L'unica persona che a Gianni, non gli ha mai fatto un favore* (Cinque, 1990: 58 (1b))
 the only person that to Gianni not to-him has ever done a favour
- b. *Non so proprio chi, questo libro, potrebbe recensirlo per domani*
 I don't know who this book could review-it for tomorrow
- (10) a. *Se gli esami finali non li superi, non otterrai il diploma*
 if the final exams not them-pass.2.SG, not obtain.FUT.2.SG the degree
- b. *Che questo problema gli studenti non l'abbiamo potuto risolvere, mi sembra impossibile*
 that this problem the students not it-have.3PL can.PART solve to-me seems impossible
- c. *E' strano che questo problema gli studenti non l'abbiamo potuto risolvere*
 It's strange that this problem the students not it-have.3PL can.PART solve

Haegeman (2004) compares Romance Clitic Left Dislocation (CLLD) with English TOP, showing that the latter is blocked in adjunct clauses:

⁹ One apparent violation of surface compositionality, i.e. Portner and Yabushita's (1998, 147) promotion of embedded topics to the root, will be discussed in §4.1.

- (11) a. *If these exams you don't pass, you won't get the degree (=10a)
 b. *While her book Mary was writing this time last year, her children were staying with her mother

TOP is nevertheless possible in some types of adverbial clauses namely, adversative clauses like (12a), *because* (12b) and conditional clauses (12c):

- (12) a. His face not many admired, while *his character* still fewer felt they could praise. (Quirk et al 1985: 1378, via Haegeman 2004)
 b. I think we have more or less solved the problem for donkeys here, because *those we haven't got*, we know about. (*Guardian*, G2, 18.2.3, page 3, col 2, via Haegeman 2004)
 c. If *these problems* we cannot solve, there are many others that we can tackle immediately (Haegeman 2004: 160).

To account for this apparent discrepancy, Haegeman (2004) proposes a distinction between *central* and *peripheral* adverbial clauses: while the former are fully integrated in the host clauses and consequently interpreted as modifiers of the event expressed in the associated clause, the latter are «less tightly connected» and serve to provide the discourse frame against which the proposition expressed in the host clause is evaluated. In this sense, central adverbial clauses do not have independent illocutionary potential and are integrated in the speech act conveyed by the associate clause, while peripheral adverbial clauses have root properties and are endowed with a Force projection in their left periphery (cf. Haegeman 2004: 169-70). Following Bayer's (2001) suggestion of a link between the availability of TOP and the presence of illocutionary Force, Haegeman proposes that English TOP depends on the presence of Force and, as such, it is strictly a root phenomenon.

Italian CLLD, on the other hand, is not likewise restricted (cf. Cinque 1990)¹⁰, as shown by the comparison between (10a-c) and (11a-b). Haegeman attributes this distinction to the availability of a lower position for CLLD topics in the C-domain;¹¹ according to the author, the lower Top projection does not depend on Force, but is licensed through Fin: hence, the «low» CLLD is not subject to the root restriction.¹² Haegeman assumes that the lower Top projection is not available in English, but the reason for this asymmetry remains unexplained.

¹⁰ “The left dislocated phrase [in Italian] can occur at the front of virtually any subordinate clause type. Here again CLLD contrasts with LD, which typically occurs in root contexts and (to different degrees of marginality) in the complements of only a few clauses of propositional attitude verbs” (Cinque 1990: 58). Notice, however, that Cinque compares CLLD with LD, while Haegeman only deals with TOP. As we will see, this difference is not trivial.

¹¹ As shown by the fact that CLLD topics can occur below fronted adverbials hosted in the low Mod projection (Haegeman's 2004, (39), from Rizzi (2004), (49)):

(i) [_{ModP} Rapidamente, [_{TopP} i libri [_{FinP} li hanno rimessi a posto]]]
 quickly the books them.CL have.3PL put.PART.M.PL in order

¹² On the other hand, Haegeman (2004) assumes that the high Topic projection depends on Force in Italian as well as in English. In more recent work (Haegeman 2007, 2009), the impossibility of TOP (argument fronting) in «central» adverbial clauses (temporal and conditional) is due to an intervention effect of the topicalized constituent on the movement of the temporal of world operator to the left periphery:

We will show that a fine-grained distinction between different types of topics can account for this discrepancy and open new perspectives of analysis.

3.1. Typology of topics. In § 2 we discussed two different views of topics: the aboutness view proposed by Reinhart (1981) and Portner and Yabushita (1998), on the one hand, and the alternative semantics view proposed by Büring (1997, 2003), on the other. These two views are generally taken to be alternative. This is, we will argue, a misconception, which is due to the prejudice that topic is a unique category, and thus susceptible of a single analysis. A different view of topics emerges, however, once we consider in detail their prosodic properties (prosodic phrasing and location of tonal events).

Several prosodic studies (cf. among others, Pierrehumbert and Hirschberg 1990; Féry 1992, Büring 1999) have distinguished different types of topics, although few attempts have been made to connect intonational properties to syntactic structures. In this respect, Frascarelli and Hinterhölzl (henceforth, F&H 2007) first showed that there is a systematic correlation between the formal properties of topics and their function in the discourse, which is encoded in a strict hierarchy in the C-domain (*contra* a free recursion analysis of TopP projections, cf. Rizzi 1997). They thus provide intonational and syntactic evidence that different types of TopP projections must be posited in the left periphery of the sentence. In particular, three tonal events can be distinguished, as illustrated below.¹³

3.1.1. **A-Topics.** When the aboutness quality (Reinhart 1981) is inherently associated with a shift in the conversation, the relevant topic in languages like Italian and German is signalled by a rise in the F0 contour that is aligned with the tonic vowel in its full extension (a complex L*+H tone)¹⁴; hence, the specificity of so-called *Aboutness-shift Topic* (henceforth, A-Topic) is to newly propose or reintroduce a topic in the discourse. The A-Topic is therefore Reinhart's sentence Topic¹⁵ (cf. § 2.1): it

(i) *_{[CP OP_w [if _{[TOPP] these exams [you don't pass in w]]]]}}

In this picture, the assumption of licensing of Top by assertive Force is no longer required; on the contrary, the lack of an assertion operator in Spec,ForceP of conditional clauses is derived from the intervention effect with respect to movement of the world operator. The question why Italian CLLD should be dispensed with the relevant effect remains open.

¹³ According to the ToBi system (Pierrehumbert 1980), tunes are described as sequences of *low* (L) and *high* (H) tones (which determine the shape of the F0 contour). According to this framework, there are six different types of pitch accent: two simple tones – high (H*) and low (L*) – and four complex (bitonal) ones. In this perspective, all pitch accents render prominent the material with which they are associated, regardless of the specific tonal event.

¹⁴ The prosodic properties of topics are based on F&H's (2007) analysis, hence on Italian and German data, whose crosslinguistic validity has been recently supported by intonational studies on Somali (Frascarelli and Puglielli 2009) and Tagalog (Frascarelli in press). In this paper we will try to relate the relevant prosodic characterization to the English (syntactic) distinction between TOP and LD. Prosodic investigation on different types of topics in English is an important issue for future research.

¹⁵ The so called continuing topic is instead an already introduced aboutness topic, which seems to be merely «refreshed». Note that a continuing topic does not require the hearer to «open» a different file card from the one that is currently being updated; therefore, we contend, it does not have a real impact on CG management, in the sense discussed above. Accordingly, the continuing topic is not signalled by a rising tone: in F&H's analysis the

is an instruction on how to update the propositional CG insofar as it identifies the entity under which the proposition expressed in the clause should be stored in the CG content; hence, the A-Topic pertains to CG management.

In order to provide an illustration of its contour and discourse function, consider example (13) below.¹⁶ Here, a student is giving her opinion about the material of a self-learning course. For quite some time she talks in general terms; then, she interrupts her narration to introduce and speak about a new topic, namely *l'ultima unit* ('the last unit'):

- (13) *Il materiale era tantissimo quindi all'inizio l'ho fatto tutto di corsa cercando di impiegarci il tempo che dicevate voi magari facendolo un po' superficialmente pur di prendere tutto-l'ultima unit la sto facendo l'avevo lasciata un po' da parte [...]*
 'The material was quite a lot, so at the beginning I did it all in a rush, trying to do it in the time that you had fixed, perhaps a little superficially, so as to do everything- I'm doing the last unit now, I had put it aside before [...]'

- (13') *l'ultima unit_k la_k sto facendo*
 the last unit it be.PRES.1SG do.GER
 'The last unit, I'm doing it now'

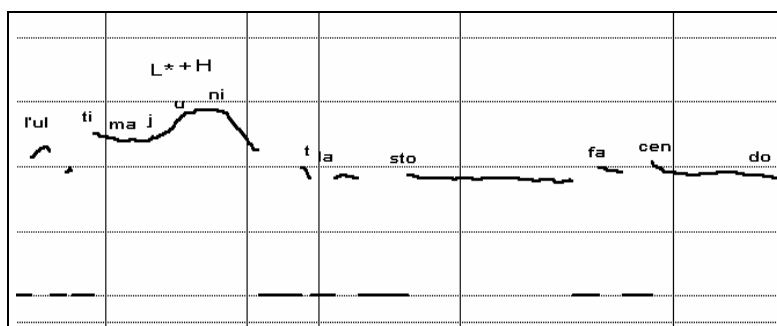


Figure 1- A-Topic (L*+H)

As we can see the new topic is signalled by a sharp rise in the F0, which is aligned with the diphthong [ju] and reaches its peak on the syllabic coda. The rest of the sentence (the 'Comment') does not present any significant tonal event and shows a final falling contour (as is the general case for broad Focus sentences; see D'Imperio 2002).

Syntactically, the A-Topic in Italian qualifies as a CLLD constituent and, as such, it is base-generated in the C-domain (Cinque 1990, Frascarelli 2000, 2004); resumed by a clitic (when available) and preceded by a preposition, if connected with an indirect object role.¹⁷

continuing function is performed by Familiar topics, namely, low toned dislocated constituents (cf. § 3.1.3). On continuing topics in English, see also the discussion around (21)-(22) below.

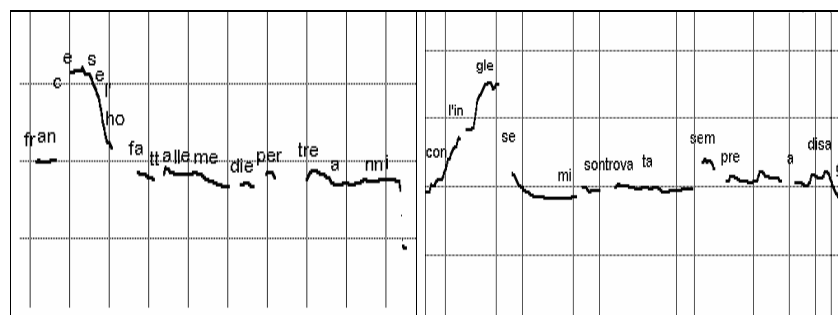
¹⁶ This and the following examples are drawn from the Italian corpus Bonvino (2006) studied in F&H (2007).

¹⁷ For these properties, the A-Topic should not be confused with a Hanging Topic (cf. Benincà 2001). Hanging Topics are not preceded by prepositions and are obligatorily resumed, also in the case of complements for which resumption is not compulsory in CLLD. Moreover, Hanging Topics can be resumed by full pronouns, while this

3.1.2. **C-Topics.** A H* tone is on the other hand associated with CLLD Topics that induce alternatives in the discourse, which have no impact on the Focus value of the sentence and create oppositional pairs with respect to other topics. This prosodically distinguished type of topic can be analysed along the lines of Büring (2003), as discussed in detail in § 2.2: the C-Topic provides an instruction for the hearer on how to relate the asserted proposition(s) to a strategy of inquiry. Following Büring and also Kuno (1976), we will call this type of dislocated constituent *Contrastive Topic* (henceforth, C-Topic). A clear illustration is provided by the following text. Here speaker A explicitly proposes a superquestion (‘why did you study two languages, French and English?’) and, accordingly, speaker B answers opposing two C-Topics (*francese* and *inglese*, respectively). Each of them is marked by a high pitch and followed by a broad Focus sentence (the Comment) expressing the informative part of the relevant contrast.¹⁸

- (14) A: *come mai hai fatto due lingue, cioè, inglese e francese?*
 B: *francese l’ho fatto alle medie per tre anni con una professoressa con cui mi sono trovata benissimo [...] - con l’inglese mi son trovata sempre a disagio*
 A: Why did you study two languages, namely English and French?
 B: ‘French, I have studied at school for three years with a professor that I liked a lot [...] (while) with English, I never felt at ease.’

(14’) *francese_k* *l_k’ho* *fatto* *alle* *medie* *per tre anni* [...]
 French it have.1SG done at.the school for three years
con l’inglese *mi son* *trovata* *sempre* *a disagio*
 with the English me be.1SG found.F always uneasy
 ‘French I have studied at school for three years [...] with English I never felt at ease’



Figures 2a-b: C-Topics (H*)

Büring’s (2003) CT-congruence requirement is therefore fully satisfied. Notice, however, that speaker B only provides a partial answer to speaker’s A wh-question (‘why’). Indeed, after the first sentence, speaker B accommodates a different set of alternative questions, substituting ‘why’ with

is excluded for A-Topics. The discourse functions of Hanging Topics is still to be investigated; however, in Frascarelli (2007) evidence is given that they are not equivalent to A-Topics.

¹⁸ As we can see, unlike A-Topics (Figure 1), the rising contour of C-Topics is aligned with the pre-tonic syllable, while the tonic vowel marks the highest part of the relevant tonal event.

‘how well’. Her second sentence can be thus considered the answer to the (implicit) multiple wh-question like “*how well* did you learn which language?”. This means that the relevant superquestion can be implicitly proposed by the speaker himself via accommodation, as discussed in § 2.2.

3.1.3. **G-Topics.** Besides A- and C-Topics, a third type of topic emerged from the analysis. This is F&H’s (2007) Familiar Topic: a low-toned (L*) CLLD constituent that is used to resume background information or for topic continuity (Givón 1983).¹⁹ We refer to this type of topic as Given (G-) Topic and characterize it as a given constituent in the sense of Schwarzschild (1999), that is to say:

- a) either it corefers with a salient antecedent (type e), or
- b) the result of replacing Focus-marked constituents with variables and existentially closing them is entailed by a salient antecedent, shifted to type t (conjoinable types).

To illustrate, in an Utterance like (15), the Existential F-closure of U is the result of replacing the F-marked phrase in U (*RED*) with variables and existentially closing the result. Further existential type-shifting is required if U is not of type t: for instance, in speaker B’s utterance in (15), in order to determine that the VP counts as GIVEN, it is necessary to lift it to type t by existential closure of the external argument position: the result is entailed by the antecedent VP in speaker A’s statement also lifted to type t. (Lifting to type t is obviously required in order for entailment to be defined.)²⁰

- (15) A: John [_{VP} ate a green apple]
 B: No, he [_{VP} ate a RED_F apple]
- (16) $\exists x[x \text{ ate a green apple}]$ (= \exists lifting of the antecedent VP) entails
 $\exists Y[\exists x[x \text{ ate a Y apple}]]$ (= \exists -F-closure and \exists - lifting of VP)

Notice that Givenness is calculated on the basis of the CG content, marking a contextually entailed element, and it does not affect the conversational dynamics. It is therefore clear that the G-Topic does not pertain to CG management.²¹

¹⁹ When located in the right periphery, a Familiar topic is also used with an ‘afterthought’ function. Right-hand Familiar topics, however, will not be treated in this paper.

²⁰ More precisely (Schwarzschild 1999, (25)), an utterance U counts as Given iff it has a salient antecedent A and

- a) If U is of type e, then A and U corefer;
- b) Otherwise: modulo E-type shifting, A entails the Existential F-closure of U.

²¹ Givenness, however, is not incompatible with CG management: C-Topics are typically given, as they relate to a contextually salient set of alternatives; however, their update potential is provided by contrast, not by mere givenness. A-Topics can be given or not (Reinhart 1981, 26). Also notice that we abstract from degrees of salience of given discourse referents.

As an illustration, consider sentence (17) below, in which multiple G-Topics are realized in the left periphery, namely, the subject-Topic *l'autoapprendimento* ('self-learning') and the DO-Topic *questo* ('this'):

- (17) *il problema secondo me di questo autoapprendimento è stato affrontare la grammatica proprio no quindi lì ti trovi davanti ad argomenti nuovi nei quali avresti bisogno appunto di qualcuno [...] invece l'autoapprendimento questo non- non me l'ha dato ecco.*
 'In my opinion the problem of this self-learning course was the grammar part – you deal with new topics for which you would exactly need someone [...] on the contrary, self-learning could not give it to me, that's it.

- (17') *l'autoapprendimento_k questo_k non me l'ha_k dato*
 self-learning this not to.me it-has give.PART
 'self-learning did not give this to me'

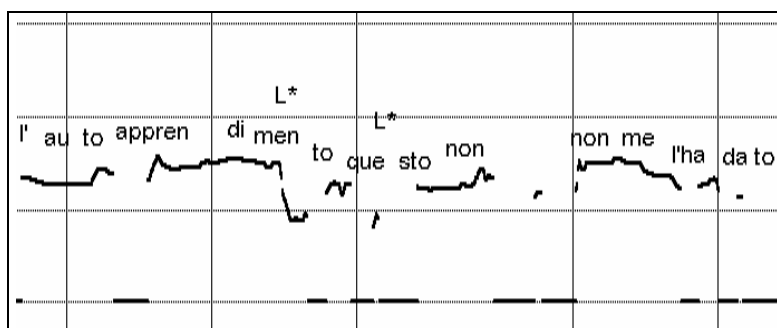


Figure 3 – G-Topic (L*)

As illustrated, the tonic vowels of the relevant topics remain at a low level (the DO-Topic *questo*, in particular, is totally destressed). As is clear, neither topic provides an instruction for the hearer: they simply refer to the existing CG content with a retrieval function.

3.1.4 **Hierarchy, co-occurrence and the Interface Root Restriction.** The analysis of naturalistic data shows that different types of topics are realized in a specific order in the C-domain. Accordingly, a topic hierarchy is provided in F&H's (2007), in which different functional projections are associated to specific tonal events (the asterisk on the functional category FamP indicates recursion):²²

- (18) [_{ShiftP} A-Topic [_{ContrP} C-Topic [_{FocP} [_{FamP*} G-Topic [_{FinP} [_{IP} L*+H H* L*]]]]]]

As we can see, the A-Topic is realized in the highest TopP projection of the left periphery, while G-Topics are located in the lowest TopP position (lower than focused elements); as a consequence, in multiple topic constructions G-Topics are always preceded by either A- or C-Topics.

²² As is clear, G-Topics only allow for recursion, an aspect to which we will return later.

The existence of a hierarchy implies that different types of topics can cooccur in the same clause and, consequently, that A- and C-Topics are not mutually exclusive. As a matter of fact, 5 cases of co-occurrence could be found in the Italian corpus, out of 112 total instances of A- and C-Topics. Consider, for instance, the following example:

(19) A: *insomma quindi familiarizzandoti un pochettino hai trovato che è cambiato qualcosa nel tuo modo di rapportarti al computer e ai programmi insomma trovi che ci sia stata un'evoluzione*

B: *sì nel primo per esempio c'era diciamo a sinistra dello schermo la traduzione in italiano c'erano tutti i vari diciamo sistemi per avere informazioni in più e **io lì** non l'avevo capito insomma... invece nel terzo caso c'era di nuovo questa cosa e io mi sono trovata molto più diciamo tranquilla a mio agio perché finalmente avevo scoperto come funzionava*

“A: well, so being more familiar [with the program] you discovered that something changed in your way of approaching the computer, in other words, you think there was some evolution

B: yes, in the first example there was, on the left of the screen, the Italian translation, there were all the different ways to get more information and, in short, I did not understand it there... on the contrary in the third example there was again this thing and in that occasion I was already much more self-confident, because finally I discovered how it worked

(19') *io, lì non l'avevo capito, insomma.*
 I there not it-had understand.PART in short
 ‘In short, I did not understand it there’

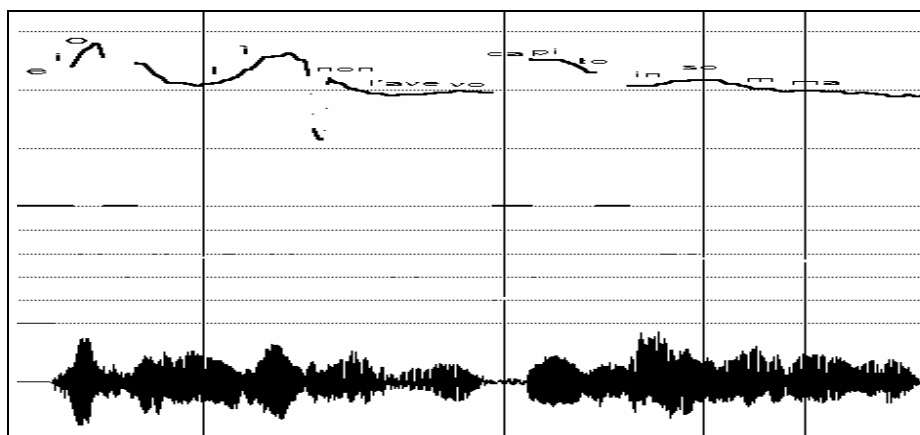


Figure 4 –A-Topic and C-Topic in a sequence

As we can see, in this sequence speaker B proposes a topic shift from the description of a language program to her personal viewpoint about it, and opposes as a C-Topic a specific exercise she had problem with (*lì* = the first example) with the *terzo caso* (‘third example’). Accordingly, *io* is marked with a L*+H contour, while *lì* shows a H* tone. This is evidence that A- and C-can co-occur, consistent with the fact that they affect two different CG subcomponents (cf. § 2.3).

Finally, the possible co-occurrence between either A- or C-Topics and G-Topics goes without saying; indeed, it is very common in Italian naturalistic data. It is in fact quite normal to propose a shift (or a contrast) and, at the same time, to dislocate a given constituent that simply involves the

retrieval of information already available in the CG content. Consider, for instance, the following passage from the corpus:

- (20) *Era tutto molto nuovo nel senso che comunque la lingua **inglese** attraverso i programmi sul computer diciamo non l'avevo mai- [...] comunque l'**inglese** risultava anche facendolo da solo più interessante [...] **io, inglese non- premetto non l'avevo mai fatto.***
 'Everything was totally new to me in the sense that I had never studied English through computer programs [...] and through self-learning English appeared more interesting to me [...] I must say that I had never studied English before.'

- (20') [A-top *io*] [G-top *inglese*]_k non- *l'avevo* *mai* *fatto*
 I English not it-had never do.PART
 'I had never studied English before'

As is clear, *inglese*, a DO resumed by the clitic *io*, is a G-Topic, while the subject-Topic *io* marks a shift in the conversation: the speaker is still talking about English but, at that point, she wants to comment on her personal relation to that language. Accordingly, *io* is characterized by an intonational rise (L*+H), while the F0 on *inglese* remains on a low range.

3.2. English. As we have seen, Italian CLLD is the syntactic implementation for any type of topic: dislocated constituents are merged in the left periphery and resumed by a clitic pronoun (whenever available), independent of their discourse role. Their interpretation therefore relies on their distribution in the C-domain and intonational properties.

In English, on the other hand, different topic constructions seem to be associated to specific interpretations. In particular, LD conveys a shift with respect to the aboutness topic of the previous sentence (cf. Rodman 1974) and, in this sense, implements an A-Topic (cf. also Gregory and Michaelis' 2001 «topic promotion»), while TOP mainly implements C-Topics (Prince's 1998 «PO-set» relation). Nevertheless, Rodman (1974) also seems to suggest a continuing function for topicalized constituents; consider for instance the following examples:

- (21) What can you tell me about John?
 a. John Mary kissed
 b. *John, Mary kissed him
- (22) What can you tell me about John?
 a. *Nothing. But Bill Mary kissed
 b. Nothing. But Bill, Mary kissed him

The initial question in (21) and (22) is about John, which means that John is the A-Topic of the discourse (i.e., the information provided in the answer will update the file card corresponding to John). From the fact that (21b) and (22a) are inappropriate answers to (21)-(22), Rodman concludes that a topicalized NP implements an already established (continuing) topic, while LD induces a topic shift in

the conversation. But is the continuing topic really not contrastive? As a matter of fact, a contrast is also implicit in (21a): the use of TOP induces the interpretation that John was kissed by Mary and somebody else wasn't. Indeed, the fact that a contrast is not available in (22a) (the speaker has nothing to say about John, but only about Bill) makes the relevant sentence ungrammatical. We therefore conclude the TOP mainly instantiates C-Topics in English; Rodman's suggestion about a continuity function can nevertheless be maintained as a secondary property of TOP.²³

As already discussed with respect to Italian, A- and C-Topics can cooccur (cf. (19)). This possibility is also attested in English, and the hierarchical order is the expected one: the A-Topic (LD constituent) precedes the C-Topic (topicalized constituent), as shown in (3) above and in (23)-(24):

(23) [_{A-top} my son] [_{C-top} beans] he likes, but [_{C-top} peas] he hates

(24) a. (As for) Rosa, my next book I will dedicate to her (Reinhart 1976)
 b. *My next book, Rosa, I will dedicate to her

As for G-Topics, our data suggest that in English, no leftward topic structure is devoted to mere givenness marking (although givenness may be a concurrent property of topics, cf. note 21). The retrieval of given information in English is generally implemented through simple destressing (see, a.o., Neeleman and Reinhart 1998, Schwarzschild 1999) – a basic difference with respect to Italian, which cannot be adequately explained within the limits of the present paper. Whatever its ultimate explanation, this asymmetry with respect to Italian will play a crucial role in our account of the different distributional properties of topics in the two languages, and in particular, the apparent lack of a root restriction in Italian, as opposed to English.

3.3. An account of crosslinguistic differences. So far, we have seen that both English and Italian implement A- and C-Topics, in the same hierarchical order and with specific intonational profiles. In addition, however, Italian also implements G-Topics (F&H's Familiar topics), i.e. deaccented given constituents (in the sense of Schwarzschild 1999). Recall now that A-Topics have a special status and, together with C-Topics, pertain to CG management (§ 2.3), while G-Topics don't. We argue that this distinction yields different distributional properties of the three types of topics, which in turn account for the differences between English and Italian.

First of all, consider the uniqueness of A- and C-Topics, as opposed to G-Topics, which are instead recursive. This difference is a direct consequence of their different role with respect to the CG management. A-Topics identify the unique entry under which the asserted proposition must be stored in the propositional CG: therefore, there can be at most one A-Topic per clause (25a), although

²³ Given the hierarchy proposed in (18), where different types of topics are encoded in specific functional projections, the possibility of a secondary interpretation implies that one and the same constituent can relate to more than one Topic head (maybe through Agree, cf. F&H 2007, § 5.3).

obviously it is possible to have a single A-Topic consisting of a plural individual, as in (25b) (Reinhart 1981, Krifka 2007):

- (25) a. * (As for) Jack, (as for) Jill, he married her last year
 b. As for Jack and Jill, they married last year

As for C-Topics, recall from § 2.2 that they mark the position with respect to which the alternative subquestions differ; the varying position is characteristically unique:²⁴

- (26) *Chi ha preparato la cena?* ‘Who prepared for the dinner?’
 → Who prepared the pasta?
 → Who prepared the fish?
 a. [_{C-top} *La pasta*] *l’ha cucinata Leo*, (e) [_{C-top} *al pesce*] *ci ha pensato Mario*
 the pasta it-has cooked Leo, (and) to-the fish to-it has thought Mario
 b. * [_{C-top} *Leo*] [_{C-top} *la pasta*] *l’ha cucinata*, (e) [_{C-top} *Mario*] [_{C-top} *al pesce*] *ci ha pensato*
 Leo the pasta it-has cooked, (and) Mario to-the fish to-it has thought

On the contrary, G-Topic dislocation is a device to mark a given constituent; as there is no upper limit to the number of given elements in a clause, G-Topics can be multiple, cf. (17) above and (27):²⁵

- (27) *Però* [_{G-top} *io*] [_{G-top} *quelle*] *le ho perse*
 however I those them-CL have lost

Thus, A- and C-Topics are unique per clause, whereas G-Topics can be multiple. We suggest that the well known asymmetry with respect to recursion between Italian CLLD and English topic constructions is due to the absence of leftward G-Topics in English. In other terms, the free recursion that is usually attribute to Italian CLLD as a structure is actually a property of one subtype of it, implementing G-Topics.

At this point we can go back to our main point, namely, the relevance of the Interface Root Restriction for English vs. Italian topic construction. Here too, we suggest that the difference concerns the availability of leftward G-Topics in Italian, as opposed to English. Recall that G-Topics simply involve the retrieval of information already present in the CG content, and they do not affect CG management: hence, according to our proposal (§ 2.3), they are not expected to be subject to the IRR.

²⁴ The realization of multiple C-Topics is marginally possible in languages that allow for multiple wh-questions.: in English, for instance, the acceptability of a superquestion like “who gave what to whom?” allows for the possibility of building alternative subquestions over ordered pairs of a theme and a recipient entity; as a consequence, we find multiple C-Topic constructions like (i) (Culicover 1996, (35)):

(i) I insisted that THAT book, to ME, MAXIM gave, and THIS book, to YOU, SASHA gave

In languages like Italian, the absence of multiple wh-questions excludes this possibility.

²⁵ Interestingly, however, in the corpus examined no more than three G-Topics can be found in the same C-domain and these sequences are very rare. In particular we could find 5 multiple occurrences out of 23 cases of G-Topics in the left periphery.

This is borne out by Italian data: the IRR is immaterial to G-Topics, which can occur in any type of subordinate clause, including non-finite complements (28), if-clauses (29), and «central» adverbial clauses (30).²⁶ (In the examples, the given – non-shifting, non-contrasting – quality of the embedded topics is made clear by the context; the figures indicate the acceptance rates.)

- (28) A: *Ecco il pacco del riso. Ci pensi tu?*
 ‘Here you have the rice. Will you make it?’
 B: *Sì, senti che idea: ho deciso, **il riso**, di cuocerlo a vapore* (89%, 16/18)
 I will. Listen to my idea: I have decided, the rice, to steam-it
- (29) A: *Il riso è già pronto.*
 ‘Rice is ready’
 B: *Vabbé: se **il riso** l’hai già cotto, apparecchia la tavola* (100%, 9/9)
 Well: if the rice you have already cooked-it, dress the table
- (30) A: *Devo guardare anche la torta?*
 ‘Should I watch the cake too?’
 B: *Sì, te l’ho detto: resta in cucina finché **la torta** non la vedi pronta da sfornare* (80%, 7/9)
 yes, I told you stay in the kitchen until the cake you see-it ready to take out

Even though G-Topics are not always fully accepted, their degree of acceptability is significantly superior to that of C-Topics. This is shown by the following examples, where embedded C-Topics have been tested in structural contexts parallel to those in (28)-(30). The acceptance rates are much lower:

- (31) *Ho deciso **il riso** di cuocerlo, e **le verdure** di metterle in frigo* (44%, 8/18)
 I decided the rice to cook and the vegetables to put in the fridge
- (32) *Se **il riso** lo cuoci e **le verdure** le prepari, riusciremo ad andare a tavola entro un’ora.* (33%, 3/9)
 if the rice you cook and the vegetables you prepare, we can have lunch in an hour
- (33) *Resta in cucina finché **il riso** non l’avrai cotto e **la torta** l’avrai tolta dal forno* (0%, 0/9)
 stay in the kitchen until the rice you’ve cooked and the cake you’ve taken from the oven

By comparing the acceptance rates with the Fisher Exact Test, a significant difference emerged between the two conditions (G-Topic vs. C-Topic), both globally ((28)-(30): 32/36 vs. (31)-(33): 11/36, $p = 0.000000$) and in each structural context ((28) vs. (31): $p = 0.005348$; (29) vs. (32): $p = 0.004524$; (30) vs. (33): $p=0.001131$).

This evidence is also supported by naturalistic data: in the Italian corpus studied by F&H, 6 embedded G-Topics were found (4 in complement clauses, 2 in adverbial clauses, out of a total of 23 G-Topics), while no case of embedded C-Topics is attested:

²⁶ G-Topics are also generally accepted in appositive relative clauses (70%), while only 50% of informants allow their presence in restrictive relatives and presentational clauses. Future research will be devoted to the understanding of this variation in acceptability.

- (34) a. *lui mi ha detto che la mia casa la comprerebbe anche subito*
 he told me that my house he would buy-it immediately
- b. *perché questa, io l'avevo presa solo per fare una curva a U*
 because this [road] I had taken-it only to make a U-turn

At this point, the crosslinguistic asymmetry pointed out by Haegeman can be accounted for: since G-Topics are not realized in English, this explains the absence of topic constituents in English central adverbial clauses.

Thus, the present analysis sheds new light on a received generalization. So far, it has been generally assumed that in English, LD and TOP are restricted to root (-like) clauses, while CLLD in Italian is generally allowed in subordinate clauses. According to the distinctions that we propose, the generalization is only partially correct: the wider distribution of Italian CLLD only concerns G-Topics. The crosslinguistic asymmetry is thus reduced to the parametrized availability of G-Topics in a language. (Recall that the realization of G-Topics in the left periphery has been also shown to be responsible for the possibility of topic recursion in Italian).

We conclude that Italian CLLD is not a real counterexample to the IRR. G-Topics are expected not to comply with it, because they do not pertain to the dimension of CG management: hence, they are not restricted to clauses endowed with illocutive force.

In the next section we turn to a more serious counterexample, by critically re-examining the status of embedded C-Topics. As discussed in § 1, the received view is that these can be embedded only in a clause that bears assertive force. However, we will see that this view is not quite correct, and that C-Topics turn out to violate the IRR in a well-defined subset of embedded contexts. This will force us to abandon our initial assumptions on the semantics of C-Topics, and to propose a revision of Büring's analysis.

4. Embedded topics in English

In the previous section we have argued that Romance CLLD is not a real counterexample to the IRR, because the type of topic that violates it, the G-Topic, does not pertain to the dimension of CG management. In this section we wish to take a closer look at embedded topics in English, a language where, we have argued, there are no (left-peripheral) G-Topics.

4.1. The hypothesis of root promotion. Notice that both Portner and Yabushita (1998) and Büring (2003) predict that topics should only be interpretable with root scope, namely, with scope over the whole proposition that constitutes the content of the relevant speech act. In order to explain away the apparent exception of embedded topics, Portner and Yabushita (1998, 147) propose a covert

«promotion to the root», by means of which an embedded topic is actually interpreted with root scope. Evidence for this is given by the fact that an embedded *wa*-topic in Japanese necessarily outscopes a matrix scope-bearing element. In (35) the embedded topic subject *Jon-dake-wa* (only John) necessarily takes wide scope with respect to the matrix attitude verb:

- (35) *Jon-dake-wa kuru to omotte-ita*
 John-only-TOP come COMP thought
 John is the only one who I thought would come
 # I thought that only John would come

The authors do not dwell on the details, and it is not entirely clear whether this should be conceived of as the result of a covert syntactic promotion, akin to «long» Quantifier Raising, or of a purely semantic operation. Be this as it may, it is clear that root promotion violates surface compositionality.

Given our hypothesis that English TOP and LD pertain to CG management, we have a clear prediction: when syntactically embedded, they should be interpreted with root scope, à la Portner and Yabushita.²⁷ We have systematically investigated this prediction by testing the scope interactions between a quantificational embedded topic (or left dislocated noun phrase) and a matrix quantifier.²⁸ (One important proviso is that most of our English informants did not quite like embedded LD as such, independently of the scopal interpretation. This is consistent with the IRR, which A-Topics obey; we return to this point in § 5.)

As shown in (36), a LD existential noun phrase appearing in the embedded clause is interpreted with wide scope with respect to a matrix universal quantifier in the 84% of cases. This means that a distributive interpretation is nearly impossible, despite the surface prominent position of the universal quantifier:

- (36) Every mechanic said [that *one of the motorbikes*, he can fix it in one day]

$\forall > \exists = 4/25$

The near impossibility of the distributive reading suggests that the embedded left-dislocated noun phrase must be interpreted outside the scope of the matrix quantifier; this follows if it is promoted to the root.

On the other hand, a distributive interpretation is much more readily available with TOP:

²⁷ Unless an embedded clause can be endowed with illocutive force, as proposed in Krifka (2001). We leave aside this possibility for the time being.

²⁸ Notice that: a) all the situations that scope relation $\exists > \forall$ also verify the inverse scope relation $\forall > \exists$; b) an apparent «wide scope» reading of an \exists quantifier may be obtained by scope neutralization (cf. Schwarzschild 2002). Therefore, the crucial empirical evidence is the emergence of a distributive interpretation that a) is verified precisely by those situations that do not verify $\exists > \forall$, and b) can only arise by giving wide scope to the \forall quantifier.

(37) Every mechanic said [that *one of the motorbikes*, he can fix _ in one day].

$\forall > \exists = 17/25$

Also in this case, the two-tail Fisher Exact p-value shows that the difference between the two conditions (embedded LD, (36), vs. embedded TOP, (37)) is statistically significant ($p = 0.0002$).

The possibility of a distributive reading in (37), however, only shows that promotion to the root is not obligatory for TOP. In order to check whether the point is mere optionality or strict impossibility we have reversed the positions of the quantifiers in the relevant examples. The judgments thus obtained clearly attest that an embedded universal quantifier can *never* take scope over a matrix existential quantifier, contrary to what the hypothesis of root promotion would predict:

(38) A mechanic said [that *every one of the motorbikes*, he will fix _ in one day].

$\forall > \exists = 0/28$

The distributive interpretation is instead available when the topicalized noun phrase is *overtly* moved to the left periphery of the root clause:²⁹

(39) *Every one of the motorbikes*, a mechanic said [that he will fix _ in one day]

$\forall > \exists = 13/28$

Once again, the two-tail Fisher Exact test shows that the difference between the two conditions (embedded surface position, (38), vs. matrix surface position, (39)) is statistically significant ($p < 0.0001$). Thus, we do not observe a «covert promotion» effect in the case of TOP, contrary to LD.

The asymmetry between LD and TOP revealed by the scope test converges with another interesting asymmetry concerning the distribution of the two structures in complement clauses. We considered a number of complement clauses which, according to Meinunger (2004), are not endowed with assertive force: factive clauses (be glad, regret) (40), complements to negative predicates (forget, conceal) (41), bridge complements under a matrix negation (42), and anti-factive volitional complements (43). In all of these complement clauses, our informants tend to accept TOP (examples

²⁹ Notice that the contrast between (38) and (39) also emerged in Italian (Fisher's Exact test: $p < 0.0001$; see Bianchi and Frascarelli 2009):

(i) *Un meccanico ha detto [che ciascuna delle moto la riparerà in un giorno]* $\forall > \exists$ (16/52)
a mechanic has said that everyone-of-the motorbikes (he) it-fix.FUT.3SG in one day

(ii) *Ciascuna delle moto, un meccanico ha detto [che la riparerà in un giorno]* $\forall > \exists$ (42/52)
everyone-of-the motorbikes a mechanic has said that (he) it-fix.FUT.3SG in one day

This confirms that an embedded topic is not necessarily promoted to the root. Since A-Topics are hardly accepted in embedded position (see § 5), embedded CLLD topics like the ones in (i)-(ii) are interpreted either as C-Topics or as G-Topics. However, in the absence of spontaneous intonation, the status of the embedded CLLD element in the Italian examples cannot be rigorously determined.

(a)), whereas LD is uniformly rejected (examples (b)).³⁰ Again, the two-tail Fisher Exact test indicates that in each type of complement clause, the difference between the two conditions (embedded TOP vs. embedded LD) is statistically significant (see values below):

- (40) a. I am glad that this unrewarding job, she has finally decided to give _ up (12/15)
 b. I am glad that this unrewarding job, she has finally decided to give it up (0/15)
 Fisher's Exact p-value: $p = .000005$

- (41) a. He tried to conceal from his parents that the maths exam he had not passed _, and the biology exam he had not even taken _ (13/15)
 b. He tried to conceal from his parents that the maths exam he had not passed it (0/15)
 Fisher's Exact p-value: $p = 0.0000008$

- (42) a. Mary didn't tell us that Bill she had fired _, and John she had decided to promote _ (8/15)
 b. Mary didn't tell us that Bill she had fired him (0/15)
 Fisher's Exact p-value: $p=0.001$ ³¹

- (43) a. I hope that the past he will forget _, and the future he will face _ bravely (13/15)
 b. I hope that the past he will forget it soon, so as to bravely face the future (0/15)
 Fisher's Exact p-value: $p = 0.0000008$

This systematic asymmetry is completely unexpected if we assume covert root promotion. If a topic were always covertly promoted to the root in order to be interpreted, its surface realization in the left periphery of a non-asserted clause should be uniformly unproblematic, unless the relevant embedded contexts block promotion in some way; but if this were the case, then the embedded realization should be uniformly impossible both for LD and for TOP. What this hypothesis does not predict is precisely the asymmetry between the two structures that we observe.

Finally, the embedded interpretation of C-Topics is also supported by the non-equivalence of a root vs. embedded realization. Consider the following sentences (cf. Bianchi and Frascarelli 2009):

- (44) a. He held back when I told him that the staff, I myself would choose _ (and the office, he would choose) (27/35)³²

³⁰ The fractions indicate the rate of acceptance for sets of examples that are structurally parallel to the one reported here. Notice that the pairs of examples reported here were *not* presented to informants as minimal pairs.

³¹ In this set of examples the contrast is less clear (we are still below the threshold of 0.05). One of the three examples of embedded topicalization was rejected by all five informants:

(i) I don't think that the maths exam he has passed.

³² In the case of (44a-b), the acceptance rates refer to sets of structurally parallel examples.

- b. [?]He held back when the staff, I told him that I myself would choose _ (# and the office, he would choose) (2/35)
- c. ^{??}The staff, he held back when I told him that I myself would choose _ (# and the office, he would choose) (0/7)

As we can see, the contrastive interpretation is only available when the C-Topic is located in the most embedded clause (44a). Interestingly, if we promote the C-Topic to the superordinate clause (44b), not only is the contrast no longer available (as indicated by the ‘#’ symbol), but the sentence is considered as marginal. These values have been also checked through the Fisher Exact test, once again with significant results ($p < 0.0001$). (The near ungrammaticality of promotion to the root in (44c) can be attributed to an island effect.)

This evidence leads us conclude that English TOP, contrary to LD, can be interpreted within the boundaries of an embedded non-asserted clause, i.e., it really violates the IRR. In the following section, we tentatively propose a semantic approach that is consistent with this conclusion. In § 5, we will eventually abandon the hypothesis of root promotion for LD as well, and we will propose a different account of the observed «promotion effect».

4.2. A revised analysis for the C-Topic. In § 3 we have suggested that English TOP is essentially contrastive. Recall from § 2.2 that under Büring’s analysis, the CT-congruence requirement directly links the use of a C-Topic with an assertion move hierarchically embedded under a strategy of inquiry in the d-tree. As far as we can see, this analysis necessarily links C-Topics with illocutive force; it is therefore inconsistent with our observation that English TOP can happily survive in declarative complement clauses that do not bear assertive force (40a)-(43a).

On the other hand, note that even if TOP does not comply with the IRR, its distribution is not as free as that of Romance G-Topics, as discussed in § 3.3. In particular, TOP is completely excluded in central adverbial clauses, in Haegeman’s terms (cf. (31)-(33) above). We thus need a semantic analysis that does not enforce the IRR, but is nevertheless not completely permissive. In a nutshell, we propose that C-Topics do not require illocutive force, but are restricted to clauses that denote propositions. Central adverbial clauses are not possible hosts because they do not denote propositions, but event modifiers.

Consider again a sequence of conjoined sentences introduced by C-Topics:

(45) [Fred]_{CT} ate [the beans]_F, and [Mary]_{CT} ate [the eggplant]_F

One point that is worth stressing is that the entities denoted by the C-Topics must be drawn from a contextually salient set: in other terms, the variable in the CT-marked position, which generated a set of alternative question meanings (cf. note 7), varies over a restricted and salient set. In this respect, we believe, the «question-based» approach proposed by Büring still incorporates an ingredient of an

«entity-based» approach, insofar as a contextually salient set of entities must be presupposed in order to generate a bounded (and contextually salient!) set of alternative questions.³³

Our idea is quite simple: suppose we have a salient set of entities, and we want to predicate something different of each of its members.³⁴ Clearly, this corresponds to complex truth conditions which cannot be expressed by a syntactically simple sentence. The only way to linguistically express this «complex proposition»³⁵ is to break it down into a conjunction of simpler propositions in each of which a predicate applies to a single member of the salient set.

One difficulty for this idea seems to be the trivial observation that it is perfectly possible to use a C-Topic in a single sentence, without any other conjoined sentence. However, as Büring (2003, 522-24) points out, such an «orphan» C-Topic gives rise to a clear implicature: the minimal implicature is that the predicate that holds true for the entity denoted by the C-Topic does *not* hold for the other members of the salient set. We surmise that in this case, the rest of the «complex proposition» is only partially specified via implicature (the speaker may be unable to provide information about the other members of the set, or a full specification may be deemed redundant for the purposes of the conversation). Anyway, the very fact that the implicature arises shows that the larger set of entities has been introduced in the semantic representation. At this point we leave open the question of how exactly it is introduced; one possibility is that an individual is eligible as a C-Topic only if it belongs in a salient set in the relevant context.³⁶

From this perspective, the function of CT-marking is to signal that the topic denotation belongs to a contextually salient set, and that the proposition expressed is part of a larger proposition. The crucial point is that the interpretation of a clause (or conjunction of clauses) containing a C-Topic remains at the propositional level; we do not assume a CT-value of a higher type, as in the alternative semantics approach. This explains why C-Topics can occur in complement clauses that are embedded under proposition-taking verbs. On the other hand, a clause containing a C-Topic cannot denote anything

³³ This suggestion comes very close to the analysis of focussed topics proposed in Portner and Yabushita (1998, 151) and Krifka (2007, 44). On their approach, a contrastive topic is an aboutness topic that contains a focus which “is doing what focus always does, namely indicating an alternative” (Krifka, 2007, 44). In this case, it indicates alternative aboutness topics. We do not wish to analyse C-Topics as focussed A-Topics, because, as noted in § 3, A- and C-Topics have completely different properties and can cooccur. Furthermore, notice that from the perspective of the Structured Meaning approach (cf. Chomsky 1971, von Stechow 1990, Krifka 1992), focus on topics does not correspond to any partition of meaning into a focus part and a background part: a “presupposition skeleton” (Jackendoff 1972) is missing, since the C-Topic is followed by new information (the “Comment”, corresponding to the (partial) answer to Büring’s superquestion.

³⁴ Of course the members of the set may be summed into plural individuals, as in e.g.:

(i) [Al and Ben]_{CT} went to the movies, while [Carl]_{CT} stayed home.

³⁵ What we are trying to convey is, more or less, the idea of a sum proposition (cf. Krifka 2001, 32). We retain the quotation marks throughout.

³⁶ That is, membership into a contextually salient set is a presupposition that restricts the domain of the C-Topic operator.

«less» than a proposition: this accounts for why C-Topics cannot appear in central adverbial clauses, which denote predicates of events.³⁷

Our proposal retains Büring's insight that C-Topics are a device to break down a complex meaning; instead of breaking down a superquestion into distinct subquestions, we propose that they break down a proposition into a conjunction of linguistically simpler entailed propositions. Thus, C-Topics do not have an impact on CG management in themselves: their interpretation does not require a necessary association with illocutive force.

This analysis is also compatible with the idea (Truckenbrodt 2009) that attitude verbs do not simply take a proposition, but they introduce a «shifted» context against which the embedded proposition is interpreted. More precisely, Truckenbrodt represents the context as a Kaplanian sequence of indices (author, world, time) augmented with a stalnakerian context set (CS) of possible worlds; an attitude verb like *believe* introduces a context whose CS is the set of worlds compatible with the beliefs of the individual denoted by the grammatical subject of the attitude verb (corresponding to the attitude holder). The proposition expressed by the embedded clause is then «placed» in this CS.³⁸ We may then assume that C-Topics can be interpreted against the shifted contexts introduced by attitude verbs. From this perspective, the relevant set of entities would be contextually salient with respect to the shifted context. This is intuitively correct; consider for instance the Italian equivalent of (42a):

(46) *Maria non ci disse che Gianni lo aveva licenziato e Leo lo aveva promosso*
Mary didn't tell us that Gianni she had fired and Leo she had promoted

This attitude report is perfectly coherent even if with respect to the current common ground, Gianni and Leo no longer belong in any one contextually salient set (one of them may have died long ago); the crucial point is that they did belong in a contextually salient set in the context of Maria's reported speech act (presumably, the set of Maria's employees at the time of that context). In this picture, embedded C-Topics are interpreted with respect to the CS determined by the subject's beliefs.

On the other hand, when C-Topics appear in root sentences they are interpreted with respect to the current common ground, and they do have a specific impact on CG management, as Büring and Krifka convincingly point out. We suggest that this impact results from the interplay between the intrinsic semantic contribution of the C-Topic, as outlined above, and the assertive force of the root declarative clause that hosts it.

³⁷ One interesting problem that we leave aside for the time being is infinitival clauses. According to Emonds (2004), control infinitival clauses disallow TOP to their left periphery, while C-Topics are possible for some Italian speaker, cf. (31).

³⁸ In particular, Truckenbrodt (2009) assumes the existence of a "hidden context variable" in the embedded clause. This requires an antecedent which is found in connection with the matrix attitude verb or the root speech act.

Following Roberts (1996) and Büring (2003), a.o., any assertion in a discourse (except perhaps for a completely «out of the blue» assertion) constitutes the answer to a possibly implicit QUD: this is what accounts for its relevance to the current discourse.³⁹ Consider again from this perspective our earlier example:

(45) [_{S1}[Fred]_{CT} ate the beans], and [_{S2}[Mary]_{CT} ate the eggplant]

Each of the two conjoined sentences, S1 and S2, will be interpreted as the congruent answer to some (possibly implicit) immediate QUD; since each of S1 and S2 is part of the larger (sum) proposition about all the members of a contextually salient set, the questions evoked by S1 and S2 will both be entailed by a possibly implicit superquestion for which the larger proposition constitutes a complete answer. Thus, a strategy of inquiry is evoked as a result of the assertive force of S1 and S2.⁴⁰

In conclusion, our approach can account for the non-root occurrences of C-Topics, while still explaining their impact on CG management when they occur in root clauses.

One interesting consequence of this approach is that the C-Topic is *internal* to the root speech act; from the viewpoint of surface compositionality, this would imply that it is syntactically lower than the assertion operator.⁴¹ A different view has been proposed for the A-Topic, to which we now return.

5. Another look at the A-Topic

In § 4, we argued that C-Topics are not intrinsically dependent on illocutive force: they allow for a genuinely embedded, non-root interpretation, and when they appear in a root clause, they are internal to the speech act. On the contrary, we observed that A-Topics have the opposite properties: when syntactically embedded, they show a «promotion effect» (cf. (36)), and they are excluded from non-asserted complement clauses (cf. (40b)-(43b)); thus, they comply with the IRR.

Further evidence suggests that the A-Topic does not really belong in the sentential domain it is associated with. First, A-Topics are independent of the illocutionary force of the following sentence, while C-Topics are severely restricted:

³⁹ “Assertions are, as for Stalnaker, choices among alternatives. If accepted, they are added to the common ground, and thereby shrink the context set. In order for discourse to be coherent (obey Relevance), it must be clear what alternatives... a given assertion selects among. The relevant alternatives are those proffered by the question, or topic, under discussion. That’s the sense in which assertions are payoff moves – they choose among the alternatives proffered by a setup move/question, and in so doing they further the goals of the game.” (Roberts 1996, § 1). See also Büring (2003, 517-18).

⁴⁰ If we attribute assertive force to the whole conjunction [S1 and S2], rather than to each conjunct, then only the superquestion is evoked, but not each subquestion separately.

⁴¹ Notice that the assertion operator cannot be identified with the Force head proposed by Rizzi (1997 and subsequent work), which is assumed to occur also in embedded clauses that lack illocutive force. In this respect, Haegeman (2007) distinguishes the Force head proper from a Sub(ordination) head.

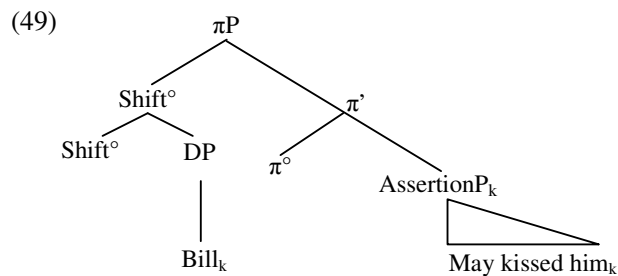
- (47) a. This book, leave it on the table! (imperative)
 b. *This book, leave on the table!
 c. Those petunias, did John plant them? (interrogative)
 d. *Those petunias, did John plant?
 e. Those petunias, when did John plant them?
 f. *Those petunias, when did John plant?

Secondly, Chomsky (1977) already noticed that LD “does not belong to the core grammar because it would violate the Complex NP Constraint”. Contrast this with TOP, which is subject to whatever constraint movement transformations in general are subject to:

- (48) a. This book, I accept the argument that John should read *(it)
 b. This book, I wonder who read *(it)

Clearly, a left dislocated constituent is not as closely related to the remaining sentence as a topicalized constituent (cf. also Jackendoff 1972, Rodman 1974). One interesting possibility is to adopt Krifka’s (2001: 25-26) suggestion that the A-Topic constitutes a speech act on its own, introduced by a dedicated speech act operator and conjoined to the speech act expressed by the following sentence. In Krifka’s (2001: 25) words, “topic selection is a speech act itself, an initiating speech act that requires a subsequent speech act like an assertion, question, command, or curse about the entity that was selected”. We identify the A-Topic as a Shift operator:⁴² the speaker’s conversational move is to signal a shift in the direction of the conversation, and hence the necessity to access a different file card in the propositional CG.

In a syntactic perspective, this hypothesis requires a modification of F&H’s (2007) hierarchy: as independent speech acts, A-Topics cannot belong in the left periphery of the clause; a different structural analysis must be envisaged. We tentatively propose the following syntactic implementation of Krifka’s suggestion:



The π head is reminiscent of Gärtner’s (2002) paratactic head, but it is actually an implementation of speech act conjunction, equivalent to the consecutive performance of the two speech acts.

⁴² Recall that the A-Topic is not merely an aboutness topic, but an aboutness shift: § 3.1.1.

The analysis sketched in (49) accounts for the properties observed above: the A-Topic can precede a sentence with any type of illocutive force, and is syntactically external to it. (49) also accounts for the IRR: the A-Topic is merged in the structure as an independent speech act, and it can only be conjoined to a root (-like) clause implementing another speech act, affecting CG management; thus, it is a root phenomenon by definition, unlike C-Topics (§ 4) and G-Topics (§ 3.1.3)

On the other hand, a problem emerges with respect to embedded A-Topics. The analysis in (49) would force us to syntactically embed (a conjunction of) speech acts, as in Krifka (2001: 30-32); e.g. we would assign to (36) above a structure like (50):

(50) [Every mechanic said [_{CP} that [_{τP} [_{ShiftP} one of the motorbikes]_i [_π [_{AssP} he can fix it_i in one day]]]]]
 (= (36))

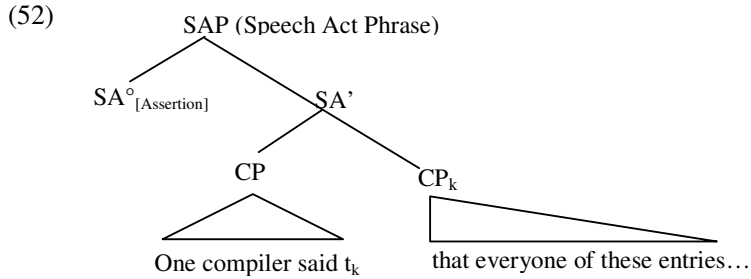
Notice that this analysis is incompatible with a mechanism of covert promotion to the root à la Portner and Yabushita (§ 4.1). However, independent evidence suggests that root promotion should be abandoned anyway. Recall that the embedded left-dislocated quantifier in (36)/(50) almost absolutely disallowed a narrow scope interpretation with respect to the matrix universal quantifier, an apparent promotion effect. If we now reverse the order of the quantifiers, the hypothesis of root promotion makes a clear prediction: an embedded left-dislocated universal quantifier should scope over a matrix existential quantifier, yielding a distributive reading. But this prediction is incorrect:

(51) One compiler said [that *everyone of these entries*, we should thoroughly revise it]
 $\forall > \exists = 0/20$

This suggests that what looked like a promotion effect in (36)/(50) is actually a consequence of the lack of scopal interaction between the matrix and the embedded quantifier.⁴³ At present, it is unclear how this neutralization effect could be derived from a structure like (49); nevertheless, we can at least conclude that the promotion analysis is not superior.

Alternatively, if we retain the earlier analysis of the A-Topic as part of the C-domain of the clause (cf. (18)), we may derive the lack of scopal interaction by invoking Meinunger's (2004: 476) proposal that root-like embedded clauses move and adjoin to a position which is in the immediate scope of the main assertion operator, so as to be turned into speaker assertions:

⁴³ Notice that scope neutralization does not emerge in the case of TOP (C-Topic): cf. (37) above.



The lack of scopal interaction may derive from the fact that the two quantifiers are contained in two parallel branches of the structure.

To summarize, the view of the A-Topic as a conjoined speech act accounts very well for its intrinsically root nature and its syntactic independence from the following clause, but it cannot easily accommodate embedded A-Topics. We feel that in order to decide on this problem, it is necessary to better evaluate the reality of the phenomenon of embedded A-Topics: as mentioned, these were not readily accepted by our English informants; in the Italian naturalistic corpus, only three instances of embedded A-Topics were found (out of a total of 76), and interestingly, they precede the complementizer:

(53) *Mi dicono* [A-top*un gran turismo*] [*che due mattine fa han dovuto farlo rientrare dal giro di città*]
 (they) tell me a tourist bus that two days ago (they) had to make-it go back from the city tour

However, since embedded A-Topics are very scanty in the naturalistic corpus, and they were considered marginal by our English informants, we might wonder about the existence of embedded A-Topics altogether and consider sentences like (53) simply as performance errors. We leave the issue at that, pending further research.

6. «Almost asserted» clauses

Before closing this discussion, let us briefly return to the problem of root-like embedded clauses. Up to now, we have assumed that they bear assertive force; but as various authors stress, this is not quite realistic: in many cases the root-like clause seems not to be asserted as such by the speaker.⁴⁴ One relevant example is (54):

(54) A: *Was ist mit Hans los? Er sieht so zufrieden aus...* (Meinunger 2004, (47))
 What is with Hans PRT? He looks so content PRT
 B: *Maria meint, [er habe/hätte im Lotto gewonnen].*
 Maria thinks, he has.KON.1/has.KON.2 in-the Lottery won

⁴⁴ See in particular Wiklund et al. (to appear), Bentzen (2009).

Since we have proposed to derive the root restriction from the necessity of illocutive force (i.e., impact on CG management), such root-like clauses constitute a nontrivial problem for our approach. At present we can only offer the sketch of a solution.

In order to tackle this problem, it is useful to think a little bit about the nature of belief reports in general: what is the purpose of making a belief report? One obvious purpose is to causally explain (or to predict) the behaviour of the attitude holder, as in the following case:

(55) A: Why has Mary been spending such an enormous amount of money lately?

B: She believes that her husband won the lottery

Intuitively, however, this is *not* the purpose of speaker B's assertion in (54). Here we are dealing with a special kind of attitude report: Maria's attitudinal state is not described in order to explain or predict her behaviour; rather, it is used as a source of information that may potentially update the CG (and answer speaker A's question). In other words, Maria's belief state is used by the speaker as circumstantial evidence, as it were, that may support the truth of the proposition expressed by the complement clause (the proposition that Hans won the lottery).⁴⁵

We surmise that this kind of attitude report conveys a marked conversational move. The speaker doesn't mean to assert the proposition expressed by the complement clause; rather, he invites the other participants to look for further evidence that may decide on its inclusion in the CG. In this case, the update of the CG will be brought about by a collective negotiation involving all the participants, and the speaker will not be responsible as the source of information.⁴⁶ However complex this kind of move may be, it seems intuitively clear that its propositional content is precisely the proposition expressed by the complement clause.⁴⁷ It is the latter's update potential that is at stake: whence its root-like character.

This idea is very close to the notion of «quasi-subordinate» clause proposed in Dayal and Grimshaw (2009). In their terms, «a quasi-subordinate [QS] clause is a subordinate clause that participates dynamically in discourse in the same way as a main clause» [p. 2]. However, QS clauses participate *indirectly* since their integration in the CG depends «on how discourse participants related to the root subject» [p. 3]. Therefore «we are not proposing that the speaker asserts or questions the

⁴⁵ This seems plausible given that, as Stalnaker (2002) stresses, his view of conversation is actually a model of belief transfer. The unmarked source for an assertion is the speaker's own belief state. The choice of mood on the embedded verb form in (54) seems to indicate to what extent the speaker himself is confident about the truth of this proposition, or agrees with Maria's belief state. We leave this aside, merely noting the connection with the general problem of evidentiality.

⁴⁶ Notice that although it is used to answer a question, this marked move is not a straightforward «payoff» move (in the sense of Roberts 1996; Krifka's (2001, 13) responding speech act.), but it calls for a rejoinder, and hence also constitutes a «setup» (initiating) move. If no rejoinder occurs after B's utterance in (54), we get the feeling of an abrupt interruption of the conversation, as with a question left unanswered.

⁴⁷ This corresponds to Meinunger's (2004: 481) insight that the proposition expressed by the embedded V2 clause is «new information».

content of the subordinate clause. Rather the speaker invites the hearer to treat the content of the subordinate clause as discourse active [p. 4]». Dayal and Grimshaw also argue that the discourse dynamic status of the subordinate clause accounts for main clause syntax (such as subject-auxiliary inversion in English embedded interrogatives or *that*-deletion in embedded declaratives⁴⁸). Their proposal converges with ours in granting a crucial role to the «root» discourse context.⁴⁹

7. Summary and concluding remarks

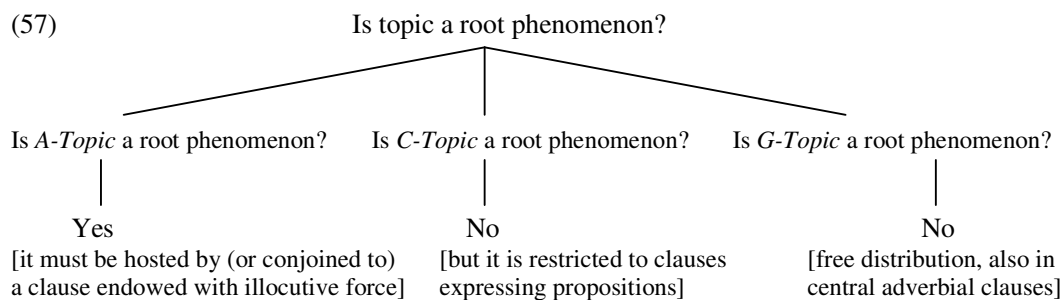
To summarize, in this paper we have discussed an interface conception of the root restriction:

(56) Interface Root Restriction (final version)

Information structure phenomena that affect the conversational dynamics (CG management) must occur in clauses endowed with illocutive force that implement a conversational move, i.e. a nonreported speech act.

Under the standard assumption that nonreported speech acts cannot be syntactically embedded, such syntactic positions are always roots (or adjoined to the root, as in (52)).⁵⁰ Notice that the relevance of assertive force has been recast in terms of update potential, i.e., impact on the conversational dynamics, and more importantly, it has been directly related to the semantics of various types of topics.

In this way, the title question turned out to be a super-question. Having extensively explored a typology of topics along the lines of F&H (2007), we divided it into three subquestions:



From the viewpoint of syntactic structure, it is interesting to notice that «root-like behaviour» is observed in the highest and most peripheral (or even clause-external) position, that of A-Topics. Our evidence thus calls into question the widespread assumption that the topic projection(s) are recursive and undifferentiated, and that specific topic interpretations are freely assigned on a contextual basis.

⁴⁸ Dayal and Grimshaw's analysis of *that*-deletion leads us to expect that «zero» complement clauses should allow for topics (left dislocation and *a fortiori* topicalization). However, it is often claimed in the literature that these clauses disallow fronting structures like negative preposing and topicalization. We leave the issue for future research.

⁴⁹ However, it is possible that other «root phenomena» are not exclusively linked to the discourse context, but can also appear in clauses that are interpreted with respect to the «shifted» context introduced by some attitude verbs, along the lines of Truckenbrodt (2009) (cf § 4.2). We leave this question for future research.

⁵⁰ On syntactically embedded *reported* speech acts, cf. Krifka (2001).

On the contrary, syntactic structures appear to encode the relevant distinctions in a well-defined layering, in compliance with interface requirements.

Of course, our hypothesis (55) has been tested against a very limited empirical domain; it is a long way before it can be extended to a more general account of root phenomena. Anyway, we feel that our attempt at taking into account both the PF interface (prosody) and the semantic-pragmatic interface, far from trivializing the role of syntax, has allowed us to integrate and refine insights from many different sources in a way that is, we hope, at least promising.

Valentina Bianchi
Università degli Studi di Siena
bianchi10@unisi.it

Mara Frascarelli
Università degli Studi Roma Tre
frascare@uniroma3.it

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