Cartography and the left periphery in English
Liliane Haegeman
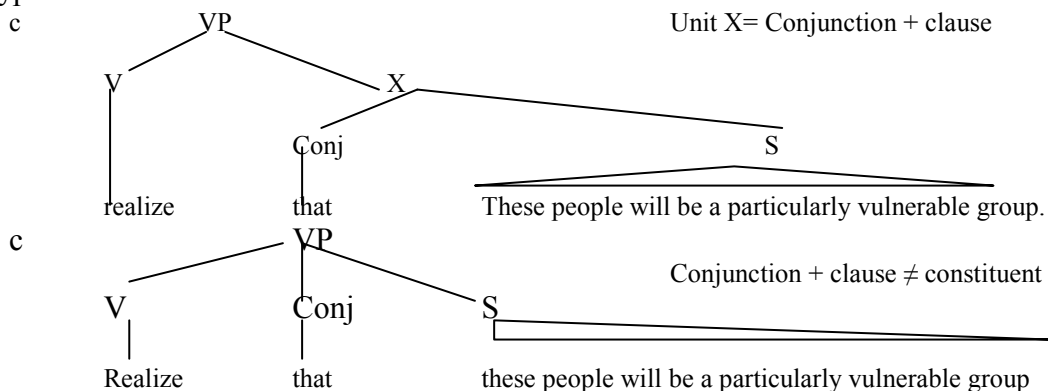
University of Ghent – Department of English

1. Functional structure and the left periphery: a first survey

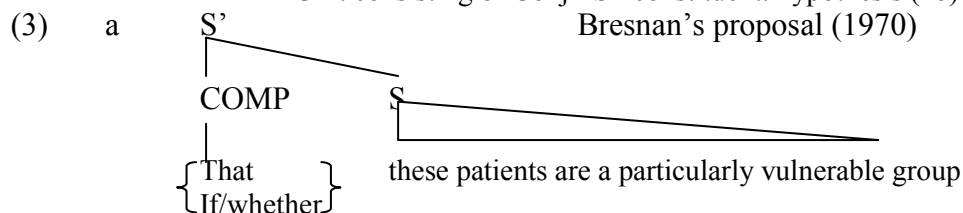### 1.1. Introduction: the left periphery of the clause

(1) a   These patients will be a particularly vulnerable group.
            Syntactic unit: unit of form and meaning; sentence/clause
     a'   [s These patients will be a particularly vulnerable group.]
     b   You should realize that [s these patients will be a particularly vulnerable group.]

Two hypotheses:

(2)   Constituency tests
        a   They say that these patients will be a particularly vulnerable group.
                What do they say?
                That these patients will be a particularly vulnerable group= constituent
        b   coordination: combines two constituents
                They realized [that these patients will be a particularly vulnerable group] and [that
                their rights will have to be properly protected.]
        Conclusion: Unit labelled 'S' = constituent
                        Unit consisting of Conj+ S= constituent: hypothesis (1b) chosen.

(3)   a   S'   Bresnan's proposal (1970)

                {That   }   these patients are a particularly vulnerable group
                {If/whether}
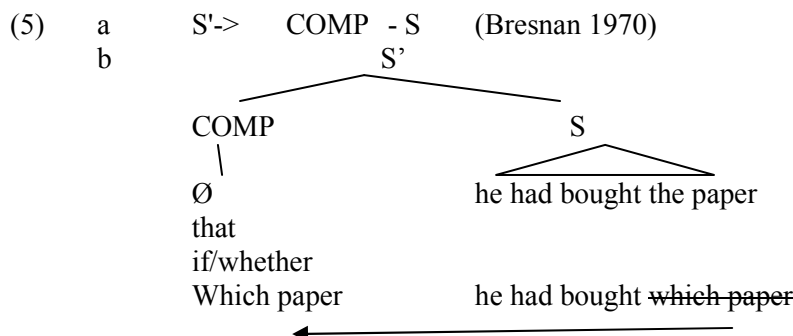   b   [s' [COMP that]   [the student will identify the body after lunch]]
        c   [s' [COMP if]   [the student will identify the body after lunch]]
        d   [s' [COMP whether]   [the student will identify the body after lunch]]
        e   You should realise these patients will be a particularly vulnerable group.
        f   You should realize [s' [COMP Ø] [s these patients will be a particularly vulnerable
                group.]
                Ø: zero element, null element: part of the paradigm: contrasts with *if, whether*

COMP= **complementiser**: encodes **illocutionary force** ([declarative/interrogative])

1.2. From COMP to CP

(4)   a   He had bought the paper   Sentence: S=   Unit of structure
             [$_{S'}$ [$_{COMP}$ Ø] [$_S$ He had bought the paper]]
       b   I thought (that) he had bought the paper
             I thought [$_{S'}$ [$_{COMP}$ that/ Ø] [$_S$ he had bought the paper]]
       c   I asked [$_{S'}$ [$_{COMP}$ if/whether] [$_S$ he had bought the paper]]
       d   I asked [$_{S'}$ [$_{COMP}$ which paper] [$_S$ he had bought ~~which paper~~]]
Movement: *which paper,* direct object of *bought*, moves to the left, to COMP; ~~which paper~~: copy of moved constituent (also called 'trace')

(5)   a   S'->   COMP - S   (Bresnan 1970)
       b   S'

             COMP   S
               \
             Ø   he had bought the paper
             that
             if/whether
             Which paper   he had bought ~~which paper~~

(5)   c   She had bought the paper.
       d   Had she bought the paper   Subject auxiliary inversion

(6)   subject auxiliary inversion:
       a   The student will identify the body after lunch.
       b   Will the student identify the body after lunch?

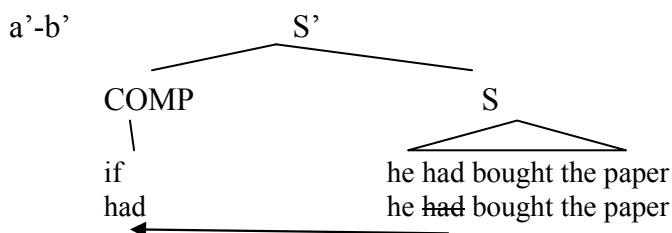Three hypotheses for deriving subject-auxiliary inversion
(7)   a   'inversion':= subject and auxiliary switch places:
             The student will identify the body after lunch

                         ↔

       b   inversion = subject moves to the right across the auxiliary:
             The student will   identify the body after lunch

                 ⟶

       c   auxiliary moves to the left across subject:
             The student will identify the body after lunch

                 ⟵

How can we test these three hypotheses?

(8)   a   The student <u>really</u> will identify the body after lunch
       b   H (7a)   * Will really the student identify the body after lunch?
             H (7b)   *Really will the student identify the body after lunch
                             (only possible with a pause: Really, will the student…)
             H (7c)   Will the student really identify the body after lunch.
       c   So, <u>does he truly believe</u> that , in our secular age, singing can play the same part in children's
             lives as it did in the hymn-singing past? 'Yes, <u>he truly does</u>.' (*Independent*, 7.6.7 Education,
             page 5 col 1)

Conclusion: the auxiliary moves to the left. Question: Where does the auxiliary move to?
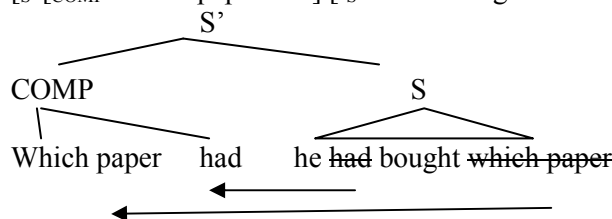
(9)   a   If he had bought the paper, he would have known the news.
       b   Had he bought the paper, he would have known the news.
       c   *If had he bought the paper, he would have known the news.
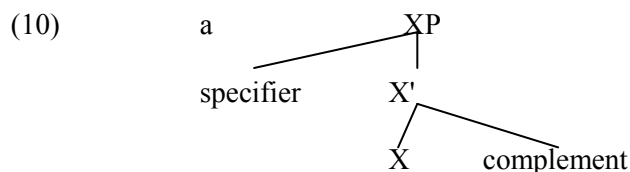   d   *Had if he bought the paper, he would have known the news.

a'-b'

```
                              S'
                  /                      \
           COMP                            S
              \                    /              \
           if                 he had bought the paper
           had                he ~~had~~ bought the paper
              <——————————————
```

(9)   e   Had he bought the paper?
               [s' [COMP Had] [s he bought the paper]] ?

Combination of auxiliary movement + movement of direct object:

(9)   f   Which paper had he bought
               [s' [COMP Which paper had] [s he ~~had~~ bought ~~which paper~~]] ?

```
                              S'
                  /                      \
           COMP                            S
              \          \        /              \
       Which paper     had     he ~~had~~ bought ~~which paper~~
              <—————————————————
          <————————————————————————————
```

1.3. The X-bar format for structure

(10)   a   XP
                         / |
                  specifier   X'
                                     /   \
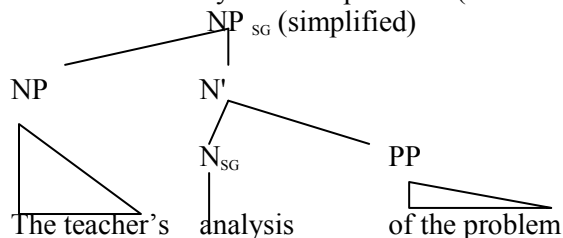   X   complement

The X-bar format distinguishes **two types of positions**, **heads (X)**, lexical items (=words) or morphemes, and **projections** (XP), that is constituents ('phrases') built around a head. For instance, an auxiliary or a verb or a N is a head, a VP or a NP is a maximal projection.
Each position holds one and only **one constituent**. In the case of head positions, however, when the head of a position is simply a bound morpheme (say Tense) then this may incorporate another head to form a complex head.
All syntactic structures is **endocentric**: it is built around the head, which selects the complement, a maximal projection. Head + complement **merge**. The resulting unit (here labeled X') is combined with a 'specifier'. Specifier & complement are '**maximal projections'**, roughly 'phrases' .

For example: Noun phrases (NP) are built around a head Noun, Verb phrases (VP) are built around a Verb, Adjective phrases (AP) are headed by adjectives (A) etc. The nature of the head determines the nature of the whole constituent and features of the head percolate to the maximal projection. Thus the **categorial** features of the head (say N, V) will determine the category of the projection. Also other grammatical features percolate to the projection: if an NP is the head is singular then the whole projection is singular.

(11)   a   The teachers analysis of the problem (was/*were interesting)
        b   NP SG (simplified)
                         / |
                  NP   N'
                                     /   \
                                   N SG   PP
                         | | |
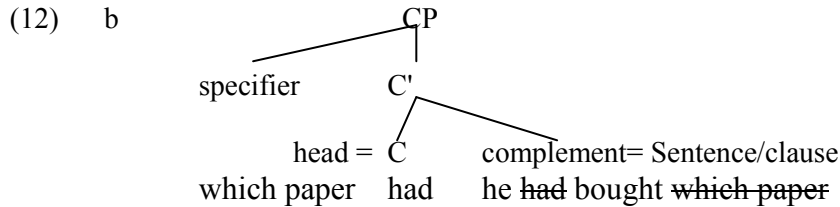   The teacher's   analysis   of the problem

Observe that some positions may remain unfilled:

(11)   c   The teacher's analysis (was not discussed).
         d   Analyses of these problems (were not discussed).

Problem:

(12)   a   (=9f)[$_{S'}$ [$_{COMP}$ Which paper had] [$_S$ he ~~had~~ bought ~~which paper~~]] ?
                 COMP: (i) *had*: head material (conjunction, auxiliary)
                         (ii) *which paper*: phrase →specifier material

(12)   b

```
                          CP
             ┌────────────┤
         specifier       C'
                      ┌───┴────┐
          head = C       complement= Sentence/clause
         which paper  had    he  had  bought  which paper
```

        (i)   The complement of C is the clause it introduces
        (ii)   The specifier of C is a maximal projection: this position can host the fronted *wh-*
               constituent in wh-interrogatives
        (iii)   C may be present but filled by a null (abstract) element: Ø
          -In English embedded *wh*-interrogatives C is not filled:

(13)   a   I asked [$_{CP}$ [$_{NP}$ which paper] [$_C$ Ø] [$_S$ he had bought ~~which paper~~]]

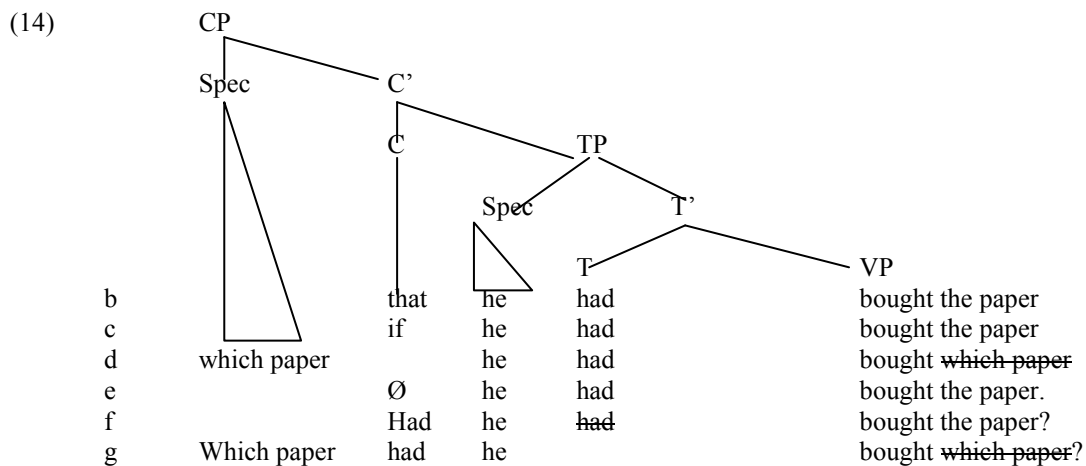   ←─────────────────

         -In embedded declaratives *that* need not be present. We assume that C is still there (the
         clause remains declarative) but that its filler is again a null (abstract) element (Ø)

(13)   b   I knew [$_{CP}$ [$_C$ Ø] [$_S$ he had bought this paper]]

Root declaratives never come with an overt complementiser. Still, they have illocutionary force and they alternate with interrogatives, in which CP is definitely available, since the auxiliary moves to C. It is assumed that C is again filled by the abstract element Ø:

(13)   c   [$_{CP}$ [$_C$ Ø] [$_S$ he had bought this paper]]

      Similar arguments were used to adapt the structure of the functional domain of S to the X-bar format, which led to the general adoption of the structure in (14). Sentences consist of three layers, each in accordance with the X-bar format: (i) VP, headed by the verb, (ii) the Tense Phrase (TP, also labelled IP) headed by the tense features , and (iii) the layer of the complementizer (CP), which also has to conform to the X'-bar template.

(14)

```
             CP
          ┌──┴──────┐
        Spec       C'
                ┌──┴──────┐
                C        TP
                      ┌───┴────┐
                    Spec      T'
                           ┌──┴────────────┐
                           T               VP
```

	Spec	C	Spec	T	VP
b		that	he	had	bought the paper
c		if	he	had	bought the paper
d	which paper		he	had	bought ~~which paper~~
e		Ø	he	had	bought the paper.
f		Had	he	~~had~~	bought the paper?
g	Which paper	had	he		bought ~~which paper~~?

Thus, what was one position COMP became decomposed into two positions, the specifier of C, a maximal projection, and the head C. S itself became reanalysed in terms of a lexical domain (VP) and a functional domain, here represented as TP.

The structure in (14) reflects a syntacticization of interpretive domains (Cinque and Rizzi 2008): each **layer** of the sentence as conceived in (14) is associated with a specialised **semantics**: the **lexical** domain, here the VP, encodes the core properties of the action/state expressed in the sentence ('who does what to whom', including the participants in the action (AGENT, PATIENT, BENEFICIARY etc)). The **functional** domain TP encodes the localisation of the action/state expressed in the VP with respect to **temporal, modal and aspectu**al properties. The **peripheral** functional domain CP encodes relations between the sentence and the context, this includes the matrix domain for embedded clause and the discourse domain for root clauses, encoding among other things, illocutionary force, and topicalized and focalized constituents, which are moved to the beginning of the clause because of their particular role in information structure.

The specifier position of CP will also host other fronted material.

(15)   a   Negative inversion: On no account will I talk to him again.
       a'   [$_{CP}$ on no account [$_C$ will] [$_{TP}$ I t$_{will}$ [$_{VP}$ talk to him again]]]
       b   topicalization
                This book, I don't need today.
       b'   [$_{CP}$ this book [$_C$ Ø] [$_{TP}$ I don't [$_{VP}$ need ~~this book~~ today]]]
       c   Focalisation:
                THIS book, I don't need (but THAT one I do)
       c'   [$_{CP}$ THIS book [$_C$ Ø] [$_{TP}$ I don't [$_{VP}$ need ~~this book~~]]]
       d   relative clause formation (restrictive relatives):
                This is the man for whose sister I am working
       d'   [$_{CP}$ for whose sister [$_C$ Ø] [$_{TP}$ I am [$_{VP}$ working ~~for whose sister~~]]]

In (15b) the object *this book* is fronted. It is to be interpreted as a topic. (15b) illustrates a topic-comment articulation, with the fronted constituent the topic/old information and the clause the comment/new information.

The topic is a preposed element characteristically set off from the rest of the clause by 'comma intonation' and normally expressing old information, somehow available and salient in previous discourse; the comment is a kind of complex predicate, an open sentence predicated of the topic and introducing new information (Rizzi 1997: 285).
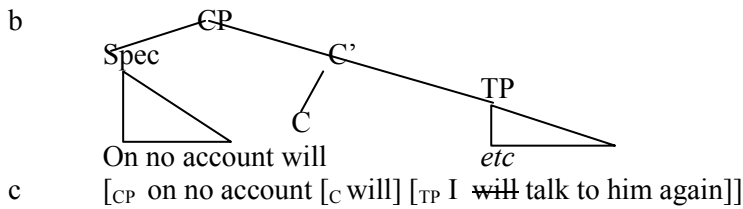
(15c) illustrates focus fronting.

The preposed element, bearing focal stress, introduces new information, whereas the open sentence expresses contextually given information, knowledge that the speaker presupposes to be shared with the hearer. (Rizzi 1997: 285)

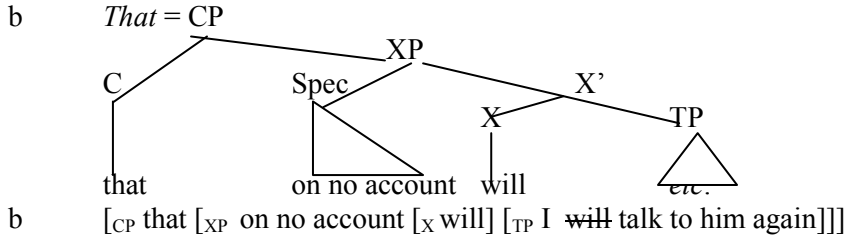## 2.   Problems in the left periphery

In the literature the domain of CP is generally referred to as the left periphery of the clause.
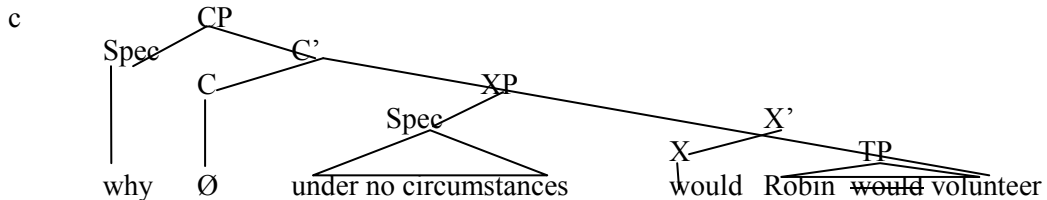
2.1. English negative inversion

(16)   a   Negative inversion: On no account will I talk to him again.
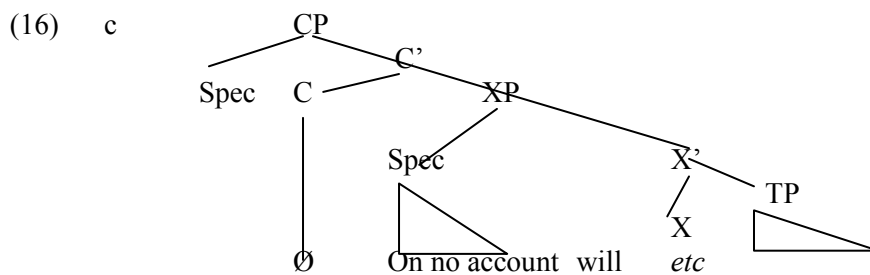
b

```
              CP
         Spec      C'
                C        TP
    On no account will       etc
```

c   [CP on no account [C will] [TP I ~~will~~ talk to him again]]

(17)   a   I swear <u>that</u> on no account <u>will</u> I ~~will~~ talk to him again.
       b   *That* = CP

```
     C            XP
              Spec        X'
                     X        TP
    that       on no account  will      etc.
```

b   [CP that [XP on no account [X will] [TP I ~~will~~ talk to him again]]]

(18)   a   [CP why [C would] [IP Robin ~~would~~ volunteer]]?
       b   Lee wonders [CP why [C Ø] [IP Robin would volunteer]].
       c   Lee wonders why under no circumstances would Robin volunteer. (cf. Culicover 1991, (27b))

       c

```
            CP
       Spec      C'
            C          XP
                  Spec         X'
                          X        TP
    why   Ø   under no circumstances  would  Robin would volunteer
```

Observe that once we admit that negative inversion is implemented in a specialised projection (XP) the question will arise whether root negative inversion (16a) should not also be targeting the projection XP. Thus a sentence such as (16a) would have the representation in (16c), with the nature of X still to be determined.

(16)   c

```
              CP
       Spec  C      C'
                    XP
               Spec        X'
                                X      TP
          Ø     On no account  will   etc
```

The question is what the nature of the mysterious projection XP is. Should it be, for instance, NegP? Or PolP (for Polarity phrase)? (Koizumi 1995)

2.2. Topicalisation and focalisation: adjunction or specialised projections?

2.2.1. SOME PROBLEMATIC DATA

Fronting operations like those in (15) also give rise to problems. According to the representations above, a fronted argument moves to the specifier of CP. However consider (19)-(24):

(19)   a   He said that this book, he would never use again.
       a'   He said [CP [C that] ??? this book, [TP he would never use again.]]
       b   I swear that during the holidays, I won't do any work.

      b'   I swear [$_{CP}$ [$_C$ that] $_{???}$ during the holidays, [$_{TP}$ I won't do any work.]]

(20)   a   Questo libro, non lo voglio.   (Italian)
                 This book,   *non* it want-1SG
                 'This book, I don't want.'
        a'   [$_{CP}$ Questo libro, [$_{TP}$ non lo voglio.]]   (Italian)
        b   Gli ho detto   che, questo libro, non lo voglio.   (Italian)
                 him have-1SG said   that this book   *non* it want 1SG
                 'I have told him that this book, I don't want.'
        b'   Gli ho detto   [$_{CP}$ [$_C$ che] $_{???}$, questo libro, [$_{TP}$ non lo voglio]](Italian)

Clitic left dislocation (=CLLD) : the left dislocated constituent *questo libro* is resumed by a clitic pronoun *lo. Lo* is a clitic on the finite verb.
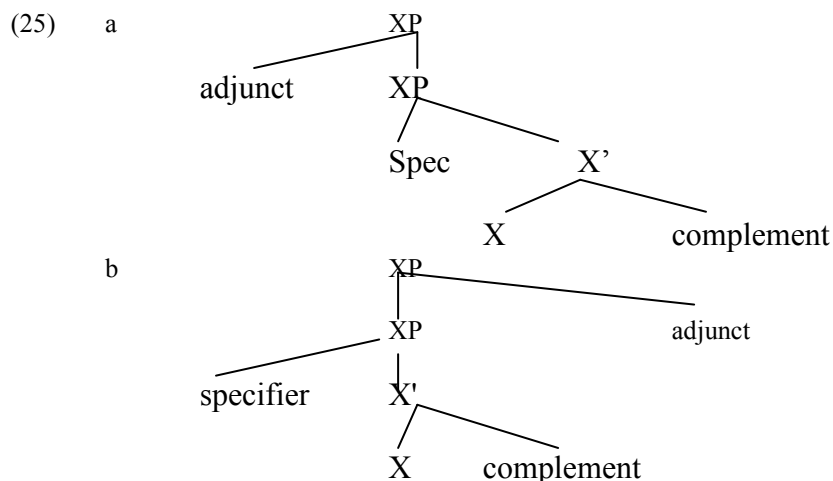
If the fronted topic moved to SpecCP, then we would expect that there is only one such topic, since there is only one specifier of CP.

(21)   Multiple topics
        a   Il libro, a Gianni,   glielo   daro   senz'altro.   (Italian)
                 the book, to Gianni   him-it give-FUT-1SG without doubt
                 'I will give Gianni the book without doubt.' (Rizzi 1997: 290, his (21))

(21)   Multiple adverbial adjunct fronting in English:
        b   Last week, in Paris, I went to the pictures.
        c   On my final lap, first of all I was blocked and then another car crashed in front of me.
                 (*Observer* 31.8.8 page 25 col 3.)

(22)   Adjunct + topic
        a   All the beers you drink, on your vacation you should keep a record of. (based on
                 Culicover 1996, 453 (21c))
        b   On your vacation, all the beers you drink you should keep a record of. (based on
                 Culicover 1996, 453 (21c))

(23)   a   [Many of the things they seem to be arguing for] [not only] do I agree with but they
                 were included in the July document. (*Guardian*, 21.1.4 page 6, col 5)
        a'   [$_{CP}$ many of the things they seem to be arguing for [$_{XP}$ not only [$_X$ do] [$_{TP}$ I ...]]].
        b   During the holidays, at no point had he considered returning to work.
        b'.   ... [$_{CP}$ during the holidays, [$_{XP}$ at no time [$_X$ had] [$_{TP}$ he ...]]].

(24)   Embedded: fronting + negative inversion:
        a   He said that during the holidays, at no point had he considered returning to work.
        a'.   ... [$_{CP}$ that [??? during the holidays, [$_{XP}$ at no time [$_X$ had] [$_{TP}$ he ...]]]]].
        b   %He said that, beans, never in his life had he been able to stand.
                 (Koizumi 1995: 140, his (12b))
        b'.   ... [$_{CP}$ that,[??? beans, [$_{XP}$ never in his life [$_X$ had] [$_{TP}$ he been able to stand]]]]].

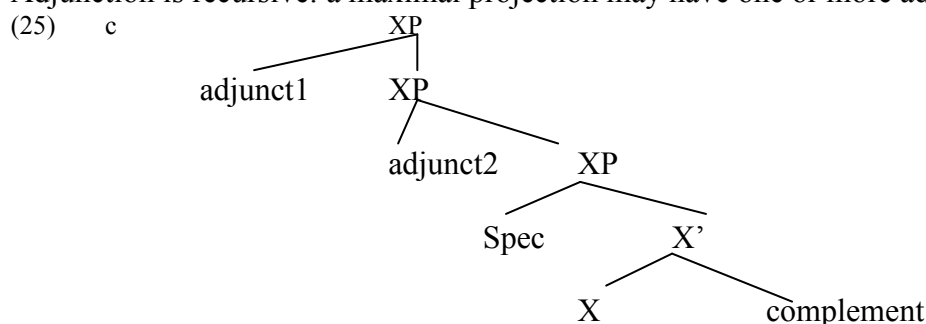Conclusion: the simple template with just one head C and one specifier cannot accommodate the data. Observe: multiple fronting of arguments is not possible in English:

(21)   d   *This book$_i$, to Robin$_j$, I gave t$_i$ t$_j$. (Culicover 1991)..
        e   *Bill$_i$, that house$_j$, she took t$_i$ to t$_j$ for the weekend. (Emonds 2004: 95 (27b))

2.2.2. ENRICHING THE X-BAR TEMPLATE: ADJUNCTION

(25)   a

     b

Adjunction is recursive: a maximal projection may have one or more adjuncts:

(25)   c

The adjunction schema allows us to reconsider the position of fronted arguments such as the topicalised constituents illustrated above. To account for the sentence initial position(s) of the fronted adjuncts and topic(s), to the left of the subject and to the right of the conjunction, one might appeal to the (multiple) adjunction analysis, represented in (26) (cf. Authier 1992, Baltin 1982, Lasnik and Saito 1992, Culicover 1996, Maki et al 1999, Newmeyer 2008): in (20a-c) the topicalised constituents would not be specifiers of CP. Rather they might simply be adjoined to the maximal projection TP.

(26)   a   …[$_{CP}$ [$_C$ Ø] [$_{TP}$ during the holidays, … [$_{TP}$ I won't do any work]]]
       b   …[$_{CP}$ [$_C$ Ø] [$_{TP}$ Beans [$_{TP}$ I won't eat t]]]
       c   …[$_{CP}$ [$_C$ Ø] [$_{TP}$ Questo libro [$_{TP}$ non lo voglio]]]   (Italian)
                         this book   *non* it want-1SG
                         'This book, I don't want.'

Note:
the adjunction analysis cannot be advocated to accommodate English negative inversion since in addition to a position for the fronted negative constituent we also need a head to host the fronted auxiliary.

       Given the added option of adjoining a maximal projection to TP we immediately create additional space and we solve the problem of embedded topicalisation, without needing to postulate an additional projection (and a functional head) :

(27)   a   …[$_{CP}$ [$_C$ that][$_{TP}$ during the holidays, … [$_{TP}$ I won't do any work]]]
       b   …[$_{CP}$ [$_C$ that] [$_{TP}$ Beans [$_{TP}$ I won't eat t]]]
       c   …[$_{CP}$[$_C$ che][$_{TP}$ Questo libro [$_{TP}$ non lo voglio]]]   (Italian)
                 that   this book   *non* it want-1SG
                 'This book, I don't want.'

Adjunction is recursive: multiple constituents could be adjoined to TP :

(28)   a $[_{CP}$ Ø $[_{TP}$ Il libro, $[_{TP}$ a Gianni, … $[_{TP}$ glielo   daro senz'altro.]]]]   (Italian)

          b $[_{CP}$ Ø $[_{TP}$ Last week, $[_{TP}$ in Paris, $[_{TP}$ I went to the pictures.]]]]

          c $[_{CP}$ Ø $[_{TP}$ All the beers you drink, $[_{TP}$ on your vacation $[_{TP}$ you should keep a record of.]]]]

With negative inversion we can also adjoin the constituent to the left of the negative constituent to XP:
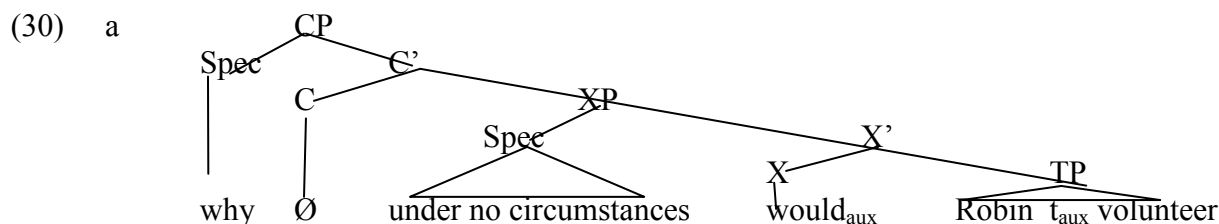
(29)   a   Many of the things they seem to be arguing for not only do I agree with but they were included in the July document. (*Guardian*, 21.1.4 page 6, col 5)

          a' $[_{CP}$ Ø $[_{XP}$ many of the things they seem to be arguing for $[_{XP}$ not only $[_X$ do] $[_{TP}$ I …]]]].

          b   He said that beans never in his life had he been able to stand.

          b'.   … $[_{CP}$ that $[_{XP}$ beans, $[_{XP}$ never in his life $[_X$ had] $[_{TP}$ he been able to stand]]]].
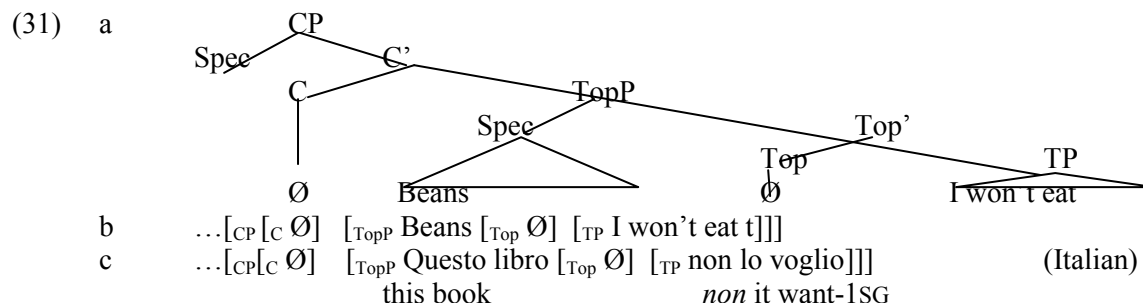
Problems
- the status of adjunction as a licit component of the grammar has been controversial since Kayne (1994), Cinque (1999).
- Adjunction does not discriminate between topicalized argument, fronted adjunct, focalized constituents: they all receive the same treatment.
- Multiple argument fronting is * in English (21d,e)

2.2.3. ALTERNATIVE: A SPECIALIZED PROJECTION FOR TOPICS ?

By virtue of the presence of the inverted auxiliary which, by hypothesis, moves to a head position, negative inversion provides evidence for a specialized projection in the CP domain:

(30)   a

By analogy, rather than simply adjoining topics to a maximal projection (TP, XP) we might propose that they are in fact licensed in a relation to a head bearing a topic feature. Thus we could postulate a special projection, TopP, with the head Top and we could then propose that the topicalised constituent moves to the specifier of TopP:

(31)   a

          b   …$[_{CP}$ $[_C$ Ø] $[_{TopP}$ Beans $[_{Top}$ Ø] $[_{TP}$ I won't eat t]]]

          c   …$[_{CP}$$[_C$ Ø] $[_{TopP}$ Questo libro $[_{Top}$ Ø] $[_{TP}$ non lo voglio]]]   (Italian)
                            this book   *non* it want-1SG

ToPP is the projection in which we encode 'topicality', i.e. that the constituent is old information, related to the discourse or the context. If TopP is recursive, and if it can also host fronted adjuncts in its specifier, then the examples of multiple fronting can also be accommodated. Note that in these examples we need no longer invoke the specCP position for the fronted constituent.

(32)   a $[_{CP}$ $[_C$Ø] $[_{TopP}$ Il libro, $[_{TopP}$ a Gianni,…$[_{TP}$ glielo daro senz'altro.]]]] (Italian)

b   [CP [C Ø][TopP Last week, [TopP in Paris, [TP I went to the pictures.]]]]
c   [CP[C Ø] [TopP All the beers you drink, [TopP on your vacation [TP you should keep a record of.]]]]

TopP vs. XP: the head Top does not attract the auxiliary:

(33)   a.   This book, I have already read.   b.   *This book have I already read.

Negative constituents are not topics: in Italian CLLD of *niente* is not possible:
(34)   a.   *Niente, lo ho visto.   (Italian)
             nothing it have-1SG seen

Proposal: TopP= XP? if the head has a Top feature, then TopP, if it has a Neg feature then XP= Neg? But more than 1 projection is needed: negative inversion co occurs with topicalisation:

(35)   a   Many of the things they seem to be arguing for not only do I agree with but they were included in the July document. (*Guardian*, 21.1.4 page 6, col 5)
       b.   %He said that, beans$_1$, never in his life$_2$ had he been able to stand. (Koizumi 1995: 140, his (12b))
       c   I swear that during the holidays$_1$, not a single message$_2$ will I read.

On the basis of the examples above we conclude that CP> TopP > XP
(36)   a.   [CP that [TopP beans$_1$ [XP never in his life$_2$ [X had] [TP he...]]]]
       b   [CP Ø[TopP Many of the things they seem to be arguing for
                                    [XP not only [X do] [TP I …]]]]

Note that while the negative quantifier *niente* ('nothing') cannot precede the subject *qua* topic in a CLLD structure, it may precede the subject *qua* focus.
(34)   b   NIENTE ho visto.   (Italian)
             NOTHING have-1SG seen
             'I saw nothing.'

Proposal: Projection XP = FocP?
(37)   a   …[CP [C Ø] [FocP NIENTE [Foc Ø] [TP ho visto]]]
       b   …[CP [C Ø][FocP On no account [Foc will$_{aux}$] [TP I ~~will~~ talk to him again]]].
       c   …[CP[C Ø][FocP THIS BOOK [Foc Ø] [TP I don''t need ~~this book~~]]]

Multiple fronted constituents:
-in the case of adjunction: appeal to multiple adjunction + postulate XP (negative inversion)
-in the case of specialized projections (TopP, FocP): multiple TopP.

Hierarchy (provisional, to be elaborated later!!): CP > TopP* > FocP

2.2.4. A COMPARATIVE ARGUMENT IN FAVOUR OF SPECIALISED PROJECTIONS

2.2.4.1. TopP

(38)   a.   Dàn lo   yà   Kòfi hù ì.   (Gungbe ; Aboh 2004: 291)
             snake the   TOPIC   Kofi kill-3SG
             'As for the specific snake, Kofi killed it.'
       b   ùn dó dò   dàn lo   yà   Kòfi hù ì.
             I say that   snake the   TOPIC   Kofi kill-3SG
             'I say that, as for the specific snake, Kofi killed it.'
       c   …[CP [C Ø] [TopP dan lo [Top ya] [TP Kòfi hù ì]]]

In Gungbe fronted adjuncts may also be used with *yà*, suggesting they are in TopP.[1]

(38)   d   Gbojè mè yà, Kòfi ná sá sen dó   xo   lo. (Gungbe : Aboh 2004)
               holiday P[inside] TOP Kofi FUT put paint Prep room Det[+SPEC; + DEF]
               'As for during the holidays, Kofi will paint the room'
       e   …[CP [C Ø] [Top Gbojè mè [Top ya] , [TP Kòfi ná sá sen dó   xo   lo.]]]

Similarly, the Japanese topic marker *wa* can be associated both with argument topics and with adjuncts:

(39)   a   John-wa   kono hon-o   yonda.   Maki et al 1999: 7, their (8a))
                   TOP   this   book –ACC read
               'As for John, he read this book.'
       b   Kono hon-wa John-ga yonda.   Maki et al 1999 7, their (8b)
               This book-TOP John-NOM read
               'As for this book, John read it.'
       c   10-nen mae-(wa)   zibun-no musuko-ga [Yamada-san-no hokori]
               10 years ago (TOP)   self-TOP son-NOM   [Mr Yamada-GEN pride]
               'Mr Yamada was proud of his son ten years ago.' (Endo 2007: 76, his (27))

2.2.4.2. FocP in Gungbe

(40)   a.   ùn ìn   dò   WÉMA LÒ wɛ [Séna xìa].   (Gungbe, Aboh 2004)
               I think-PERF   that   book-the wɛ [Sena read-PERF]
               'I think that it is the BOOK that Sena has read.'
       b   [CP [C Ø] [FocP wéma lò [Foc wɛ] [TP Séna xìa]]].

2.2.4.3. The relative order of TopP and FocP

On the basis of the fact that topicalised arguments preceded negative inversion we arrive at the provisional hierarchy: CP> TopP > FocP. This hierarchy would match information structure: Given that topics represent 'old information' and that the focused constituent represents 'new information' (cf. Reinhart 1981, Prince 1987), one would expect that the topic will precede the focus. One might go so far as to propose that the hierarchy is simply determined by IS.

(41)   a   This book to ROBIN I gave. (Culicover 1991: 36, ex. (117a))
       b   *To ROBIN this book I gave.
       c   To Mary, such a book even JOHN would never give. (Marcel den Dikken, cited in Van der Wurff 2007: 35)

The order CP> TopP>FocP is also found in Gungbe, as shown by (42) (Aboh 2004: (1)):

(42)   a   Ùn   nywɛn dò   Sɛtù   yà   MÀRí wɛ   é   dà.   (Gungbe)
               1sg   know that   Setu   Top   Mary Foc   3sg marry
               'I know that, as for Setu, he married MARY.'
       b   Ùn nywɛn [CP [C dò] [TopP Sɛtù [Top yà] [FocP MÀRí [Foc wɛ][TP é dà.]]]]
       c   *Ùn   nywɛn dò   [Màrí] wɛ   [Sɛtù] yà   é   dà

However, the Italian examples in (43) show that the sequence focus> topic is apparently not universally ruled out: while the sequence Topic-Focus is certainly grammatical (43a), the reverse order in which a focus precedes a topic is also grammatical (43b-d):

(43)   a   Credi che a Gianni QUESTO gli dovremmo dire
               I believe that to Giannit THIS him must-con-1pl say
               'I think that to Gianni we should say THIS.' (Rizzi 1997: 295, (37a))
       b   (Domani,) QUESTO a Gianni, gli dovreste dire.

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[1]   Not all fronted adjuncts are accompanied by *ya*. (Aboh: 2004: 312-4)

Tomorrow, THIS to Gianni him must-cond-2PL say
'This you should tell GIANNI tomorrow.' (Rizzi 1997: 298 (46))
  c Credo che QUESTO, a Gianni gli dovremmo dire.
     I believe that THIS to Gianni him must-cond-1pl say
     'I think that to Gianni we should say THIS. (Rizzi 1997, 295: (37b))
  d Credo che ieri, QUESTO, a Gianni, i tuoi amici avrebbero dovuto dirgli.
     think-1SG that yesterday THIS to Gianni the your friends have-COND-3PL must-
     PARTICIPLE say-him
     'I believe that yesterday, THIS, to Gianni, your friends should have said to him' (Rizzi
     2001, his (5))

2.3. Topic vs Focus: (Rizzi 1997)

Gungbe fronted topics and fronted foci are distinguished in terms of the head with which they are associated: topics precede *ya*, foci precede *wɛ*. A second distinction is that with topic fronting, the clause contains an anaphoric pronominal element that picks up the topic constituent, while there is no such element with focalisation: the topic *dàn lo* ('the snake') is picked up by the anaphoric *ì* ('it'), while there is no such anaphoric element for *wéma lò* ('the book'):

(44) a. Dàn lo **yà**   Kòfi hù **ì**   (Gungbe)
     snake the TOPIC Kofi kill-3SG
     'As for the specific snake, Kofi killed it.'
  b. *Dàn lo **yà**   Kòfi hù   (Gungbe)
     snake the TOPIC Kofi kill
(45) a ùn ìn   dò wéma lò **wɛ** [Séna xìa] (Gungbe)
    I think-PERF that book-the wɛ [Sena read-PERF]
    'I think that it is the BOOK that Sena has read.'
  b *ùn ìn dò wéma lò **wɛ** [Séna xìa **ì**] (Gungbe)
    I think-PERF that book-the wɛ [Sena read-PERF-3SG]

(46) a Gianni, lo ho sempre apprezzato.   (Italian)
    Gianni, him have-1SG always appreciated
  b *Gianni, ho sempre apprezzato.   (Italian)
  c(a+b) Gianni, *(lo) ho sempre apprezzato.   (Italian)
    'Gianni, I have always liked.'
(47) a GIANNI ho sempre apprezzato.   (Italian)
    GIANNI I have always appreciated.
    'GIANNI I have always liked.'
  b *GIANNI lo ho sempre apprezzato.   (Italian)
  c(a+b) GIANNI (*lo) ho sempre apprezzato.   (Italian)

(48) Bare quantifiers cannot be topics but they can be focalised :
  a. TUTTO ho visto.   b. *Tutto, lo ho visto (Italian)
    everything I-have seen   everything it I have seen
    'I have see EVERYTHING.'   (Italian: Rizzi 1997: 290)

2.4. Force/Fin

(49) a What I expect is that/*for he will come.
  b What I expect is for /*that him to come.
  c I wonder whether/if I should do that.
  d I wonder whether/*if to do that.

Table 1. Subordinating conjunctions in English: 2 ingredients: illocutionary force; finiteness

IForce / Infl	Finite	-finite
Interrogative	*If, whether*	*Whether*
-interrogative	*that*	*For*

(50)   The 'split CP' (Rizzi 1997)
        Force>   Topic* >   Focus >   Topic* >   Fin>   TP

Topic*: topic projection is recursive
Individual conjunctions may occupy either Force or Fin. For instance, in Italian, the conjunction *di*,
which introduces infinitival clauses, follows the preposed CLLD topic (51a), hence Rizzi (1997)
assumes it is merged in *di*. The complementizer *che* ('that'), on the other hand, precedes topicalised
constituents (51b), and is inserted in Force. In (51c), from Welsh (see Roberts 2003) cited by Rizzi
(2004: 238, his (46)) *mai* could be argued to out Force and *a* can be said to spell out Fin.

(51)   a   Ho   deciso,   il tuo libro, **di** rileggerlo.
                Have-1SG decided,   the your book, *di* re read it
                'I have decided to reread your book.'
        b   Penso   **che**, il tuo libro,   dovrei   rileggerlo.
                think-1SG that, the your book,   must-COND-1SG reread-it
                'I think I should reread your book.'
        c   Dywedais I [**mai** 'r dynion fel arfer **a** [werthith y ci]]
                Said   I C   the men as usual   C will-sell the dog. (Rizzi 2004: 238 (48))

2.5. Interrogative constituents and the split CP

-Gungbe: fronted wh-constituent moves to SpecFocus:
(52)   Gungbe   ún kanbíó   dò [dàn lò yà   [mɛnù wɛ   [ùn hù –ì ná]]]
                     I ask   that snake the TOP   who FOC   I kill –perf prep
                     'I wonder, as for the snake, who did I kill it for?'

-Hungarian: focus fronting triggers verb movement
(53)   a.   AMARCORD-ot   làtta Jànos tegnap este.   (Hungarian, Puskas 1996)
                AMARCORD-ACC saw Jànos last night
                'It's AMARCORD that Janos saw last night.'
        b   Tudom **hogy** AMARCORD-ot   làtta Jànos tegnap este.
                know-1SG that AMARCORD-ACC   saw Jànos last night
                'I know that it's AMARCORD that Janos saw last night.'

-fronted negative constituents behave like focused constituents:
(54)   (Hallottam hogy) semmit nem làtott Balàzs
        (hear past- 1sg   that) nothing *nem* see-3 SG- PAS Balàzs-NOM
        '(I hear that) Balazs did not see anything.'

(55)   a.   (Tudom hogy) tegnap este. AMARCORD-ot   làtta Jànos   topic> focus
                (know-1SG that) last night   AMARCORD-ACC   saw Janos
                '(I know that) last night it's AMARCORD that Jànos saw.'
        b   (Hallottam   hogy) Réka   'PETERT irigyli
                (hear past- 1sg   that)   Reka-NOM (=TOP) PETER-ACC (FOC) envies
                ('I have heard that) as for Réka, it's PETER that she envies (not Paul)'
        c   (Hallottam hogy) Balàzs (topic) semmit nem làtott   topique > negation
                (hear past- 1sg   that)   Balàzs (topic) nothing *nem* saw
                '(I hear that) as for Balazs, he did not see anything.'

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Interrogative constituents behave like focused constituents:

(56)   a.   (Nem tudom hogy)   melyik filmet làtta   Jànos tegnap este.
                (not know-1SG that)   which film saw   Jànos last night
                '(I don't know) which film Janos saw last night.'
        b.   (Nem tudom hogy) tegnap este.   melyik filmet làtta   Jànos
                (not know-1SG that)   last night which film saw   Jànos
                '(I don't know) which film Janos saw last night.'

2.6. A theoretical argument for functional projections in the left periphery

2.6.1. MOVEMENT AND LOCALITY: THE HEAD MOVEMENT CONSTRAINT(TRAVIS 1984

(57)   a   John could have known it.   b   Could John have known it?
        c   *Have could John known it?

        Head movement constraint: *   X   Y   ~~X~~
                                     Ok: X   YP   ~~X~~

(58)   a   Il l'a vu.   b   L'a-t-il vu?   c   *   A-t-il le vu?
                He it has seen   it has –t he seen   has –t-he it seen
(59)   a   Il n'est pas ici   b   N'est-il pas ici ? c   *   Est-il ne pas ici ?
                He *ne*-is not here   *ne*-is he not here   is he *ne* not here

2.6.2. INDIRECT EVIDENCE FOR FUNCTIONAL HEADS
Suppose that topicalised arguments in English were adjoined to a maximal projection.
(60)   a   She told me to eat beans, but <u>beans</u> I won't eat!
        b   [$_{TP}$ beans [$_{TP}$ I won't eat]]

An auxiliary, being a head, X°, should be able to cross the (TP-)adjoined NP *beans* (a phrasal projection, XP) and hence should be able move to a higher position. Thus (60c) should be grammatical, contrary to fact. (60d) is from Koizumi 1995: 140 (his 13b):

(60)   c   * [$_{FocP}$ On no account [$_{Foc}$ will] [$_{TP}$ beans [$_{TP}$ I eat]]]
        d   *Becky said that [$_{FocP}$ only with great difficulty [$_{Foc}$ can] [$_{TP}$ these books [$_{TP}$ she carry]]].

On the other hand, if fronted arguments occupy the specifier of a designated projection, TopP, then we are led to conclude from the ungrammaticaly of (60f) that the head of this projection does not and cannot host an inverted auxiliary. We assume that English has a null variant ∅ of the Top head realized as *ya* in the Gungbe examples above.

(60)   e   [$_{TopP}$ Beans [$_{Top}$ ∅] [$_{TP}$ I won't eat]].
        f   *[$_{TopP}$ Beans [$_{Top}$ won't] [$_{TP}$ I ~~wont~~ eat]].

The ungrammaticality of (60c,d) now follows: the auxiliary *will* in (60c) must attain a specifier head relation with the fronted *wh*/NEG constituent. This is not possible: as shown in (60g), because the abstract Top head (∅) intervenes. Direct movement of the auxiliary to Foc will violate the Head Movement Constraint).

(60)   g   * [$_{FocP}$ never again [$_{Foc}$ will] [$_{TopP}$ beans [Top ∅] [$_{TP}$ I ~~will~~ eat]]]
                                        ⟵

The account will extend naturally to (60h) if we assume that adjuncts too are associated with a specialized projection in the left periphery, provisionally labelled TopP

(60)   h   *I swear that on no account will during the holidays I write a paper.
       i   *I swear[$_{CP}$ that [$_{FocP}$ on no account [$_{foc}$ will] [during the holidays [$_{TP}$ I write a paper]]]]

Thus postulating a specialized projection to host fronted arguments and fronted adjuncts will allow us to exclude the ungrammatical (60c,d) and (60h). The ungrammaticality of the examples is due to the fact that locality conditions on movement, in particular (an update of) Travis's (1984) Head Movement Constraint, is violated. An adjunction account for fronted arguments and fronted adjuncts does not seem to have anything to say about these examples: the adjoined constituent does not implicate an independent head, and as such the adjoined constituents, being maximal projections, should not intervene in head movement.

3. Problems for the analysis

(61)   a   *This book, to Robin, I gave. (Culicover 1992).
       b   *Bill, that house, she took to for the weekend. (Emonds 2004: 95 (27b))
       c It.   Il libro, a Gianni, glielo   daro   senz'altro.
              the book, to Gianni him-it give-FUT-1SG without doubt (Rizzi 1997: 290, (21))
       d Fr.   A Jean, ton livre, il ne faut pas le lui montrer.
              To John, your book, it *ne* must not it him show-INF
       e   Last week in Paris I met an old schoolfriend of mine
       f   In London, with those skills, you could make a fortune.
.
(62)   a   Eng   *argument topic – argument topic…
       b   Rom   √CLLD - CLLD…
       c   Eng   √adjunct -adjunct…

(63)   a   *This book Lee says that, to Robin, I gave (Culicover 1991: (37), his (120))
       c   These patients Marty suggested that the cooked vegetables we should not give in the present circumstances
       b   Ce texte Pierre dit que à Jean il ne faut pas le lui montrer.
              This text Pierre says that to Jean it NEG should not it him show
              'This text, Pierre says you should not show it to Jean.'
       d   These patients Marty suggested that in the present circumstances we should not give any cooked vegetables.

(64)   a   Eng   *argument topic   …   argument topic…
       b   Rom   √CLLD   …   CLLD…
       c   Eng   argument topic   …   -adjunct…

We need a more fine grained theory of intervention which predicts (among other things) that
       (i) English topicalised arguments block movement of other (interrogative or topic) arguments across them.
       (ii) English fronted adjuncts of time/place etc do not block movement.
       (iii) CLLD constituents in Romance do not block movement.

4. The articulated structure of TP (Cinque 1999)

4.1. A hierarchy of functional projections in the TP domain

The backbone of the clausal domain is an articulated structure of modal, temporal and aspectual heads; The head position may host a modal/temporal/aspectual particle or auxiliary, the specifier position

hosts a modal, temporal or aspectual adverb.

(65)   MoodP$_{\text{speech act}}$>MoodP$_{\text{evaluative}}$>MoodP$_{\text{evidential}}$> ModP $_{\text{epistemic}}$ >TP (Past) > TP (Future) >MoodP$_{\text{irrealis}}$
        >ModP$_{\text{alethic}}$>AspP$_{\text{habitual}}$>AspP$_{\text{repetitive}}$>AspP$_{\text{frequentative}}$>ModP$_{\text{volitional}}$> AspP$_{\text{celerative}}$>TP (Anterior)>
        AspP$_{\text{terminative}}$ >AspP$_{\text{continuative}}$>AspP$_{\text{retrospective}}$ > AspP$_{\text{proximative}}$ >AspP$_{\text{durative}}$ >AspP$_{\text{generic}}$/$_{\text{progressive}}$ >
        AspP$_{\text{prospective}}$> ModP$_{\text{obligation}}$> ModP$_{\text{permission/ability}}$> AspP$_{\text{completive}}$ >VoiceP>AspP$_{\text{celerative}}$ >AspP$_{\text{repetitive}}$
        >AspP$_{\text{frequentative}}$ (Cinque 2004: 133, his (3))

4.2. Intervention effects

(66)   a   Hij is helaas waarschijnlijk ziek   (Koster 1978: 205-209)
                MoodP$_{\text{evaluative}}$>…> ModP $_{\text{epistemic}}$
                he is unfortunately probably ill
        b   *Hij is waarschijnlijk helaas ziek
                *ModP $_{\text{epistemic}}$ >MoodP$_{\text{evaluative}}$
        c   Helaas is hij waarschijnlijk ziek.   .
                MoodP$_{\text{evaluative}}$>…> ModP $_{\text{epistemic}}$
        d   *Waarschijnlijk is hij helaas ziek
                *ModP $_{\text{epistemic}}$ >…MoodP$_{\text{evaluative}}$

4.3. Circumstantial adjuncts:

        - typically realised as PP or DP;
                                - do not lead to intervention effects wrt to high adverbs (67);
                                - can be clefted (68);
                                - can be focus of *wh*-question (69).
                                - do not create topic islands (lecture 2: 3.2.5);

        If AdvPs proper occupy the specifier position of distinct functional projections above the VP…it seems
        natural <u>not</u> to assume the same for circumstantial phrases. This is particularly natural if the rigid
        ordering of AdvPs is a consequence of the rigid ordering of the respective functional heads. (Cinque
        1999: 29, also: pp. 15-16 and 28-30).)

(67)   a   Hij is (vandaag) helaas (vandaag) waarschijnlijk (vandaag) ziek.
                He is (today) unfortunately (today) probably (today) sick
        b   Waarschijnlijk/Helaas is hij vandaag ziek.
                Probably/unfortunately is he today sick
(68)   a   *It is probably/obviously/without any doubt that he left.
        b   It was yesterday/only recently that they discovered he had left.
(69)   a   *How probably will he arrive late? ('How probable is it that…')
        c   How recently have you done an energy audit of your site? (*www.chemical
                processing.com/ articles/ 2008/131.html - 59k*)

For proposals to differentiate circumstantial modifiers and modal adverbials: Alexiadou (1997),
Laenzlinger (1996: 107), Cinque (1999: 29, 2004), Hinterhölzl (to appear) etc.

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