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On the Italian repetitive prefix *ri*-:
Incorporation vs. cliticization[*]

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0. Introduction

In Keyser and Roeper (1992), the English repetitive prefix *re*- is analysed as a clitic element attached to the verb via a rule of compounding. This analysis cannot be extended to the Italian counterpart *ri*-. The Italian *ri*- construction does not undergo the same restrictions as the English *re*- construction, and *ri*- can modify any verb.

I claim that *ri*- is an incorporated adverb, attached to the verb in the syntax. In the case under discussion, English and Italian thus differ in the way the repetitive morpheme is lexically stored, from which all the superficial differences follow. This analysis supports the view that language variation is to be attributed to the lexical properties of single lexical items.

The distribution of Italian *ri*- also provides empirical evidence to distinguish between two very similar syntactic processes: incorporation and cliticization. This conclusion is based on the comparison of *ri*- with both clitic pronouns and clitic adverbs.

Finally, the distribution of *ri*- shows that excorporation cannot be a grammatical possibility.

1. Keyser and Roeper's analysis of English *re-*

Keyser and Roeper (1992) suggest that the English repetitive prefix *re-* originates in an abstract clitic position associated with any verb and then raises to the left of the verb by a rule of compounding. *Re-* cannot co-occur with particle verbs, idiomatic expressions, detransitivized, causative and locative verbs. If particles, idiomatic nouns, empty objects, etc. all occupy the "clitic" position, co-occurrence of any these constructions is predicted to be ungrammatical.

The Italian *ri-* construction does not undergo the same restrictions as the English *re-* construction. Italian *ri-* can modify any verb. Particle verbs, idiomatic expressions, detransitivized, causative and locative verbs give rise to grammatical sentences if combined with *ri-* (the English counterparts of (1)-(5) are all ungrammatical, cf. Keyser and Roeper 1992):[1]

(1)   a. Ha ributtato via il latte.
           [he] has re-thrown away the milk
       b. Ha rimesso su pancia.
           [he] has re-set up paunch
           "he has developed a paunch again"

(2)   Ha rigiocato sporco.
           [he] has re-played dirty

(3)   Mi piace ritradurre.
           [it] to-me pleases re-translate
           "I like to translate again (something)"

(4)   Questo mi ristupisce ogni volta.
           this me re-amazes each time
           "this amazes me again each time"

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[1]   Other constructions are independently excluded in Italian and cannot therefore be checked with *ri-*. Among those discussed by Keyser and Roeper, there are double-object constructions, resultatives, and middles (without *si*).

(5)   Gianni ha rimesso la palla sullo scaffale.
       Gianni has re-put the ball on the shelf

Keyser and Roeper's analysis cannnot be extended to Italian. In what follows, the peculiar properties of *ri-* will be discussed, which distinguish it from any other prefix of the language. *Ri-* also differs from both members of a compound, which confirms that a rule of compounding is not an appropriate analysis for Italian *ri-*.

2. The peculiar properties of Italian *ri-*

Differently from other prefixes, repetitive *ri-* does not form a (morphological) word with what follows it. *Ri-* does not undergo word-internal processes such as s-sonorization and vowel deletion and can appear separated from the verb it modifies.

2.1. S-sonorization

S-sonorization applies word-internally in intervocalic contexts. It can take place stem-internally, as in *asola* "button-hole" pronounced *a[z]ola,* or across a stem and an inflectional morpheme, as in *case* "houses" pronounced *ca[z]e*. Whereas other prefixes, including non-repetitive *ri-*, trigger the sonorization of [s] (cf. (6a)), repetitive *ri-* does not, (6b) vs. (6c):

(6)   a. ri[z]ultare / re[z]istere / de[z]istere / pre[z]umere
           to turn out / to resist / to desist / to suppose
       b. *ri[z]alire / ri[z]alutare
       c. ri[s]alire / ri[s]alutare
           to re-climb / to re-greet

2.2. Vowel deletion
Deletion of the final vowel of a prefix can apply if the verb stem has an initial vowel. An example is provided by the verb *rinviare*, meaning "postpone".
   This rule does not apply to repetitive *ri-*. *Rinviare* can be contrasted with *riinviare*, meaning "send again".

2.3. Ri-separation

Repetitive *ri-* can appear on a verb higher than the one it modifies. This can be a higher past participle in e.g. passive clauses, or a modal verb:

(7) a. È ristato fatto ieri.   (= È stato rifatto ieri)

          [it] has re-been done yesterday   (= [it] has been re-done yesterday)

     b. Ripossiamo prendere il vaporino.   (= Possiamo riprendere il vaporino)

          [we] re-can take the boat   (= [we] can re-take the boat)

In (7a), the "again" meaning clearly modifies the lexical predicate *fatto* (*ieri*). In (7b), although the "again" meaning can modify the modal verb, it can also modify the embedded lexical predicate *prendere* (*il vaporino*). The sentence does not necessarily mean that we have again the possibility of taking the boat. It can mean that we have the possibility of taking the boat again.

This is clearer with epistemic *dovere* "must" in (8). It seems semantically odd that the prefix meaning "again" combines with the epistemic meaning, to get the interpretations "it must again be true that he is sick", "it must again be true that he has left", respectively. Rather, the sentences in (8) mean: "it must be true that he is again sick", "it must be true that he has again left":

(8) a. Ridoveva essere malato.   (= Doveva essere malato di nuovo)

          [he] re-must have been sick   (= [he] must have been sick again)

     b. Rideve essere partito.   (= Deve essere ripartito)

          [he] re-must have left   (= [he] must have left again)

I call this phenomenon *ri*-separation (the term *ri*-climbing is avoided for reasons that will become clear below). *Ri*-separation only applies to repetitive *ri-*. The separation from the stem of other instances of *ri-* and other prefixes produces ungrammatical sentences (even when the stem is a possible word: cf. *corso* in (9b) and *chiamare* and *correre* in (10b,c)):

(9) a. È stato ripetuto.   vs.*È ristato petuto.

          [it] has been repeated

     b. È stato percorso più volte.   vs.*È perstato corso più volte.

          [it] has been run-along many times

(10) a. Possiamo ripetere la lezione.   vs.*Ripossiamo petere la lezione.
          [we] have to repeat the lecture

      b. Devo richiamare il ragazzo.   vs.*Ridevo chiamare il ragazzo.
          [I] have to rebuke the boy

      c. Deve percorrere quel viale.   vs.*Perdeve correre quel viale.
          [I] must run-along that avenue

In sum, *ri-* displays a morphological independence from what follows and a freedom in distribution unknown to morphological elements. The first conclusion is that *ri-* is not attached to the verb by a derivational word formation rule.

2.4. Ri- is not the member of a compound either

Does the compound analysis proposed by Keyser and Roeper (1992) for English *re-* account for the peculiarities of Italian *ri-*? The compound analysis accounts for the two first properties of *ri-*, which *ri-* shares with compounds, but remains silent on the third one, which is unknown to compounds. Let's consider the relevant data.

As with *ri-*, s-sonorization does not take place in compounds:

(11) a. *spargi[z]ale

      b. spargi[s]ale
          salt-sprinkler

Deletion of the last vowel of the first member of a compound takes place only in some types of compounds (cf. Scalise 1983). Deletion is possible in the lexicalized compound in (12a). In (12b), where no stress clash is produced, vowel deletion is optional. In (12c), on the other hand, vowel deletion is blocked because it would produce a stress clash, and in (12d,d') it never applies, independently of stress considerations:

(12) a. *galant**e**uomo vs. galantuomo   "gentleman"

      b. port**a**ombrelli vs. portombrelli   "umbrella-stand"

      c. spart**i**acque   vs. *spartacque   "watershed"

      d. turb**o**elica   vs. *turbelica   "turbo-propeller engine"

      d'. uom**o** uccello vs. *uomuccello   "bird-man"

If *ri-* forms a compound, this is clearly not of the lexicalized type. As we saw above in section 2.2, *ri-* never undergoes vowel deletion. Since no stress consideration is relevant for *ri-*, the compound must be of the type (12d,d').

However, differently from *ri-*, no constituent of a compound can ever be separated from the other constituent by any element: cf. *un grande portaombrelli* "a big umbrella-stand" vs. **un porta grande ombrelli*. This property, together with the observation that *ri-* is possible with any verb in Italian and does not undergo the restrictions pointed out by Keyser and Roeper (1992) for English (see section 1 above), leads us to the conclusion that compounding is not the correct analysis for Italian *ri-*.

3. The incorporation analysis

The above discussion shows that *ri-* has a very special status with respect to all other Italian prefixes and to the constituents of Italian compounds. It is phonologically and morphologically independent from what follows and shows a freedom in distribution which is unknown to morphological elements.

A radical way of accounting for the independence of *ri-* is to suggest that *ri-* is an incorporated adverb, attached to the verb in the syntax.

What is *ri-* the incorporated version of? It is tempting to suggest that *ri-* is the incorporated counterpart of the synonymous aspectual adverbs *ancora*, *nuovamente*, *di nuovo* (all meaning "again"):

(13) a. Ha vinto ancora / nuovamente / di nuovo.
          [he] has won again
      b. Ha rivinto.
          [he] has re-won

This proposal is supported by the following observations. First, *ri-* can be repeated, but only twice:[2]

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[2].   Repetitive prefixes are claimed to be iterated in French and Argentina Spanish in Rainer (1986:202). Incidentally, iteration is another property that distinguishes *ri-* from other prefixes, which cannot be repeated. Examples: **disdisfare* "unundo", **dededurre* "dededuce". The restriction also holds true of the quasi-verbal form *ecco*, which allows *ri-* twice, but not more times:

(14) a. ririfare

  re-re-do

  b. *riririfare

It is evident that we cannot put any numeric constraint on the iteration of *ri-* of the type "two but not more", especially in view of the fact that three-times repetitions are possible in the language to convey a meaning of exaggeration or emphasis: cf. *Sei cattivo cattivo cattivo* "you are bad, bad, bad" = "you are extremely bad".[3] Nor does there seem to be any semantic reason to exclude (14b). If a process can be iterated twice, why not three or more times?

The syntactic approach to repetitive *ri-* provides an answer to the restriction exemplified in (14). As noted in Cinque (1999:Section 4.13), repetitive adverbs can occur twice in one and the same sentence, as shown in (15):

(i) a. Eccolo ancora / nuovamente / di nuovo.

  "here he is again"

  b. Rieccolo.

  c. Ririeccolo.

  d. *Riririeccolo.

[3] Rainer (1986:206f) observes that this kind of iteration, which is also possible with adverbs in English and with some prefixes in languages like German, always implies an intensification of the meaning of the adverb or the affix:

(i) a. very very very old = extremely old

  b. urururalt

  very very very old = extremely old

The interpretation of (i) is thus different from that of other prefixed words such as English *meta-meta-language* or German *vorvorgestern*, where the meaning is compositional: "a language used to talk about a language used to talk about a language", and "the day before the day before today". To get a compositional meaning, prefixes are usually iterated only twice.

(15) Gianni ha *di nuovo* battuto alla porta *di nuovo*.
        Gianni has again knocked on the door again

The leftmost *di nuovo* quantifies over the event of knocking on the door, while the rightmost quantifies over the act itself of knocking. Cinque concludes that repetitive adverbs occupy two different specifier positions in the clause structure, with different scope properties.

   If *ri-* is the incorporated version of repetitive adverbs, it follows that there can be only two occurrences of *ri-* in one and the same sentence, and not three or four.

   We also expect that *ri-* can cooccur with *di nuovo*, as in (16). In (16a), *ri-* modifies the lexical predicate, in (16b) it quantifies over the event:[4]

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4. The sentence in (16b) implies that the verb is higher than the starting point of *ri-*. This word order, not displayed in (15), is in fact possible, and is due to further movement of the past participle to the left:

(i)   Gianni ha battuto *di nuovo* alla porta.
        Gianni has knocked again on the door

The sentence in (i) is also compatible with an analysis in which *di nuovo* occurs in the lowest aspectual position and quantifies over the predicate. It can in fact co-occur with the highest, pre-participle *di nuovo* that quantifies over the event. (ii) is thus synonymous with (15):

(ii)   Gianni ha *di nuovo* battuto *di nuovo* alla porta.

Notice that more than two occurrences of items meaning "again" are sometimes possible:

(iii) a.   Gianni ha di nuovo riribattuto alla porta.
       b.   Gianni ha riribattuto alla porta di nuovo.

These cases are problematic only apparently. In (iii), *ri-* seems to convey the meaning of intensification displayed by the examples discussed in note 3. This also seems to be the case in the following sentence containing *ri-* on a modal verb:

(iv)   Gianni rideve di nuovo parlare a Maria.
        Gianni re-must again speak to Maria

(16)   a. Gianni ha di nuovo ribattuto alla porta.

         b. Gianni ha ribattuto alla porta di nuovo.

Notice that in the absence of an aspectual adverb, a verb modified by *ri-* is ambiguous between the two readings:

(17)   Gianni ha ribattuto alla porta.

         a. Gianni ha di nuovo battuto alla porta.

         b. Gianni ha battuto alla porta di nuovo.

   Another argument for the incorporation analysis comes from the observation that *ri-* is always the outmost prefix in a series of prefixes. Cf. the contrast between *ridisfare* re-un-do "undo again" and **disrifare*.

   The incorporation analysis is supported by comparative observations. In some languages, the repetitive prefix has the same lexical form as the free adverb with the same meaning. This is the case in e.g. German (and Greek, as pointed out by Antonietta Bisetto, p.c.):

(18)   a. **wieder**einstellen = to re-engage, to re-employ

         b. Er singt morgen schon **wieder**.

            he sings tomorrow already again

         c. Er ist schon **wieder** auf den Berg gestiegen.

            he is already again on the mountain climbed

            "he has already climbed the mountain again"

It is tempting to consider *wieder* in (18a) as the incorporated version of *wieder* in (18b) and (18c). Notice that in (18c), *wieder* is clearly an adverb and not a separated prefix, since it precedes the complement of the verb. Prefixes follow complements: *Er hat Maria **an**gerufen* "he has Maria pref-called" / **Er hat **an** Maria gerufen* "he has pref Maria called".

3.1.   Ri- does not realize a functional head

   In many languages, repetitive morphemes realize the functional aspectual head(s) in whose specifier(s) repetitive adverbs are found (cf. Cinque 1999). This analysis cannot be extended to Italian *ri-*. If *ri-* were to realize a functional head, we would expect *ri-* to

appear as a suffix on the verb, on a par with the other inflectional material in a language like Italian. Furthermore, given the Mirror Principle of Baker (1988) and the clause structure proposed in Cinque (1999), where repetitive functional heads are rather low, we would expect *ri-* to occur very close to the stem morpheme. This is in fact the position where, as Cinque (1999:Appendix 2) reports, the repetitive head appears in some Austronesian languages (e.g. Big Nambas and Kiribatese).

In Italian, *ri-* is not a suffix, nor is it close to the stem morpheme. I conclude that Italian *ri-* is not a functional head. As suggested above, Italian *ri-* is an incorporated adverb.

3.2. *Language variation*

Repetitive morphemes can be analysed differently in different languages. They can be analysed as members of compounds, as in English (see Keyser and Roeper 1992), as incorporated adverbs, as in Italian in the present analysis, or as functional heads, as in some Austronesian languages.

The proposed analysis supports the view that language variation is to be attributed to the lexical properties of single lexical items. In the case under discussion, English, Italian and the Austronesian languages differ in the way the repetitive morpheme is lexically stored, from which all the superficial differences follow.

Repetitive morphemes can also be absent from the lexicon of a language. Italian differs minimally from many Italian dialects, which do not display the repetitive prefix *ri-*, but use an aspectual adverb (e.g. Piedmontese *t'lu dik* **turna** "[I] say it to you again") or an aspectual verb instead (e.g. Venetian **torno a** *magnar* "[I] eat again") (see Rohlfs 1969:360).

4. The similarities with clitic pronouns

The properties of *ri-* mentioned in section 2 are shared by other elements that appear adjacent to a verb without forming a phonological word with it: clitic pronouns.

Clitic pronouns do not trigger s-sonorization, cf. *lo [s]o / *lo [z]o,* [I] it know "I know it".

Clitic pronouns do not generally undergo deletion of the final vowel in front of verbs with initial vowel, cf. *lo amo* [I] him love "I love him".[5]

Clitic pronouns can undergo climbing, i.e., they can appear on a modal verb, but their interpretation depends on the embedded lexical verb, as in (19):

(19) Lo posso fare domani.   (= Posso farlo domani)
      [I] it can do tomorrow
      "I can do it tomorrow"

Differently from *ri-*, we can only find one instance of a clitic pronoun in one and the same sentence. This difference is independently explained in theta-theoretic terms: clitic pronouns are verbal arguments, and the source for verbal arguments is unique.[6]

Both *ri-* and clitic pronouns are moved onto the verb in the syntax. Do the similarities with clitic pronouns mean that incorporation is the same as cliticization?

5. Incorporation vs cliticization: *ri-* vs clitic pronouns

A closer look at the distribution of *ri-* reveals that there are important differences between *ri-* and clitic pronouns. The distribution of Italian *ri-* supports the current hypothesis that incorporation and cliticization are different syntactic processes.

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[5].   Deletion of the vowel of the clitic pronoun, as in *l'amo* [I] him love "I love him", is archaic.

[6].   Double occurrence of one and the same clitic is marginally found in clitic-climbing contexts, cf. ?*Lo posso farlo domani* [I] it can do-it tomorrow "I can do it tomorrow" (see Kayne 1989:256f, note 37), and can be explained in terms of the lexicalization of the trace left by the clitic pronoun on the embedded lexical verb. The same process is not possible with the prefix *ri-*. When it appears twice, on the modal verb and on the lexical verb, it necessarily conveys the "again" meaning twice:

(i)   Ridevo richiamare Maria.
       [I] re-must re-call Maria

In other words, the sentence necessarily means that "I have again to call Maria again". This can be seen as a further difference between incorporation and cliticization.

Although incorporation and cliticization are both instances of head-to-head movement, the way in which head movement takes place differs in the two cases. Incorporation takes place out of the base position of the incorporated element, whereas cliticization takes place from an already derived position. In other words, incorporation is a one-step derivation, whereas clitic movement is a two-step derivation, the first step being an instance of XP-movement which is shared by weak elements, the second being a true instance of head-movement (cf. Sportiche 1989, Kayne 1994, Belletti 1999, Cardinaletti and Starke 1999).

The proposal here is that *ri-* is incorporated, not cliticized. The incorporation analysis explains why *ri-* is always closer to the finite verb than clitic pronouns, i.e., the incorporated adverb intervenes between the verb and the clitic pronoun(s):[7]

(20) a. Lo rifa / *Ri lo fa.
     [he] it re-does
     "he does it again"
   b. Lo ripuò fare / *Ri lo può fare.
     [he] it re-can do
     "he can do it again"

With infinitival and imperative verbs, *ri-* is always proclitic whereas clitic pronouns appear in enclitic position:

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[7]. This happens in other languages, such as Greek, which has both clitic pronouns and incorporated adverbs. See (i), from Rivero (1992):

(i)   To sigo-évrasa.
     [I] it slowly-boiled
     "I boiled it slowly"

A different word order is however found with the locative clitic *ci* "there" occurring in existential constructions with the verb "be" in some central Italian dialects. The example is taken from the dialect spoken in Arcevia as reported in (Rohlfs 1969:360) (also see note 12):

(ii)   Chi ar c'era?
     who again there was?
     "who was there again?"

(21) a. Può rifarlo.
         [he] can re-do-it
         "he can do it again"
      b. Rifallo!
         re-do it!
         "do it again"

If the verb-enclitic order derives from the movement of the verb across the clitic pronoun (cf. Kayne 1991), (21) shows that *ri-* is moved together with the verb across the clitic pronoun. Once again, this is only possible if *ri-* attaches to the verb before verb movement across the clitic pronoun takes place, whereas clitic movement is not dependent on the verb until the head-movement step takes place.

6. The analysis of *ri*-separation

The main consequence of the incorporation analysis, combined with the hypothesis that excorporation is not a possibility of UG, is that *ri*-separation (see section 2.3) is not *ri*-climbing. In other words, *ri-* stops on the first available host verb and does not climb from a derived position to another. *Ri-* and pronominal clitics thus differ in this respect in spite of the apparent similarity.

Remember that there are two potential sources for *ri-*, namely the two aspectual positions individuated by Cinque (1999) for the full counterparts of *ri-*. This suggests that separated *ri-*, as in (7), repeated here as (22),

(22) a. È ristato fatto ieri.   (= È stato rifatto ieri)
      b. Ripossiamo prendere il vaporino.   (= Possiamo riprendere il vaporino)

is incorporated from the highest of the two positions available to repetitive adverbs, and no climbing has taken place. The passive auxiliary *stato* and the modal verb *possiamo* can appear before the (highest) repetitive adverb, as in (23), which thus provides the configuration for incorporation:

(23) a. È stato di nuovo messo tutto bene sugli scaffali.

[it] has been again put all well on-the shelves

"everything has again been put well on the shelves"

b. Possiamo di nuovo prendere il vaporino.

[we] can again take the boat

Notice that, contrary to (17), the sentences in (7)/(22) are not ambiguous. The repetitive prefix cannot modify the embedded lexical verb. To get this reading, the prefix can only incorporate to the lexical verb itself (as in e.g. (16a)).

Another consequence of the incorporation analysis is the following contrast between lexical and modal verbs. Although *ri-* can appear on a modal verb in what we have called *ri*-separation, it cannot appear twice on a modal verb, contrary to what happens with lexical verbs (see (14a)):

(24) a. Lo ha ririfatto.

[he] it has re-re-done

"he has re-re-done it"

b. *Lo riripuò fare.

[he] it re-re-can do

In (24a), as proposed above, the two instances of *ri-* attached to the lexical verb are incorporated from the two aspectual positions for repetitive adverbs, the lower and the highest one. In (24b), one of the two instances of *ri-*, the lowest one, violates the locality conditions on movement. It should incorporate on the lexical verb (cf. *Lo ripuò rifare*). It however cannot move across the lexical verb, hence the ungrammaticality of the sentence.

The ungrammaticality of (24b) thus confirms that *ri*-separation cannot be *ri*-climbing. If it were, nothing would block the climbing of two instances of *ri-*. Cf. the climbing of more than one clitic pronoun in clitic clusters: *Maria può dartelo*, *Maria te lo può dare* "Maria can give it to you".

Ri- contrasts with clitic pronouns in other climbing contexts. In what follows, we discuss long-distance climbing and restructuring verbs.

6.1. Long-distance climbing

Whereas there are some marginal instances of long-distance clitic climbing, as in (25a) (cf. Kayne 1991), *ri-* cannot be separated long-distance, (25b):[8]

(25) a. Non ti so cosa dire.
        [I] not to-you know what [to] say
        "I don"t know what to say to you"
      b. *Non riso cosa dire a Maria   (cf. Non so cosa ridire a Maria)
        [I] not re-know what [to] say to Maria

The clitic pronoun moves across the *wh-* word as a maximal category. This is confirmed by the fact that it triggers past-participle agreement on the highest verb: *Li ha saputi leggere* (cf. Roberts 1997).[9] On the other hand, the adverb *ri-* has no other choice than

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[8]. In the presence of *ri-*, long-distance climbing of a clitic pronoun is ungrammatical both when *ri-* is moved to the matrix verb and when *ri-* is incorporated on the embedded verb:

(i)   *Non ti riso cosa dire.
       [I] not to-you re-know what [to] say

(ii)   ?*Non ti so cosa ridire.
       [I] not to-you know what [to] re-say, again

[9]. This is not a sufficient condition on clitic climbing. Clitic climbing is impossible out of embedded clauses, e.g. tensed clauses as in (i):

(i)   *Lo spera che farò.   (cf. Spera che lo farò)
       [he] it hopes that [I] will-do   [he] hopes that [I] it will-do
       "he hopes that I will do it"

This is also true of *ri-* separation:

(ii)   *Rispera che farò lo stesso.   (cf. Spera che rifarò lo stesso)
       [he] re-hopes that [I] will-do the same   [he] hopes that [I] re-will-do the same
       "he hopes that I will again do the same"

head movement, which is blocked in (25b) by the complementizer head of the embedded sentence.

6.2. *Ri- with restructuring verbs*

Ri- and clitic pronouns also behave differently with restructuring predicates such as perception, causative and motion verbs. When *ri-* appears on these verbs, the preferred reading is the one where *ri-* modifies them rather than the lexical verb: see the a. interpretations in (26), (27), (28) and (29), which are much better than the b. interpretations. This ambiguity, and the consequent preference for the matrix reading, never arises in the case of cliticization, since the clitic pronoun is an argument of the embedded lexical verb, as shown in (30):

(26)   L'ho rivisto leggere quel libro.
       [I] him have re-seen cross the street
    a. = L'ho di nuovo visto leggere quel libro.
    b. ??= L'ho visto leggere di nuovo quel libro.
       (cf. L'ho visto rileggere quel libro)

(27)   Gliel'ho rifatto leggere.
       [I] to him it have re-made see
       "I have again made him see it"
    a. = Gliel'ho di nuovo fatto leggere.
    b. ??= Gliel'ho fatto leggere di nuovo.
       (cf. Gliel'ho fatto rileggere)

(28)   È riandato a prendere il pane.
       [he] is re-gone to get the bread
    a. = È di nuovo andato a prendere il pane.
    b. ??= È andato a prendere di nuovo il pane.
       (cf. È andato a riprendere il pane)

(29)   Ho ricominciato a leggere quel libro.
       [I] have re-started to read hat book
    a. = Ho di nuovo cominciato a leggere quel libro.

b. ??= Ho cominciato a leggere di nuovo quel libro.
   (cf. Ho cominciato a rileggere quel libro)

(30) a. L'ho visto leggere quel libro.
      b. Gliel'ho fatto leggere.
      c. Lo è andato a prendere.
      d. Lo ha cominciato a leggere.

This follows if restructuring verbs build a complex event together with the lexical verb, which *di nuovo* quantifies over.[10] In (26), (27), (28) and (29), *ri-* incorporates from the highest of the two repetitive aspectual positions.[11] Incorporation from the lowest one is blocked by the lexical verb itself.

7. Incorporation vs cliticization: *ri-* vs clitic adverbs

Further support for the distinction between incorporation and cliticization comes from the comparison between *ri-* and clitic adverbs, such as the reduced forms of manner adverbs (*ben* "well" and *mal* "badly").

In Italian, the reduced forms of these adverbs can appear in the word order in (31), where they precede the past participle. In this order, they are adjoined to the verb. Evidence for this comes from the observation, attributed in Cinque (1999:211, note 70) to Richard Kayne, that the adverb precedes the verb in participial clauses, as in (31c). In this type of clauses, the past participle is known to move to C (cf. Belletti 1990:Ch.2). The order "adverb past-participle" thus shows that the verb has moved to C together with the adverb:

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[10]. For the different types of restructuring verbs, see Cinque 2001, in press, and Cardinaletti and Shlonsky 2002; for motion verbs, see Cardinaletti and Giusti 2001.

[11]. Notice also that in the case of aspectual and motion verbs, the incorporation of *ri-* from the specifier position modifying the embedded lexical verb is blocked by the prepositional head *a*. The XP-movement of clitic pronouns is never blocked by the presence of these prepositional heads.

(31) a. L'hai ben sistemata?
          it-have [you] well placed?
          "do you have placed it well?"
      b. La valigia è stata ben sistemata.
          the suitcase has been well placed
      c. Una volta ben sistemato anche te, tuo padre si rilasserà.
          once well placed you too, your father will relax

There are a number of distributional asymmetries between *ben* / *mal* on the one hand and *ri-* on the other.

First, *ben*, like *ri-*, can also appear before the passive past-participle auxiliary, but differently from *ri-* cannot climb to the modal verb:

(32) a. ?La valigia è ben stata sistemata.
          the suit-case has well been placed
      b. *Ben devi sistemare la valigia.
          [you] well must place the suit-case

Assuming, as we did above, that excorporation is not a possibility provided by UG, the location of *ben* in (32a) cannot be due to direct incorporation from the base position because this would lead to a violation of locality conditions. *Ben* must move to the verb *stata* from a position closer to it and therefore higher than *sistemata*. Such a position could be identified with the specifier occupied by the weak version of the adverb *bene* (cf. Cardinaletti and Starke 1999:Section 9.1.4). This implies that *ben* in (32a) is a clitic adverb, which moves onto the verb *stata* from the derived position of the weak counterpart *bene*, a specifier which can be higher than the head reached by the passive past-participle of the lexical verb (cf. Cinque 1999:Section 4.24, from which (33) is taken):

(33) Questo genere di spettacoli è sempre stato bene accolto da tutti.
      this kind of shows has always been well received by everybody

The ungrammaticality of (32b) follows from the fact that in Italian, infinitival verbs move to a position which always precedes the position of the weak adverbs *bene* and *male*: cf. the contrast in (34):

(34) a. Devi sistemare bene la valigia.
           [you] must place well the suit-case
       b. *Devi bene sistemare la valigia.

The infinitival verb represents the only host for the cliticized adverb: cf. *Devi ben sistemare la valigia.* The adverb cannot cliticize to higher verbs such as modals, hence the ungrammaticality of (32b).

   Furthermore, contrary to French (35), Italian does not display long movement of weak adverbs, as shown in (36) (see Cinque 2002 for a recent discussion). This explains why (36c) cannot be the source of (32b):

(35) a. Il a bien dû se comporter.   (Kayne 1975)
           he has well must himself behave
           "He must have behaved well"
       b. J'ai mal dû raccrocher.   (Kayne 1991:655,fn.23)
           I have badly must hang-up
           "I must have hung (the phone) up badly / wrongly"

(36) a. *Ha ben dovuto comportarsi.
           [he] has well must behave-himself
       b. *Ho mal dovuto riattaccare.
           [I] have badly must hang-up
       c. *Ha ben dovuto sistemare la valigia.
           [he] has well must place the suit-case

   To summarize: *ben / mal* are cliticized adverbs, the cliticized counterpart of the weak adverbs *bene* and *male*, whereas *ri-* is an incorporated adverb, moved directly from the base position.

8. A restriction

   Ri- cannot appear on "have" and "be":[12]

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[12].   In the Italian dialects in which the lexical verb *have* requires the clitic *ci* (*C'ha l'influenza*, "he has a

(37) a. ?*Riho chiamato la proprietaria.   (cf. Ho richiamato la proprietaria)
        [I] re-have called the owner
     b. ?*Riè dovuto partire.   (cf. È ridovuto partire)
        [he] re-have had to leave

(38) a. ?*Riha l'influenza.   (cf. Ha di nuovo l'influenza)
        [he] re-has a flu
     b. ?*Riera malato.   (cf. Era di nuovo malato)
        [he] re-is sick
     c. ?*Riè l'avvocato di Gianni.   (cf. È di nuovo l'avvocato di Gianni)
        [he] re-is the lawyer of Gianni

The tentative proposal to explain these facts is that *ri-* cannot incorporate to auxiliaries.

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flu"), the respective order of *ci* and *ri-* is fixed, as in (i). The opposite order in (ii) is ungrammatical:

(i)   Ric'ha l'influenza / Ri c'ha l'influenza.

(ii)   *Ci riha l'influenza.

This is explained if *ci* is a predicate (cf. Moro 1997). *Ci* is incorporated to the verb before the aspectual adverb *ri*. Difficulties however arise as to how (i) should be spelled. Neither of the possibilities in (i) is satisfactory.

    The same paradigm is found with the idiomatic form *c'entra* "to have to do with", and the same problem in the graphic transcription arises (see (iiib)) (see Renzi 2000). Only (iii) is possible, while (iv) is ungrammatical, or better, loses the idiomatic meaning and equals "This enters there again", or "This falls within it":

(iii) a.   Questo c'entra eccome.
          "that's got indeed to do with it"
     b.   Questo ric'entra eccome. / Questo ri c'entra eccome. / Questo ricentra eccome.
          "that's got indeed to do with it again"

(iv)   *Questo ci rientra.

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9. Conclusions

In this paper, the Italian repetitive prefix *ri-* has been analysed as an incorporated adverb. Purely morphological analyses in terms of word-formation rules have been shown to be inadequate. *Ri-* also displays a number of distributional properties which distinguish it from cliticized elements, both nominal (clitic pronouns) and adverbial (clitic adverbs). The different distribution follows from the different derivational history of incorporation and cliticization.

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Issues in Adverbial Syntax*

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1. The functional nature of adverbs

The question how adverbs (and adverbials, more generally)[1] integrate into the structure of the clause has been, and continues to be, a moot question.

In work of the early '90's, later merged into Cinque (1999), I suggested that adverbs should not be seen as accessory appendices to clause structure (as the traditional notion of "adjunct" would suggest), but rather as an integral part of it, despite their general optionality. Much as inflectional morphology, functional particles, and auxiliaries were at the time considered to be the overt manifestation, in head format, of the functional portion of the clause, AdvPs, I argued, could be seen as the overt manifestation of the same functional distinctions in specifier format. The main evidence for their belonging to the functional make-up of the clause was the observation that cross-linguistically the number and type of the different classes of AdvPs and their relative order appears to

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[1].   As is customary, I distinguish here between 'adverbials' (XPs of any syntactic category, PP, DP, AP, QP, CP,…, functioning as clausal modifiers, and subject to partially different licensing conditions) and 'adverbs', or rather, AdvPs (a *syntactic* category with specific adverbial function).

exactly match the number, type and relative order of functional heads morphemes (cf. Cinque 1999, chapters 2,3 and 4).[2]

Recently a number of works have appeared which argue for a return to the traditional "adjunct" approach, and against what we might call the "functional specifier" approach.[3] These works notwithstanding, there are, I think, reasons to retain the "functional specifier" approach. Before considering such reasons, let me mention two additional clues in favor of the functional nature of adverbs. They come from the study of sign languages and language acquisition.

In sign languages, lexical information conveyed by verbs and noun phrases is characteristically expressed manually, while functional information (e.g., negation, agreement, aspect, etc.) characteristically has both a manual and a non-manual marking (sometimes just a non-manual marking). See Neidle, Kegl, MacLaughlin, Bahan and Lee (2000, chapter 3). Interestingly, adverbs in both American Sign Language (Neidle, Kegl, MacLaughlin, Bahan and Lee 2000, 42f; Neidle and MacLaughlin 2002, section 3.3.3) and Italian Sign Language (Zucchi 2002) typically have both a manual and a non-manual marking (with some adverbs, for some speakers, having just a non-manual marking). The strong similarity between them and agreement, aspect and negation in the way they are expressed (manually *and* non-manually, or just non-manually) again suggests that they should be assimilated to the functional rather than the lexical portion of the clause.

Work on first language acquisition of functional elements and of adverbs suggests a similar conclusion. Just as the acquisition (or maturation) of aspectual distinctions precedes that of temporal ones (Antinucci and Miller 1976; Weist 1986; Schlyter 1990), so are lower aspectual adverbs apparently acquired earlier than temporal (and still higher) ones. In a longitudinal study of a group of bilingual Swedish/French children, Schlyter (2002) reports that "[i]n the initial stages (MLU around 2) of the children

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[2] So, for example, just as habitual aspect morphemes are higher than completive aspect morphemes, habitual adverbs are higher than completive adverbs (*John usually completely ignores his guests* vs. **John completely usually ignores his guests*).

[3] See, among others, Shaer (1998), Costa (2000, and this issue), Haider (2000, and this issue), Rosengren (2000), Williams (2000), Maienborn (2001), Ernst (2002, and this issue), Svenonius (2002). Variants of the "functional specifier" approach are advanced in Laenzingler (1993, 1996, 1998, 2000), and Alexiadou (1994, 1997), among others (see Cinque 1999, chapter 2, fn.1, and section 3.2 below, for certain differences).

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(bilingual L1 acquirers), we do not find any evidence for adverbs other than the most low-level ones. In the next stage (MLU around 3), adverbs specifying intermediate categories – aspect of different kinds – appear, and later (MLU around 4), adverbs specifying still higher F(unctional) C(ategorie)s, such as Tense, appear. The adverbs appear simultaneously with the corresponding evidence from verb morphology for the same categories." (section 7). Whether or not such findings can be construed as evidence for a genetically determined order of maturation of functional categories (Ouhalla 1991, cited in Clahsen, Eisenbeiss and Vainikka 1994,87), hence "as evidence for some kind of Non-Continuity or Weak Continuity Hypothesis and, since the FCs seem to appear gradually, for a Structure Building Model" (Schlyter, ibidem), they do show that the emergence of adverbs in first language acquisition is closely tied to that of the functional heads they correspond to; another indication of the intrinsic functional character of adverbs.[4]

2. Semantic scope and the "adjunct" approach

As already mentioned, a number of works have recently appeared which purport to show the superiority of the traditional adjunct analysis of adverbs (and adverbials) over the "functional specifier" analysis. Their basic claim is that, if the relative order among adverbs is attributed to independent semantic scope principles (belonging to the conceptual-intentional interface), their syntax can be drastically simplified, by essentially allowing, as in the traditional approach, free adjunction to any category (cf., e.g., Ernst 2002,13).

Appealing though it is in its simplicity (actually tempered in analyses like Ernst's by the necessary addition of lexical specifications for individual adjuncts and of principles

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[4]. In Cinque (1999,213fn79) I also reported that in some languages (in Eskimo-Aleut languages, in the Sino-Tibetan languages Boro and Garo, and in the Uto-Aztecan language Chemehuevi) adverbs are for the most part expressed not as independent words but as bound morphemes, much as other functional morphemes are; another indication, I take, of their functional character. In this connection, it is also significant that virtually every adverb class finds morphological expression as a suffix in some language (see Cinque 1999 for several such examples, and Nilsen and Vinokurova 2000 for an interesting proposal that unifies adverbs, affixes, and auxiliaries as verb raisers).

of Directionality and Weight -cf. Ernst 2002, 97 and 441), this approach falls short, I think, of accounting for certain crucial properties of adverbial syntax.[5]

As hinted at in Cinque (1999,224fn10 and related text), a purely semantic scope principle of the conceptual-intentional interface provides by itself no understanding of why we find in the languages of the world the specific classes of adverbs (and corresponding functional heads) that we find, rather than some different assortment. Surely there are many more semantic notions in our conceptual-intentional world than those that receive grammatical expression (are grammaticalized) in the languages of the world. So, for example, one finds evidential adverbs and evidential mood morphology (expressing the speaker's source of information for his/her assertion), but as far as I know no language grammaticalizes, through verbal morphology, particles, or adverbs, the speaker's sentimental attitude toward his/her assertion (whether what he/she says is said with love or with hate: e.g. *John is lovingly a coward* = I am saying it with love that John is a coward), nor many other imaginable notions. Clearly, it is an 'accident' of evolution if UG has come to look the way it looks, with certain functional distinctions (and related adverb classes) rather than others. This must be encoded in the functional portion of the UG lexicon, and it seems reasonable to require that there be a formal means to relate the functional head distinctions to the corresponding AdvP distinctions, irrespective of the possibility that the relative scope relations among such UG entities ultimately reflect a more general cognitive order of scope among them.

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[5]. It also begs the question in important ways. In the absence of a complete understanding of the semantics of each adverb class, from which its scope with respect to the other adverb classes can be made to follow, a claim such as Ernst's (2002,130-33) that, *as a consequence of their lexicosemantic properties*, speaker- and subject-oriented adverbs have a rigid ordering while quantificational and aspectual adverbs can have a variable ordering (with meaning differences), and participant PPs have a free ordering (with no meaning differences), essentially restates the question rather than explaining it. Some of these generalizations also appear to be factually wrong. See footnotes 13 and 21 below, and Cinque (2002a). As noted in Cinque (1999, section 6.3) (cf. also Nilsen, this issue), an approach which derives the order of adverbs from the different scope requirements of the lexical items involved must address the question why a sentence like *È probabile che sia per me una sfortuna che Gianni è stato licenziato* 'It's probable that it is unfortunate for me that G. has been fired' is fine (pace Pittner 2000,204), while **Probabilmente Gianni è sfortunatamente stato licenziato* 'Probably G has unfortunately been fired' is not. Richard Kayne (p.c.) points out that for him *It's probable that Gianni has unfortunately been fired* is also unacceptable.

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But there is a more fundamental property that a purely semantic scope approach falls short of accounting for. Although it is certainly reasonable to take the relative order between two adverbs to be related to their relative semantic scope (hardly anyone refutes this possibility in principle), the relative order between a single adverb and the verb, or a single adverb and one of the arguments of the clause, do not seem to lend themselves to a similarly simple account in terms of semantic scope.

Consider briefly the first case. As discussed in Cinque (1999, chapter 2 and Appendix 1), lexical verbs in Romance appear to have a different distribution vis-à-vis the adverbs with which they occur, though invariably falling under their scope. This depends on their form (whether they are finite, infinitival, participial, etc.), and on the type of language considered. For example, French active past participles can precede fewer adverbs than French infinitival (and finite) verbs;[6] and fewer adverbs than Italian active past participles.[7] These generalizations, and many others similar to these, are all implicational in nature. This means that if a certain verbal form, in a certain language, can precede Adv_i, then it will necessarily be able to precede all Advs which, when cooccurring with Adv_i, follow Adv_i.

Such verb/adverb interactions cannot be directly, and naturally, expressed in terms of the relative semantic scope of adverbs, plainly because they involve each time a *single* adverb (and the verb). The relation, which is indirect, must be mediated by structure, it seems.

If adverbs are arranged hierarchically in a syntactic structure containing verb and argument positions, and if verbs raise to different verbal positions interspersed among the adverbs depending on the particular type of language and the particular verbal form involved, then such implications are easily and naturally expressed, as shown very schematically in (1):

(1) | Adv_1 Adv_2 Adv_3 Adv_4 Adv_5 $Adv_6$$Adv_7$ | $Adv_8$$Adv_9$ $Adv_{10}$$Adv_{11}$ | Adv_{12} Adv_{13}... [$_{VP}$V

French	**Italian**	**French**	**French**
finite V	active past part.	Infinitival V	active past part.

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[6] .   Cf. Pollock (1989,413); Cinque (1999,143); Kampers-Manhe (2001,40).

[7].   Cf. Cinque (1999,146).

The same implicational generalizations would also fail to be naturally captured, it seems, in a system which postulated just two projections, say TP and VP, and free multiple adjunction of adverbs to one or the other (with obligatory raising of V to the higher head to account for the necessary postverbal positioning of at least some classes of adverbs: *bene* 'well', *presto* 'early' in Italian, *tôt* 'early' in French, etc.).[8] Eric Groat (p.c.,1998), and Svenonius (2002), correctly pointed out that a system with just two adjunction sites would be able to accomodate the same basic facts as Cinque (1999) without postulating all the functional projections (and their empty heads) needed to host the adverbs, which in that system fill a separate (and unique) specifier; but, I add, it would do so at the cost of missing a natural account for the implicational generalizations just mentioned. Why, for example, should the number of AdvPs which can be adjoined to TP (with the effect of preceding the V) be dependent on the form of the V which raises to T? In French, for instance, most of the adverbs would be able to adjoin to TP if T contains a participial V, whereas fewer would be able to adjoin to TP if T contains a finite V (and the dialectal variation in this regard is quite formidable).[9]

In Cinque (1999, chapter 2) I proposed that the above mentioned implications could be captured by assuming V to raise to (progressively higher) head positions interspersed

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[8]. To account for the attested variation in Romance, in part documented in Cinque (1999, chapter 1, and Appendix 1), adding a third projection would not do, nor adding a fourth (and so on). Many more would be needed; essentially one for each class of adverbs.

[9]. The same criticism applies to Bok-Bennema's (2001) analysis. According to this analysis, the verb targets one and the same head position (F_x), and the variable position of the verb with respect to different adverb classes is accounted for through a certain freedom in the merger of F_x with respect to the XPs containing the different adverbs (a merger sensitive to the form of the verb): either before or after a certain XP. But, once again, in such a system, the implicational generalizations pointed out above could not be captured naturally, it seems. Why should F_x, say in Spanish, be able to be merged after the XP containing a manner adverb, before or after the XP containing an aspectual adverb, but necessarily before the XP containing an epistemic adverb, rather than vice versa? And how could this be related to the scope of these adverbs among each other? She also assumes F_x to be the same for French infinitivals and active past participles, but see the reference in fn.7 for evidence that these verbal forms target in French different positions among the hierarchy of adverbs.

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among the adverbs.[10] Comparable remarks hold for the ordering restrictions between adverbs and arguments (and their interpretation). Once again the putative semantic principle governing the scope relation between two adverbs would have nothing to say about the order of the subject, or the direct object, with respect to each single adverb in a language, or the different orders among them found in different languages. For discussion, see Cinque (1999, chapter 5)

Frey (2000,113,132) makes a similar point. In German, existentially interpreted wh-phrases (which resist scrambling) show the existence of a rigid ordering between temporal adjuncts and the subject ((2)a-b), and between the subject and place adjuncts ((3)a-b):

(2)   a.   daß **wann wer** das Zimmer aufräumen wird…
           that sometimes someone the room tidy up will…
      b.   *daß **wer wann** das Zimmer aufräumen wird…

(3)   a.   weil **wer wo** das Buch verloren hat…
           because someone somewhere the book lost has…
      b.   *weil **wo wer** das Buch verloren hat…

Again it seems that a semantic scope principle for adjuncts falls short of accounting for such restrictions, which can instead be naturally captured in a hierarchical structure where there are dedicated positions for arguments interspersed among the positions occupied by the adverbs.[11]

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[10].   Concerning Bobaljik's (1999) claim that adverbs, DP positions, and verb positions should be seen as belonging to separate tiers, see the comments in fn.43 below. If V raising (or remnant VP raising) is a PF phenomenon, as Chomsky (1995,368) suggests, due to its apparent lack of influence on meaning, then such implications would have to be captured in some other way. But there is some evidence that V (or remnant VP) movement has semantic consequences, thus qualifying as a Narrow Syntax phenomenon. Cf. Cinque (1999,102f; 184fn.8). Also see Zwart (1999).

[11].   This idea, for example, directly leads one to expect *wann > wo*, from *wann > wer* and *wer > wo*, which is correct:

(i)   a.   Hans sollte wann wo darüber vortragen.   (Frey 2000,113)
           H. should sometimes somewhere about that talk
           'H. should talk about it somewhere sometimes'

The picture that is emerging from a rich line of "cartographic" research is that the structure of the clause (as well as that of the other major phrases) may be highly articulated and, perhaps more importantly, rigidly fixed across languages.[12] In such structure, particular "zones" begin to be recognized: for example, a higher CP zone, which is currently being intensely investigated (see Rizzi 1997, 2001, 2002, forthcoming, and references cited there; Beninca' 1996, 2001; Poletto 2000; Beninca' and Poletto 2002; Munaro 2002). Here, distinctions in clause typing and informational structure are represented, among others. Immediately below is a zone where evaluative, evidential, and epistemic operators are present which imply the existence of a proposition represented in a still lower zone comprising the tenses, and various aspect, modal, and voice phrases. The latter dominate the nucleus of the event represented by the lexical verb, its arguments and additional participant adjuncts (Cinque 1999,2002a).[13] Even if such organization of the clause may ultimately prove to reflect

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b.   *Hans sollte wo wann darüber vortragen.

[12].   See Cinque (2002b), Belletti (forthcoming), Rizzi (forthcoming).

[13].   Although bearing some resemblance to this model in the recognition of ordered zones whose scope relations may ultimately find a semantic correlate, Ernst's (2002, sections 2.2.3, 3.2) Fact-Event-Object (FEO) partition of the clause differs in being coarser in the distinctions it makes (Speech-Act > Fact > Proposition > Event > Specified event). This means that certain rigid ordering among adverbs belonging to one and the same type (say, those which select a fact, like evaluative and evidential adverbs) are underdetermined , when not misrepresented. So, for example, if evaluative adverbs "must combine with a fact as their sisters, and they yield a fact" ($[_{FACT}$ ADV $[_{FACT}$]]) (p.100), and if evidential adverbs "take facts to form (stative) events" ($[_{STATE}$ ADV $[_{FACT}$]]) (p.104), then one should expect the possibility of an evidential adverb preceding and taking scope over an evaluative adverb (contrary to fact - V. Jackendoff 1972,88ff; Siewierska 1992,418, cited in Cinque 1999,174fn37):

(i)   a.   *Obviously John unfortunately finished all his money.

      b.   Unfortunately John obviously finished all his money.

Also, due to its loose relation to syntactic structure, the FEO model cannot explain why adverbs belonging to the same type distribute differently with respect to other elements of the clause. Ernst (this issue), for example, assumes the lowest (specified event) zone to stretch (in English) from the position (adjoined to PredP) preceding the lexical verb rightward (see his discussion of *deftly*). Yet, an adverb like

the semantic necessity for certain notions to be in the scope of other notions, it does not follow that Narrow Syntax should be amorphous. Similarly, the fact that identical ordering conditions hold among adverbs in the clause (..probably quickly..), and the corresponding adjectives in the DP (..probable quick..) is no argument to impose the poorest structure possible (adjunction).[14]

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early, which must also belong to the same specified event zone as it follows *deftly* (*He deftly left the room early*), can never appear preceding the lexical verb (*He early left). To specify it as inherently [+heavy], and [+R] (linearized to the right), as Ernst analyses *well, fast,*etc., does not appear illuminating. Clearly, finer-grained distinctions are needed.

Similar remarks hold for Frey and Pittner (1998), Frey (2000), Pittner (2000), and Tenny (2000), all of whom recognize different zones in the functional structure of the clause, but take relative orders inside each zone to be regulated by semantic scope restrictions only.

[14]. In this connection, Haider (2000,102) (cf. also Ernst 2002,129f) claims that cases like (i) are potentially problematic for the "functional specifier" approach, as it is not clear that "the functional projection structure of an attributive adjectival projection [as in (i)] is congruent with the architecture of a clause (especially w.r.t. features associated with *tense, mood, aspect*)" (also see Haider, this issue, section 2.4). But they are not really so if such complex Aps are actually derived from a small clause relative (as in Kayne 1994,100f). In that case, the functional architecture is literally the same (modulo differences stemming from the presence of an AP rather than a VP predicate):

(i)   die [vielleicht tatsächlich jetzt hier noch nicht wirklich ganz reife] Banane.

        the maybe indeed now here yet not really fully ripe banana

Shaer (1998) claims that the same ordering restrictions hold for the corresponding nominalizations (*the probability of the quickness..* vs. **the quickness of the probability..*); but this is much less clear. In fact, despite the strict ordering between *reportedly* and *probably* (cf. *Reportedly they have probably won* vs. **Probably they have reportedly won*)*, the report of the probability ..*, and *the probability of the report* both seem to be possible, suggesting that the parallelism may be more apparent than real.

Williams (2000,137) claims that the same ordering restrictions between two adverbs (say, *probably > nearly*) hold "*even when the adverbs are not part of the same functional structure*" but one is inside a PP (*probably*) and the other inside the main clause (*nearly*), and that this "radically undermines the notion that adverbs can be explicated in terms of clausal functional architecture". Quite apart from the possibility of analysing *probably* inside a PP as a focussing adverb (hence merged as part of the clausal functional

For the reasons above, I will continue to assume that adverbs, when present in the numeration, are merged ("base generated") under a checking relation with the corresponding functional head of the clausal hierarchy, which I take to be obligatorily part of the numeration (like the prototypical T and C are for Chomsky 1995,240). When no adverb is part of the numeration (hence merged), I take the corresponding functional head to receive the default interpretation (cf. Cinque 1999,section 6.1).

In addition to the semantic scope argument just reviewed, other arguments have been raised against the "functional specifier" approach. But they too lack cogence, in my opinion.

3. Some apparent problems of the "functional specifier" approach

3.1. *Coordination of different classes of adverbs*

Costa (2000,21) claims that the apparent possibility of coordinating adverbs of different semantic classes, like the frequency and manner adverbs in (4), is at odds with the idea that they belong to distinct specifier positions:

(4)   O Paulo lê frequentemente e simpaticamente o livro à avó
       P. often and nicely reads the book to the grandmother

As already noted in Cinque (1999,211fn72) for similar examples in Italian, such cases may involve not coordination of AdvPs but of larger constituents, with a reduced second conjunct, and "Right Node Raising" in the case of (4) (which makes it more marginal in Italian). This appears confirmed by the fact that the two adverbs resist being coordinated (in Italian) in those "edge coordinations" (Bianchi and Zamparelli 2001) that appear to impose a stricter parallelism requirement on the paired focussed constituents:

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architecture, if Kayne 1998 is right), I find such cases as (i) possible (in which a lower adverb has been moved across *probabilmente* within a larger phrase):

(i)   Gianni ha quasi investito i bambini accanto probabilmente/verosimilmente alla fermata
       dell'autobus.
       G. has nearly run over the kids next to probably the bus stop

(5) a *?Gianni legge non frequentemente ma simpaticamente il libro alla nonna.
       G. reads not frequently but nicely the book to the grandmother
    b. *?Gianni legge sia frequentemente che simpaticamente il libro alla nonna.
       G. reads both frequently and (lit. "that") nicely the book to the grandmother

Topicalized cases such as (6), for which a parenthetical reading of the second conjunct is difficult, also show that the two adverbs cannot be directly coordinated:

(6) *?Frequentemente e simpaticamente, non glielo legge.
    Frequently and nicely he does not read it to her

It thus seems that cases like (4) are not incompatible with the "functional specifier" approach.[15]

3.2. *Adverbs as "complements"*

In Cinque (1999, sections 1.3-4, and chapter 2) I discussed some evidence for taking the postverbal position of adverbs in cases such as (7)a-b below to be a consequence of the leftward movement of VP (or of a phrase larger than VP) across the adverb, itself merged in a specifier position above VP, modifying Larson's (1988, section 2.3; 1990, section 3.2) original "Light Predicate Raising" analysis.[16] If this is correct, the adverbs

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[15]. Costa's (2000) other arguments against the "functional specifier" approach bear even less force. The contrast between (the Italian equivalent of) (4) and (5) is also unexpected under the alternative explanation suggested in Ernst (2002, section 3.9).

[16]. Differently from Cardinaletti and Starke (1994) and Alexiadou (1997, section 5.2.3), I assumed no movement of the adverb from a postverbal to the preverbal position (*Il a bien cuisiné t* 'he has well cooked'). The postverbal position of the adverb (*Il a cuisiné très bien* 'he cooked very well') was rather analyzed as deriving from the "Light Predicate Raising" of the participle phrase around the specifier containing *bien* (whence the ban on weak adverbs in that position, which "Light Predicate Raising" turns into an information focus). That the preverbal position is not an intrinsically weak position is shown by the fact that it can contain modified and conjoined AdvPs (*Il a très bien cuisiné* 'he has very well cooked'; *Il a bien ou presque bien repondu* 'He has well or almost well answered'). Also see Abeillé and Godard (2001,14).

in (7), which McConnell-Ginet (1982), Larson (1988,fn.11), Stroik (1990), and others, take to be sisters of V, can actually be in specifier position, like all others, thus presenting no problem for the "functional specifier" approach.

(7) a. John saw Mary *recently.*
     b. He hasn't completely ruined it *yet.*

But the very existence of cases such as (8), where the adverbs apparently function as obligatory complements of the verb (Alexiadou 1997, section 5.1.1), seems to be much more problematic for the "functional specifier" approach:[17]

(8) a. Pat behaved *(rudely) to John.
     b. Pat treated John *(badly).

Note however that, even under a larsonian analysis of the VP, complements can be merged in specifier positions. For example, this is true of a direct object in the presence of a PP: [*I treated*$_k$[*John* [t$_k$ *with respect*]]]. So, nothing prevents an adverb in specifier position from being obligatorily selected by the verb, depending on the verb's semantics. Indirect evidence that this is correct for the manner adverb cooccurring with the verb *treat* comes from the following facts:[18]

(9) a. Everybody has treated them *badly.*
     b. *Everybody has *badly* treated them.
     c. (?)They have been *badly* treated by everybody.

The facts discussed in Kampers-Manhe (2001,38ff) can also be accommodated without having to postulate raising of light *bien, mal*.

[17]. Goldberg and Ackerman (2001) show that many of the cases where an adverb appears to be obligatorily selected by a verb involve in fact pragmatic, rather than syntactic (subcatagorization), factors. But they admit that the verbs in (8) are "indeed subcategorized for by the verb" (p.812).

[18]. Cf. Blight (1997), and for similar cases in Italian Cinque (1992; 1999,102). See also Ernst (2002,274).

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The relative well-formedness of (9)c, vs. the ill-formedness of (9)b, can be made sense of if the adverb is merged in a specifier position to the left of the verb (its selected status notwithstanding), and if the passive participle can stop below it (possibly in VoiceP) while the active participle necessarily crosses it in its movement to a higher position (possibly Perfect AspectP). Cf. Cinque (1999,102f).

If so, adverbs apparently acting as obligatory complements of a verb provide no evidence against the merger of adverbs in specifier position.[19]

3.3.   *Apparent non-rigid ordering of adverbs*

It has been claimed (e.g. Ernst 2002, section 3.5, among others) that the relative order between two adverbs is not always rigid, and that this provides an argument for the "Scope theory", and against the "functional specifier" approach.

While he concedes that the relative order among speaker-oriented adverbs is rigid, he claims that the order between an adverb like *frequently* and such other adverbs as *wisely, suddenly, already,* and *willingly* is not (p.120), because both orders are admitted. See, for example, (10):[20]

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[19].   It seems that adverbials, whether subcategorized or not, occupy the same position. This can be seen in (i)a-c, where the durative adverbial follows (in the unmarked case) the locative adverbial, irrespective of its selected status (in (i)a the durative, but not the locative, adverbial is selected; in (i)b it is the other way around; in (i)c both are selected):

(i)   a.   Il maltempo è durato (in montagna) *(un mese intero).

'the bad weather lasted in the mountains a whole month'

b.   È vissuto *(in montagna) (un mese intero).

'he lived in the mountains a whole month'

c.   Ha trascorso *(in montagna) *(un mese intero).

'he passed in the mountains a whole month'

This suggests that the position of merge of an adverb is independent from its "complement" or "adjunct" status.

[20].   He further claims that given the order *willingly > wisely > suddenly > already*, and given the free ordering between *frequently* and each of these, "*frequently* must be able to occur in each of at least five positions, among, before, and after [each of these adverbs]" (p.122). This is however not necessary.

(10) a. She frequently was suddenly (being) rejected by publishers.

   b. She suddenly was (being) frequently rejected by publishers.

No such conclusion is, however, warranted, as independent evidence exists that *frequently/often/ rarely*/etc. occur in two distinct positions, one above and one below *wisely, suddenly, already, willingly* (and other adverbs). See Cinque (1999,26ff;92f), who cites the simultaneous occurrence of two such adverbs in the same sentence as one of the arguments for this conclusion:

(11) a. Gianni raramente esce con la stessa persona spesso.

   'G. rarely dates the same person often'

   b. She rarely/often/frequently was suddenly (being) frequently rejected by the publishers.

Selecting, with *suddenly*, only the higher, or only the lower, instance of *frequently* ((10)a-b) may give the mistaken impression that the two are freely ordered.[21]

Frequently need only occur in two positions, one above, and one below, the entire sequence (see the discussion immediately below in the text).

[21].   Ernst cites a similar case in French: the apparent free ordering between *fréquemment* 'frequently' and *habituellement* 'habitually'. See (i)a-b (=(3.108)a and (3.109) of Ernst 2002,126):

(i)   a.   Habituellement ils regardent fréquemment la télé.   'they usually watch TV frequently'

   b.   Fréquemment ils ont regardé habituellement la télé.   'Frequently they usually watched TV'

Here, the illusion of free ordering is further compounded by the fact that habitual adverbs too can fill two distinct positions in French (cf. Cinque 1999, 92f and 204fn.36):

(ii)   D'habitude ils regardent habituellement la télé.

(I assume that the alternative order *D'habitude ils regardent la télé habituellement* is derived by preposing both the verb and the object around the position occupied by *habituellement* in (ii)). Another indication that there are two separate positions for habitual adverbs is that certain adverbs are specialized for only one of the two positions. So, for example, *d'habitude* (like *di solito*, in Italian, *usually* in English) can fill only the higher position. Compare (ii) with (iii):

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These cases are not so different from the well-known cases of adverbs like *stupidly, rudely*, etc., which depending on interpretation (manner or subject-oriented) come to occupy different positions in the structure of the clause (cf. Cinque 1999,19f, and references cited there). The fact that there is a systematic relation between these two usages may suggest (rather than ambiguity, or, worse, homonymity) the existence of a common core between the two interpretations. If the lexical item only expresses this common core, it is underspecified with respect to the two positions; hence compatible with both.

Underspecification may also play a role in some differences among languages. For example, Italian *presto* renders English *soon* (*Presto la sveglieranno* 'Soon they will wake her up'), (certain usages of) *quickly* (*Fallo presto!* 'Do it quickly!'), and *early* (*La sveglieranno presto* 'They will wake her up early'), coming to occupy different positions in the clause depending on its interpretation (see, in particular, the order of *presto* with respect to the verb when it means 'soon' and when it means 'early'). Again, it is tempting to see this as a consequence of a common meaning component shared by *soon*, *early* and *quickly*, which also have additional properties specific to each. Languages may differ according to whether they associate an underspecified word (*presto*) with just the common meaning component (which is thus compatible with the more specific interpretations), or associate two, or three, fully specified words, thus capitalizing on the specific differences among the three positions. Cf. Vegnaduzzo (2000) for a similar idea concerning the various usages of *ancora* 'still, yet, more, again' in Italian.

Presto may also give the impression of being freely ordered with respect to other adverbs (see (12)a-b), but this is again illusory, as it shows different interpretations depending on the position it occupies (the 'soon' interpretation being higher than the 'early' interpretation):[22]

(iii)   *Habituellement ils regardent d'habitude la télé/la télé d'habitude.

[22].   Nilsen (this issue) notes that in Norwegian *alltid* 'always' may both follow and precede *muligens* 'possibly', and suggests that adverb ordering may after all be non linear (i.e., not transitive, antisymmetric, and connected). Whether this is the correct conclusion, or is an effect of two distinct usages of *muligens*, or perhaps of the focalization of *alltid* across *muligens* remains to be seen. The partly similar case discussed by Nilsen (this issue) of Italian *ancora* 'still', which appears to be able to precede *probabilmente* (as well as follow it) (cf. his example (81)) is, I think, spurious as *probabilmente* continues

(12) a. Maria sveglierà *sempre presto* i suoi bambini.
        'M. will always wake up her children early/*soon'
      b. Maria *presto* sveglierà *sempre* i suoi bambini.
        'M. will soon/*early always wake up her children'

3.4. Stacked adverbials

Haider (2000, 104f) claims that the stacking of adverbials seen in (13)a-d is problematic for the "functional specifier" approach because, being in different specifiers, either they do not form a constituent, or if they do, the constituent is a remnant XP containing the trace of V, which "is not in the c-command domain of the verb in the V2-position" (also see Haider, this issue, section 2.3):

(13) a. Letzes Jahr im Juni an einem Sonntag kurz vor Mittag rief er alle an.
        Last year in June on a Sunday shortly before noon he phoned all up
      b. In der Küche neben den Tisch auf dem Boden unter einem Tuch fand er es.
        In the kitchen besides the table on the floor under a cloth found he it
      c. Abends wegen des Staus hat er diesen Platz gemieden.
        (In the) evening because of the (traffic) congestions has he this place avoided
      d. Gestern im Hörsaal als der Vortrag begann hustete er wie verrückt.
        Yesterday, in the lecture room, when the lecture started, coughed he like mad

That such examples raise a problem for the "functional specifier" approach is not obvious. For one thing, these cases may not be of the same kind. (13)a-b seem to instatiate one (temporal or locative) phrase composed of progressively further specified PPs of the same type. (13)c-d instead involve PPs of different types (temporal and reason, or temporal and locative). In the first case, the PPs appear to be subject to tighter constraints (which possibly indicates that they are merged together as a constituent, though that remains to be ascertained).[23] They can be separated only by fronting the PP which expresses the larger domain (I exemplify this with the locative case, in Italian):

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to take scope over *ancora* even when it follows *ancora* (as in his example (81)), actually being used as a focussing adverb (cf. Cinque 1999,31)

23.   Rather than "stacking", some refer to this second kind of cases as cases of iterability of adverbials (possible only with a subset of them). Ernst (2002) suggests that iteration is possible with "adjuncts that

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(14) a. È in cucina che lo tiene dentro un cassetto.
        'It's in the kitchen that he keeps it inside a drawer'
      b. *È dentro un cassetto che lo tiene in cucina.
        'It's inside a drawer that he keeps it in the kitchen'

Very different is the second case, again exemplified with Italian. Besides moving together ((15)a), either PP can be fronted stranding the other ((15)b-c):

(15) a. È di sera a causa del traffico che Gianni non esce di casa.
        It's in the evening because of the traffic that he doesn't go out
      b. È di sera che non esce di casa a causa del traffico.
        'It's in the evening that he doesn't go out because of the traffic'
      c. È a causa del traffico che non esce di casa di sera.
        'It's because of the traffic that he goes out in the evening'

The fact that the clefted PPs in (15) are necessarily outside the scope of negation suggests that they (and perhaps the two PPs in (13)c-d) form a constituent not because they are merged together but because they are fronted together as part of a remnant, after having being merged clause-initially (outside of the scope of negation):

(16) a. Di sera, a causa del traffico, Gianni non esce di casa.   →
        'In the evening, because of the traffic, G. does not go out'
     b. [Gianni non esce di casa], di sera, a causa del traffico t .   →
        'G. does not go out in the evening because of the traffic'
     c. È [di sera, a causa del traffico t], che Gianni non esce di casa t .
        'It's in the evening, because of the traffic that G. does not go out'

If something along these lines is correct, there may be no trace of the finite V within the constituent in first position in (13), and consequently no incompatibility with the "functional specifier" approach.

can be conceived of as 'nested'" (p.135), and he too takes it to be a problem for the "functional specifier" approach. In the absence of a deeper understanding of the phenomenon, however, I think that such cases can hardly be considered anyone's exclusive problem.

3.5. *"Edge effects" with preverbal adverbials in head initial languages*

Haider (2000) (see also Haider, this issue, section 2.2) claims that the constraint against post-head material with preverbal adverbials in head-initial vs. head-final languages exemplified in (17a) vs. (17b) (what he calls "edge effects") provides another problem for the "functional specifier" approach since "[e]dge effects are unknown for phrases in *spec-positions*, as e.g., phrases in Spec-C or Spec-I" (p.100) (cf. (18) and (19)), though he acknowledges that the effect "is caused by (not yet fully understood) properties of head-initial structures" (p.99).[24]

(17) a. He has more carefully (*than anyone else) analysed it.

   b. Er hat es sorgfältiger (als jeder andere) analysiert.

(18) How many more people (than you thought) came to the party?

(19) Many more people (than I thought) came to the party.

I think the argument does not carry much force as little is understood of this effect. I will nonetheless venture an analysis which is compatible with the generation in Spec of adverbs; one that capitalizes on the correlation with head-initiality and head-finality (assuming it to be basically correct).

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[24]. That it actually is "head-initial structures" rather than "head-initial languages" is shown, he claims (p.100), by the fact that pre-head attributes in German DPs are head-initial, and also show "edge effects":

(i)   eine viel größere (*als ich dachte) Summe   'a much bigger (than I thought) sum'

Note that the generalization in the text is not entirely accurate, as certain post-head constituents with preverbal adjuncts appear to be possible even in English, as Richard Kayne (p.c.) pointed out to me (e.g. *He more often than not makes mistakes*), especially if the VP is made heavier (compare (17a) with (ii) below), though heaviness in DPs does not seem to lead to a similar improvement (cf. (iii)):

(ii)   He has more carefully than anyone else analysed the weak points of that argument.

(iii) *A much more expensive than I thought painting by my favorite painter

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Suppose we follow Kayne (2002a), and previous work of his, in taking prepositions/complementizers like *than* and *als* not to be merged with their ultimate complement, but higher up in the structure, as shown in the simplified (20)a-b:

(20) a. …. als .... [sorgfältiger jeder andere] analysiert
     b. ….than.... [more carefully anyone else] analysed it

The impossibility of a pre-verbal positioning of *than anyone else* in English would then follow, in a kaynean derivation, from the fact that *than* in (20b) attracts its complement (→*… than anyone else... [more carefully t] analysed it*), and from the further movement of the remnant to the Spec of *than*: *[[more carefully t] analysed it] than anyone else t* (*He has analysed it more carefully than anyone else* would instead be derived if the VP [*analysed it*] were to move past *more carefully*... before the other movements).

The different order in German follows if we analyse head-final (German) clauses as eventually derived by raising of the V to T/AGRs and then movement of the entire remnant past the V (cf. Kayne 1994,52):

(21) a. ... als ... [sorgfältiger jeder andere] analysiert   →
     b. ... als jeder andere ... [sorgfältiger t] analysiert   →
     c. ... [[sorgfältiger t] analysiert] als jeder andere t   →
     d. ... analysiert [[sorgfältiger t] t] als jeder andere t   →
     e. ... [[[sorgfältiger t] t] als jeder andere] analysiert t

4. The syntax of adverbial PPs and Pesetsky's paradox

In Cinque (2002a) I suggested that Kayne's analysis of prepositions, in combination with certain other ideas, can provide a novel approach to the syntax of adverbial PPs, and to the specific paradox they give rise to (Pesetsky 1995). As Pesetsky shows, their syntax gives apparent evidence for two distinct and conflicting structural representations. On the one hand, movement diagnostics would seem to favor a

structure like (22), in which the PP on the right is higher than, and c-commands, the PP to its left (in apparent contrast with Antisymmetry):[25]

(22)
```
                IP
               / \
            DP    I'
                 / \
                I    VP
                    / \
                  VP    PP₂
                 / \
                V    PP₁
```
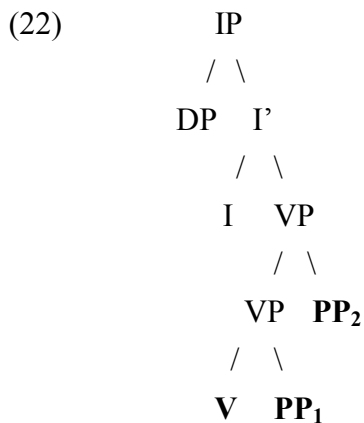
On the other hand, the binding of anaphors, that of pronominals by quantifiers, and the licensing of Negative Polarity Items (NPI) would seem to favor a larsonian structure such as (23), where the PP on the right is lower than, and is c-commanded by, the PP to its left:[26]

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[25]. This is because the V, in addition to forming a constituent with both PPs ((i)b), appears to form a constituent with the first PP which strands the second ((i)a):

(i) (He said he would talk with Joe on Monday…)   a. …and *talk with Joe* he did on Monday

                                                    b. …and *talk with Joe on Monday* he did

Moreover, as (ii) shows, the two PPs do not form a constituent by themselves (cf. Pesetsky 1995,228):

(ii) a.   *It's [*with Joe on Monday*] that he said he talked.

[26]. The relevant facts suggesting c-command of the PP on the right by the PP to its left are given in (i)-(iii):

(i) a.   John spoke to Mary about *these people* in *each other's* houses on Tuesday.

                                                    (Pesetsky 1995,172)

     b.   *John spoke to Mary about *each other* in *these people*'s houses on Tuesday.

(ii) a.   G. K. performed in *every Baltic republic* on *its* independence day.   (Pesetsky 1995,161)

      b.   *G.K. performed on *its* monument on *every independence day*.

(23)   IP   (Larson 1988,fn49; Kayne 1994,69ff; Chomsky 1995,333)
            / \
         DP   I'
              / \
            I   VP
                / \
                   V'
                  / \
                V   VP
                    / \
                 PP₁   V'
                        / \
                      V   **PP₂**
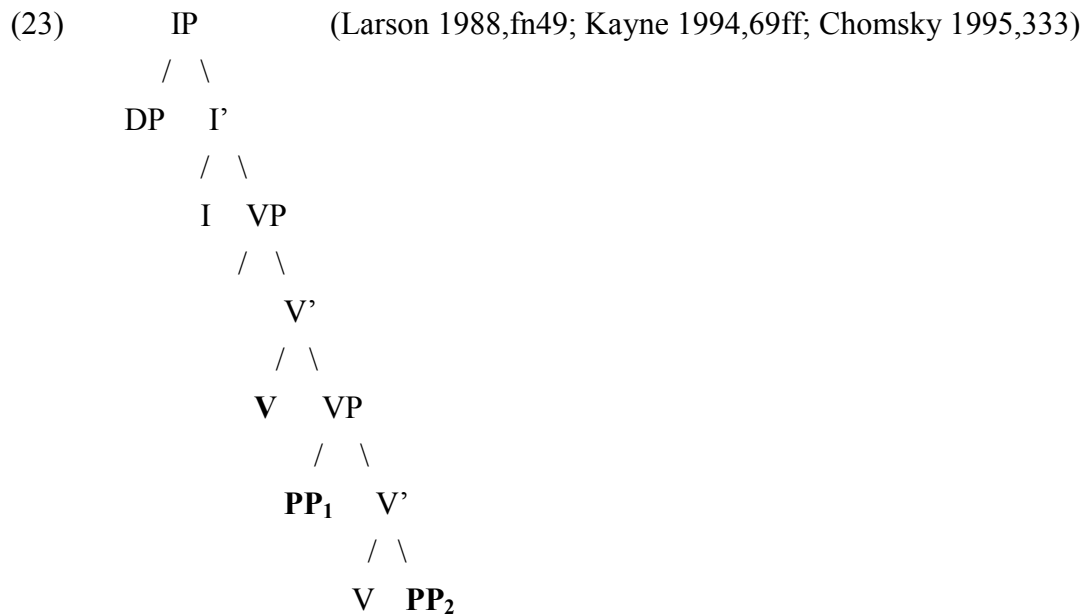
The paradox can be seen to dissolve if, as I argued in Cinque (2002a), (22) is not a merge, but a derived, structure; derived (in head-initial languages) from a structure essentially like … PP₂… PP₁ … VP … by rolling up the VP around the lower PP; then

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(iii) a.   John spoke to Mary about *no linguist* in *any conference room.*   (Pesetsky 1995,162)

       b.   *John spoke to Mary about *any linguist* in *no conference room.*

Pesetsky (1995) notes a further puzzle. The DP object of the higher PP in (i)-(iii) unexpectedly appears to c-command out of the PP; a property which leads him to propose a novel representation where such DP literally c-commands the object of the lower PP (what he calls "cascade structure"):

(iv)   PP
         /   \
             P'
           /   \
              PP
             /   \
                 P'
                / \
       about these people in each other's houses
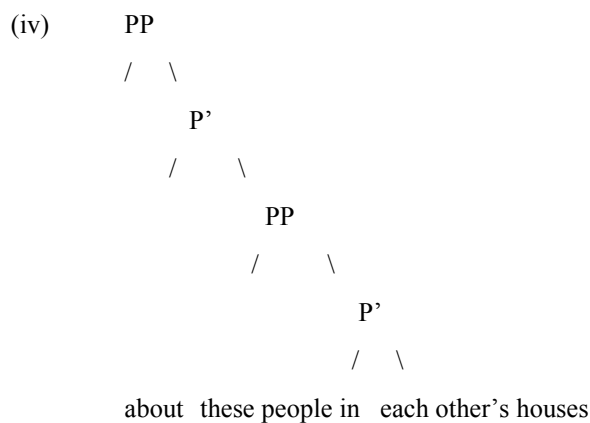
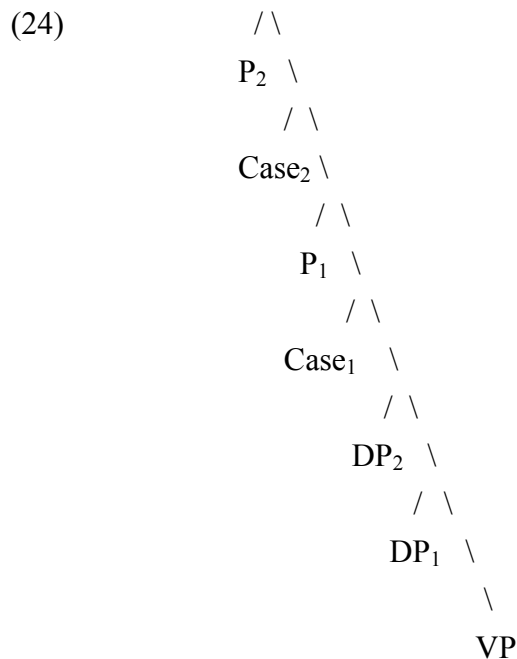taking the resulting structure [VP PP t] and rolling it up around the next higher PP ([[VP PP$_1$ t] PP$_2$ t]), and so on; in ways reminiscent of Barbiers' (1995) intraposition analysis of Dutch postverbal PPs. In fact, as Barbiers notes, this derivation can also account for the mirror image effect of the order of PPs in head-initial and head-final structures (and languages).[27]

The c-command puzzle which lead Pesetsky to propose "cascade structures" can instead be solved if the … PP$_2$ … PP$_1$ … VP structure to which the roll up derivation applies in head-initial languages is itself derived from a structure in which the DP complements of P$_2$ P$_1$… are merged without their respective prepositions, themselves merged higher up, above the respective Case Phrases to which each DP moves, as proposed in Kayne (2002a):

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[27]. Like the postverbal position of high adverbs in VO languages (*John left, probably*), postverbal PPs in Dutch are typically deaccented (Zwart 1997,96; Koster 1999). This may suggest that the roll-up is across an IP-initial positioning of the PPs, rather than across their lower positioning above VP, as is the case in ordinary VO languages.

Phillips (1998) proposes a different solution to Pesetsky's paradox; one based on a top-down incremental merging of constituents. Though intriguing, his analysis appears to face some empirical problems. For example, it cannot cope, as far as I can tell, with those cases where a PP to the right takes scope over a preceding PP (and is thus right adjoined above it), and yet it is bound by the object of the preceding PP (as in example (ia) of the previous footnote). Also, it is not clear how it can express the typological generalization relating VO and OV languages discussed in Cinque (2002a), as it generates the two mirror orders independently of one another. The proposals by Haider (2000, this issue) are open to similar criticism.

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(24)
```
                    / \
            P₂  \
               / \
        Case₂ \
              / \
          P₁  \
             / \
        Case₁   \
              / \
          DP₂  \
             / \
        DP₁  \
                \
              VP
```

The attraction of DP$_1$ to the CaseP related to P$_1$ before the attraction of DP$_2$ to the CaseP related to P$_2$ (itself a consequence of Chomsky's 1995 Extension Condition) allows binding of a DP merged higher (say, a locative DP$_2$) by a DP merged lower (say, a goal DP$_1$). For more detailed discussion I refer to the forthcoming written version of Cinque (2002a).[28,29]

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[28]. In that paper, I also provide evidence that, contrary to what is claimed in Cinque (1999, section 1.5) and Ernst (2002, section 6.4), "circumstantial" (or "participant") PPs are also rigidly ordered, as already suggested in Nilsen (1998). This is visible only when scrambling of the PPs is blocked (e.g., when they are part of an idiom chunk; when they are proforms which resist scrambling, like *wann, wo* in German, *der, da* in Norwegian, etc.).

[29]. Haider (2000, section 3; this issue, section 2.1) also considers the extraction out of postverbal PPs in English (*The car that he left his coat in* t… - if [in t] is in a specifier crossed over by the VP), and the extraction out of preverbal phrases preceding an adverb in German (*Wen hat er [t damit zu konfrontieren] leider noch nicht versucht?* 'Who has he unfortunately not yet tried to confront with it') as problematic for the "functional specifier" approach, as extraction out of specifiers is quite generally known to be impossible (whereas the mentioned extractions are unexceptionable). Matters, however, are again far from clear. Even if the postverbal PP in the English example above is in a specifier, no ungrammaticality is necessarily to be expected. In the essentially larsonian VP structure which Haider

5. The complementary distribution of adverbs and the corresponding XP adverbials

The merger of prepositions above the VP external CasePs to which argument and other adjunct DPs raise may afford an account for another puzzling fact: the general complementary distribution of adverbs (AdvPs) and the adverbial PPs which correspond to them.[30]

It is well-known that in head-initial languages adverbs can occur sentence-internally while the corresponding PPs cannot (Jackendoff 1972,94; 1977,73; Sportiche 1994; Ernst 2002,462):[31]

(25) a. He has *<ever since>* stopped smoking *<ever since>*

　　　 b. He has *<*ever since he was thirteen>* stopped smoking *<ever since he was thirteen>*

---

himself assumes, the first of two PPs sits in a specifier. Yet, extraction out of (many) such PPs is possible (suggesting, if anything, that it is the position with respect to the V that matters):

(i)　　Who did John talk to t about Harry yesterday?　　　　(Hornstein and Weinberg 1981,71)

Furthermore, extraction out of preverbal specifiers in German is known to be possible (*Was hat* [PRO t *zu beanstanden*] *sich nicht gehört* 'what has to object to not been proper' – Haider 1983,92ff), making the German extraction case mentioned above unsurprising.

All in all, pending a better understanding of the matters, Haider's cases provide no evidence against the "functional specifier" (nor any other) approach.

[30].　Actually, as (25)-(27) show, the distribution is only partially complementary (in ways that do not affect the ensuing argument). While PPs can appear sentence-finally but never sentence-internally, the corresponding adverbs can appear both sentence-internally and sentence-finally (As noted in section 3.2 above, Cinque 1999, section 1.4, analysed the postverbal position of the adverb in the a. cases as deriving from a leftward movement of the VP around the sentence-internal merge position of the same adverb).

[31].　The restriction appears however to be suspended for some adverbial PPs (mostly temporal, frequency, and durative) in more careful styles. Cf. Ernst (2002, section 4.3.5).

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(26) a. Marie a <*très lentement*> mangé sa soupe <*très lentement*>

  b. Marie a <**d'une manière lente*> mangé sa soupe <*d'une manière lente*>

(27) a. Gianni si è <*brevemente*> trattenuto <*brevemente*>

  b. Gianni si è <**per breve tempo*> trattenuto <*per breve tempo*>

In each of (25)-(27) there is a reading in which the a. sentence is synonymous with (the grammatical version of) the b. sentence. Yet the adverb, but not the corresponding adverbial PP, is possible sentence-internally. How can we account for this (quasi-)complementary distribution?

That the AdvP and the corresponding adverbial PP may be in competition for one and the same position of merge is suggested by the fact that they cannot occur together. See, for example:[32]

(28) a. *Gianni si è *brevemente* trattenuto *per breve tempo.*
     'G. briefly stayed for a while'
  b. *He has (*ever*) *since* stopped smoking *since he was thirteen.*[33]

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[32].   The ungrammaticality of (28) can hardly be due to the fact that it contains redundant information. A sentence like *In futuro, Gianni avrà più fortuna* 'In the future, G. will be luckier', where both the verbal form and the adverbial PP refer to a period of time in the future, though redundant, is perfectly grammatical. The same is true of cases of clitic doubling.

Another indication that the AdvP and the corresponding PP are merged in the same position may be given by scope considerations. The adverbial PP, though invariably in sentence-final position, appears to have the same scope properties with respect to other elements in the clause as the corresponding AdvP. Just as *ever since* in (i) takes scope over *no longer*, so does *ever since he was thirteen*, even from a sentence-final position ((ii)):

(i)   John has ever since no longer eaten meat.

(ii)   John has no longer eaten meat ever since he was thirteen.

[33].   Other, apparently similar, cases are fine. See , for example, (i):

(i)   Gianni ha rapidamente alzato il braccio con (grande) rapidità.
       'G. has rapidly raised his hand with (great) rapidity'

Given this, it is tempting to take both the adverb (*brevemente*) and the corresponding DP (*breve tempo*) to be merged in the same specifier position (possibly that corresponding to Durative Aspect – cf. Cinque 1999,98), and to account for their ultimate different location in the sentence as due to their different licensing conditions. AdvPs are licensed in situ, in a specifier associated with the corresponding functional head. But DPs also need Case; whence the insertion of a preposition, which in Kayne's system attracts (in head-initial languages) the VP to its Spec, with the consequence that the PP will *necessarily* end up in postverbal position (a sentence-final one if no other leftward movement obtains).[34]

6. Clause initial adverbs and adverbials

Most classes of AdvPs, and adverbial PPs, CPs, DPs, etc., can occur in clause initial position.[35]

This position, however, may not be unique, but may rather disguise several structurally distinct positions.

So, for example, if an AdvP in its position of merge can show up clause-initially due to the fact that no other constituent (say, the subject DP and the V) crosses over it (cf.

But here there is evidence for two independent positions of merge of the adverb (on such cases as: *John has quickly raised his hand quickly*, see Travis 1988,292; Cinque 1999,93).

[34]. These considerations may carry over to DP adverbials, which also cannot appear sentence-internally (in head-initial languages) (though some can in more careful styles – cf. Haegeman 2001. Also see fn.31 above). As Richard Kayne pointed out to me, such contrasts as *Only John has been badly/*that way treated by everybody* may support the distinction between unpronounced preposition (with *that way*) and complete absence of preposition (with *badly*).

If the *–ly* (and *–mente*) which attaches to adjectives (possibly to APs) is nominal in nature (Kayne 2002b,fn.2), it apparently does not need a P to satisfy its Case requirements. The same would have to be true for invariable adverbs like *spesso* 'often' if, as Kayne (2002a,fn.46) suggests, they are also hidden DPs. Also see Manninen (1999) for a uniform analysis of manner DPs, APs, CPs and AdvPs as KasePs.

[35]. Though some cannot. See below for discussion.

Cinque 1999, chapter 5), then the initial position can be one of a number of structurally different positions of merge, depending on the class of the AdvP.

It is however not entirely clear that this conjecture is correct.

We do know that verbs in many languages need not raise past (higher) AdvPs within IP. This is especially clear in a language like Paduan, where topicalized (clitic left dislocated) 3rd person subjects obligatorily require a resumptive clitic:

(29) Mario i dize che *('**l)** ze partìo.
M. they say that he (clitic) has left.   ('M. they say has left')

Now, the fact, noted by Beninca' (2001,56), that no resumptive clitic is necessary in such cases as (30) clearly shows, as she observes, that the subject DP is not topicalized across the AdvP, but fills the canonical subject position (*one* canonical subject position if there are more):

(30) Mario geri ze partìo presto.
M. yesterday is left early   ('Yesterday M. left early')

If so, we also have clear evidence that the (auxiliary) verb need not raise past the AdvP *geri* (in fact, it cannot: **Mario ze geri partìo presto*). The same is generally true of higher adverbs lower than *geri*, though they can also be crossed over by the verb, apparently (*Mario <forse> gavarà <forse> dito che..* 'M. perhaps will have said that..').

However, if we have positive evidence that verbs need not raise past higher AdvPs, we have no comparable evidence that subjects need not raise past them. Consequently, a sentence like (31) could have the AdvP not in its IP-internal position of merge but in a position within the CP field, reached by movement across the highest position of the subject in IP:

(31) Geri Mario ze partìo presto.
Yesterday M. is left early   ('Yesterday, M. left early')

If this were so, the number of distinct structural positions available to AdvPs at the beginning of the clause would reduce to positions in the CP field only.

We know that in addition to Topic and Focus positions, AdvPs access a third position in the CP field; one which is lower than the positions targeted by topicalized, focussed

and wh- phrases. Rizzi (2002) discusses various pieces of evidence for distinguishing such a position (which he labels "Modifier Phrase") from the more familiar positions occupied by topicalized, focalized and wh- phrases.

Preposing to such position does not require the special contextual conditions that characterize focalized and topicalized AdvPs.

Among other properties, (32) differs from the corresponding topicalized and focalized versions (33)-(34),

(32) Rapidamente, qualcuno farà sparire i documenti.
      Quickly, someone will make the documents vanish

(33) Rapidamente, nessuno farà sparire i documenti.
      Quickly, nobody will make the documents vanish

(34) RAPIDAMENTE, qualcuno farà sparire i documenti.
      Quickly (focus), someone will make the documents vanish

in that a) it can occur in out-of-the-blue contexts:[36]

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[36]. The topicalized version (33) and the focalized version (34) require contexts such as the following:

(Si pensava che qualcuno potesse far sparire i documenti rapidamente, ma…)
One would think that someone could make the documents vanish quickly, but..

(i)   Rapidamente, nessuno farà sparire i documenti.
      Quickly, nobody will make the documents vanish

(Qualcuno farà sparire i documenti troppo piano…)
Someone will make the documents vanish too slowly..

(ii) Forse, TROPPO RAPIDAMENTE, qualcuno farà sparire i documenti (non troppo piano).
      Perhaps, too quickly (focus), someone will make the documents vanish (not too slowly)

For some reason that remains to be understood, AdvPs (and other non referential XPs) are typically (some exclusively – see below) topicalized (clitic left dislocated) from positions under the scope of negation (like the context in (33), (37), (40), and (i) above). Cf. Cinque (1990,89-94).

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(Poi, cosa succederà? What will happen, then?)

(35) a. Rapidamente, qualcuno farà sparire i documenti. (= (32))
           Quickly, someone will make the documents vanish

      b. *Rapidamente, nessuno farà sparire i documenti. (= (33))

      c. *RAPIDAMENTE, qualcuno farà sparire i documenti. (= (34))

b) it displays Relativized Minimality effects:[37]

(36) *Rapidamente*, qualcuno *probabilmente* farà sparire i documenti.
      Quickly, someone will probably make the documents vanish

(37) *Rapidamente*, nessuno *probabilmente* farà sparire i documenti.
      Quickly, nobody will probably make the documents vanish

(38) *RAPIDAMENTE*, qualcuno *probabilmente* farà sparire i documenti.
      Quickly (focus), someone will probably make the documents vanish

c) it is clause-bound:[38]

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[37]. Rizzi (2002) arrives at a refinement of his notion of Relativized Minimality (Rizzi 1990) based on the typology of features *argumental, quantificational, modificational, topic*, showing that a system based on a simple A/A-bar distinction is too liberal, and one based on Chomsky's (1995,311) Minimal Link Condition (which presupposes sameness of features) is too selective.

[38]. The clause-boundedness of the preposing of AdvPs to sentence-initial position is also noted in Nakajima (1991, 339,343), and carries over to such cases as *Probably they say that **t** he will not make it*. See also Ernst (2002,section 8.3.2.4). Chomsky and Lasnik (1993) also note that "[(i)] is not given the interpretation of [(ii)], as it would be if *carefully* in [(i)] had been moved from the D-structure position of *carefully* in [(ii)]" (Chomsky 1995,48):

(i)   Carefully, John told me to fix the car.

(ii)   John told me to [fix the car carefully].

Likewise, in Italian (iii) does not have the same interpretation as (iv), suggesting that *domani* 'tomorrow' cannot have moved from the position occupied by *domani* in (iv), but interestingly it can have the same

(39) *Rapidamente, credo che qualcuno farà sparire i documenti.
       Quickly, I think that someone will make the documents vanish

(40) Rapidamente, credo che nessuno farà sparire i documenti.
      Quickly, I think that nobody will make the documents vanish

(41) RAPIDAMENTE, credo che qualcuno farà sparire i documenti.
      Quickly (focus), I think that someone will make the documents vanish

There is another property which supports Rizzi's discovery of a separate Modifier Phrase in the CP field which AdvPs can access in addition to accessing TopicP and FocusP: the existence of a whole class of AdvPs which can freely access the latter two positions but not the former. In Cinque (1999, section 5.1) it is noted that "lower adverbs" (from the negative AdvP *mica* downward) as opposed to all higher ones cannot precede the subject under normal conditions. See (42) (= (3) of Cinque 1999, chapter 5):[39]

(42) a. Maria mica prende il treno.
          M. not takes the train

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interpretation as (v), suggesting that movement is possible from a clause-initial position (cf. Cinque 1990, 89-94):

(iii) Domani Gianni mi ha detto che verrà.   'Tomorrow G. told me that he will come'

(iv) Gianni mi ha detto che verrà domani.   'G. told me that he will come tomorrow'

(v)   Gianni mi ha detto che domani verrà.   'G. told me that tomorrow he will come'

Postal and Ross (1970) claim that the latter possibility is unavailable in English when the matrix clause is in the past, but this does not seem to be true in general, to judge from Haegeman (2002, section 2.3.1).

[39].   The ungrammaticality of the lower cases (l. to o.) is actually sharper, as Paola Beninca' (p.c.) observed, than that of the higher ones. For the impossibility of a presubject positioning of the same adverbs in English, see Jackendoff (1972,50), Cinque (1999,112).

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    b. *Mica Maria prende il treno.

        Not M. takes the train

    c. *Già Maria è di ritorno, per le una.

        Already M. is back, at one o'clock

    d. *Più Maria non mi pensa.

        No longer M. thinks of me

    e. *Ancora Maria gli parla.

        Still M. speaks to him

    f. *Sempre Maria ripete le stesse cose.

        Always M. repeats the same things

    g. *Appena Maria si era coricata, quando squillò il telefono.

        Just M. had gone to bed, when the phone rang

    h. *Subito Maria mi avvertiva (no focus intonation on *subito*).

        Immediately M. would call me

    i. *?Brevemente Maria ci sta parlando della sua avventura.

        Briefly M. is telling us about her adventure

    l. *Quasi Maria cadde dall'emozione.

        Almost M. fell for the emotion

    m. *Completamente Maria distrusse tutto quello che aveva fatto fino ad allora.

        Completely M. destroyed all that she had done till then

    n. *Bene Maria fece tutti i compiti.

        Well M. did her homework

    o. *Presto Maria si alzava ogni mattina.

        Early M. would get up every morning

This can be made sense of if such AdvPs (as opposed to all higher ones) cannot be moved to ModiferP in the CP field. The fact that they can (with some exceptions) appear in front of the subject if topicalized or focalized is then further evidence that Topicalization and Focalization should be kept distinct, as Rizzi proposes, from Preposing to ModifierP.[40]

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[40].   The rough generalization appears to be the following: negation *mica* and all AdvPs which follow *mica* cannot be fronted to ModifierP. This might be related to Rizzi's (2002) observation that "Negation blocks both simple adverb preposing and preposing to a focus position" ((42D)).

In addition to AdvPs and adverbial PPs moved from within IP to the clause-initial CP field (to TopicP, FocusP, ModifierP), there appear to be adverbial XPs which are directly merged in the CP field. For discussion, see Cinque (1990,89-94), Bianchi (2000), Haegeman (2001), and, within a different analysis, Haumann (1997, 1999).[41]

7. Variable adverb positioning

After discussing clause-initial adverbs, let us consider the variable adverb positioning one finds in cases such as (43) and (44), which is at first sight also at odds with the "functional specifier" approach, according to which each adverb is licensed in the specifier of a unique functional projection:[42]

(43) a. Probably they could be working a bit harder.
　　　b. They probably could be working a bit harder.
　　　c. They could probably be working a bit harder.
　　　d. *They could be probably working a bit harder.

(44) a. Foolishly Howard may have been trying to impress you.
　　　b. Howard foolishly may have been trying to impress you.
　　　c. Howard may foolishly have been trying to impress you.
　　　d. Howard may have foolishly been trying to impress you.
　　　e. Howard may have been foolishly trying to impress you.

Cinque (1999, section 5.1) suggested that, assuming (as we must, for independent reasons) that Vs and DPs move upwards to different landing sites, the apparent

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[41]. The problem that Ernst (2002, section 3.10.2) takes the "functional specifier" approach to encounter with topicalized AdvPs and adverbial PPs seems superable if one takes into account the different movement possibilities (to TopicP, FocusP, ModifierP), as well as the "base-generation" option.

[42]. (43) is adapted from Ernst (2002, 380), and (44) from Svenonius (2002,section 3.1).

multiplicity of adverb positions seen in (43)-(44) reduces drastically.[43] Of course, given the possibility of fronting an IP-internal AdvP to Rizzi's ModifierP, some of the cases in (43)-(44) are open to two analyses. Consider (43) first. (43)a-c could, for example, be analysed as involving the IP-internal instance of the AdvP not crossed over by anything (the a. case), crossed over by just the subject (the b. case), or by both the subject and the first auxiliary (the c. case). Quite correctly the d. case is expected to be impossible as the raising of the second auxiliary across *probably* would also cross the trace left by the first auxiliary, in violation of (whatever derives) the Head Movement Constraint.[44]

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[43]. If we take into consideration the proneness to displacement of Vs and DPs and, after Pollock (1989), the essential immobility of AdvPs (except for limited and recognizable cases of movement to CP positions, as in Wh-, Topic and Focus and V/2 structures), the otherwise ingenious argument given in Bobaljik (1999) for taking auxiliaries, participles, and floating quantifiers to be immobile, with adverbs moving around them, loses much of its force, as does his further conclusion that adverbs and DP arguments belong to separate tiers, ultimately merged together like two decks of cards.

The argument rests on questionable premises: for example, that auxiliaries have a fixed position of merge. If auxiliaries are inserted to bear affixes that would otherwise remain stranded (Cinque 1999,57, and references cited there), there is no reason to take them to be merged in a fixed position. If so, Bobaljik's conclusion that when an auxiliary can follow Adv_i there is a violation of the Head Movement Constraint whenever both it and the participle precede Adv_i, is no longer necessary. The auxiliary can be merged in one case below Adv_i, in the other above it.

[44]. Here, *could* could not be merged above *probably* (cf. the previous footnote), as it is inflected for Past, which is lower than epistemic modality (cf. Cinque 1999,135).

Jackendoff (1972,81), Ernst (2002,380), among others, note that *probably* can marginally follow two auxiliaries when the second is *have*:

(i) a. John will have probably been beaten by Bill.

   b. They could have probably worked a bit harder.

This fact is not problematic for the idea that *probably* fills a unique position (in the Spec of Mood(epistemic)P, crossed over by the subject and just one auxiliary, the first), if as suggested by both Jackendoff and Ernst *have* in such cases incorporates, or adjoins, to the position of the modal. A more promising alternative might relate (i) to the special cases of inversion documented in Johnson (1988) (*Should 've the kids left?*), which Kayne (2000,215) analyses as involving not *have*, but a complementizer (*of*), thus opening up the possibility that the modal left-adjoins to it when raising.

Alternatively, (43)a-c could have the AdvP in ModifierP, with nothing crossing over it (the a. cases), or with the subject crossing over it (the b. cases), but possibly without the auxiliary also crossing over it ((43)c would thus be derived as suggested under the first option). Although the evidence may not be enough to choose, I take the more special intonation contour of (43)a-b vs. c (cf. Ernst 2002,397) to indicate that they, but not (43)c have the AdvP in ModifierP, though nothing hinges on this assumption.

Cases such as (44) appear at first sight to be more problematic. Ernst (2002,116f), and Svenonius (2002, section 3.1) claim that in sentences with more auxiliaries the "functional specifier" approach leads to a violation of the Head Movement Constraint. Allegedly, this is so because all the auxiliaries would have to be merged lower than the AdvP in order to account for the a. and b. cases; yet, to account for the d. and e. cases, more than one auxiliary would have to raise past the AdvP, with the lower auxiliary crossing over the trace of the higher one.

This is however not necessary. First, (44)a and b could have the AdvP in Spec of ModifierP, in the CP field, moved from an IP-internal position, as discussed above. But even disregarding this possibility, the different orders in (44) can be derived without violating the Head Movement Constraint. The reason is that AdvPs like *foolishly* may be merged in more than one position. At least two can in fact cooccur in one and the same sentence. See (45), and the discussion in Cinque (1999,19), from which (45) is adapted:

(45)   a. Stupidly John has been cleverly answering their questions.
         b. Stupidly John has been answering their questions cleverly.

If two merge positions are available for adverbs like *foolishly*, the remaining cases of (44) (c,d, and e) can be accounted for by assuming the merge structure schematically shown in (46):

(46)   ..<foolishly> may have <foolishly> been trying..

(44)c (*Howard may foolishly have been trying to impress you*) is derived from (46) if the higher instance of the AdvP is selected and if the modal crosses over it. (44)d (*Howard may have foolishly been trying to impress you*) is derived if the lower instance of the AdvP is selected, and nothing moves. Finally, (44)e (*Howard may have been foolishly trying to impress you*) is derived if the lower instance of the AdvP is selected,

and the auxiliary *been* crosses over it, to a head between it and the higher auxiliary *have*.

If the AdvP in (44)a and b is in Spec,ModifierP, more options are available, which would have to be evaluated and compared on the basis of independent evidence supporting one or the other.

All in all, it seems to me that, when looked at more closely, the objections raised against the "functional specifier" approach are less convincing than they at first appeared, and that the approach still naturally expresses many important properties of adverbial syntax better than competing approaches.

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Impersonal *Man* and Aspect in Swedish

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1. Introduction

A great deal of attention has been dedicated to the syntax and semantics of impersonal pronouns. Generative oriented approaches have tried to capture the interaction between fundamental, presumably universal principles of interpretation, and broad cross-linguistic micro-variation. This paper aims at contributing to the understanding of such phenomena. Its purpose is essentially empirical in that, through a survey of Swedish data, I will try to capture the empirical generalisations behind the syntax and semantics of impersonal pronouns. The point of departure is subject *man* 'man', 'one', in Swedish. Consider the following two sentences:

(1) a. Man måste   arbeta   för att   förtjäna uppehället.
        man must   work   to   earn   a living
     b. Man arbetade i   tre   månader   för att   lösa problemet.
        man worked for   three months   to   solve the problem

(1a) is a generic statement. The subject, *man*, in (1a) refers to a quasi-universal set of individuals, roughly equivalent to 'people', 'everyone' or 'anyone'. In (1b), the tense reference is episodic and the subject takes on an existential reading. In this example, *man* denotes a non-specific group of individuals, equivalent to 'some people', impersonal 'they', or even 'someone'. Henceforth, the reading of (1a) will be called *generic* and that of (1b) *arbitrary*. In addition, there is a further usage of *man* illustrated in (2):

(2)   I går   på eftermiddagen   blev man fast   anställd.
      yesterday   afternoon   *was man permanently employed*

Subject *man* in (2) is equivalent to the 1st singular, 'I'. The expression means that I was employed yesterday. Traditionally, this latter usage has been considered substandard and not all native speakers are inclined to accept it.[1] However, the alternation between the impersonal usage of *man* as in (1a-b), and the specific one in (2), is not merely a matter of register, communicative strategy or social variation. It may be shown that the differences in reading between the various instantiations of *man* relate to syntactic and semantic factors.

   The facts under discussion have been described and analysed in a seminal work by Cinque (1988) on the Italian *si*-construction. Cinque argues that the interpretation of the impersonal expression is essentially guided by two interacting factors, namely the time reference of the clause, and the argument structure of the predicate. Some more recent approaches have revealed that the correct generalisations can be captured in terms of aspect. According to D'Alessandro & Alexiadou (2003), genericity is crucially restricted by clausal aspect (essentially the perfective-imperfective distinction). Egerland (2003) argues that arbitrariness relates to 'inner aspect' or *Aktionsart* (essentially the telic-atelic distinction). Developing on such ideas, a drastically simplified account of the syntax of impersonal pronouns may be within reach.

   The discussion in this paper is organised as follows: In section 2, I will show how the interpretation of subject *man* is sensitive to aspectual context. In section 3, I will discuss how one is to formulate the accurate generalisation. My claim is that the interpretation

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[1]. For some, the usage of *man* for 'I' has the flavour of modesty; a communicative strategy to avoid the 1st person singular pronoun when the speaker does not wish to emerge as the focus of attention. This could perhaps be advanced as the historical origin of the construction, but as an explanation of its synchronic syntactic properties it is far from satisfactory, as we shall see. For many speakers, the usage in question no longer has any particular stylistic implications. For further discussion on this and related topics, the reader is referred to Jónsson (1992) who analyses the impersonal pronoun *madur* in Icelandic.

of Swedish *man* may be reduced to a matter of the interaction between clausal and inner aspect.[2]

2. The Data: *Man*, Genericity, and Arbitrariness

In (3a-d), the subject *man* appears with transitive, unergative, unaccusative, and passive predicates. In all of these cases, *man* can be interpreted as generic, hence paraphrased as 'people'. However, a specific reading corresponding to the 1st person singular is also available. Henceforth, the two readings will be abbreviated as Gen(eric) and Spec(ific):[3]

(3) a. Man   äter   middag sent i Spanien.   *Trans.* (Gen/Spec)
        man   eats   dinner   late   in Spain
        'people have dinner late in Spain' / 'I have dinner late in Spain'
      b. Man måste   arbeta   för att   förtjäna uppehället.   *Unerg.* (Gen/Spec)
        man   must   work   to   earn   a living
        'People have to work to earn a living' / 'I have to work to earn a living'

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[2].   It should be pointed out from the beginning that the following discussion is inspired by Cinque (1988) and that some of the Swedish examples are adapted from Cinque's treatment of Italian. Despite this, Cinque's classification differs from the one adopted here. Cinque compares a quasi-universal reading of Italian *si* (equivalent to 'people', hence the reading I have chosen to call *generic*), and a quasi-existential reading that is "roughly paraphrasable as 'unspecified set of people including the speaker' ('we')" (Cinque 1988, 542). Considering the empirical similarities between Swedish and Italian impersonal constructions, there are solid reasons to believe that the specific 'I'-reading of Swedish *man* is strictly parallel to the 'we'-reading of Italian *si* as described by Cinque. However, this issue will only be briefly commented upon. An in-depth comparison between Scandinavian and Romance falls outside the scope of this work.

[3].   In many cases, only the generic reading is salient, whereas the specific (substandard) one may be far-fetched or require a particular scene setting. Thus, (3a) is compatible with a specific reading if, for instance, I am living for some period each year in Spain and wish to say something like 'When I'm in Spain I have dinner late (at home I dine earlier)'. (3d) could be a claim about the general situation on the working market ('people don't get steady jobs anymore'). It could also mean that nobody wants to employ me. Because the examples are so numerous, they are generally given without context.

    c. Med flyget   kommer   man fram   i tid.   *Unacc.* (Gen/Spec)
       with the plane   arrives   man   on time
       'With the plane people arrive on time' / 'With the plane I arrive on time'

    d. Nuförtiden blir   man inte   fast   anställd.   *Pass.* (Gen/Spec)
       nowadays   is   man   not   steadily   employed
       'Nowadays people are not steadily employed'/'Nowadays I'm not steadily employed'

(3a-d) are all imperfective in that they describe ongoing or non-completed events. In contrast, in perfective sentences like (4a-d) *man* cannot be interpreted as generic. Instead, subject *man* is arbitrary (*Arb*) and denotes a group of people. However, this reading is dependent on what kind of predicate is used. With transitive and unergative verbs, the *Arb* reading is available along with the *Spec* one. With unaccusatives and passives, only the *Spec* reading is possible:

(4)   a. I går   åt   man middag sent på kvällen.   *Trans.* (Arb/Spec)
         yesterday   ate   man dinner   late in   the evening
         'Yesterday some people/they had dinner late' / 'yesterday I had dinner late'

      b. Man arbetade   i två månader   för att   lösa problemet.

                                                     Unerg. (Arb/Spec)
         man worked   for two months   to   solve the problem
         'Some people/they worked for two months…/ I worked for two months …'

      c. I går   på eftermiddagen kom   man fram   i tid.   *Unacc.* (*Arb/Spec)
         yesterday   afternoon   arrived   man   on time
         'Yesterday afternoon I arrived on time'

      d. I går   på eftermiddagen blev man fast   anställd.   *Pass.* (*Arb/Spec)
         yesterday   afternoon   was   man   permanently employed
         'Yesterday afternoon I was employed'

That is to say, (4a) is compatible with a situation where some people (roughly equivalent to unspecific 'they') had dinner late in the evening; *Först såg man på matchen till sent på kvällen, sedan åt man middag* 'First, they watched the game until late, then they had dinner'. A similar consideration holds for (4b). At the same time, in

both (4a) and (4b), *man* is interpretable specifically as 'I'. However, (4c-d) can only mean that I myself arrived or was employed yesterday afternoon.[4]

There are ways of detecting the difference between these predicate types, as suggested in Cinque (1988). If the expression has an *Arb* subject, it will be compatible with a sentence that points out some group of people as a plausible agent, for instance *det måste ha varit några tonåringar som vanligt* 'it must have been some teenagers as usual'. If the subject is specifically 1st person singular, it will not tolerate the adding of such a sentence. Consider the following examples

(5) a. Klockan fem sjöng man sånger i trappuppgången.   *Transitive*
       at five o'clock sang man songs in the staircase
       Det måste ha varit några tonåringar som vanligt.
       'It must have been some teenagers as usual.'

     b. Klockan fem skrek man i trappuppgången.   *Unergative*
       at five o'clock shouted man in the staircase
       Det måste ha varit några tonåringar som vanligt.
       'It must have been some teenagers as usual.'

     c. Klockan fem föll man i trappuppgången.   *Unaccusative*
       at five o'clock fell man in the staircase
       *Det måste ha varit några tonåringar som vanligt.
       'It must have been some teenagers as usual.'

     d. Klockan fem blev man knuffad i trappuppgången.   *Passive*
       at five o'clock was man pushed in the staircase
       Det måste ha varit några tonåringar som vanligt.
       'It must have been some teenagers as usual.'

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[4].   Christer Platzack (p.c.) points out to me that (i) is acceptable without the specific reading:

(i)   I går   kom   man   åter fram i tid.
      yesterday came man again   on time

I suggest this is so because in (i), genericity is re-established by the adverbial. (i) does not really describe a single, specific event, but rather takes on the reading 'Yesterday it was again possible to arrive on time'.

In (5a-b), subject *man* is compatible with an arbitrary reading. The added sentence points out 'some teenagers' as the agent of the action expressed by the predicates. In (5c) this is not possible because the subject is necessarily understood as the speaker. A similar consideration holds for (5d) although with a different result. In (5d), subject *man* is interpreted as the Patient and 'some teenagers' is understood as the agent. (5d) can only mean that it must have been some teenagers who pushed the speaker in the staircase.

Furthermore, the effect of unaccusatives and passives can be made more evident if we use predicates that, for pragmatic reasons, exclude the 1st person singular (the test was suggested by Cinque 1988; it is also used by D'Alessandro & Alexiadou 2003). Consider (6a-b):

(6) a. Klockan fem dog man.   *Unaccusative* (*Arb/Spec)
        at five o'clock died man

     b. Klockan fem blev man begravd.   *Passive* (*Arb/Spec)
        at five o'clock was man buried

The oddity of examples such as (6a-b) is merely due to the fact that such predicates in perfective contexts impose a specific 1st person singular reading of *man*.

The discussion in the following section aims at capturing the relevant empirical generalisation emerging from these data.

3. Analysis

3.1. *Genericity and Clausal Aspect*

First consider the *Gen* reading. Following the literature on this topic, the generalisation can be stated as in (7) (cf. e.g. Chierchia 1995):

(7) **Restriction on Genericity (1st version)**
     Gen is incompatible with a specific time reference

It is clear, however, that Gen is not ruled out merely because a specific time reference has been made explicit. What matters is not the actual duration or time span, but whether the event is seen as completed or not. There are contexts that "suspend"

perfective Aspect and hence favour genericity. For instance, in modal environments the *Gen* reading is clearly available both with ergative and passive predicates regardless of whether some time reference is made explicit. The effect is observable in embedded interrogatives (8a), in conditionals (8b), and in *when*-clauses with a conditional value (8c) (cf. Dahl 1975; Cinque 1988, 544; Kratzer 1995, 129-130; Krifka et al. 1995, 49ff.):

(8) a. [De strejkar på flygplatserna]
         [they are on strike at the airports]
         Jag   undrar om   man kom fram   i tid   i går   också.
                                                                                Unacc. (Gen)
         I   wonder whether man arrived   on time yesterday   also
     b. Om   man hade blivit anställd   i går   hade   man haft   tur.
                                                                                Pass. (Gen)
         If   man had   been employed yesterday, had   man been   lucky
     c. [Arbetslösheten var hög på trettitalet]
         [Unemployment was high in the thirties]
         När   man blev fast   anställd   hade man tur.   *Pass.* (Gen)
         When   man   was permanently   employed   was man lucky

In modal environments like conditionals and indirect questions, the *Gen* reading is available. There is nothing really surprising about this. Obviously, aspect and mood interact, in the sense that irrealis mood suspends perfective aspect.

   In addition, the *Gen*-reading may be available in spite of a specific reference to some point in the past, if it is made clear that the event described was regularly or repeatedly carried out until this point (cf. Krifka et al. 1995, 36). Consider (9a-b):

(9) a. Man kom fram i tid   fram till i januari   *Unacc.* (Gen/Spec)
         man   arrived   on time until   January
         [sedan blev förseningarna vanliga)
         [after that delays became common]
     b. Man blev lätt   avskedad   till i januari   *Pass.* (Gen/Spec)
         man   was easily   fired   until January
         [sedan ändrades lagarna]
         [after that laws were changed]

(9a) states that people regularly or repeatedly arrived on time until a certain point in the past, from after which this was no longer true. Likewise, (9b) means that people were fired easily until a certain point in the past, when the laws changed. (The specific 1st person singular reading is in principle available in both cases.) There is indeed a specific time reference in (9a-b), *until January*. However, the context induces iteration or habitual repetition of the event. The aspectual interpretation is altered and the restriction of (7) does not rule out *Gen* interpretation in these cases.

Furthermore, consider predicates like *die* or *be buried* as in (6a-b) above. In a perfective environment they impose a specific 1st person singular reading of subject *man* as we have seen. In a context with different aspectual properties, such verbs are perfectly compatible with subject *man* under generic readings, witness (10a-b):

(10) a. Till för femtio år sedan   dog man vanligtvis hemma.   *Unacc.* (Gen)
          until fifty   years ago died man usually   at home
      b. Fram till medeltidens slut blev man begravd i kyrkan.   *Pass.* (Gen)
          until the end of the medieval ages was man buried in church

That is to say, (10a) is acceptable meaning that at least until a certain point in the past people used to die in their homes (and not in the hospital). (10b) is well-formed if it is intended to mean that people in the medieval ages used to be buried inside the church (and not outside, in the graveyard). In both cases there is a specific time reference of sorts, but the contexts make it clear that the event is to be understood as habitually repeated. Therefore, the generalisation of (7) should be restated as in (11):

(11) **Restriction on Genericity (2nd version)**
      Gen is incompatible with perfective aspect

What (11) expresses is that a *Gen* interpretation is available if the event is not understood as completed, hence under an imperfective reading. With the perfective aspect, the event is interpreted as having been carried out at a precise moment of time (which may or may not be explicit). In conditional or hypothetical environments, the event is looked upon as not having been carried out at all.

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3.2.   Arbitrariness and Inner Aspect

This section is dedicated to the discussion of how arbitrariness relates to argument structure. Under 3.2.1 a restriction on arbitrariness will be formulated. The following paragraphs are intended to show that the major verb classes obey to this restriction.

3.2.1.   Capturing the generalisation

Consider the *Arb* interpretations that obtain in perfective contexts. Transitives and unergatives allow for both an *Arb* and a *Spec* interpretation, whereas with unaccusatives and passives only the *Spec* reading is acceptable. A first attempt to state the relevant generalisation could be the one in (12):

(12) **Restriction on Arbitrariness (1ˢᵗ version):**

     Arb interpretation of *man* is barred with unaccusatives and passives

There is a particular point to be made in stating (12) as a restriction on 'arbitrary' interpretations instead of, say, formulating a principle that positively imposes specific interpretations. (12) not only covers the intuitions of those speakers who accept *man* with an 'I' reading, but also those who do not. In other words, for native speakers who do not allow for the specific usage of *man*, (4c-d) and (5c-d), for instance, are unacceptable. (12) captures those contexts where arbitrary readings are not permitted. In those cases, speakers have recourse to the specific reading if such a reading is available in their grammar. If not, the result is unacceptability. Moreover, if the specific reading exists in a given grammar, it is in principle unrestricted, and hence always available.

But there are further generalisations to be captured. Suppose the surface subject of an unaccusative predicate is a "deep object" (e.g. Burzio 1986). Likewise, suppose the surface subject of a passive is an internal argument promoted to subject position (e.g. Jaeggli 1986). Then, the restriction on *Arb* appears to hold if the subject *man* starts out as an internal argument of V, typically a Patient. The subjects of transitives and unergatives, on the other hand, are external arguments, typically Agents. Therefore, the restriction on arbitrary reading can be restated as in (13):

(13) **Restriction on Arbitrariness (2ⁿᵈ version):**

     Arb interpretation of *man* is barred if *man* is a Patient.

(13) appears to be a correct descriptive generalisation. However, given the data we have seen, a more radical formulation is, in fact, within reach. In the examples of *man* given above, the aspectual interpretation crucially correlates with the argument structure of the verb, and the syntactic promotion of an internal argument to subject position. Following a well-known line of thought in generative grammar, a second aspectual notion should be considered, namely the one which signals whether the predicate itself describes an event which may be completed, or whether it is rather seen as ongoing in a non-limited period of time. In work by Tenny (1987, 1994), Borer (1993, 1995), and Arad (1995, 1999), this is referred to as the delimited/non-delimited distinction. I will here continue to use the term *telic* since the choice of term is not of crucial importance.

Suppose that the internal argument has a privileged relation to the predicate. In a sentence such as *John worked at the hospital*, the predicate *work* is atelic because it has no intrinsic limit. In *John arrested Bill* the predicate *arrested* describes a telic event since there is an intrinsic point at which the event will be completed. It is the object, *Bill*, that inherently puts a limit to the event, not the subject *John*. In *Bill was arrested*, it is still *Bill*, now promoted to subject position, that marks this limit. Crucially, telicity hinges only on the internal argument only, not on the external one.

Now consider the fact that in the relevant examples, (4c-d), (5c-d), (6a-b), the subject *man* is the internal argument of the telic predicates. The surface subject of a verb such as *arrive* is an internal argument which puts a limit to the event described by the verb. Likewise, *to employ* is telic, and the subject of the passive expression *to be employed* is thus the deep object of a telic predicate. Therefore, we could attempt a stronger formulation of the restriction on *Arb* interpretations. In (14), the reference to theta-roles in (13) has been replaced by a reference to telicity.

(14) **Restriction on Arbitrariness (3rd version):**

Arb interpretation of *man* is barred if *man* is the internal argument of a telic predicate.

What this means is that impersonal *man* can never be the arbitrary subject of a telic event, if man itself corresponds to the argument that puts the limit to the event.[5]

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[5]. The advantage of this approach depends on the question of the theoretical status of theta-roles. It is an explicit aim of the aspect-oriented approaches already cited to do away with thematic labels (Borer 1993; Arad 1995). For relevant discussion, see also Hale & Keyser (1993, 2001).

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Aspectual interpretation is to some extent elastic; whether a predicate should be thought of as telic or not is partly a matter of morpho-syntactic context. Consequently, an important prediction falls out from the generalisation as formulated in (14). If arbitrary interpretations depend on inner aspect, they are expected to be elastic to the same extent that aspectual interpretations are. I believe the most correct description is precisely this. In the following paragraphs (3.2.2-3.2.5), I will go through the relevant verb classes in order to argue for this claim and thus the correctness of (14).

3.2.2.   Particle Verbs

Certain verbs lend themselves to both delimited and non-delimited readings depending on context. Take a couple of Swedish verbs such as *springa* 'run', and *gå* 'go', 'walk'. Assuming that the atelic readings are the unmarked readings, in Swedish as well as in many other languages, the interpretation of the predicate may be strengthened or altered by prepositional elements, or particles. So for instance, *springa omkring* 'run around', *gå omkring* 'walk around' are unambiguously atelic. Then, as one would expect, in (15a-b) such predicates pattern with unergatives:

(15)   a. Igår   sprang   man omkring   i trappan   fram till   fem
         yesterday   ran   man around   in the staircase   until   five
         på morgonen.
         in the morning
      b. Igår   gick   man omkring i trappan   fram till fem
         yesterday   walked   man   around   in the staircase   until   five
         på morgonen.
         in the morning
         Det var väldigt störande. Jag kunde inte sova.
         'It was quite annoying. I couldn't sleep.'

That is to say, the interpretation of subject *man* in (15a-b) clearly is ambiguous between *Arb* and *Spec* readings. If an expression such as *I couldn't sleep* is added, the interpretation is contextually determined as *Arb*; 'Yesterday at five some people were running/walking around in the staircase'. In contrast to the above, *springa in i* 'run into' or *gå in i* 'walk into' are telic expressions. Consider (16a-b):

(16) a. Igår   vid fem sprang man in i   väggen.
        yesterday at five   ran   man into the wall   (??ARB/SPE)
     b. Igår   vid fem gick man in i   väggen.
        yesterday at five   went man into the wall   (??ARB/SPE)

The effect is the expected one. In (16a-b), the *Arb* interpretation is far fetched. The salient readings are that I myself ran or walked into the wall yesterday at five. The arbitrary interpretation thus is sensitive to a change of inner Aspect.[6]

3.2.3. Psych-Verbs

The complex typology of psych-verbs puts our hypothesis to a test. At least from Rizzi & Belletti (1988), different kinds of such predicates have been recognised in the literature, such as *frukta* 'fear', *oroa* 'worry' or *skrämma* 'frighten'. Following Arad's (1999) more recent classification, such verbs may be: 1. stative, if no change of state takes place in either participant; 2. agentive, if the subject intentionally causes some reaction in the object; 3. eventive, in which case a change of state in the surface subject (in theta-theoretic terms, the Patient) is the cause for the psychological state of the surface object (the Experiencer).

To begin with, psych-verbs of the type *frukta* 'fear' describe states since there is no change of state in either participant. Therefore, (14) predicts that there should not be any restriction on the *Arb* reading. This is indeed true, witness (17a-b):

(17) a. Man fruktar ett snart krigsutbrott.   *Psych. 'fear'* (Arb/Spec)
        man fears   the soon break-out of a war
     b. I går   fruktade man ett snart krigsutbrott i tre timmar.

                                                                      Psych. 'fear' (Arb/Spec)
        yesterday feared   man the soon break-out of a war for three hours

As expected, (17a) can be paraphrased as 'people feared …', and (17b) as '(some) people…'.

Under the agentive reading, a verb such as *skrämma*, 'frighten', is expected to behave like a transitive, cf. (3a) and (4a) above. This prediction is indeed carried out:

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[6]. Note that the data only follow from a restriction formulated in terms of inner aspect. It is not clear how Theta theory would account for the difference between (15a-b) and (16a-b).

(18) a. Man skrämmer lätt   små barn.   *Psych*. *'frighten'* (Gen/Spec)
      man frightens   easily   small children
   b. I går   klockan tre skrämde   man ett litet barn.
                                            Psych. *'frighten'* (Arb/Spec)
   yesterday   at three   frightened   man a small child

Hence, in the generic statement of (18a), subject *man* refers to 'people'. In the episodic context of (18b), *man* means 'somebody' or 'some people'. There is no restriction on *Arb*.

   However, consider the eventive verb *oroa* 'worry' in the examples of (19a-b):

(19) a. När   man är ung
      When   man is young
      oroar   man ofta sina föräldrar utan anledning.
                                            Psych. *'worry'* (Gen/?Spec)
      worries   man often one's parents without reason
   b. Idag har   man oroat sina föräldrar utan anledning.
                                            Psych. *'worry'* (*Arb/Spec)
   today has   man worried one's parents without reason

(19a) is a generic statement, meaning that parents are usually worried because of their children. The interpretation of *worry* in (19b) is episodic. (19b) describes a single, specific event. What (19b) says is that a change of state in the surface subject provoked the reaction of worry in the surface object. In this case, *man* appears to be the argument putting a limit to the event. As expected, the arbitrary reading in (19b) is barred because the construction now falls under the restriction of (14). (19b) takes on the specific reading only, to wit, 'I worried my parents'.[7]

   Although admittedly the interaction of agentive and aspectual readings is complicated, especially in the field of psych-verbs, I conclude that the generalisation covers the data considered so far and that psych-verbs behave as predicted. *Frukta* 'fear' with a stative reading, patterns with atelic predications in general; *skrämma* 'frighten' with an agentive reading patterns with transitives; *oroa* 'worry' with a telic, eventive reading patterns with passives and unaccusatives.

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[7]   It is of relevance that the verb *oroa* 'worry' in Swedish does not lend itself to the agentive reading as easily as, for instance, *skrämma*.

3.2.4. Copular Constructions

Given that copular constructions generally describe a state, the restriction (14) should not apply. Therefore, *man*, as the subject of a copular construction, is expected to be compatible with *Arb* interpretations. In fact, in Swedish, an example such as (20) may be understood as *Arb* or *Spec*:

(20) Man är välvilligt inställd till invandrare.   *Copular* (Arb/Spec)
       man is kindly disposed towards immigrants

The perfective sentences in (21a-b) still allow for both interpretations:

(21) a. [I det ögonblicket förändrades attityderna]
      [in that moment attitudes changed]
      man blev plötsligt välvilligt inställd till invandrare.

                                  Copular (Arb/Spec)
      man was suddenly kindly disposed towards immigrants.
    b. Man har blivit mer välvilligt inställd till invandrare på sistone.

                                    Copular (Arb/Spec)
      man has become kindly disposed towards immigrants lately

Such scene-settings might describe a sudden change of attitude among the inhabitants of a village, for instance. Since there is no telicity involved, there is no ban on the *Arb* interpretation.[8]

3.2.5. Raising Constructions

The interpretation of *man* in raising constructions is a delicate matter. Consider that, in Swedish as well as in several other languages, expressions of distance have raising properties (Gunnarson 1989; (22a-b) = his (2) and (4)):

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[8]. Cinque (1988, 522, 542) claims that the quasi-universal reading of Italian *si* is generally ruled out with psych-verbs. However, the psych-verb used to exemplify the effect is Italian *preoccupare*, which seems to pattern with *worry*. Therefore, it is licit to suspect that Cinque's conclusion might not be generally valid for psych-verbs, but only for verbs of this particular subclass of psych-verbs.

(22) a. De   var   nära att förlora   omröstningen.
         they   were   near losing   the poll
      b. Det   var   nära att de förlorade   omröstningen.
         it   was   near that   they lost   the poll

Such a predicate is inherently stative. Therefore, according to the restriction of (14) a raising expression like *vara nära att* 'to be close to' should not play a role in the interpretation of subject *man*. Consider the examples in (23a-b):

(23) a. I tre dagar   var   man   nära att gripa den skyldige.   *Raising* (Arb/Spec)
         for three days was   man   close to catch the culprit
      b. I tre dagar   var   man   nära att bli gripen av polisen. *Raising* (??Arb/Spec)
         for three days was   man   close to be caught by the police

(23a-b) are both perfective. There is a difference between the two cases however, in that (23a) is ambiguous between a specific and an arbitrary reading, while (23b) tends to be specific. Interestingly, the raising expression appears to be of no relevance for the interpretation of subject *man*. Notice that the complement is a transitive predication in (23a) and a passive one in (23b). In fact, (23a) patterns with the transitive example given as (4a) above, and (23b) behaves like the passive example in (4d). Again, this is the expected result; the raising verb itself is stative, and thus is 'invisible' as far as the arbitrary interpretation is concerned.

In contrast, the expression *visa sig* 'turn out' has raising properties but is telic, witness (24a-b):

(24) a. Det visade sig att Johan var lämplig för jobbet på mindre än en månad.
         it turned out that John was suitable for the job in less than a month
      b. Johan visade sig vara lämplig för jobbet på mindre än en månad.
         Johan turned out to be suitable for the job in less than a month

In a perfective context, subject *man* takes on a specific reading as in (25):

(25) Efter en månad visade man sig till slut vara lämplig för jobbet.

Raising (??Arb/Spec)

after a month man turned out finally to be suitable for the job

In (25), *man* is the subject of an adjectival predication selected by a telic predicate. The restriction of (14) comes into play ruling out the *Arb* reading of (25), which means that I myself turned out to be suitable for the job.[9]

4. Conclusions and final discussion

Summing up, the survey presented in this paper has brought us to conclude that an impersonal expression such as *man* is subject to restrictions of essentially two kinds, both of which are related to aspect.

As a phrasal subject, *man* enters into a semantic relation with clausal aspect. If this is perfective, a generic reading of *man* is ruled out.

In perfective contexts, there is a further restriction. If *man* is the internal argument, *man* enters into a semantic relation with inner aspect, or the *Aktionsart* of the predicate. If this is telic, an arbitrary reading of *man* is ruled out.[10]

A more radical simplification would be within reach if, furthermore, we accept that clausal aspect and inner aspect are not distinct systems but rather "parts of the same system operating at different levels of composition" (Tenny & Pustejovsky 2000, 6). This possibility, however, has not been pursued here. In any case, the data can be taken

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[9]. As for Italian *si*, Cinque (1988, 522, 542) reaches the conclusion that raising-predicates generally rule out the quasi-universal reading of the impersonal. The Swedish data suggest that this is true for some, but not all, raising verbs. Instead, I suggest here that Cinque's result is not valid for raising verbs in general but rather is due to the precise verb being used in Cinque's survey, namely Italian *risultare* 'turn out' which is a telic predicate.

[10]. The restrictions of (11) and (14) could be captured in derivational terms, though that would extend the scope of the present work. Assume that the syntactic derivation includes aspectual features such as [+perfective] and [+telic]. Then, the restrictions concern two configurations, in both *man* raises to the sentence subject position. Firstly, if *man* is the sentence subject of a clause with a [+perfective] feature, *man* is in a checking relation with this feature and genericity is blocked. Secondly, if *man* is the externalised argument of a telic event, *man* first enters into a checking relation with the feature [+telic], and successively with [+perfective]. In such a context, arbitrariness is blocked. The syntactic account thus would build on the assumption that the interpretation of an impersonal subject is settled by the checking relations it enters into during derivation.

to support the view that aspectual semantics are among those lexical factors that feed syntax and that the relevant features are in fact part of syntactic derivations.

Beyond these two restrictions, which I hold to be universal in nature, the interpretation of *man* is a highly variable matter. The arbitrary reading appears to be entirely open to context, and is in principle compatible with any kind of referent. In addition, *man* is (substandardly) associated to the specific 'I'-reading, which may be a lexicalised option.

The interest of an impersonal expression such as *man*, then, lies in the fact that it combines universal principles of interpretation with language-specific microvariation, the latter being partly communicative-pragmatic, partly lexical. Only when the analysis abstracts away from such variations, the fundamental and invariable properties of the system become transparent. This result is sufficient to claim that further research on the topic is warranted.

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On some anaphoric temporal locutions

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0. Introduction

In this paper we will analyze the semantic and syntactic properties of temporal expressions such as *il giorno dopo* (the day after) and *il giorno prima* (the day before) – i.e., the so called *anaphoric* temporal locutions. We will consider their distribution in Italian, given the availability of native intuitions. However, the conclusions which will be arrived at in this work can be extended to other languages as well, among which English, modulo morphosyntactic variation.

The hypothesis to be illustrated is the following: given that these locutions are anaphoric, they require an antecedent in the sentence or in the previous discourse. However, such an antecedent cannot be provided by the utterance time, presumably for inherent semantic reasons.

At first sight, such a generalization does not make the correct predictions – or is at least insufficient – with respect to embedded contexts. In some embedded contexts in fact, the anaphoric locutions cannot appear, somewhat unexpectedly.

We will show that these contexts are (Generalized) Double Access Reading ones, in the sense of Giorgi & Pianesi (2001a). According to these authors, the DAR involves computing two semantic representations of the embedded clause, one adopting, as it were, the point of view of the subject of the reported attitude/dictum, and the other involving the speaker's point of view. Non-DAR contexts, on the other hand, are limited to the first step. We will show that it is the second step of DAR computation that is responsible for the contrast..

The aim of this work is twofold. On one hand we want to investigate *temporal anaphora* in order to understand what it means for a temporal locution to be anaphoric, as

opposed to indexical, and to better understand the requirements it poses on the antecedent. On the other, we want to shed some further light on Sequence of Tense mechanisms, with respect not only to the properties of tenses, but also to the properties of temporal modifiers.

The perspective adopted here is "from semantics to morphosyntax" – namely, the general question which is addressed in this work is why and how a given relation holds between a certain meaning and a certain morphosyntactic structure expressing it.

The paper is organized as follows: in the first section we will illustrate the basic facts concerning the distribution of the anaphoric locutions in matrix contexts. The second section will delve with embedded ones, focusing on the distribution of anaphoric locutions in Double Access Reading (henceforth, DAR) and non-DAR contexts. In the third, we will articulate an account that will eventually lead to an explanation of the contrast. This will require an (informal) discussion of the meaning of our anaphoric locutions, an analysis of some of the properties of embedded contexts that are relevant for the interpretation of tenses, and details about the properties telling apart DAR and non-DAR contexts. Finally, section four provides some more discussion of aspects related to the semantics of anaphoric temporal locutions.

1. Basic facts

Anaphoric temporal expressions require suitable temporal entities to draw (or build) their reference from. If said in an out-of-the-blue fashion, (1) and (2) are odd, for lack of an antecedent for the anaphoric temporal phrase:

(1)   #Gianni è partito il giorno (mese/ anno / ora) prima/ dopo.

        Gianni left the day (month/ year, hour) before/ after.

(2)   #Gianni partirà il giorno prima/ dopo.

        Gianni will leave the day before/ after.

If a suitable antecedent is provided by the context, utterances of (1) and (2) become acceptable:

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(3) A: Gianni è partito il 23 maggio

     A: Gianni left on May 23rd

(4) B: Ma no! E' partito il giorno prima!

     B: Oh no! He left the day before!

(5) B: Ma no! E' partito il giorno dopo!

     B': Oh no! He left the day after!

Discourses (3)+(4) and (3)+(5) are acceptable: the anaphoric locution in the second sentence can draw its reference from the temporal phrase introduced by the first sentence. In the following, we will hypothesise that this behaviour is due to the existence of a phonetically unpronounced temporal variable in the anaphoric phrase, yielding, e.g., *il giorno prima x* (the day before *x*). So we can comment on the data above by saying that with out-of-the-blue utterances of (1) and (2) there is no temporal referent for the hidden variable to exploit. In discourses (3)+(4) and (3)+(5), on the other hand, the phrase *il 23 maggio* (May 23rd) in sentence (3) introduces a temporal referent that the hidden variable of the following sentence can use to draw its reference from.

When the tense is the imperfect, or the compound tense with the auxiliary in the imperfect (the so-called pluperfect) the variable of our anaphoric expression can take its reference sentence-internally, so that out-of-the-blue utterances of (6) are fine:

(6) Quando l'ho incontrato Gianni era partito il giorno (mese/ anno / ora) prima.

     When I have met him Gianni had(IMPF) left the day (month/ year, hour) before.

Example (6) features a pluperfect, a compound tense consisting of the auxiliary in the imperfect and the main verb in the past participle. The latter, as we argued at length in past works, instantiates a tense projection, T2, distinct from that corresponding to the tense morpheme of the auxiliary, and contributing a past meaning.[1] The imperfect on the auxiliary, on the other hand, can be analysed as a present in the past, shifting the current

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[1]. See Giorgi and Pianesi (1997).

point of view to a past one which is either explicitly provided in the sentence (in the form of a time topic), or drawn from the context.[2] Using a terminology made famous by Reichenbach (1947) and his followers, one could say that with the imperfect the reference time R is identified with some past time, possibly provided by the topic phrase. The contribution of T2, on the other hand, locates the event time, E, before R, so that the resulting meaning of a pluperfect verbal form such as *era partito* (was left) is that the leaving (the event time E) is before R, the past-shifted time.

Returning to (6), the hidden temporal variable of the anaphoric phrase can have the same reference as R, which, in turn, is the time/event corresponding to *quando l'ho incontrato* (when I have met him). The result is that Gianni's leaving is located one day (month, hour) before the meeting.

The possibility for the hidden variable to corefer with the reference time in these constructions is obviously ruled by a number of intervening conditions. So, if in the presence of a pluperfect tense we use a locution like *il giorno dopo x* (the day after), the very meaning of such an expression prevents *x* from coreferring with R, and an out-of-the-blue utterance of (7) is odd:

(7) #Quando l'ho incontrato Gianni era partito il giorno (mese/ anno / ora) dopo.
     When I have met him Gianni had(IMPF) left the day (month/ year, hour) before/ after.

As with (6), R is the time/event of the meeting, and the contribution of T2 (the tense morpheme of the past participle) requires it to be after the event time E. If the hidden variable of the anaphoric locution corefers with R, then E is the day after R, conflicting with the requirements of T2. The only possibility, therefore, is that the hidden temporal variable take its reference from some other entity:

(8) Ieri ho incontrato Carlo. Era arrivato in città la settimana prima, e sua sorella lo aveva raggiunto due giorni dopo.
     Yesterday I have met Carlo. (he) had(IMPF) arrived in town the week before, and his sister had(IMPF) reached him two days after.

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2.   See Giorgi and Pianesi (2003) for more on the imperfect tense as a present in the past.

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Here the temporal variable of *due giorni dopo* (two days after) can take its reference from the temporal phrase in the second sentence, avoiding clashes with the pluperfect meaning.

There are other restrictions to the possibility for the our hidden variable x to corefer with R. Remember (1) and (2): we said that out-of-the-blue utterances of these two sentences are odd, showing that x doesn't find any suitable referent. The tense was the present perfect, which, under a a (neo-)Reichenbachian analysis like the one in (Giorgi and Pianesi 1997), yields S=R and E<R. So, the oddness of (1) and (2) shows that the temporal variable cannot have the same value as the speech time/event.

This is not easy to explain. The use of the present perfect involves reference to the speech time/event, and this should be enough to raise it to salience. And, possibly independently from this, one might argue that the very fact that a sentence is uttered should be enough for the speech time/event to become salient.[3] But, there is no way: x cannot have the same reference as R when R=S — that is, when the reference/perspective time is the utterance/speech time. In particular, (1) cannot mean that Gianni has left the day before the utterance day. Maybe this is due to some presuppositional feature carried by the hidden temporal variable, which prevents it from taking on the same value as the speech time. But, be it as it may, we can stand with the conclusion that the hidden temporal variable of our anaphoric locutions can have the same value as the reference time, but cannot have the same value as the speech time/event.

2. Anaphoric temporal locutions in embedded contexts

In the previous section we focused on matrix contexts, and showed that there is a contrast between cases in which the anaphoric locutions are in construction with verbal forms in the imperfect or the pluperfect tense, and cases where the verb is in the present perfect. In the former the hidden temporal variable of the anaphoric phrase can have the same reference as Reichenbach's reference time, in the latter it cannot. The result is that out-of-the-blue utterances of sentences of the first type can be fine, whereas sentences of the second kind yield unacceptable results.

A similar contrast can be found in embedded contexts: certain types of referential relationships seem to be allowed or disallowed, according to the tense of the embedded clause. In particular, the contrast involves the future tense and the present perfect on the

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[3].   As Schlenker (2002) seems to argue.

one side, and the pluperfect and the perfect conditional on the other. Let us first consider the future tense when embedded under a past tense.

(9) #Ieri/giovedì/quando l'ho incontrato, Gianni ha detto che Mario partirà due giorni dopo.
     Yesterday/Thursday/when I met him, Gianni said that Mario will leave two days after.

(10) Ieri/giovedì/quando l'ho incontrato, Gianni ha detto che Mario sarebbe partito due giorni dopo.
     Yesterday/Thursday/when I met him, Gianni said that Mario would leave two days after.

(11) Ieri Gianni ha detto che Mario partirà/sarebbe partito domani.
     Yesterday Gianni said that Mario will leave tomorrow

Sentence (9) is odd if uttered out-of-the-blue, contrasting with (10). In the former the embedded tense is the future, in the latter it is the perfect conditional, the tense Italian commonly uses for future-in-the-past contexts. The oddness of (9) signals that the hidden variable of *due giorni dopo* (two days after) can't find a suitable antecedent, despite the presence of the temporal phrase in the matrix. The felicity of (10) signals that in this case the hidden variable has no similar problems. Finally, if in (9) the anaphoric locution is substituted by an indexical one, as in (11), an out-of-the-blue utterance of the resulting sentence is felicitous.

The contrast between (9) and (10) extends to cases where no explicit temporal phrase appears in the matrix clause.

(12) #Gianni ha detto che Mario partirà due giorni dopo.
     (Yesterday) Gianni said that Mario will leave two days after.

(13) Gianni ha detto che Mario sarebbe partito due giorni dopo.
     Gianni said that Mario would leave two days after.

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Again, when uttered out-of-the-blue, (13) is fine, locating the reported leaving of Mario two days after the reported speech event. On the other hand, (12) is still odd. It cannot mean what (13) does; in particular, the leaving is not perceived as being located two days after Gianni's dictum, but there's the clear feeling that the reference of *due giorni dopo* (two days after) is left undetermined.

Obviously, we should not hasten to conclude that the (embedded) future tense is not compatible with anaphoric temporal expression. For, when a temporal referent is made available by a phrase appearing in another sentence, no conflict arises:

(14) Mario partirà venerdì, e Carlo mi ha detto che sua sorella lo seguirà due giorni dopo.
Mario will leave on Friday, and Carlo has told me that his sister will reach him two days after.

(15) ?Carlo è partito giovedì. (Ieri) Sua madre mi ha detto che la sorella lo raggiungerà dieci giorni dopo.[4]

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[4]. This sentence is slightly odd, though, we believe, for reasons that don't affect our reasoning here. Notice that the problem is not specific to embedded contexts:

(i) ?Carlo è partito giovedì e sua sorella lo raggiungerà dieci giorni dopo.
Carlo has left on Thursday, and his sister will reach him ten days after.

In both cases, the marginality of the examples seems to be related to the fact that the locution *dieci giorni dopo* (ten days after) is used in a clause with the future tense, while its hidden variable picks up a referent introduced in a past tense clause. The oddness is maintained if the distribution of the future and of the past tenses is reversed:

(ii) ?Carlo partirà giovedì; sua sorella era arrivata dieci giorni prima.
Carlo will leave on Thursday; his sister had arrived ten days before.

(iii) ?Carlo partirà giovedì. (Ieri) Sua madre mi ha detto che la sorella era arrivata dieci giorni prima.
Carlo will leave on Thursday. (Yesterday) his mother told me that his sister had arrived ten days before.

Carlo has left on Thursday. (Yesterday) his mother told me that his sister will reach him ten days after.

It seems, therefore, that the embedded future tense is not comfortable with anaphoric phrases that take their reference intrasententially.

The future tense is not isolated in this. A similar behaviour is exhibited by the Italian present perfect tense, this time contrasting with the pluperfect:

(16) #Ieri/giovedì/il 2 febbraio Gianni ha detto che Mario è partito il giorno prima.
      Yesterday/thursday/ February 2, Gianni said that Mario left the day before.

(17) Ieri/giovedì/il 2 febbraio Gianni ha detto che Mario era partito il giorno prima.
      Yesterday/thursday/ February 2, Gianni said that Mario had(IMPF) left the day before.

(18) Questa mattina Gianni ha detto che Mario è partito ieri
      This morning Gianni said that Mario has left yesterday

Much as the future tense in the examples above, the present perfect tense is not comfortable with an anaphoric temporal locution, whereas the pluperfect is, cf. (16)-(17). Again, (16) can be rescued by substituting the anaphoric phrase with an indexical one, as in (18).

The contrast is maintained also when there is no temporal phrase in the matrix, and the intended reading involves directly the matrix's eventive variable:

(19) #Gianni ha detto che Mario è partito il giorno prima.
      Gianni said that Mario left the day before.

(20) Gianni ha detto che Mario era partito il giorno prima.
      Gianni said that Mario had(IMPF) left the day before.

As it seems, all these sentences are neither ungrammatical, nor non-interpretable, but seem to violated some (pragmatic?) constraint favouring referents that are oriented (with respect to the speaker) the same way as the tense of verb.

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If uttered out-of-the-blue, (20) is fine, with the leaving being perceived as located two days before Gianni's reported utterance. The same does not hold of (19): the embedded anaphoric phrase remains without an available antecedent, and the relevant utterance is non-felicitous.

Finally, as with the future tense, the present perfect too does not prevent the embedded temporal phrase to draw its reference from outside the sentence:

(21) Mario è partito venerdì, e Carlo mi ha detto che sua sorella lo ha preceduto due giorni prima.
Mario has left on Friday, and Carlo told me that his sister has preceded him two days before.

So, in all relevant respects anaphoric temporal phrases give raise to the same type of contrasts with embedded present perfect tenses vs. the pluperfect, as those we saw above with the future tense vs. the perfect conditional: the hidden variable of the temporal locution cannot have the same reference as the matrix event/time when the tense is the present perfect or the future, whereas it can do so with the pluperfect and the perfect conditional. The future tense patterns together with the present perfect, and the perfect conditional with the pluperfect, and the question is whether there is any property that one context has and the other doesn't, or viceversa.

The answer is in the affirmative. The contexts where the anaphoric temporal locution yields unacceptable results are all contexts of double access readings (DAR), whereas those in which these problems don't arise do not enforce the DAR.

Typical examples of sentences exhibiting the DAR are the following:[5]

(22) John said that Mary is pregnant.

(23) Gianni ha detto che Maria è incinta.

The feeling is very clear that whatever the meaning of the embedded clause is, the pregnancy state attributed to Mary/Maria holds both at the speaker's time and at the time of the reported speech. Thence the oddness of (24)-(25):

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[5].   For the DAR see Abusch (1997), Ogihara (1995), Giorgi and Pianesi (2001a).

(24)   Ten months ago John said that Mary is pregnant.

(25)   Dieci mesi fa Gianni ha detto che Maria è incinta.

Sentences such as (22) and (23) contrast with cases like the following, where there is no requirement for the pregnancy state to overlap the speaker time, being enough that it overlap the saying time (notice the use of the imperfect in the Italian sentence):

(26)   John said that Mary was pregnant.

(27)   Gianni ha detto che Maria era(IMPF) incinta.

According to the intuitive criterion we have used so far, sentences where a future tense is embedded under a past tense have double access readings as well:

(28)   John said that Mary will leave.

(29)   Gianni ha detto che Maria partirà.

Both in the Italian and in the English version, Mary's/Maria's leaving is located after both the current and the reported speech times. The contrast, this time, is with the English *would*-future and the Italian perfect conditional:

(30)   John said that Mary would leave.

(31)   Gianni ha detto che Maria sarebbe partita.

In this case, all is required of the leaving is that it takes place after John's/Gianni's saying so.

So, the future tense gives raise to double access readings when embedded under a past tense, whereas the *would*-future/perfect conditional, and the simple-past/the imperfect, don't. As to the present perfect, it is a little bit harder to appeal to the same intuitions we have used so far in order to show that it gives raise to the DAR too. Notice, however, that if it is the case that Mary actually left, and that that leaving was the one John referred to with his dictum, then for an utterance of the following sentence to be fine it is necessary

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that the consequent state of the leaving be still present — that is, that Mary hasn't returned:[6]

(32)   John said that Mary has left.

It seems possible, therefore, to conclude that the present perfect too, when embedded under a past tense, creates a DAR context. Eventually, we have shown that the contrast we are discussing — the possibility/impossibility for embedded anaphoric phrases to draw their reference from (certain) material in the matrix clause — indeed corresponds to the DAR/non-DAR divide.[7]

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[6].   For the notion of consequent state see (Parsons 1990).

The corresponding Italian example doesn't behave in the same way. But this doesn't show that the Italian counterpart of (32) is not a DAR sentence. The fact is that whereas it is generally not appropriate to use the English present perfect tense to inform about Mary's leaving in case she has returned, the same doesn't hold of Italian. So (i) is odd, but (ii) is fine:

(i)   #John has left and she has just returned.

(ii)   Gianni è partito ed è appena ritornato.

This well-known contrast points to a partially different meaning for the two verbal forms. The English present perfect is more sensitive to what Parsons (1990) called the 'resultant state' of an event: the possibly transitory state that comes about as a consequence of the mentioned event. In our case, the event is a leaving and the resultant state is the state of John being away. The Italian present perfect seems to exploit a more abstract notion of 'consequent state' (Parson 1990), which is a state that ensues automatically once an event has terminate: the state consisting in the event being over.

Despite these differences, both the Italian and the English present tenses feature a present tense auxiliary, the present tense providing the paradigmatic cases of DAR. Hence we straightforwardly extend that property to the Italian present perfect.

[7].   Another piece of evidence in this direction is provided by the following minimal pair:

(i)   (Giovedì) Mario dirà che sua sorella è partita il giorno prima.
       Thursday Mario will say that his sister has left the day before.

In this section we have shown that certain types of referential relationships involving anaphoric locutions such as *il giorno prima* (the day before) are allowed/disallowed in embedded contexts. The relevant relationships involve the matrix event/time and, we have concluded, the contrast seems to pattern together with the presence/absence of the DAR. Whenever the latter is enforced, the hidden variable of *il giorno prima* cannot have the same value as the matrix's event/time, whereas this is possible in non-DAR contexts. It seems, therefore, that in order to understand the nature of the contrast we must consider the formal properties telling apart DAR from non-DAR contexts.

3. Toward a solution

3.1. Cross-clausal or local reference?

The generalisations we arrived at are the following:

- in matrix contexts, the hidden variable of *n giorni prima* (n days before) can have the same reference as Reichenbach's R.[8]
- the variable cannot refer to the speech time/event.

(ii) #(Giovedì) Mario ha detto che sua sorella è partita il giorno prima.

   Thursday Mario has said that his sister has left the day before.

Both sentences feature an embedded present perfect, but their matrix verbal forms are in the future tense and in the present perfect, respectively. Matrix future tenses do not support the DAR; hence (i) isn't, and (ii) is, a DAR context. An out-of-the-blue utterance of (ii) still gives raise to the same problems we have become accustomed to: even in the presence of an overt temporal phrase in the matrix, the hidden temporal variable of the anaphoric locution doesn't manage to find a suitable antecedent. On the other hand, an utterance of (i) in the same conditions is perfect, signalling that the variable of *il giorno prima* (the day before) can have the same reference as the matrix temporal phrase/event, yielding the following meaning: Mario will say that his sister had left the day before Thursday.

[8].   Given the similarities between *n giorni/settimane/mesi prima* (n days/weeks/months before) and *n giorni/settimane/mesi dopo* (n days/weeks/months after) our discussion will focus on the former.

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The problem we have introduced in the last section involves subordinate contexts: if the DAR is enforced, the hidden variable of an embedded anaphoric locution is disjoint from the matrix's event/time, whereas in non-DAR contexts it can be assigned that value.

Before going on, we want to bring some other evidence in favour of the idea that the problem turns around whether the hidden variable can or cannot have the same reference as the matrix time/event, and that this doesn't depend on structural facts; in particular, that c-command is not an issue. Consider the following two cases:

(33) #Quando <u>giovedì</u> gli ho parlato, mi ha detto che Carlo è arrivato il giorno prima.
      When I talked to him on Thursday, he has told me that Carlo has arrived the day before.

(34) Quando <u>giovedì</u> gli ho parlato, mi ha detto che Carlo era arrivato il giorno prima.
      When I talked to him on Thursday, he has told me that Carlo had(IMPF) arrived the day before.

Differently from examples such as (16) and (17), in (33) and (34) the temporal phrase *giovedì* does not c-commands the anaphoric locution. Yet the pattern is identical to that exhibited by (16)-(17); in particular, (33) is odd, if uttered out of the blue, showing that the temporal variable of *il giorno prima* cannot have the same reference as *giovedì* (Thursday).

Further evidence is provided by (35)-(36) below: *giovedì* (Thursday) appears in a different sentence, yet the contrast is reproduced. Despite the general possibility for the temporal variable of *il giorno prima* to draw its reference from the extrasentential context, this move is prevented in (35).[9]

(35) Ho incontrato Mario giovedì. #Mi ha detto che Carlo è arrivato il giorno prima.
      I met Mario on Thursday. He has told me that Carlo has arrived the day before.

(36) Ho incontrato Mario giovedì. Mi ha detto che Carlo era arrivato il giorno prima.
      I met Mario on Thursday. He has told me that Carlo had(IMPF) arrived the day before.

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[9].   See the discussion in §1.

What unifies (33)-(36) with, e.g., (16)-(17) is the fact that irrespective of its position, *giovedì* (Thursday) contributes to determine the temporal location of the event of the main clause. It does so directly in (16)-(17), being the temporal argument of the matrix verb;[10] indirectly, through the mediation of the *when*-clause, in (33)-(34); and indirectly again in (35)-(36), where discourse factors conspire to favour a reading of the second sentences whereby Mario's dictum is located on Thursday. As soon as the temporal phrase does not determine the location of the event of the main clause, the contrast disappears, and the referent provided by *giovedì* (Thursday) becomes available even with embedded present perfect tenses, as in (37):

(37) Il ragazzo che hai incontrato giovedì, ieri mi ha detto che Carlo è arrivato il giorno prima.
      The boy you met on Thursday, yesterday told me that Carlo has arrived the day before.

In this case, *giovedì* doesn't specify the temporal location of the matrix event, and the hidden variable of *il giorno prima* (the day before) can corefer with it, so that the meaning of the temporal locution is: 'the day before Thursday'.

So it seems that we can adopt the following generalisation:

(38) **Generalisation**: The hidden variable of *il giorno prima* (the day before) can have the same reference as the matrix event/time in non-DAR contexts, but cannot do so in DAR ones.

This, in turn, seems to entail that DAR contexts disallow, and non-DAR contexts allow, the following indexations, where Temp-phrase in (39) is any temporal phrase specifying the time of the matrix event:

(39) a. Temp-phrase$_i$ ….V che …. V il giorno prima x_i.
      b. ….. V$_i$ che …. V il giorno prima x_i..

But, we argue, (39) need not be what underlies (38). Notice, in the first place, that there is a certain amount of redundancy between (39a) and (39b), for whenever the former is

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10.   See Giorgi and Pianesi (1997) and Delfitto and Bertinetto (2000) on temporal arguments.

descriptively appropriate, so is the latter, but there are examples in which (39b) applies that don't fall under (39a). We will see this in more detail in the next section.

3.2. *Eventive reference and the* unit mismatch *constraint*

We have tacitly assumed that both temporal and eventive antecedents can be relevant for computing the meaning of *il giorno prima*. This move seems justified by the fact that our anaphoric locutions can be in construction both with event-referring phrases, cf. (40)-(41), and with time referring ones, cf. (3):

(40)   Due anni prima (de) la quarta crociata
       Two years before (of) the fourth crusade.

(41)   Il giorno prima (de) la dichiarazione d'indipendenza/il suo arrivo.
       The day before (of) the declaration of independence/his arrival.

(42)   Due giorni prima di domenica
       Two days before of Sunday

Whatever the meaning of (40) or of (41) is, the relevant computations must take into account the fact that *la quarta crociata* (the fourth crusade) or *il suo arrivo* (his arrival) pick up events. Thus, our tacit assumption seems justified that the hidden temporal variable of *il giorno prima* can pick both temporal and eventive referents.

   Suppose that temporal reference is involved. Then we analyse *il giorno prima x* as 'the day that lies one day before x (for $x=t$ a given time)', taking these expressions as functions associating a given time t (the value of x) with the unique time that lies n days/hours/etc. before t. If reference to events is involved, we can hypothesise that the time of that event is to be extracted, say, by means of a definite description, so that *il giorno prima x* amounts to 'the day that lies one day before the time of x (for $x=e$, a given event)'. In both cases, computing the value of *il giorno prima x* always involve a temporal entity, be it directly provided as the value of the hidden temporal variable, or by means of a covert definite description.

   Interestingly, the reference /denotation of the covert definite description is not free:

(43) A: Mario è partito giovedì.
      A: Mario left Thursday.
      B: #Ma no! E' partito un'ora prima.
      B: No! He left one hour before.

B's reply is odd, showing that the anaphoric phrase in the second sentence cannot find a suitable antecedent. It cannot find an eventive referent, given that the second speaker denies the existence of the event mentioned in A's utterance. It also fails anaphoric reference to *giovedì* (Thursday), though, despite the fact that this is an available temporal referent. The reason, we argue, is due to a constraint we call the *unit mismatch constraint*: the temporal referent for *x* in 'the hours that lies one hour before *x* (for *x* a time)' must be of the type 'hours', so that a more appropriate paraphrase is 'the hour that lies one hour before *x* (for *x* an hour-type entity)'.[11] So, for temporal reference we have:

(44) If *x* refer to a time span, and Y is an expression classifying time spans, then expressions of the form *n Y before x*, amount to 'the Y that lies *n* Y(s) before *x*, where *x* is a Y'.

When eventive reference is involved, on the other hand, the paraphrases discussed above suggest the following:

(45) If *x* refer to an event, and Y is an expression classifying time spans, then expressions of the form *n Y before x*, amount to 'the Y that lies *n* Y(s) before <u>the time</u> of *x*'.

The unit mismatch constraint can be seen at work also in cases like (46), which contrasts with (47):

(46) A: Mario è partito oggi.
      A: Mario left today.
      B: #Ma no! E' partito il giorno prima.
      B: No! He left the day before.

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11. The importance of unit mismatch for the examples in the text has been suggested to us by J. Higginbotham..

(47) A: Mario è partito ieri.
      A: Mario left today.
      B: Ma no! E' partito il giorno prima.
      B: No! He left the day before.

Example (47) is felicitous, showing that the temporal referent introduced by *ieri* (yesterday) is available for the hidden variable of the temporal locution to pick. This is as expected, since that referent is of the type required by *il giorno prima* — that is, a day. The unacceptability of (46), therefore, shows that the referent introduced by *oggi* (today) is not of the right type. Indeed, it can be seen that for any relevant type, hours, days, weeks, etc., *oggi* always fails to provide a suitable referent:

(48) A: Mario è partito oggi.
      A: Mario left today.
      B: #Ma no! E' partito il giorno/la settimana/un'ora prima.
      B: No! He left the day/the week/one hour before.

Indeed, *oggi* refers to a contextually relevant portion of the day of the utterance, where the choice of such a portion is strongly affected by the tense:

(49) a. Oggi Mario è partito.
         Today Mario has left.
     b. Oggi Mario partirà.
         Today Mario will leave.

As it turns out, such a portion is neither of the hour-type, nor of the week-, day-, etc., type.
    The unit mismatch constraint is less visible when eventive reference is at stake:

(50) A: Mario è partito giovedì.
      A: Mario left Thursday.
      B: Vero! e suo fratello è arrivato un'ora prima.
      B: True! And his brother arrived one hour before.

The anaphoric locution in B's reply cannot draw its reference from Thursday for the same reasons as above: *un'ora prima* (one hour before) requires that the time antecedent be hour-like. The reply, however, is felicitous, showing that the variable can get to a referent

in such a way that the *unit mismatch* constraint is not violated. The only open possibility here is that the referent be the event mentioned in A' utterance. Now, (45) had it that cases of eventive reference involve the covert definite description *the time of x (for x an event)*. Given the felicity of (57), it must be admitted that such a definite description can be made more precise by the linguistic context, yielding the paraphrase: 'the hour that lies one hour before <u>the hour</u> of *x* (for *x* a given event)'. Eventually, we can modify (45) as follows:

(51) If *x* refer to an event, and Y is an expression classifying time spans, then expressions of the form *n Y before x*, amount to 'the Y that lies *n* Ys before <u>the Y of x</u>'.

The consequence of (51) is that there is the choice of the referent for the hidden variable is much freer in the case of eventive reference than in the case of temporal one: in the latter case, the unit mismatch constraint directly applies to the temporal referent, ruling out cases like (43) and (46). When eventive reference is at stake, on the other hand, the mediating definite description in (51) can provide for the right temporal unit. This greater latitude of eventive reference with respect to temporal reference in our temporal locution is further exemplified by the following example:

(52) A: Carlo è arrivato ieri.
     A: Carlo is arrived yesterday.
     B: Ma no! Oggi suo fratello mi ha detto che era arrivato un'ora prima.
     B: No! Today his brother has told me that Carlo is arrived one hour before.

One reading of B's reply has it that Carlo's brother said today that Carlo had arrived one hour before his (the brother's) saying. This reading is not obtained by letting the hidden temporal variable of *un'ora prima* (one hour before) draw its reference from *oggi* (today). According to the discussion above, *oggi* is generally unable to provide a suitable referent for the temporal variable of our temporal locutions, because of it always gives rise to unit mismatch. So in this case too the mentioned reading of B's reply must be due to the fact that *un'ora prima* is spelled out as 'the hours that lies one hour before <u>the hour of x</u> (for *x* the saying event)', with the definite description read attributively.

Returning to our main topic, (52) is a case in which (39a) doesn't apply, whereas (39b) apparently does. Another interesting contrast is the following, which exploits the properties of the DAR/non-DAR divide:

(53) Giovedì Gianni mi ha detto che Carlo era arrivato un'ora prima/la settimana prima.
Thursday Gianni told me that Carlo was arrived one hour before/the week before.

(54) #Giovedì Gianni mi ha detto che Carlo è arrivato un'ora prima/la settimana prima.
Thursday Gianni told me that Carlo is arrived one hour before/the week before.

What is interesting here is that the contrast between DAR and non-DAR contexts is maintained despite the *unit mismatch* constraint. The acceptability of (53) shows that the hidden variable of the embedded anaphoric locution takes its reference from the matrix event. Temporal reference, in fact, is ruled out by *unit mismatch* constraint.

Quite generally, our account has the following consequence for (39a) and (39b): whenever there is no violation of the *unit mismatch* constraint, there is no ground to decide whether the hidden variable of an embedded anaphoric temporal locution draws its reference from the temporal phrase fixing the location of the matrix event or from the event itself. However, the *unit mismatch* constraint allows us to isolate cases in which only eventive reference is operative. So, the redundancy between (39a) and (39b) seems well established: whenever the former works, so does the latter, but not vice versa.[12]

The next question is whether the eventive reference we are after is appropriately captured by (39b) — that is, by having the two share their indices. Consider the following cases:

(55) #Mario ho sognato che in quel momento sua madre dormiva.
Mario has dreamed that in that moment his mother dreamed(IMPF).

(56) #Mario ha sognato che il giorno prima/un'ora prima c'era stato un terremoto.
Mario has dreamed that the day/one hour before there was(IMPF) been an earthquake.

There is a clear sense in which out-of-the-blue utterances of these sentences are odd. In the first sentence, the anaphoric expression *in quell momento* (in that moment) cannot

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12.   We are not saying that (39a) is impossible, but, simply that referential processes that directly pick the time of the event independently from the event itself don't have a great explanatory value, in view of our data. We will see in a while why this conclusion is important for our considerations. For the time being, let us keep to the fact that we have proven that explanation of the data can be pursued by resorting to eventive reference alone.

find a suitable antecedent. Example (56), on the other hand, contrasts with, e.g., (20), out-of-the-blue utterances of which are acceptable, signalling that the hidden variable of the anaphoric phrase of (56) cannot find an antecedent. What is relevant is that eventive reference to the matrix event seems to fail in both cases. If we were to maintain that (39b) is adequate for (20), it would be very difficult to explain (56): why should the coindexation be blocked in one case and be allowed in the other?

In Giorgi and Pianesi (2001b), we related examples like (55) and (56) to the fact that contexts created by the verb *sognare* (to dream) do not enforce temporal anchoring. Our conclusion was that the absence of temporal anchoring and the unavailability of suitable referents in (55)-(56) can be explained by hypothesising that reference to the matrix event from within a subordinate clause is never direct, but is always mediated by whatever mechanism is responsible for temporal anchoring. Eventually, temporal anchoring is responsible for making the matrix event available from within the embedded clause.[13] If this conclusion is correct, (39b) can be rejected, for, quite generally reference to the matrix event is not a matter of cross-clausal anaphora, but must find a local mediation.

If reference to the matrix event is the relevant factor, and if it is locally (within the subordinate clause) realised, according to the properties of temporal anchoring, then the acceptability/ non-acceptability of anaphoric temporal locutions in the embedded clauses of non-DAR/ DAR sentences (as exemplified by (19-(20)) must be due to the fact that in the former local reference is fully operative, whereas in the latter it is somehow hampered.

3.3.   *Temporal anchoring*

In the previous section we argued that there is something special to the way the matrix event is made available within subordinate clauses. In this section we will further investigate this point, introducing our favourite theory for temporal anchoring.[14]

Following Higginbotham (1995) we hypothesise that in propositional attitude contexts, the interpretation of tenses crucially involves reference to the matrix event. In the previous section, we have shown that this is not done directly, by means of a

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[13].   For more data and discussion about *dream* context, see (Giorgi and Pianesi 2001b).

[14].   See also Giorgi and Pianesi (2001a, 2001b).

coindexation/anaphoric link between the two entities, but that the relationship goes through the interpretative properties of the local context, crucially involving the notion of *temporal anchoring*. The latter refers to the fact that if tenses are taken to be relational, then they connect the event of their clause to some other entity, the temporal anchor. In matrix contexts, the temporal anchor is the utterance itself, and in subordinate clauses it is the matrix event.[15] What those two entities have in common is that they can play the role of the (egocentric) temporal coordinates of the speaker (the utterance) and of the attitude's subject. So, tenses relate events with the current egocentric temporal coordinate, this way ultimately relating them with the agent who is responsible for the content of the speech/attitude episode.

Thus, in an utterance of a sentence like *John is sick*, the temporal anchor is the speaker's coordinate (the utterance) and the tense relates this entity to the sickness, requiring that they overlap. From an utterance of a sentence such as *John said that Mary was sick*, on the other hand, we recover that according to John, Mary's sickness was simultaneous to the temporal anchor (the subject's coordinate=the reported speech episode).[16] In the case of *John believed that Mary was sick*, pretty much the same considerations apply. The temporal coordinate for the subordinate clause is the belief state John was in — i.e., the temporal coordinate of the subject. Quite generally, in these subordinate contexts the matrix event localises (reported) thoughts and dicta in time, tying them together.

In (Giorgi and Pianesi 2001a) we framed those ideas within an ILF semantics for subordinate clauses, according to which verbs such as *say*, *believe*, etc. establish a relationship between individuals (attitude's subjects) and syntactic objects (LFs) annotated with semantic values, yielding so-called Interpreted Logical Forms (ILFs). Nodes, besides carrying the usual categorical labels, are also adorned with semantic

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[15]. Actually, this is true only of subordinate clauses in contexts of propositional attitude. In dream contexts there is no temporal anchor, and no temporal anchoring. In Giorgi and Pianesi (2001b) we have proposed an explanation for why this should be so.

[16]. Notice that this is so independently of whether John was correct or mistaken about his localization along the objective time series. That is, simultaneity is something which John could not be wrong about, showing that such a relationship does not obtain with respect to times (for which ignorance or error is always possible, see below), but with respect to the very attitude episode.

values, the latter being provided by appropriate assignment sequences.[17] For instance, the ILF of the subordinate clause of (57a) is (57b):

(57)   a. Mary thinks that John is sick.
       b. $[_{CP, t}$ C $[[_{DP, John}$ John] $[_{VP, \langle e\, x \rangle}$ sick]]

The theory takes the form of a recursive theory of truth where lexical axioms establish, e.g., that *sick* is true of a state, *e*, and an individual, *x*, just in case the state is a sickness and the individual is affected by it, etc. Phrasal axioms, on the other hand, compute the values for non-lexical nodes, for instance requiring that the combination of the DP and of the VP in (57b) yield truth just in case Mary is the individual whom the sickness affects, etc.

Tenses connect events with the temporal coordinate of the attitude's/dictum's subject. In 'ordinary' matrix contexts the relevant subject is the speaker, and her coordinate is the utterance. Following Larson and Segal (1995), we let the utterance be the value the assignment sequence, σ, associates to a distinguished index, 0, so that $\sigma(0)=u$, for *u* the utterance. With this, we can write axioms for tenses like the following ones for the present and the simple past tenses:

(58)   a. Val(*e*, Pres, σ) iff overlaps($\sigma(0)$, *e*)
       b. Val(*e*, Past, σ) iff $e < \sigma(0)$

They state that a given event is the value of a tense morpheme just in case it overlaps the temporal anchor/utterance (present tense), or precedes it (past tense). If we generalize the role of index 0 in such a way that, for any assignment, it is associated with the relevant temporal coordinate, then we have that tenses are always evaluated with respect to the latter. Finally, for the purposes of this paper, we hypothesise that the eventive variable contribute by the verb is (implicitly) existentially closed at the level of TP:

(59)   Val(*x*, $[_{TP}$ T VP], σ) iff for some *e* Val(*e*, T, σ) and Val($\langle x, e \rangle$, VP, σ)

In subordinate contexts we might need to consider different temporal coordinates than in matrices, as required by temporal anchoring; hence the current assignment must be

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17.   For ILF theories of propositional attitude contexts, see Higginbotham (1991), Larson and Ludlow (1992) and Larson and Segal (1995).

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changed into one that associates index 0 to a different entity — i.e., the very attitude/dictum. We can then distinguish between speaker-oriented, σ_{sp}, and subject-oriented, σ_{sub}, assignment sequences, taking these as ways to isolate the specific contribution different entities, the utterance and the reported attitude/dictum, make to semantic computation, and keeping in mind that in both cases those entities play the role they do because they are the temporal coordinates of the relevant agents. Hence, σ_{sp} is such that $\sigma_{sp}(0)=u$, where u is the utterance, whereas σ_{sub} is such that $\sigma_{sub}(0)=e$, for e the event of the matrix clause.[18]

We can model the passage from σ_{sp} to σ_{sub} as the selection of an appropriate assignment sequence. The starting point is the fact that an assignment sequence is appropriate for the evaluation of a sentence only if it correctly incorporates facts about the context of utterance — e.g., by associating index 0 with the utterance, index 1 with the utterer, and so on.[19]

(60) If u is an utterance of S, then σ is appropriate for S iff $\sigma(0) = u$, $\sigma(1) =$ the utterer, etc.

We then generalize this to clauses expressing the content of attitudes — as they are ascribed to subjects by means of verbs such as *believe*, *think*, etc., and verbs of communication, such as *say* — by requiring of an appropriate assignment sequence that it associate index 0 with the attitude/saying episode:

(61) If e is any episode of propositional attitude/saying with structural representation S, then σ is appropriate for S iff: $\sigma(0)=e$, …..

So, σ_{sub} is an assignment that is appropriate to evaluate a clause embedded under a verb of propositional attitude: its temporal coordinate (the value of the 0 index) is the matrix

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[18]. Subject-oriented assignments are not meant to represent subjects' referential intentions. The point of our construction is that assignments, as used in actual utterances, reflect the speaker's intentions; when turning to propositional attitudes what the speaker intends is that the event/state figuring in the content of the subordinate clause be connected to the subject's attitude episode, which is the same temporal anchor the subject used — that is, the subject's temporal coordinate. The actual connection is performed through (the interpretation of) tenses.

[19]. See Larson and Segal (1995).

event (the attitude/saying episode). Statement (61) incorporates the conclusions we reached above: the attitude/saying episode plays a special role in the evaluation of the embedded clause, which is similar to that played by the utterance for the matrix context; in particular, the attitude/saying episode is made available through the assignment sequence, this way becoming the new temporal coordinate. Eventually, (61) (and (60)), together with (58), provide an account of temporal anchoring — namely, the fact that embedded tenses invariably relate the event they are in construction with to the attitude episode/dictum/utterance.

Before closing this section, let us spend a few words about the imperfect (and the pluperfect). In (Giorgi and Pianesi 2003) we proposed that the imperfect tense has two features: **past* and *present*. When such a tense combines with a temporal phrase (the time-topic), as in (62b), axiom (62a) requires that the current assignment be updated to one whose temporal coordinate is the value of the time topic.

(62) a. Val(t, [T-term F′], σ) iff there is a σ′ and an *x* such that Val(*x*, T.-term, *σ*), σ′ is like σ but for the fact that σ′(0)=*x*, and Val(t, F′, σ′)

    b. [time-topic [F0-**past* [Mario *present* dorme]]]

The feature **past* contributes only a presuppositional check to the effect that the new temporal coordinate is past with respect to the old one; the second feature, *present*, is (roughly) interpreted as an ordinary present. The result is that an imperfect behaves as a present in the past.

Given this account of the imperfect, it can be expected that assignment updates due to temporal anchoring in contexts of propositional attitude suffice to satisfy its requirements. This is what happens with the so-called simultaneous readings of subordinate imperfects:[20]

(63) a. Mario ha detto che Maria era incinta.
      Mario said that Carlo slept(IMPF).

    b. [.....[C-*past [$_{XP}$ ... T-pres...]]]

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[20]. This is not meant to provide a full account of sequence of tense phenomena, but simply give enough background for our discussion. For recent theories of the sequence of tense, see (Schlenker 2002; von Stechow 2002).

It can be shown (Giorgi and Pianesi 2001a) that the complementiser of the embedded clause, C, can attract (some or all of) the temporal features of T. E.g., in (63a) this process involves the feature **past*, so that the LF for (63a) is (63b). For subordinate contexts, we can use the following axiom:

(64) $\text{Val}(\langle e, x \rangle, [\text{V} [_{CP} \text{C} [_{XP} \dots]]], \sigma)$ iff for some y, $\text{Val}(\langle e, x, y \rangle, \text{V}, \sigma)$ and $y=/\text{XP}/_{\sigma'}$ where σ' is an appropriate sequence.

This axiom is used to compute the semantic value of phrases of the form *[V [_{CP} [_{XP} …]]]*, where *V* is a verb of propositional attitude, and *[_{CP} [_{XP} …]]* is its complement. It requires the ILF of the complement clause to be computed by means of an appropriate sequence, skipping the C node.[21] According to (61), the subject-oriented one is appropriate, so it is used.

   In (63b) the only temporal feature within XP is *present*, hence the ILF of the embedded clause of (63a) talks about a pregnancy state which is simultaneous to σ_{sub}'s temporal coordinate — that is, the matrix event. As to **past*, it simply checks that the XP is evaluated by means of an assignment sequence σ' such, if $\sigma'(0)$ is defined, then $\sigma'(0)<u$. The test is successful: σ' is σ_{sub}, and $\sigma_{sub}(0)<u$. Eventually, we have that the content attributed to Marios's speech is such that there's a pregnancy state involving Maria, and that state overlaps Mario's temporal coordinate (the reported utterance).

3.4. *Double Access Readings*

One way to understand the DAR consists in hypothesising that there is actually a double evaluation of the embedded clause (Giorgi and Pianesi 2001a). Skipping details, this view maintains that the meaning of:

(65) Gianni ha detto che Maria è incinta.

(66) John said that Mary is pregnant

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[21].   For reasons why the C node should be skipped, see Giorgi and Pianesi (2001a) and Higginbotham (1991).

requires a two stage process: the first constructs an interpreted logical form (ILF1) for the embedded clause that purports to describe the subject's original dictum/thought; therefore, it is computed by means of the subject-(John's/Gianni's) oriented assignment sequence. The resulting ILF1 is truth-conditionally equivalent to the ILF of the embedded clause of the English sentence *John said that Mary was pregnant*, and of the Italian sentence *Gianni ha detto che Maria era incinta*, considered at the end of the previous section. That is, ILF1 is true just in case Mary/Maria was pregnant at Gianni's/John's temporal coordinate. ILF1 is then compounded with the meaning of the matrix verb, to recover one part of the meaning of (65)-(66): there was a past utterance by Gianni/John whose content is as conveyed by ILF1, and to the effect that Mary's/Maria's pregnancy held at the reported saying time.

So, the first step takes care of the relationship between the subject and the content she is said to have expressed. The second step, in turn, involves the speaker, requiring the computation of another ILF (ILF2) from the same material as before, by using the speaker-oriented assignment. ILF2 talks about a current (from the speaker's point of view) pregnancy of Mary. Such an object is not linked to the embedding verb as ILF1 was, though, this way avoiding to attribute John the content corresponding to ILF2.[22] At the same time, ILF2 is not interpreted as being part of the speaker's assertion. Rather, it is used to form part (and only part) of the propositional content of a speaker's attitude.[23]

What is relevant for our purposes is that according to this account, the embedded clause is evaluated twice: once from the perspective of the subject (by using the subject-oriented assignment) and then from the perspective of the speaker (by using the speaker-oriented assignment).[24] We argue that it such a double evaluation process crucially explains the contrast we are discussing.

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[22]. If we are right, this would not only be mistaken (John might well have been only interested in Mary's pregnancy state at his own temporal location, and completely disinterested about what could happen later on) but also impossible. The very practice of anchoring thoughts/dicta content to the temporal coordinate of their subjects clashes with the possibility of having a content attributed to X which includes anchoring to the temporal coordinate of a different subject Y.

[23]. See Giorgi and Pianesi (2001a) for details.

[24]. Or, to be more precise, once to form the ILF expressing the propositional content attributed to the subject, the other time to form part of the content of the speaker attitude.

3.5.   *Explaining the contrast*

When we talked Reichenbachian, we said that the hidden variable of our anaphoric locutions, *x*, can have the same reference as R, provided that R≠S. When R=S, *x* has to look around to find a different, suitable antecedent. S is the speech time/event — that is, the speaker's temporal coordinate, $\sigma_{sp}(0)$. So, when the current assignment sequence is the speaker-oriented one *x* cannot bear index 0.

In the present framework we can dispense with R: it is a side-effect of the shift of temporal coordinates induced by the imperfect, which is obtained by updating the current assignment sequence to one whose temporal coordinate is in the past. Accordingly, R is nothing but the temporal coordinate of the new sequence — that is $\sigma'(0)$ in (62), for some updated σ'. Moreover, we know that in subordinate contexts the hidden variable of *il giorno dopo* can have the same reference as the attitude event. We know, by now, that this is possible only if it bears index 0, being then given the right value by the subject-oriented temporal assignment. Eventually, our previous observations in terms of S and R can be recast by saying that when the current assignment sequence is different from the speaker-oriented one, the variable of our anaphoric phrase can bear index 0.

(67)   If a speaker uses x_0 in clause S, then σ is appropriate only if $\sigma \neq \sigma_{sp}$.

Putting (67) together with the discussion in the previous section, we have all the necessary ingredients for an account of our contrast.

(68)   a. (Giovedì) Gianni ha detto che Mario era partito il giorno prima *x*.
           Thursday Gianni has said that Mario was left the day before *x*.
       b. [(giovedì).....[C-*past [$_{XP}$ ... T-pres...*x*]]]

(69)   #Giovedì Gianni ha detto che Mario è partito il giorno prima *x*
         Thursday Gianni has said that Mario is left the day before *x*.

Let us start from (68a), which has the LF in (68b). The embedded CP is interpreted by means of σ_{sub}, which, in accordance with (61), is such that $\sigma_{sub}(0)$ is the attitude/saying event. If the variable *x* in *il giorno prima* has index 0, (67) allows it to be assigned the local temporal coordinate, $\sigma_{sub}(0)$. The resulting ILF is the right one: it says that the content of Gianni's dictum was that Mario left the day before the (day of the) dictum itself. That is, the ILF for the subordinate clause of (68a) has the following truth conditions (to be computed by means of σ_{sub}, and in accordance with (51)):

(70) $\exists e(\text{leave}(e) \land \ldots \land \text{at}(e, \text{the-day-before}(x_0)))$

Turning to (69), this is a DAR context. Suppose that the variable x has index 0. After going through the first phase (to compute ILF1) the resulting value for x_0 is $\sigma_{sub}(0)$, the local temporal coordinate — that is, Gianni's utterance. This yields a meaning close to the one we arrived at for (68a) under the same choice of indexation: the content of Gianni's dictum was that Mario left the day before the dictum itself. When we turn to the second step, to compute ILF2 by means of σ_{sp}, the presence of index 0 on x clashes with (67). As a consequence, no value is assigned to the hidden variable and, eventually, the computation of ILF2 fails.

In conclusion, our contrast is explained by a combination of the following factors:

- Reference to the matrix event in subordinate clauses is always mediated by appropriate assignment sequences, whereby the matrix event becomes the new temporal coordinate (temporal anchoring). As a consequence, there is no (direct) reference to the matrix event as such, but only to it as being the local anchor.

- In the readings that are crucial to our contrast, the hidden variable of *il giorno prima* bears index 0. Hence, it is subject to the (presuppositional) constraint in (67), to the effect that the speaker-oriented sequence is not appropriate.

- Double access sentences involve a double evaluation of the embedded clause: by means of the speaker-oriented sequence (the temporal anchor is the utterance), to reconstruct the subject's attitude; and by means of the subject-oriented one (the temporal anchor is the attitude/saying episode), to account for the speaker's one.

- In DAR contexts, the unavailability of our anaphoric expressions is due to the failure of the computation of the speaker-oriented ILF (ILF2): (67) prevents the hidden variable of *il giorno prima* from being assigned any value when it bears index 0 and the current assignment sequence is the speaker-oriented one.

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4. Consequences and conclusions

Up to now, our discussion has focused on the role of the temporal anchor (an event), disregarding its temporal location on the time axis. According to the proposed theory, the temporal location of temporal anchor doesn't seem to play an explanatory role in the different behaviours anaphoric expressions have in DAR vs. non-DAR contexts.

The temporal location of the anchor, however, is obviously relevant to compute the value of the whole anaphoric expression. According to the in the previous section, in our contrast the hidden variable of *il giorno prima x* (the day before *x*) has eventive reference: it bears index 0, and it is assigned the temporal anchor by the relevant appropriate. In the light of the discussion in §3.2, the whole anaphoric expression can therefore be paraphrased as *the day that lies one day before the day of x (for x=the temporal anchor)*. So, understanding what meaning the whole anaphoric expression contributes requires computing *the day (hour/month/..) of x*, for *x* being the temporal anchor.

Now, temporal anchors and their temporal location behave differently. The former are manipulated and controlled by assignment sequences, under the condition that they be appropriate; moreover, for a given utterance of, say, (68a), all the possible appropriate subject-oriented sequences behave uniformly, agreeing on the value of the temporal anchor (=the subject's temporal coordinate). This reflects the fact that there is no way for a subject uttering or thinking something to be confused or mistaken about its temporal coordinate, as long as this is the very utterance/thought she is involved in; and there is no way for her to be confused about the relationship between that entity and the event/state figuring in her dictum/thought, as such a relationship is deployed by the tense. In other words, the temporal anchor isn't subject to error through identification.[25]

The time of the temporal anchor — that is, the localisation of the saying/thought episode on the temporal axis — is subject to such an error, though, as much discussion in the literature about the ascription of attitudes to time-confused subjects have made clear. Hence, usual concerns about de-re/de-dicto/de-se readings of the relevant expression arise. We are not going to delve into these issues here; however, we can try to highlight possible directions for future analysis within the developed framework.

Consider the scenario below and the two possible utterances (71a) and (71b):

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[25]. For the notion of 'being subject to error through identification', see Shoemaker (1968), Evans (1982), and Higginbotham (2003).

(71)   Gianni speaks on Wednesday, but he thinks it is Thursday. He says 'Maria è arrivata lunedì (Maria has arrived on Monday)'

    a. Gianni ha detto che Maria era arrivata due giorni prima.

      Gianni said that Mary had(IMPF) arrived two days before.

    b. Gianni ha detto che Maria era arrivata tre giorni prima.

      Gianni said that Maria had(IMPF) arrived three days before.

Both (71a) and (71b) are appropriate reports of what Gianni said, though for different reasons. Informally speaking, we can say that given the background story, when uttering (71a) the speaker adopts her own perspective on the temporal axis: the time of the subject's temporal coordinate is Wednesday, and the leaving about which the subject reports is located two days before it (on Monday); this makes for a correct report of Gianni's dictum. On the other hand, given the same background story, (71b) invites the adoption of the subject's (=Gianni's) point of view: the temporal anchor, the dictum, is located on Thursday, and the reported leaving occurs three days before it, again, on Monday. Thus, (71a) and (71b) yield two ILFs with similar truth conditions. They differ because of the lexical material they contain (*due giorni prima* vs. *tre giorni prima*), although the relevant nodes are annotated with the same semantic value — namely, Monday.

    The possibility of using both (71a) and (71b) in the given scenario relies on knowledge about Gianni's problems (or absence thereof) in locating himself in time, which the background makes available to both the speaker and the hearer. Hadn't the relevant information been supplied, one could hardly interpret (71b) the way suggested above.

    We can develop these ideas by hypothesising that the two anaphoric expressions in (71a) and (71b) differ in their hidden portions. That of (71a) simply amounts to *the day of x (for x=the temporal anchor)*, in line with the discussion in §3.2 and with (51). The hidden description of (71b), on the other hand, would be the more verbose *the day the subject thinks x (for x=the temporal anchor) to be located at*. These unspelled descriptions can then be interpreted as directly picking up the relevant values from the context, e.g., by means of the following axiom:

(72)   Val(x, [det NP], σ) iff x is the unique object such that Val(x, NP, σ).

We have are readings very close to E-type ones, with the variable referring to an event (in the way discussed above), and the context supplying a suitable descriptive material,

according to what is salient in the given context: the missing NP corresponding to *the day of x*, for (71a), and *the day Gianni thinks x is located at* for (71b).

Now suppose that Gianni was so confused that, despite being able to utter 'Maria è arrivata lunedì (Mary arrived on Monday)', he cannot tell whether the day he so does is Tuesday, Wednesday, etc. The dictum can be reported by using an anaphoric expression, e.g., as in (71a), and interpreting it as containing the hidden description *the time of x (for x=the temporal anchor)*, provided that the context makes available knowledge about when Gianni so uttered. So, we might still know that he spoke, say, on Wednesday, and we can get the correct value for the hidden part of the anaphoric expression by means of (72). Obviously, given the overall context, and what Gianni says (he refers to a particular day in his dictum), it makes no sense to interpret the anaphoric expression as we did for (71b).

Another possibility is that Gianni, despite being completely confused about his localisation in time, is capable of correctly tracing the passage of time, so that he can use an indexical expression and truthfully say:

(73) Non so che ore siano, ma Carlo è arrivato due ore fa.
       I don't know what time is it, but Carlo has arrived two hours ago.

This can be reported in the usual way:

(74) Gianni ha detto che Carlo era arrivato due ore prima.
       Gianni said that Carlo had arrived two hours before.

Here we have two options: either the contexts makes available the 'true' time of the temporal anchor, so that the hidden part of the anaphoric expression is *the time of x (for x= the temporal anchor)*, and (74) is, again, on a par with (71a). Or, there is no cue in the context about that time, and/or the speaker herself is similarly confused about time, as in the following case:

(75) Non so a che ora l'ho incontrato, ma mi ha detto che Carlo era arrivato due ore prima.
       I don't know at what time I met him, but he told me that Carlo had arrived two hours before.

In these cases it seems that we must read the hidden part of the anaphoric expressions in (74) and (75) as: *the hour of x (for x= the temporal anchor), whatever that might be —* that is, with the hidden description used attributively. The modal strategy is a possible one for cases like these, and consists in considering the possible alternative localisations of the dictum/thought episode (in terms of contextual indices) that could be compatible with the subject's thoughts/dicta.

However, some caution should be exercised to better assess the acceptability of (74) in the given conditions. Indeed, informants report that its English counterpart, e.g., (76), is acceptable insofar as there is the presupposition that either the speaker knows about the time of the saying (and by this, we mean, the real time or the subject's one) or the subject's does.

(76)   John said that Mary had left two hours before

If neither is the case, then (76) is unintelligible. Our judgments of Italian sentences corresponding, or similar to (76), e.g., (75), is that they are fully acceptable. If so, the oddity of the English counterpart could be traced back to stronger constraints on the acceptability of attributively-used definite descriptions in the course of the process leading to spelling out the meaning of temporal anaphoric phrases.

To sum up, in this paper we have discussed some of the properties of anaphoric temporal locutions such as *il giorno prima* (the day before) in Italian, focusing on their behaviour in clauses embedded under verbs of propositional attitude and of communication. We discovered an interesting contrast: when the DAR is enforced, the hidden variable of an embedded anaphoric phrase doesn't seem capable to pick up the same referent as the matrix event, whereas this is possible in non-DAR contexts. To explain this fact we argued that:

- Reference to the matrix event in subordinate clauses is always mediated by appropriate assignment sequences, whereby the matrix event becomes the new temporal coordinate (temporal anchoring), being assigned to index 0. The notion of appropriateness for assignment sequences can be elucidated by extending Larson and Segal's (1995) account.
- As a consequence, there is no (direct) reference to the matrix event as such, but only insofar as it is the temporal anchor. We can distinguish, therefore, between speaker-oriented sequences, which associate index 0 with the utterance, and subject-oriented ones, which link index 0 with the very attitude/saying event.

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- 0-indexed variables are subject to a (presuppositional) constraint, cf. (67), that excludes speaker-oriented sequences as not appropriate.
- We relied on Giorgi and Pianesi's (2001a) theory of the DAR, according to which double access sentences involve a double evaluation of the embedded clause: by means of the speaker-oriented sequence (the temporal anchor is the utterance), to reconstruct the subject's attitude; and by means of the subject-oriented one (the temporal anchor is the attitude/saying episode), to account for the speaker's one.
- Such a theory has the consequence that in DAR contexts the second step of the computation cannot be accomplished, because: a) it exploits the speaker-oriented assignment, and b) the presuppositional constraint mentioned above prevents the hidden variable of *il giorno prima* from being assigned any value when it bears index 0 and the current assignment sequence is the speaker-oriented one.

Finally, we discussed problems related to providing a full semantics for anaphoric locutions in embedded clauses.

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Sentential Particles and Clausal Typing in the Veneto Dialects

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1. Introduction

In this work we describe and analyse both the syntactic and the semantic properties of a number of sentential particles (henceforth *SPs*), which can appear in some Veneto dialects in main non declarative clauses.[1]

The presence of these particles induces interesting interpretive effects; more generally, an investigation of their properties is relevant for the analysis of the left periphery of the clause; in addition, a detailed study of these particles turns out to have theoretical relevance for a crosslinguistic theory of clausal typing on the one hand and for a deeper understanding of the syntax-semantics interface on the other. The distribution of *SPs* also involves a number of interpretive and pragmatic distinctions that contribute to highlight the way sentence type is encoded in the syntactic structure and to provide some insights into more fine-grained distinctions internal to each sentence type.

We will systematically analyze data from two varieties, a Northern Veneto variety and an Eastern Veneto variety (*Pagotto* and *Venetian*, glossed as *Pg* and *Ve* respectively); however, the particles described here occur, with a partially different distribution, in several other dialects of the North-Eastern Italian area, which we will occasionally refer to as well.

While *SPs* can appear in main interrogatives, exclamatives or imperatives, none of them can occur in declarative clauses or in embedded contexts; furthermore, they always occur in "special" contexts, in the sense that they induce a presupposition in the clause determined either by the linguistic context or by the universe of the discourse.

The particles we consider also share the following distributional property: they can occur in sentence final position, a fact that - we claim - can be derived by movement of the whole CP to the specifier position of the head occupied by the particle, as illustrated in (1):

(1) $[_{Spec,prt}\ CP_i\ [\ prt][\ t_i\ ]]$

Beside the sentence final occurrence, some particles can also occur either immediately after the *wh*-element or with a *wh*-item in isolation.

This is the outline of the article: in section 2 we address the issue of the categorial status of the particles providing some arguments in favour of the hypothesis that *SPs* are heads; in section 3 we provide a description of the syntactic properties shared by all *SPs*; in section 4 we analyze in detail the syntactic derivation exploiting clause preposing; in section 5 we examine more closely the interpretive properties and attempt a description of the semantic contribution of each particle; section 6 contains a summary of the article.

2. Sentential particles as X° categories

A priori, *SPs* can be analyzed either as heads or as specifiers. The head status of the *SPs* is suggested by the fact that they cannot be modified or focalized:

(2)   a. *Cossa gali fato, proprio ti?!   Ve
            What have-they done, just ti

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    b. *Zeli partii, proprio po?   Ve
       Have-they left, just po

    c. *Quando riveli, proprio mo?!   Pg
       When arrive-they, just mo

    d. *L'é fret incoi, proprio lu!   Pg
       It-is cold today, just lu

(3)   a. *Cossa gali fato, TI?!   Ve
       What have-they done TI

    b. *Quando riveli, MO?!   Pg
       When arrive-they MO

    c. *Eli partidi, PO?   Pg
       Have-they left PO

    d. *L'é fret incoi, LU!   Pg
       It-is cold today LU

The ungrammaticality of (2) and (3) and the fact that *SPs* cannot be used in isolation would be completely unexpected if *SPs* were located in some specifier position.[2]

Evidence for the head status of *SPs* is also provided by their diachronic evolution: two of these particles, namely *ti* and *lu,* were originally tonic pronouns, the second singular and third singular masculine forms respectively; however, they have a different distribution with respect to subject pronouns.

    The particle *ti* is compatible with third person subjects and can cooccur with the omophonous tonic pronominal subject *ti*:

(4)   a. Dove zelo ndà, ti?   Ve
       Where has-he gone, ti

    b. Ti, dove ti ze 'ndà, ti?   Ve
       You, where you-have gone, ti

---

[2].   Another possible analysis is that *SPs* are merged in a low specifier position of the IP field and are subsequently raised to some specifier of the CP layer; notice however that this option should be discarded in view of the impossibility for the *SPs* to undergo any kind of modification.

The particle *lu* is compatible with a singular or plural third person subject (though not with first and second person subjects):[3]

(5) a. L'é rivà al to amigo, lu   Pg
         It-has arrived your friend, lu

     b. L'é riva i to amighi, lu   Pg
         It-has arrived your friends, lu

(6) a. *Son vegnest anca mi, lu   Pg
         Have come also I, lu

     b. *Te sé rivà anca ti, lu   Pg
         You-have arrived also you, lu

---

[3].   Notice however that a preverbal subject is compatible with *lu* only if it is 3rd person singular:

(i) a. Al to amigo l'é rivà, lu

         Your friend he-has arrived, lu

     b. I to amighi i é rivadi, lori/*lu

         Your friends they-have arrived, they/lu

Furthermore, *lu* is generally compatible with postverbal subjects and induces a contrastive focalization of the subject with any verb class:

(ii) a. L'à magnà tut al tozatel, lu

          He-has eaten everything the child, lu

      b. L'à laorà to fradel, lu, incoi

          He-has worked your brother, lu, today

(iii) L'é rivà (anca/proprio) to fradel, lu

       He-has arrived (also/just) your brother, lu

The non-contrastive interpretation is possible only with right-dislocation of the subject:

(iv) L'é rivà, lu, to fradel (atu vist?)

      He-has arrived, lu, your brother (have-you seen ?)

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c. *Sion partidi anca noi, lu   Pg

    Have left also we, lu

Moreover, while the particle *lu* is restricted to third person subject clauses in Pagotto, this restriction does not hold in Paduan, where, as discussed in Benincà (1996), *lu* may appear in exclamatives and is compatible with first, second and third person subjects:[4]

(7)   a. A ghe go dito tuto a me sorèla, mi, lu! Paduan

        A cl-dat-have told everything to my sister, I, lu

     b. A te ghe fato ben, ti, lu!

        A you-have done well, you, lu

     c. A le gera vignù trovarte, le toze, lu!

        A they-had come see you, your daughters, lu

On the basis of these data, *ti* and *lu* cannot be analyzed as personal pronouns, although the diachronic connection is clearly witnessed by the omophony of the two forms.

As for the other two particles, *mo* and *po*, they were most probably temporal adverbs in origin, *po* being connected to Latin *post* ('afterwards', cf. Pellegrini (1972)) and *mo* to Latin *quomodo* ('now', cf. among others Rohlfs (1969); *mo* does in fact still retain the original temporal meaning in the Central and Southern Italian dialects).

Based on this evidence, we propose that *SPs* are the result of a grammaticalization process which includes a phonological as well as a semantic impoverishment along with the development of special syntactic properties; such a process is generally attested in the case of elements becoming the overt realization of (marked values of) functional heads, and not with specifiers. Hence, we propose to analyze the *SPs* considered here as filling functional heads located in a layered CP field (cf. Rizzi (1997)).

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[4].   Moreover, *lu* is compatible with adjectival predicates with a feminine ending:

(i)   L'é vera, (lu), che i é tornadi, (lu)

     It-is true (lu) that they-have come back (lu)

3. Common syntactic properties

It should be pointed out first that the *SPs* considered here behave differently from other particles attested in the Veneto dialects as well as in other Northern Italian dialects, which are characterized by two properties not shared by the particles we have examined: they occur in initial position and have no presuppositional import. This is the case of the particle *e* in the Southern Veneto dialect of Taglio di Po, which marks the exclamative illocutionary force of the utterance in which it occurs; as shown by (8) and (9), in this variety an exclamative clause is fully grammatical only if the particle *e* appears in sentence initial position:

(8) a. *E* c bel libro c l'à scrito!   Taglio di Po
     b. **C(he) bel libro* c l'à scrito *e*!
        [E] what a nice book that he-has written [e]

(9) a. **Che bel libro* c l'à scrito!   Taglio di Po
        What a nice book that he-has written
     b. **Co beo*![5]
        How nice

We suggest that particles like *e* have a purely typing function and consequently are obligatory in the clause type they mark. This is not the case for our *SPs*, which seem at first sight optional, although, as we claim, they contribute to convey a special meaning.

As mentioned above, the *SPs* attested in the two dialects examined here share the following distributional properties:

(10) a. *SPs* can occur in sentence final position;
      b. those *SPs* which can occur immediately after the *wh*-element, can also cooccur with the *wh*-item in isolation;
      c. *SPs* are sensitive to the clause type: they cannot occur in declarative clauses;
      d. *SPs* never occur in embedded contexts;
      e. *SPs* can/must be followed by right dislocated arguments

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[5]. The element *co* is used only in exclamative clauses and can exclusively modify adjectives.

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With respect to the first property, the sentence final position is always available for the particle, independently of the clause type it is associated with.

As shown by the following examples, the particle *ti* occurs exclusively in main *wh*-questions, and the only possible position is the sentence final one:

(11) a. Dove valo, ti?   Ve
     b. *Ti, dove valo?
      [Ti] where goes-he [ti]

(12) a. Dove zelo ndà, ti?   Ve
     b. *Dove zelo, ti, ndà?
      Where has-he [ti] gone [ti]

The particle *mo*, which can appear both in imperative and in interrogative clauses, can always appear in sentence final position but never in sentence initial position, as witnessed by the following constrasts:

(13) a. Parècia sta minestra, mo!   Pg
     b. *Mo, parècia sta minestra!
      [Mo] prepare this soup [mo]

(14) a. Vien qua, mo!   Ve
     b. *Mo, vien qua!
      [Mo] come here [mo]

(15) a. Ali magnà, mo?   Pg
     b. *Mo, ali magnà?
      [Mo] have-they eaten [mo]

(16) a. Quando rivelo, mo?   Pg
     b. *Mo, quando rivelo?
      [Mo] when arrives-he [mo]

The sentence final occurrence is also attested with the particles *po* and *lu,* appearing in interrogative and exclamative contexts respectively:

(17) a. Quando eli rivadi, po?   Pg
          When have-they arrived po

      b. Eli partidi, po?   Pg
          Have-they left po

(18) a. Dove zei ndai po?   Ve
          Where have-they gone po

      b. Zei ndai via, po?   Ve
          Have-they gone away po

(19) a. L'à piovest, lu!   Pg

      b. (*Lu) l'à (*lu) piovest!
          [Lu] it has [lu] rained [lu]

Secondly, among those *SPs* that occur in *wh*-contexts, some can also occur immediately after the *wh*-item and with a *wh*-item in isolation; this is the case of the particles *mo* and *po* in Pagotto, as exemplified in (20)-(23), but not of *ti*, for example, as illustrated in (24):[6]

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[6].   As discussed in Munaro (1997), Pagotto belongs to the group of Northern Italian dialects in which some classes of *wh*-items can appear either sentence initially or sentence internally in main *wh*-questions; however, the position of the *wh*-item does not interact in a relevant way with the presence of the particle. With respect to the particle *po*, the *wh*-element *parché* displays a special behaviour, as in Pagotto the position after the *wh*-item is preferred to the sentence final one:

(i)   a.   Parché po éli 'ndadi via?

        b.   ?Parché éli 'ndadi via, po?

        c.   ?Po, parché eli 'ndadi via?

              [Po] why [po] have-they gone away [po]

As witnessed by (ic), the sentence initial position of *po* is not excluded in Pagotto; we leave a more detailed investigation of this fact for future research.

In Venetian *parché* is the only *wh*-item that can be immediately followed by *po* and be used in isolation with the particle, as shown by the data in (ii) :

(20) a. Quando rivaràli, mo?   Pg

     b. Quando, mo, rivaràli?

       When [mo] arrive-fut-they [mo]

(21) a. Che mo?   b. Andé mo?   Pg

       What mo   Where mo

(22) a. Quando eli rivadi, po?   Pg

     b. Quando, po, eli rivadi?

       When [po] have-they arrived [po]

(23) a. Andé po?   b. Quando po?   Pg

       Where po   When po

(24) a. *Dove, ti, zelo ndà?   Ve

     b. *Dove ti

       Where [ti] has-he gone

Thirdly, all *SPs* are sensitive to clause type: the examples reported above show that *SPs* always occur in interrogative, exclamative or imperative clauses and are never found in declarative clauses; in addition, they always convey a presuppositional entailment which we try to depict in greater detail below.

Finally, the occurrence of *SPs* is restricted to main contexts; as shown by the following data, particles are banned from embedded clauses, independently of the clause type they are associated with:

(25) a. El me ga domandà dove (*ti) che i ze ndai (*ti)   Ve

       He-me-has asked where [ti] that they-have gone [ti]

     b. No so dirte quando (*ti) che i é partidi (*ti)   Pg

       I can't tell you when [ti] that they-have left [ti]

(ii)   a.   *Dove, po, zei ndai?

        Where po have-they gone

     b.   Parché, po, i ze/zeli ndai via?

     c.   Parché po?

         Why [po] (they-have/have-they gone away)

(26) a. I me a domandà cossa (*mo) che avon fat (*mo)   Pg
          They-have asked me what [mo] that we have done [mo]

      b. No so andé (*mo) che i é ndadi (*mo)   Pg
          I don'y know where [mo] that they-have gone [mo]

(27) a. I me à domandà parché (*po) che l'à parlà (*po)   Pg
          They-me-have asked why [po] that he-has spoken [po]

      b. No so dove (*po) che el ze ndà (*po)   Ve
          I don't know where [po] that he-has gone [po]

(28) L'à dit (*lu) che l'à piovest (*lu), ieri sera (*lu)[7]   Pg
      He-has said [lu] that it-has rained [lu] yesterday evening [lu]

The distributional constraint on main clauses suggests that the presence of the particle entails the activation of (some portion of) the CP-layer, where the main *vs* embedded distinction is encoded (cf. Rizzi (1997) among others); we address this issue more thoroughly in the next section.[8]

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[7]. Notice that *lu* is compatible with a subjective clause, that can be either preceded or followed by the particle:

(i)   a. L'é meio, lu, che te vegne ale nove

      b. L'é meio che te vegne ale nove, lu
          It is better [lu] that you-come at nine [lu]

(ii) a. L'é bel, lu, sveiarse tardi ala matina

      b. L'é bel sveiarse tardi ala matina, lu
          It is nice [lu] to wake up late in the morning [lu]

Incidentally, these data provide evidence that *lu* is not a tonic pronoun in these contexts.

[8]. A further common distributional feature concerns the fact that all *SPs* are incompatible with sentential negation, as shown by the Venetian imperative in (i) and the Pagotto interrogatives and exclamatives in (ii) and (iii):

(i)   *No sta farlo, mo!
      Don't do it, mo

Notice furthermore that arguments are generally right dislocated (as witnessed by the presence of resumptive clitics) in interrogative clauses containing a particle:

(29) a. Dove le gavarò messe, ti, le ciave?!   Ve
          Where clacc have-fut-I put where, ti, the keys
      b. Quando lo àla magnà, mo, al polastro?!   Pg
          When clacc has-she eaten, mo, the chicken

However, this effect is not due to the presence of the particle, but is a general property of main *wh*-questions (cf. Antinucci & Cinque (1977) and Munaro, Poletto & Pollock (2001) for further discussion on this issue).

(ii)   a. *Andé no i é/éli ndadi, ti?
           Where not they-have/have-they gone, ti
       b. *No i a/ali fat che, mo?
           Not they-have/have-they done what, mo

(iii) a. *No l'à piovest, lu
           Not it-has rained, lu
       b. *No l'é rivà (lu) nisuni, (lu)
           Not it-has arrived (lu) anybody (lu)

The Pagotto examples in (iv) might suggest that the particle *mo* is indeed compatible with negation in *yes/no* questions:

(iv)   a. No i gnen, mo?
           Not they-come, mo
       b. No te dis gnent, mo?
           Not you-say anything, mo

However, as discussed by several authors (cf. among others Portner & Zanuttini (1998)) negation in *yes/no* questions is an instance of the so called *expletive negation*, which has only a presuppositional value, and does not perform the function of a real negative marker; as a consequence, the generalization that all the *SPs* we consider are incompatible with real sentential negation holds; for the time being, we do not have an explanation for this fact and leave a deeper investigation of this issue for future research.

This effect in fact not attested in imperative clauses, where an object DP or an embedded clause can either occur in its canonical position or be right dislocated after the particle:

(30) a. Magna sta minestra, mo!   Ve/Pg

      b. Magna, mo, sta minestra!   Ve

      c. Magnela, mo, sta minestra!   Pg

        Eat (cl) [mo] this soup [mo]

(31) a. Gnen qua che finison sto laoro, mo!   Pg

      b. Gnen qua, mo, che finison sto laoro!

        Come here [mo] that we finish this work [mo]

(32) a. Vien che fazemo sta roba, mo!   Ve

      b. Vien mo, che fazemo sta roba!

        Come [mo] that we do this thing [mo]

In the case of the particle *lu*, which occurs in *yes/no* exclamatives, adverbials are also preferably right dislocated:

(33) a. L'à piovest, lu, ieri sera   Pg

      b. ??L'à piovest ieri sera, lu

        It has rained [lu] last night [lu]

(34) a. L'é fret, lu, qua dentro   Pg

      b. ?L'é fret, qua dentro, lu

        It is cold [lu] inside here [lu]

In the next section we will analyze all the syntactic properties listed here, trying to provide a plausible unified account for all of them.

4. Clause fronting to [*Spec,Prt*]

We propose to account for the fact that all *SPs* can occur in sentence final position under the assumption that *SPs* are located in a head position of the CP layer and that their sentence final position is derived via movement of their clausal complement, the whole CP, to their specifier, as illustrated in (35):

(35) $[_{FP}$ CP$_i$ $[_{F°}$ *particle*]$[_{CP}$ t$_i$]]

The hypothesis that *SPs* are located very high in the structure and that the whole CP must raise across them might seem at first sight a rather *ad hoc* proposal. We will therefore compare this analysis with the null hypothesis, namely with the view that *SPs* are located in the low position inside the IP field, showing that the null hypothesis encounters a number of problems; in addition, there are empirical arguments suggesting that these particles belong to the CP-layer.

Firstly, we have to exclude that *SPs* are merged inside the VP, as they have no argumental status. The assumption that *SPs* are located very low in the IP field would force us to the problematic conclusion that, given their sentence final positioning, all arguments must have vacated the VP; if this analysis might in principle be conceivable for object DPs (which move out of the VP in order to get case in some agreement projection), it looks much less plausible for PPs, which, not being in need of structural case, have no trigger for scrambling out of the VP.[9]

Secondly, given that low functional projections have in general aspectual value, we would expect that these particles also do. As we will see below, this is not the case; on the contrary, the interpretation triggered by the presence of *SPs* concerns semantic and pragmatic aspects such as presupposition, point of view, and presentation of the event, which are usually encoded in the left periphery of the clause.

Thirdly, the syntactic behaviour of *SPs* suggests that they belong to the highest functional domain: as shown above, they are not found in embedded contexts: this asymmetry is a typical property of phenomena involving the CP field (like for example *V2*, *do*-support, subject clitic inversion, etc.); to the best of our knowledge, no elements

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[9].   Moreover, the structural position of the particle should be in that case the lowest specifier position above the VP projection: if it were a head, it would block verb movement and if it were not the lowest functional specifier, we would expect it to be followed by low adverbs.

of the low inflectional field are sensitive to the main *versus* embedded status of the clause in which they occur.

After claiming that *SPs* are located in a head position of the CP layer and that their sentence final occurrence is derived via movement of their clausal complement, the whole CP, to their specifier, we intend to show now that the relation between *SPs* and the preceding CP does indeed display the properties of the structural spec-head relation.

As is well known, parentheticals cannot intervene between a head and its specifier, while they can intervene between two maximal projections.[10] Therefore, we can use parentheticals as a diagnostic test for spec-head relations; the following examples show that it is not possible to insert a parenthetical expession between the CP and any *SP*:

(36) a. *L'à piovest, son sicur, lu, ieri sera   Pg
           It-has rained, I'm sure, lu, last night

      b. *Cossa falo, diseme, ti?   Ve
           What does-he, tell me, ti

      c. *Vien, sa, mo!   Ve
           Come, you know, mo

Under the proposed analysis, the natural question arises as to whether all the particles are located in the same head or whether each particle occupies a different C° position. As we will discuss in the next section, there are reasons to believe that each particle marks a different semantic value.[11] There is, however, a more straightforward syntactic argument for the hypothesis that *SPs* occupy different head positions inside the CP layer; interestingly, the particles *ti* and *po* can cooccur, in a rigid order in which *po* precedes *ti*:

(37) Quando eli rivadi, po, ti?   Pg

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[10]. The general constraint blocking the insertion of parenthetical elements, and of lexical material in general, between a head and its specifier, follows straightforwardly from the antisymmetric approach of Kayne (1994).

[11]. Adopting Cinque's (1999) view that each functional projection can only encode one semantic feature, we are led to the conclusion that each particle occupies a different head position.

If the two particles cooccur, it is obvious that they cannot be located in the same head. According to our account there are two possible analyses of the sequence in (37), which can be derived either as in (38) or as in (39):

(38)   a. [[ti] [po] [$_{CP}$ quando eli rivadi]]

     b. [[ti] [[$_{CP}$ quando eli rivadi]$_x$ [po]] t$_x$]

     c. [[[[[$_{CP}$ quando eli rivadi]$_x$ [po]] t$_x$]$_y$ [ti]] t$_y$]

(39)   a. [[po] [ti] [$_{CP}$ quando eli rivadi]]

     b. [[po] [[$_{CP}$ quando eli rivadi]$_x$ [ti]] t$_x$]

     c. [[[$_{CP}$ quando eli rivadi]$_x$ [po]] [t$_x$ [ti]] t$_x$]

As illustrated, we can hypothesize two different initial sequences, depending on the relative linear order of the two particles. If *ti* is higher than *po*, like in (38a), we have movement of the interrogative clause into the specifier of *po*, like in (38b), and the final word order in (38c) is obtained by raising the whole constituent formed by the CP and the particle *po* into the specifier of *ti*. In the second derivation, with *po* higher than *ti*, like in (39a), the interrogative CP raises, through the specifier of *ti*, up to the specifier of *po*. Beside the different initial order, the difference between the two alternatives lies in the second step of the derivation: only in the former case does the moved constituent include the lower particle.[12]

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[12].   Under either analysis it is possible to account for the ungrammaticality of the following sequences:

(i)   a.   *Quando eli rivadi, ti, po?

     b.   ??Po, quando eli rivadi, ti?

     c.   ??Quando po éli rivadi ti?

       [Po] when [po] have-they arrived [po/ti] [ti/po]

Under the first analysis the ungrammaticality of (ia) may be traced back to the fact that *ti* requires its specifier position to be filled by the whole complement (including the particle *po*); on the other hand, the deviance of (ib/c) suggests that the raising of the whole clause to the specifier of *ti* requires previous movement of the clause (and not only of the *wh*-item) to the specifier of *po*, a condition which is virtually identical to the well known general restriction on successive cyclic movement according to which intermediate positions of the same type cannot be crossed over. On the other hand, the second analysis correctly predicts the ungrammaticality of (ia), where the particles are in the reverse order, as well as the

We have seen that some *SPs* can either be preceded by the whole interrogative clause, like in (40), or intervene between the sentence initial *wh*-item and the rest of the clause, like in (41):

(40)   a. Parché gnenlo, mo?   Pg
           Why comes-he, mo

       b. Quando eli rivadi, po?   Pg
           When have-they arrived, po

(41)   a. Parché, mo, gnenlo?   Pg
           Why, mo, comes-he

       b. Quando, po, eli rivadi?   Pg
           When, po, have-they arrived

The examples in (40) show that the particle can be located in the left periphery, as it precedes the inflected verb which has undergone subject clitic inversion (we take subject clitic inversion to witness that (some type of) verb movement to the CP layer has applied).[13]

Under our account the particle occupies one and the same position, the difference between (40) and (41) depending on whether it attracts to its specifier the whole clause or only the *wh*-item, stranding the clause; hence, cases like (41) are expected if we assume the analysis in (35) and have a structure like the following, where the element checking the strong feature in the specifier of the *SP* is not the entire CP but the *wh*-item:

(42) $[_{FP}\ wh_i\ [_{F°}\ particle]\ [_{CP}\ t_i\ [_{IP}\ ...t_i...]]]$

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deviance of (ib), where the specifier of *po* remains empty, and of (ic), where the *wh*-item has been extracted from a left branch.

[13].   If we took (40) as the basic sequence, in view of (41) we would have to posit that the particle can either be merged in two different positions, belonging to very different sentence domains, or be merged very low in the structure and subsequently moved to the CP area for some reason to be determined. This hypothesis is not plausible, given that *SPs* do not encode any aspectual feature.

We propose that the difference between particles that admit for this possibility and the ones that do not should be linked to the semantic feature the particle marks, as discussed below in detail.[14]

As for the obligatoriness of right dislocation in interrogative clauses, we assume that these cases should be treated along the lines of Kayne & Pollock (2001) and Munaro, Poletto & Pollock (2001), where it is proposed that these cases are to be analyzed as left dislocation of the prosodically emarginated constituent to the specifier of a Topic projection, followed by remnant movement of the whole clause; according to our analysis, the XPs occurring after the particle are left dislocated to a CP position lower than the one occupied by the particle itself.

An empirical argument is favour of the idea that in the cases under examination what looks like right dislocation is left dislocation followed by clausal movement is provided by the contrasts in (43) and (44). As noted by Benincà (1988), right dislocation can be preceded by a focalized XP, which is prosodically tied to the verbal complex; interestingly, this does not hold for the kind of constructions we are examining here:

(43) a. *Vèrzila mo SUBITO, sta finestra   Ve

        b. Vèrzila mo, subito, sta finestra

            Open-it [mo] soon [mo] this window

(44) a. *L'àtu vist mo IERI, to papà?   Pg

        b. L'àtu vist mo, ieri, to papà?

            Him-have-you seen [mo] yesterday [mo] your father

In the examples (43b) and (44b) the adverb cannot be focalized, which shows that the object must have undergone left dislocation at some stage of the derivation.

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[14].   A further argument in favour of our analysis is provided by the empirical generalization formulated above: those particles that can intervene between the *wh*-item and the rest of the clause may also occur with the *wh*-item in isolation; this fact follows straightforwardly from the analysis proposed here, while it would remain unaccounted for if we admitted that *SPs* are located in the low IP area.

5. On the interpretive contribution of the particles

In this section we attempt a more thorough description of the contexts in which *SPs* are attested, thereby sketching an account of the semantic contribution of each particle to the interpretation of the clause.

5.1. Ti

As already mentioned, *ti* only appears in *wh*-questions and is not compatible with *yes/no* questions:

(45) a. Quando sarali rivadi, ti?   Pg
       b. Sarali rivadi quando, ti?
          [When] be-fut-they arrived [when], ti

(46) a. *Saràli rivadi, ti?   Pg
          Be-fut-they arrived, ti
       b. *I ze partii, ti?   Ve
          They-have left, ti

Ti questions can have two different interpretive shades and both correspond to non-canonical interpretations of the question. Under the first interpretation, which can be identified with Obenauer (1994)'s "can't find the value" (henceforth *Cfv*) reading, the speaker has already unsuccessfully tried to identify an appropriate value for the variable.[15] The second interpretation is a surprise/reproach (henceforth *Sr*)

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[15]. This type of questions can only be self-addressed questions; interestingly, both in Venetian and in Pagotto (as exemplified in (ia) and (ib)), *ti* cannot appear in epistemic questions, which display an overtly realized complementizer *che* and are generally in the subjunctive mood:

(i)   a.   Cossa che el gabia fato, (??ti)?
            What that he-have-subj done (ti)
      b.   Che'l sia 'ndat andé, (??ti)?
            That he-be-subj gone where (ti)

interpretation: in this case the speaker already knows the value of the variable, so his question does not really bear on the value of the variable bound by the *wh*-operator but rather conveys a feeling of surprise or reproach towards the event referred to.[16]

We propose that the function of *ti* is in both cases to signal that the value of the variable is outside the set of canonical answers. Suppose that the canonical way of interpreting a question is to present a class of possible answers and invite the addressee to select one: *ti* signals a non-canonical interpretation of the question, that is, the fact that the addressee is not allowed to choose a value for the variable from inside the set. So, the common feature shared by both the interpretations associated with the presence of *ti* is the fact that the answer drawn from the set specified by the *wh*-item is not sufficient and/or relevant.

Let us analyze more in detail what semantic property these two interpretations share: in the *Cfv* interpretation all the possible values of the variable have already been tried and excluded by the speaker, while in the *Sr* interpretation the value of the variable is already identified but it is outside the set of plausible values defined by the context (cf. Obenauer (1994)). Interestingly, the choice between the two interpretations seems to be connected to the verbal features, as present and past trigger the *Sr* interpretation more easily, while future favours the *Cfv* one:[17]

(47) a. Dove le gavarò messe, ti?   Ve
          Where cl have-fut-I put, ti

Questions of the type exemplified in (i) are also self-addressed questions, which might be taken to show that self-addressing in questions cuts across questions types.

[16]. For a more detailed analysis of questions with this particular type of pragmatic salience, the reader is referred to Poletto (2000:67 ff.) and Munaro & Obenauer (2002).

[17]. Notice that *Cfv* questions with *ti* are incompatible with second person subjects, which is probably due to the fact that the speaker excludes the possibility of getting an answer from the addressee:

(i) a. *Andé sareo ndadi, ti?

     b. *Dove sarì ndai, ti?
         Where be-fut-you gone, ti

    b. Cossa avarali magnà, ti?   Pg

       What have-fut-they eaten, ti

(48) a. Andé eli ndadi, ti?   Pg

       Where have-they gone, ti

    b. Cossa sì drio magnar, ti?   Ve

       What are-you eating, ti

The choice is performed via different mood marking: both in *Cfv* questions and in *Sr* questions the activation of a modal feature may be involved, most likely an epistemic modality in the former case and an evaluative modality in the latter (cf. Munaro & Obenauer (2002) for a specific proposal on the second type of questions).[18]

    The fact that modality is relevant to the interpretation of the question could provide an explanation for why *ti*, unlike other particles, always requires the whole CP, and not simply the *wh*-item, in its specifier. If the modal feature must be in a local structural relation with the particle, there are a priori two possible ways to satisfy this requirement: since *ti* has no affixal properties, left-adjunction of the finite verb to the particle via head movement is excluded, so we are left with the option of pied-piping the whole CP up to the specifier of the particle.[19]

    In the *Sr* interpretation not only does the speaker know that the value of the variable is outside the set; the set is defined either on the basis of acceptable values (producing the reproach reading) or on the basis of the expected values (producing the surprise interpretation). In other words the rough interpretation of (49a) is (49b):

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[18].   That future tense can have modal properties is shown by examples like the following:

    Bussano alla porta. Sarà Gianni.

    (They) are knocking at the door. (It) will-be John

    'Somebody is knocking at the door. Probably it's John'

As illustrated by the English translation, the use of the future in this case triggers an epistemic interpretation.

[19].   As for the fact that *ti* occurs only in *wh*-interrogatives and not in *yes/no* questions, this may depend on the fact that in the latter the variable can have either a positive or a negative value; since these two values exhaust the set, there is no third value to be placed outside the set.

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(49) a. Cossa$_C$ magnelo ti ?

    b. {magna cossa, x : x ϵ C Δ x is a thing}
       C = acceptable
       C = expected

The two basic meanings of the *Sr* question type are thus derived from the typing of the set of possible values, which can be either expected or acceptable.

5.2. *Mo*

As anticipated above, the particle *mo* has a different distribution in Venetian and Pagotto, as only in the latter dialect it can occur both in interrogatives as well as in imperatives.

We propose that *mo* can have the following values in the structures examined: it introduces a *presupposition* and/or it expresses what has been defined in the literature as a *point of view*. From these two properties we derive its interpretive import in the two dialects under investigation; in Pagotto *mo* introduces 'point of view' because it expresses a reference to the person to whose benefit the action has to be performed (either the speaker or the hearer): imperatives with *mo* are uttered to the benefit of a class of persons which includes the hearer (a similar information is conveyed by the particles *mo/ma* in the Raethoromance variety of Badiotto, as discussed by Poletto & Zanuttini (2003)):

(50) a. Magna, mo (che te deventa grant)!   Pg
       Eat, mo, (so that you grow up)

    b. Ledelo, mo (che te capisarà tut)!   Pg
       Read it, mo, (so that you'll understand everything)

(51) a. Nèteme le scarpe, mo (che sion in ritardo)!   Pg
       Clean my shoes, mo, (that we are late)

    b. Parèceme da magnar, mo (che dopo avon da 'ndar via)!   Pg
       Cook for me, mo, (that later we have to go)

Sentences like the ones illustrated in (50) are clearly uttered to the advantage of the hearer, while those in (51) are felicituos only if they are uttered in a context in which both the speaker and the hearer benefit from the action performed.[20]

As for the role of *mo* in imperatives in Venetian, it can be informally characterized as expressing the confirmation of an order already given, requiring that the action be performed immediately; as such it is not compatible with adverbs expressing future tense:

(52) a. Ciamime (*tra un'ora), mo!   Ve
          Call me (in an hour), mo

     b. Lezilo (*doman), mo!
          Read it (tomorrow), mo

In Venetian imperatives *mo* is sensitive to the tense of the utterance, as it signals that the utterance time and the performance time must coincide. In addition to this, *mo* signals the presence of a presupposition, that is, that the speaker already knows that the hearer does not intend to obey the order. The combination of these two factors, that is, the presupposition and the coincidence between utterance and performance time, yields a semantic effect characterized by Venetian informants as 'reinforcement of the order'.

In imperatives *mo* expresses two distinct values in the two dialects under investigation, but the reading conveyed by *mo* in Pagotto interrogatives is partially similar to the one expressed in Venetian imperatives because in both cases a presupposition concerning the addressee's intentions is entailed (as said above, *mo* does not appear in Venetian interrogatives). We surmise that in *mo* interrogatives both a presupposition and a point of view are involved, the interpretation depending on the position of the *SP*:

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[20]. The distinction concerning *point of view* attested in Pagotto is not relevant in Venetian, as *mo* can appear in the following imperative clauses expressing an order whose performance is exclusively to the advantage either of the hearer or of the speaker:

(i)   a.   Vien mo, che te iuto!
            Come mo, that I help you

       b.   Vien mo, che ti me porti casa!
            Come mo, that you take me home

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(53) a. Quando rivaràli, mo?   Pg

　　　b. Quando, mo, rivaràli?

　　　　When [mo] arrive-fut-they [mo]

If the whole clause raises, like in (53a), the speaker expresses the fact that the present situation does not conform to his expectations, a fact which, due to the presence of the point of view, might have negative consequences; if *Point of view* is encoded by a modal projection in the higher portion of IP (cf. Poletto & Zanuttini (2003)), then IP raising is necessary for the intended interpretation to obtain (as is the case with *ti*). When the particle occurs immediately after the *wh*-item, like in (53b) (or with the *wh*-item used in isolation), *mo* introduces the speaker's opinion that the addressee does not intend to answer, so that he is forced to repeating his question. Hence, what is expressed in this case is not a point of view, but just a presupposition; given the absence of point of view, the clause need not raise as a whole and the *wh*-item can, and must, raise alone.[21]

　　We can conclude that both in Venetian imperatives and in Pagotto interrogatives (with the particle following the *wh*-item) the effect of reinforcement perceived by the

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[21].   A similar distinction between two different dialects is found in the Rhaetoromance varieties spoken in the Badia valley; in the dialect spoken in S.Leonardo *mo* exclusively expresses the speaker's point of view:

(i)   a.   Arzignem mo le bagn

　　　　　Prepare-me mo the bath

　　　b.   *Töt mo n'de d vacanza

　　　　　Take mo a day of holiday

The ungrammaticality of (ib), which is uttered to the benefit of the addressee, shows that in this dialect the particle *mo* expresses an order to be performed to the benefit of the speaker. In the minimally different dialect of S.Vigilio di Marebbe *mo* encodes an order to be performed immediately and as such it is incompatible with adverbial forms of duration or referring to a point in the future:

(ii)   a.   Dayrela mo (*te siis mensc)

　　　　　Open-it mo (*in six months)

　　　b.   Comportete mo (*entrees) bun

　　　　　Behave-refl mo (*always) well

informants is due to some presupposition concerning the addressee's attitude. How this presupposition is syntactically expressed remains however to be determined.

5.3. ***Po***

Also in the case of *po* the interpretation of the sentence depends on the position of the particle, which, as anticipated above, can appear either sentence final or immediately after the *wh*-item:

(54) a. Quando eli rivadi, po?   Pg
       b. Quando, po, eli rivadi?
            When [po] have-they arrived [po]

We claim that the contribution of *po* to the interpretation of the clause consists of two components: the fact that the set of the answers specified by the *wh*-item is ordered according to a probability scale (along the lines of Portner & Zanuttini (1998)'s analysis of exclamative clauses) and that the most probable values have already been tried and excluded.

When *po* immediately follows the *wh*-item, like in (54b), the speaker knows that the event was supposed to take place and is asking for a confirmation; as discussed above for *mo*, this interpretation seems to convey a presupposition concerning the whole event, so that the question does not really bear on the *wh*-item. This position triggers an interpretation in which the possible values for the variable have been ordered according to a probability scale derived through the context, and the most probable ones have been excluded.

Sentence final *po*, in (54a), in addition to the ordering of the possible values and the exclusion of the most probable ones, also entails the speaker's reference to a preceding communicative situation that has been left suspended and is taken up again at present; we suggest that the speaker's reference to a previous situation might be connected to the activation of the *Tense* projection, which, being relevant for this interpretation, must move to the specifier of the particle, pied piping the whole clause (as in the cases of *ti* and *mo*).[22]

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[22].   Indeed, this additional interpretation is excluded in Venetian with a future tense:

(i)   %Quando sarali rivai, po   When be-fut-they arrived po

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5.4. *Lu*

The occurrence of the particle *lu* is limited to non-constituent exclamatives presenting the whole propositional content as unexpected:

(55) a. L'é frét, lu   Pg
          It-is cold [lu]

      b. L'é rivà al to amigo, lu   Pg
          It-has arrived your friend, lu

So, in the two examples in (55) the speaker becomes aware of an unexpected matter of fact: in (55a) he realizes that the temperature is lower than he expected while in (55b) he is surprised about the fact that the addressee's friend is not going to arrive.

Lu is not compatible with constituent exclamatives in which a *wh*-phrase has been fronted to the sentence initial position, as shown by the following examples:

(56) a. Che fret (*lu) che l'é incoi (*lu)   Pg
          How cold [lu] that it-is today [lu]

      b. Quant (*lu) che l'à piovest ieri sera (*lu)
          How much [lu] that it-has rained last night [lu]

We will limit ourselves to suggesting that the semantic function of *lu* consists in introducing a presupposition; in this case the event described by the clause corresponds to either of the two possible truth values (the positive and the negative one); the propositional content expressed is contrary to the speaker's expectations, so the

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As mentioned above, in Pagotto *po* is also attested in sentence initial position, both in *yes/no* and in *wh*-questions:

(ii) a. Po, éli rivadi?

      b. Po, quando éli rivadi?
          Po [when] are-they arrived

In both cases the presence of *po* conveys the speaker's mild surprise about the fact that the event has taken place, rather than focalizing the question on whether they have arrived or not or on the actual time of their arrival; hence the event is presented as unexpected given the context, and the value of the variable does not seem to be relevant.

interpretive feature associated with *lu* may be reduced to the choice of the contextually less probable value (between the two a priori conceivable ones).

In this respect the interpretive contribution of *lu* in reversing the presupposition resembles the semantic function performed by *mica* in standard Italian (cf. Cinque (1976)):

(57)   Non fa mica freddo oggi
       Not makes mica cold today

In (57) the speaker expresses the fact that, contrary to common expectations, it is not cold; in this sense, *lu* could be viewed as the positive counterpart of *mica*.

6. Summary

In this article we have analyzed the syntactic and semantic behaviour of some sentential particles attested in the Veneto dialects.

The particles we have considered share some interesting properties: they are associated to specific clause types, they can only appear in matrix clauses, they can all occur in sentence final position and display the typical properties of X°-elements. Our hypothesis that each particle occupies a different head position within the CP layer is crucially supported by the possibility of combining two particles; however, their precise ordering and a precise characterization of the single projections they mark remains to be determined.

We have proposed a syntactic analysis exploiting movement of the *wh*-item or of the whole clausal complement to the specifier of the projection whose head is occupied by the particle. The interpretation triggered by the presence of the particle changes depending on whether the constituent which targets the specifier of the *SP* is the *wh*-item or the whole clause. We have suggested that the raising of the whole CP-complement is induced by the necessity for some projection of the inflectional field (typically Tense or Mood) to enter a local structural relation with the particle; when this obtains Tense or Mood also contribute to the interpretation of the clause, which becomes a function of the semantic import of the particle combined with the interpretive contribution of the relevant projection. Each particle is sensitive to tense and modality features in a different way, an issue which deserves further investigation.

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Similarities and differences between standard Albanian and Arbëresh numerals. A case of micro-parametric variation

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1. Introduction

In this paper, I will explore similarities and dialect differences in relation to the distribution of numerals between standard Albanian and the Arbëresh variety spoken at San Nicola dell'Alto, a village in Southern Italy. Albanian and Arbëresh numerals such as *një* 'a/one', *dy* 'two', *tre* 'three' are ambiguous between quantifiers and adjectives. Compare the two Albanian/Arbëresh structures in (1):

(1)   a. tre burra
           three men
     b. të tre   burrat
           the three men-the

As we will see, the Albanian/Arbëresh numeral in (1a) has all the properties of a universal quantifier, whereas the pre-articulated numeral in (1b) resembles to a pre-articulated adjective. Despite this similarity, Arbëresh numeral constructions differ from Albanian corresponding structures.

This paper is organized as follows: In section 2, I give a description of numeral constructions in Arbëresh. In section 3, I present the corresponding Albanian data. Section 4 will deal with the position of numerals in floating quantifier constructions. Section 5 will focus on the distribution of numerals in pronominal structures. In section 6, I present an analysis for the various structures.

2. Arbëresh numerals

Arbëresh elements such as *njo* 'a/one', *di* 'two', *tre* 'three', *katr* 'four' display the same characteristics of universal quantifiers. Like quantifiers, Arbëresh numerals always precede the head noun:

(2)   a. shumë/pak burra
          many/few   men
      b. *burra shumë/pak

(3)   a. di/tre   burra
          two/three   men
      b. *burra di/tre

Like quantifiers, Arbëresh numerals never agree with the head noun:

(4)   a. shumë/pak burra
          meny/few men
      b. shumë/pak gra
          many/few women

(5)   a. di/tre   burra
          two/three   men
      b. di/tre   gra
          two/three   women

Like quantifiers, Arbëresh numerals can only be combined with a head noun with no article.

(6)   a. shumë/pak burra
          many/few men

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  b *shumë/pak burrat [1]
    many/few men-the

(7) a. di/tre burra
    two/thrre men
  b. *di/tre burrat
    two/three men-the

Finally, Arbëresh numerals can combine with a demonstrative, just like other quantifiers do:

(8) këto di/tre burra
   these two/three men

(9) këto pak burra
   these few men

Thus, in Arbëresh, the element illustrated in (1a) behaves exactly like a universal quantifier.

  Let us consider now the numeral presented in (1b). It behaves differently. From a morphological point of view, it looks like an adjective. Both Arbëresh and Albanian have two distinct classes of adjectives: pre-articulated adjectives, i.e. adjectives which are always preceded by an article and adjectives which occur without article. Compare the two different adjectives in the following Arbëresh sentences:

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[1]. In Arbëresh and Albanian, the definite article cliticizes to the head noun (Giusti 1993, Giusti 1997, Dimitrova-Vulchanova & Giusti 1998, Turano & Rrokaj 2000, Turano 2001, Turano 2002):

(i) mal
  mountain

(ii) mal**i**
  mountain-the
  the mountain

(10) a. një djalë **i**   bukur
          a boy   the   nice
          a nice boy
      b. një djalë shpertu
          a   boy   clever
          a clever boy

The prepositive article **i** which precedes the adjective in (10a) expresses the agreement of the adjective with the head noun in gender, number and case. In fact, the article surfaces as **i** when the adjective modifies a masculine nominative noun; it surfaces as **e** when the adjective modifies a feminine nominative noun, and it surfaces as **të** when the adjective modifies a plural noun or a neuter noun:

(11) a. burri   **I**   bukur
          man-the- MASC   the-MASC   nice
          the nice man
      b. vajza   **e**   bukur
          girl-the-FEM   the-FEM   nice
          the nice girl
      c. burrat   **të**   bukur
          men-the-PL   the-PL   nice
          the nice boys
      d. vajzat   **të**   bukura
          girls-the-PL   the-PL   nice-FEM.PL
          the nice girls
      e. ujët   **të**   mir
          water-the-NEUTER the-NEUTER good
          the good water

The prepositive article is an integral part of the adjective, whereby it must be obligatorily realized. Its deletion causes ungrammaticality:

(12) a. *burri bukur
          man-the nice
      b. *një burrë bukur
          a   man nice

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Coming back to the numeral in (1b), it is preceded by the article **të**, an element which is typical of Albanian and Arbëresh adjectives. Besides that, the numeral in (1b) agrees with the head noun in number and gender, just like other adjectives do. Compare the adjectives and the numerals in (13):

(13) a. **të   tre**   burrat   **të   bukur**
        the-PL three-MASC.PL men-the   the-PL   nice-MASC.PL
        the three nice men
     b. **të   trea**   vajzat   **të   bukura**
        the-PL three-FEM.PL girls-the   the-PL   nice-FEM.PL
        the three nice girls

However, there are crucial differences between numerals and other adjectives. In Arbëresh as well as in standard Albanian, adjectives are always in post-nominal position, whereas numerals can only appear in pre-nominal position:

(14) a. ghibret   **të ri**   jan sip banks
        books-the   the new are on table-the
        the new books are on the table
     b. *****të ri** ghibret jan sip banks

(15) a. **të tre**   ghibret   jan sip banks
        the three books-the are on table-the
        the three books are on the table
     b. *ghibret **të tre** jan sip banks

From a syntactic point of view, the pre-articulated numeral in (1b) differs from the numeral in (1a) in that it requires the suffissed definite article on the noun:

(16) a. të tre **ghibret**   jan sip banks
        the three books-the are on   table-the
        the three books are on the table
     b. *të tre   **ghibre** jan sip   banks
        the three books   are on   table-the

(16b) becomes grammatical if we introduce a demonstrative:

(17) ato të tre **ghibre** jan sip banks
      those the three books are on table-the

When the noun phrase is preceded by a demonstrative, the suffissed article on the noun is not allowed:

(18) *ato të tre **ghibret**   jan sip banks
      those the three books-the   are on table-the

In Arbëresh, thus, the article-less numeral is only possible with article-less nouns (cf. (7)) or with demonstratives (cf. (8)), whereas pre-articulated numerals are only possible with nouns containing a definite article (cf. (16)) or a demonstrative (cf. (17)). Given this distribution, we can conclude that two types of constructions can be distinguished in Arbëresh.

3. Albanian numerals

As in Arbëresh, numerals in standard Albanian are ambiguous between quantifiers and adjectives (cf. (1)). However, a direct comparison of standard Albanian and Arbëresh shows that there is a minimal syntactic variation between the two languages in question.

Like in Arbëresh, in standard Albanian numerals such as *një* 'a/one', *dy* 'two', *tre* 'three' precede the head noun, just like other quantifiers.

(19) a. dy/tre   burra
        two/three men
     b. *burra dy/tre

(20) a. shumë/pak burra
        many/few   men
     b. *burra shumë/pak

Moreover, Albanian numerals are similar to universal quantifiers in that they do not display morphological agreement with the noun phrase:[2]

(21) a. dy/ katër/pesë burra
         two/four/five men
      b. dy/katër/pesë gra
         two/four/five women

Like in Arbëresh, in standard Albanian numerals can be combined with demonstratives:

(22) këta   tre   burra
     these three men

Despite these similarities, in standard Albanian the behavior of numerals is minimally different from that of other quantifiers. In Albanian, in fact, quantifiers can only combine with indefinite nouns (23), whereas numerals can freely co-occur with definite nouns (24).

(23) a. shumë/pak **burra**
         many/few   men
      b. *shumë/pak   **burrat**
         many/few   men-the

(24) a. dy/tre   **burra**
         two/three men
      b. dy/tre   **burrat**
         two/three men-the

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[2]. The numeral *tre* 'three' is an exception since it has a feminine form:

(i)   **tre** burra

      three men

(ii)   **tri** gra

      three women

Then, the distribution of numerals in Arbëresh and in standard Albanian differs in that Albanian allows the combination of a numeral with a definite noun, whereas in Arbëresh this is impossible (cf. (7b)).

Also the distribution of the pre-articulated numerals is minimally different. In Arbëresh, pre-articulated numerals can combine with nouns having the suffissed definite article (cf. (16)) or with article-less nouns preceded by a demonstrative (cf. (17)). In standard Albanian, on the contrary, pre-articulated numerals can only combine with nouns occurring with the definite article, whereby even if the structure contains a demonstrative, the suffissed article on the noun is obligatory:

(25) a. të   tre   **burrat** punojnë
         the   three men-the work
     b. *të   tre   **burra** punojnë
         the   three men   work

(26) a. ata   të   tre   **burrat** punojnë
         those the   three men-the work
     b. *ata   të   tre   **burra** punojnë
         those the   three men   work

Briefly, the contrast between (7b) and (24b) on the one hand and (18) and (26a) on the other hand shows that the distribution of numerals is not exactly the same in standard Albanian and in Arbëresh.

4. Numerals in Floating Quantifier constructions

A suggestive fact in the context of our discussion is that standard Albanian and Arbëresh numerals can be used in floating quantifier constructions. According to Sportiche (1988), floating quantifiers allow their complement to move out leaving them in place. Thus, in (27a) the floating quantifier 'all' is moved to the left along with the nominal phrase, whereas in (27b) the NP moves stranding the quantifiers in its basic position, inside the VP:

(27) a. all the men have arrived.
　　　b. the men have all arrived.

Interestingly, both in Albanian and in Arbëresh, the only numeral which can float is the pre-articulated numeral, as evidenced by the Arbëresh examples in (28) and (29) and by the Albanian examples in (30) and (31).

(28) a. **të tre**　　　**burrat**　　kan dal
　　　　　the three　men-the　have gone out
　　　b. **burrat** kan dal **të tre**

(29) a. **tre burra**　kan dal
　　　　　three men　have gone out
　　　b. ***burra** kan dal **tre**
　　　c. ***burrat** kan dal **tre**
　　　　　men-the have gone out

(30) a. **të tre**　　　**burrat**　kanë dalë
　　　　　the three men-the have gone out
　　　b. **burrat** kanë dale **të tre**

(31) a. **tre burra** kanë dalë
　　　　　three men have gone out
　　　b. ***burra** kanë dalë **tre**
　　　c. ***burrat** kanë dalë　　**tre**
　　　　　men-the have gone out three

As the ungrammatical examples in (29b-c) and (31b-c) show, NP-movement with quantifier stranding is not allowed with the quantifier *tre*.

　　It should be noted that floating quantifier constructions, in Albanian and in Arbëresh, are also possible with the universal quantifier *gjithë* 'all'. *Gjithë*, in standard Albanian, is like numerals: it is at the same time a quantifier and an adjective[3]. The quantifier *gjithë* is indeclinable, whereby it does not agree with its complement:

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[3]. The idea that quantifiers have an ambiguous status has been made by Giusti (1991, 1993, 1997) for Italian. According to Giusti, when quantifiers such as *tutti* 'all' and *molti* 'many' are not preceded by a

(32) a. gjithë burrat   shkojnë në punë
        all   men-the go   in work
        all the men go to work
     b. gjithë grate   shkojnë në punë
        all   women-the go   in work
        all the women go to work

The adjectival form, on the contrary, is a pre-articulated element which always agrees in gender and number with the head noun:

(33) a. **i**   gjithë fshati   ishte plot kodra
        the-MASC all village-the-MASC was full hills
        all the village was full of hills
     b. **e**   gjithë krahina   ishte plot kodra
        the-FEM all   country-the-FEM was full hills
        all the country was full of hills
     c. **të**   gjithë fshatrat   ishin plot kodra
        the-PL all   village-the-PL were full hills
        all the villages were full of hills
     d. **të**   gjith**a**   krahinat   ishin plot kodra
        the-PL all-FEM.PL   country-the-PL were full hills
        all the countries were full of hills

The quantifier *gjithë* and the adjective *të gjithë* have the same distribution, whereby the quantifier in (32) can be replaced by the adjectival form *të gjithë*, and the adjectival forms in (33) can be replaced by the quantifier *gjithë*. Crucially, floating quantifier constructions are only possible in presence of the adjectival form *të gjithë*, whereas the occurrence of the quantifier *gjithë* is excluded:

(34) a. burrat punojnë **të gjithë** në Itali
        men-the work   the all   in Italy
     b. *burrat punojnë **gjithë** në Itali

---

definite article (*molti ragazzi* 'mani boys'), they are quantifiers realizing a Q° head. In contrast, when these elements are preceded by a definite article (*i molti ragazzi* 'the many boys') they are adjectives realizing a higher Spec position.

c. *burra punojnë **gjithë** në Itali
men   work   all   in Italy

So, in standard Albanian, there is a perfect symmetry between floating quantifier constructions containing the element *gjithë* and structures with numerals.

Arbëresh, on the contrary, only preserved the invariant element *gjith*. Arbëresh *gjith*, like its Albanian counterpart, does not agree with the head noun:

(35) a. gjith burrat
all men-the
b. gjith grat
all men

Unlike standard Albanian, Arbëresh allows the quantifier *gjith* to appear in floating quantifier constructions:

(36) burrat   kan rron gjith dje
men-the have arrived all yesterday

5. Numerals and pronouns

The data I will present in this section show the behavior of numerals in constructions containing personal pronouns. Both in Albanian and in Arbëresh, the numeral in (1a) is never found in combination with pronouns.

(37) a. *ju **tre**
you three
b. ju   **të tre**
you the three

As the example in (37b) shows, Albanian and Arbëresh only allow the combination between a pronoun and a pre-articulated numeral. The same facts can be observed if we combine a pronoun with the universal quantifier *gjithë* 'all'. In Albanian, only the

adjectival form *të gjithë* can be combined with personal pronouns. On the contrary, the occurrence of the quantifier *gjithë* is excluded:

(38) a. ju   të gjithë
          you   the all
      b. *ju gjithë

In Arbëresh, on the contrary, the loss of the pre-articulated universal quantifier forces the combination between pronouns and article-less *gjith*:

(39) gjith ju
      all you

Coming back to pronouns, note that, both in Arbëresh and in standard Albanian, the pronoun must precede the numeral, as illustrated by the contrast in (40):

(40) a. ju   të tre
          you   the three
      b. *të tre ju

Pronouns behave differently from other nominals that must follow numerals:

(41) a. të tre burrat
          the three men-the
      b. *burrat të tre

The same behavior shows the Albanian element *të gjithë:* it precedes ordinary DPs

(42) a. të gjithë burrat
          the all men-the
      b. *burrat të gjithë

Nevertheless, in combination with personal pronouns, *të gjithë* can both precede or follow the pronoun:

(43) a. të gjithë   ju
          the all   you
      b. ju të gjithë

In Arbëresh, instead, *gjith* precedes both ordinary DPs (44) and pronouns (45):

(44) a. gjith burrat
          all men-the
      b. *burrat gjith

(45) a. gjith ju
          all you
      b. *ju gjith

In summary, the distribution of numerals, in Arbëresh and in standard Albanian differs in that: a) Albanian numerals can co-occur with definite nouns (cf. (24b)), whereas Arbëresh numerals only combine with indefinite nouns (cf. (7b)); b) Albanian pre-articulated numerals which co-occur with demonstratives can only combine with definite nouns (cf. (26a)), whereas Arbëresh numerals combined with demonstratives do not allow the definite article on the noun (cf. (18)).

Based on these facts, we are lead to two conclusions: a) the position of numerals in these two languages is different; b) cardinals, in Albanian and Arbëresh differ in their categorial nature: whereas the numeral presented in (1a) is a head like element, in (1b) it is a phrasal constituent. I will consider the article-less element in (1a) as a quantifier of the same type of *shumë* 'many', *pak* 'few', in all relevant sense. Therefore, I will assume it realizes a Q° position within the extended projection of the noun. The pre-articulated element in (1b), instead, will be considered as a modifier realizing a specifier position.

Before going into an analysis of the facts illustrated above, I will present the structure I will adopt for Albanian and Arbëresh DPs.

6. The syntax of Albanian and Arbëresh numeral constructions

6.1. The structure of Albanian and Arbëresh DPs

Both in Albanian and in Arbëresh, the definite article has the property of a clitic. It is in fact realized as a suffix on the noun:

(46) a. mal

           moutain

       b. mal**i**

           moutain-the

Since Abney (1987) it has been assumed that determiners like articles, determinatives and pronouns occupy a D position inside the DP projection, whereas the noun is generated inside an NP projection, which is a complement of the head D.

In addition to the positions of determiners and nouns, many languages show evidence that there are other functional projections within DP, hosting number/gender information and quantifiers (cf. Ritter 1991 on Hebrew, Valois 1991 on French, and Cinque 1995 on Italian).

I will assume that in Albanian and in Arbëresh the suffix realizing the definiteness is lexicalised in D°. The incorporation of the suffix to the head noun is a result of N-to-D movement, which takes place in the overt syntax[4]. Thus, the definite noun in (46b) has the derivation in (47):

(47)   D   N

           mal-i   ~~mal~~

6.2. The syntax of numerals

Let us consider now numeral structures. The Arbëresh-Albanian nominal structure illustrated in (1a) can be schematically represented as (48), in which the quantifier *tre* occupies a Q° position, whereas the nominal *burra* occupies the base noun position:

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[4]. This analysis is different from the one in Turano (2002).

(48)   D   Q   N
               tre   *burra*
               three   men

Given (48), the combination of a quantifier with a demonstrative is expected if we take the demonstrative to lexicalize a D position. (49) is the representation of Arbëresh (8) and Albanian (22):

(49)   D   Q   N
               këta   *tre*   *burra*
               these   three   men

Albanian and Arbëresh structures containing universal quantifiers (cf. (2) and (20)) can be represented in the same fashion:

(50)   D   Q   N
                   shumë/pak   *burra*
                   many/few   men

Consider now the example in (1b) containing the element *të tre*. It has a structure similar to that of other pre-articulated adjectives, which I will assume to consist of a determiner and a complex AP complement[5]. Evidence for the assumption that adjectives have a DP projection comes from the examples in (11) and (12) showing that, both in Albanian and in Arbëresh, the article which precedes the adjective cannot be deleted. This fact indicates that the article belongs to the adjective. I will analyze that article as a D° element within the projection of the adjective phrase[6]. In particular, I will consider D as the position where gender, number and case information features realize. According to this analysis, Albanian APs are full DPs, displaying a full extended projection incorporating a functional head D and a functional head I, where adjectival inflection is

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[5]. For a detailed discussion of Albanian pre-articulated adjectives see Turano (2002).

[6]. The assumption that the article is part of the extended projection of the AP has also been made by Dimitrova-Vulchanova & Giusti (1988).

realized. This yields the articulated structure in (51) for pre-articulated adjectives illustrated in (11):

(51)   [DP AGG   D   [IP   I   [AP   A
              të   bukur-a   ~~bukur~~
              the   nice   ~~nice~~

I will extend the structure (51) to pre-articulated numerals illustrated in (13):

(52)   [DP AGG   D   [IP   I   [AP   A
              të   tre-a   ~~tre~~
              the   three   ~~three~~

Although pre-articulated numerals are similar to pre-articulated adjectives, nevertheless the position they occupy inside the noun phrase is not the same. In Albanian and in Arbëresh, adjectives normally appear in post-nominal position. Compare the grammatical sentences in (53a) and (54a) with the ungrammatical ones in (53b) and (54b):

(53)   a. djali   i   bukur
            boy-the the   nice
            the nice boy
       b. *i   bukur   djali

(54)   a. një   djalë i   bukur
            a   boy   the   nice
            a nice boy
       b. *një i bukur djalë

Only when emphasized, adjectives appear in pre-nominal position. In this case the definite article realizing the definiteness, which usually is attached to the head noun, appears instead on the adjective, whereas the noun appears in its indefinite form:

(55)   a. i   bukur**i** djalë
            the   nice-the boy
            the NICE boy

b. *i bukur djalë

With respect to the position of the adjective inside the noun phrase, I will follow Cinque's (1995) proposal that adjectives occupy the specifier of a functional head dominating NP. Thus, the N-adjective order in (53a) is derived by N-movement to D in order to incorporate the definite article.

(56)   D   Q   A$_{GG}$ N
          djal-i   [i bukur]   ~~djalë~~

The word order in (54a) results from N-movement to an inflectional position where nominal inflection is realized:

(57)   D   Q   I   A$_{GG}$ N
          një   djalë   [i bukur]   ~~djalë~~

As for the emphasized adjective in (55), I will assume that it generates inside the AP projection and then it moves to a higher domain, in a Focus projection, in order to check a strong [focus] feature:

(58)   Foc   D   Q   A$_{GG}$ N
          [i bukur]   i   ~~[i bukur]~~   djalë

In this case the definite article in D is attached to the adjective, whereby the overt movement of N to D is not required, hence blocked by Procrastinate (Chomsky 1995).

Coming back to numerals, the structure in (1b) contains a definite noun phrase, which in the present analysis is derived by moving the nominal from its base position to D. Given this evidence that N raises to D in overt syntax, the position of the pre-articulated numeral cannot be the specifier of QP. The only way to capture the fact that the numeral *të tre* precedes the noun in D is to assume that there is another higher QP projection. The relevant structure of (1b) is given in (59):

(59)   Q   D   Q   N
          [*të tre*]   *burra*-t   ~~*burra*~~
          the three   men-the

I exclude that the pre-articulated numeral raises to SpecDP. Note, in fact, that it is necessary to have a higher head position within the noun phrase, for the universal quantifier *gjithë* 'all', which both in Arbëresh and standard Albanian only combines with definite nouns:

(60) a. gjithë burrat
           all men-the
      b. *gjithë burra
           all men

An extra position is then necessary for the element *gjithë*:

(61)   Q   D   Q   N
          gjithë   *burra*-t   ~~*burra*~~
          all   men-the

Thus, whereas the article-less numeral in (1a) occupies a lower Q° position, the pre-articulated element in (1b) occupies a higher SpecQP position.

Let us consider now Arbëresh-Albanian differences illustrated in this paper. As we saw in (24b), Albanian allows the counterpart of Arbëresh (7b) with the article-less numeral followed by a definite noun. The relevant structures are repeated in (62). (62a) corresponds to the grammatical Albanian case, whereas (62b) represents the ungrammatical Arbëresh example:

(62) a. tre burrat
           three men-the
      b. *tre burrat

The grammatical combination in (62a), found in standard Albanian, is indicative of the fact that numerals, in this language, can also lexicalize the higher Q position, therefore they can be combined with a definite noun in D. Thus, in addition to the structure in (48), standard Albanian has the alternative structure schematised below:

(63)   Q   D   Q   N
          tre   *burra*-t   ~~*burra*~~

In Arbëresh, on the contrary, article-less numerals can only lexicalize the lower Q position, therefore they can only be combined with indefinite nouns (cf. (48)).

    Consider now the structures in (64). (64a) corresponds to the Arbëresh example in (17), whereas (64b) corresponds to the Albanian example in (26a). In the Arbëresh example, the pre-articulated numeral precedes an indefinite noun, whereas in the Albanian counterpart, it precedes a definite noun, despite the presence of a demonstrative:

(64) a. ato   të   tre   ghibre jan sip banks
          those the   three books are on table-the

      b. ata   të   tre   burrat   punojnë
          those the   three men-the work

The Arbëresh example in (64a) can be analized as having the demonstrative in D and the element *të tre* in the lowest SpecQP position:

(65)   D   Q   N
        ato   *[të tre]*   *ghibre*

The Albanian example in (64b), containing a definite noun, must be analized in a different way: since the noun has moved to the D position, the numeral which precedes it must be in a higher Q position. But, also the demonstrative must be in a higher D position. So, examples like (64b) involve a DP structure containing more than one string of positions. I will assume that (64b) has the following structure:

(66)   D   Q   D   Q   N
        ata   *[të tre]*   *burra*-t   ~~*burra*~~

Consider, now, Arbëresh and Albanian structures containing both a numeral and a personal pronoun. As we saw in (37), both in Arbëresh and in standard Albanian, personal pronouns can only be combined with pre-articulated numerals. (67) corresponds to (37):

(67) a. *ju tre
        you three

  b. ju të tre
     you the three

Assuming that pronominal subjects lexicalize a D position (Abney 1987), examples like (67) are instances of lexicalisations of the pronoun in D°, whereas the numeral is realized in a lower SpecQP position:

(68)   D   Q   N
          ju   *[të tre]*   *j̶u̶*

(67b) is ungrammatical because an intervening head, the quantifier *tre*, has been skipped, which leads to a HMC violation (Travis 1984).

6.3.   The syntax of the universal quantifier *gjithë*

   Consider finally the universal quantifier *gjithë* 'all'. Both the article-less *gjithë* and the pre-articulated *të gjithë* can be combined with definite nouns (cf. (32) and (33)). Since definite nouns raise to the D position of the noun phrase, the prenominal position of *gjithë* and *të gjithë* indicates that both these elements realize a higher Q position. (69) is the representation of the examples (32) and (33), containing the two elements in question:

(69)   Q   D   Q   N
          gjithë   *burra-t*   *b̶u̶r̶r̶a̶*
          [i gjithë]   *fshat -i*   *f̶s̶h̶a̶t̶*

Let us now consider the combination of this universal quantifiers with personal pronouns. As we already saw in (43), pronouns can only co-occur with the pre-articulated element *të gjithë,* which can both precede or follow the pronoun. I repeat the data in (70):

(70) a. të gjithë ju
          the all you
      b. ju të gjithë
      c. *gjithë ju

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    d. *ju gjithë

Since the pronominal subject lexicalises the D position, the word order in (70a) indicates that the pre-articulated *të gjithë* occupies a higher SpecQP position, whereas the word order in (70b) indicates that this pre-articulated element occupies a lower SpecQP position:

(71) a.

Q	D	Q	N
[të gjithë]	*ju*		*j̶u̶*

      b.

D	Q	N
ju	*[të gjithë]*	*j̶u̶*

(70c) is ungrammatical because pronoun raising to D did not apply, whereas the ungrammaticality of (70d) is due to the condition on Head to Head Movement (Travis 1984): movement of the pronominal to the D position has skipped the intervening quantifier *gjithë* in Q°.

    Unlike standard Albanian, Arbëresh allows the combination of pronouns with the quantifier *gjith*:

(72) a. gjith ju
        all you
    b. *ju gjith

The examples (72a) seems to indicate that in Arbëresh the pronoun does not raise to D:

(73)

D	Q	N
	gjith	*ju*

(72b) is excluded because violates the Haed Mouvement Constraint.

7. Conclusions

In this paper, I explored similarities and differencies in relation to the numeral system between standard Albanian and an Arbëresh variety. The micro-parametric variation between these two languages seems to be related to the position where numerals realize. In Arbëresh, article-less numerals occupy a Q° position, in between D° and N°. Therefore they can co-occur with indefinite nouns, realized in their base position and with demonstratives, realized in D°. In this respect, article-less numerals behave exactly like other quantifiers.

Arbëresh pre-articulated numerals realize two different positions: they can appear in a lower SpecQP position or in a higher SpecQP position. In the first case, they can co-occur with indefinite nouns, with demonstratives and with pronouns. In the second case, they combine with definite nouns.

In Albanian, on the contrary, article-less numerals can realize both a lower and a higher Q° position. When they occupy a lower Q° position, they can combine with indefinite nouns and with demonstratives, whereas, when they occupy a higher Q° position, they combine with definite nouns, realized in D°.

Albanian pre-articulated numerals, like their Arbëresh counterparts, can lexicalize two different positions. When they appear in a lower position, thy can only combine with personal pronouns, whereas in a higher position, they can combine with definite nouns and with demonstratives.

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