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**ADVERBS AND FUNCTIONAL HEADS**  
**A CROSS-LINGUISTIC PERSPECTIVE**

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## Introduction

The present monograph has two interrelated goals (though their relation may not be immediately obvious).

The first is to motivate an analysis of adverbial phrases (AdvPs) as the unique specifiers of distinct maximal projections (rather than as adjuncts).

The second is to argue for the existence of a fixed universal hierarchy of clausal functional projections.

U(niversal) G(rammar), despite the severe restrictions on phrase structure and movement proposed in Kayne (1994) and Chomsky (1995), is often still taken to allow for wide variation among languages in the *type* of functional projections that they admit, and/or in their relative *order*. Moreover, it is often assumed that within a single language different clause types may instantiate different sets of functional projections.

Here I will try to construct a plausibility argument against these assumptions, suggesting that no such variation is allowed by UG, and that the same type and order (hierarchy) of functional projections holds across languages and clause types, despite apparent counterevidence.

Of course, to determine it empirically in detail is another matter, and what I will have to say here is to be taken as a first approximation only.

Specifically, I will argue that, in addition to the order of free functional morphemes ("particles" and auxiliaries) and of bound functional morphemes (affixes), there is a third important source of evidence for determining the hierarchy of functional projections, namely the order and the nature of the different classes of AdvPs in the clause.

To anticipate, we shall see that the different classes of AdvPs enter into a transparent Spec/head relation with the different functional heads of the clause, providing evidence which may in certain languages be missing from the heads' side and which, when present, interestingly converges with that deriving from the order of free and bound functional morphemes.

In other words, my suggestion is that adverbs are the overt manifestation of (the specifiers of) different functional projections, which in certain languages may also manifest themselves via overt material in the corresponding head positions.

The first step in this plausibility argument consists in showing that the AdvPs of each class fill the unique Spec position of a distinct maximal projection. Crucial evidence for this conclusion will be discussed in Chapters 1 and 2, mainly on the basis of Romance data. In Chapter 1, the fixed relative order of the different classes of AdvPs will be established. In Chapter 2, it will be argued that the distribution of past participles and finite verbs in Italian provides evidence for one head position to the immediate left and one head position to the immediate right of each AdvP in the fixed sequence. If sound, such an interpretation of the facts will, in turn, constitute strong evidence for locating each AdvP in the unique Spec position of a distinct maximal projection (rather than in an adjunction position, or in the Spec of a maximal projection hosting multiple Specs).

The second step in the argument consists in establishing the hierarchy of the functional heads of the clause on independent grounds (namely, on the basis of the order of free and bound functional morphemes in different languages). This is attempted in Chapter 3.

Chapter 4 develops the third, and crucial, step in our plausibility argument, by matching the two independently established hierarchies, and by showing the systematic one-to-one relation between the different AdvPs and the different functional heads.

The rest of the chapters will be devoted to the discussion of certain extensions (such as the positions of AgrPs and NegPs - Chapter 5), and certain implications of the analysis (Chapter 6). Chapter 7 gives a brief summary of the main conclusions.

The beginnings of this work go back to 1992. They were prompted by the desire to gain a better understanding of the nature of the functional projections hosting APs in the DP. The relative poverty of functional morphology on nouns offered little insight on the question; so the natural move was to see whether sentences provided a clearer picture for the projections hosting adverbs, the sentential counterpart of adjectives.

The first results were presented in classes at the University of Venice, in 1993, and at the Girona Summer School in Linguistics, in 1994. Further elaborations were presented at the Glow conference in Tromsø, in 1995, and at the Universities of Rome, Stuttgart, Bergamo, Paris, Vienna, McGill and Amsterdam, in 1995 and 1996. I am indebted to those audiences, and to many other people, for comments, criticism, and references. I have tried to remember and thank them at the beginning of each chapter.

## CHAPTER 1

### On the Relative Order of Adverbial Phrases<sup>1</sup>

#### 1.1 Introduction

#### 1.2 "Lower" (pre-VP) AdvPs in Italian and French

#### 1.3 "Higher" (Sentence) AdvPs in Italian and French

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#### 1.5 Cases of AdvP movement and questions of scope

#### 1.6 Circumstantial adverbials of Place, Time, Manner, etc.

#### 1.7 'Focusing' and 'parenthetical' uses of AdvPs

#### 1.8 Towards a universal hierarchy of AdvPs: some cross-linguistic evidence

**1.1 Introduction.** In this chapter, I will try to establish the relative order of the main classes of AdvPs in Italian and French; an order which turns out to hold more generally in Romance (cf. chapter 2 below, and Zanuttini, to appear, chapter 3), and, from what we can gather from the limited evidence available (cf. §1.8), even cross-linguistically (a result of some interest, in itself, as it is not logically necessary).

The argument that AdvPs enter into a fixed order (invariant across languages) requires explaining away those cases where they seemingly enter more than one order in one and the same language, or different orders in different languages.

As we will see, typical sources of apparent counterexamples to the existence of a unique canonical order of AdvPs include the following:

1) when an AdvP directly modifies (is the specifier of) another AdvP. This may yield the opposite of the canonical order, but is clearly irrelevant, and can in general be told apart from the latter, as no material from the sentence can, in this case, intervene between the two adverbs. A number of such cases will be discussed in §1.2.

2) when a lower portion of the clause (containing an AdvP) is raised across a higher AdvP (for focus-presupposition requirements). Cases of this sort will be discussed in §1.4.

3) when one AdvP is wh-moved across another. Such cases are fairly obvious (and limited in application). They will be discussed in §1.5.

4) when one and the same AdvP can be "base generated" in two different positions in the clause (with one of the two positions to the left, and the other to the right of another AdvP). The different

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<sup>1</sup>I wish to thank for native judgements and comments on different material of this chapter Paola Beninca', Gerhard Brugger, Anna Cardinaletti, Carmel Coonan, Peter Culicover, Giuliana Giusti, Hubert Haider, Marie Christine Jamet, Richard Kayne, Rita Manzini, Friederike Moltmann, Øystein Nilsen, Cecilia Poletto, Jean-Yves Pollock, Michal Starke, Marie-Therèse Vinet and Raffaella Zanuttini.



positioning of the AdvP can in general be detected from the different meaning or scope properties that the AdvP has in the two positions. Some such cases (which concern only certain classes of AdvPs) will be discussed in §1.5, and in chapter 4 below.

5) when a non inherently 'focussing' AdvP (e.g., *probably*) is used as a 'focussing' adverb (like *only*, or *simply*). In such usages, the AdvP can acquire different positions (and scopes) within the sentence. Cf. §1.7.

6) when an AdvP is used 'parenthetically' (cf., again, §1.7). Even if no real analysis will be proposed for such usages, they are intonationally quite clearly distinguishable from ordinary usages, and it should be relatively easy to keep them apart.

All six cases will be argued below to be only apparent counterexamples to the existence of a unique, fixed, order of AdvPs.

Although I occasionally use the term 'adverb' (for brevity), I do not assume it to be a head taking the VP, or some projection dominating the VP, as complement; in other words, I do not assume it to be part of the 'extended projection' of V (in Grimshaw's 1991 sense).<sup>2</sup> The evidence against this assumption ranges from the fact that adverbs do not block head movement of various verbal forms,<sup>3</sup> to the fact that they (some of them) can undergo Topicalization and Focus Movement, which are open to XPs but not to X<sup>0</sup>s. In the next chapter, in fact, an empirical argument will be presented for locating adverbs (more accurately, the Adverbial Phrases they head) in distinct specifier positions.<sup>4</sup>

**1.2 "Lower" (pre-VP) AdvPs in Italian and French.** We may begin by considering first those AdvPs which occur in Italian in the lower portion of the clause, in the "space" delimited on the left by the leftmost position an (active) past participle can come to occupy, and on the right by a complement (or the subject) of the past participle.

In French, the same "space" is not delimited on the left by the past participle, as this necessarily remains closer to its complements (i.e. "lower") than in Italian. This difference, however, will have no consequences for the relevant comparison between the two languages.

The relative order of the AdvPs occurring in this "space" appears to be rigidly fixed, as can be seen by considering the relative order of any two pairs of them.

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<sup>2</sup>For proposals to analyse (some) adverbs along these lines, see Sportiche (1993, 1996).

<sup>3</sup>This may actually be rather delicate to establish, if the verb can cross over an adverb within a larger constituent, as Sportiche assumes (and I assume in §1.5 for certain special cases). In this connection, however, it is interesting that differently from what happens with APs in DPs (cf. Cinque 1994, §6 and fn.21), no head-final language is documented in the literature as having an order of adverbs which is the exact mirror image of that found in 'head-initial' languages (and some other 'head-final' languages). But precisely this would be expected, if successive XP raisings were systematically possible.

<sup>4</sup>An additional argument for treating adverbs as heads of XPs in specifier position, rather than as heads taking an extended projection of V as complement, may come from the 'grammar' of Code Switching. As Mahootian and Santorini (1996, 472ff and fn.9) observe, a head always dictates the position of the complement (irrespective of the 'code' of the complement). But with adnominal and adsentential adjuncts (adjectives and adverbs) anything goes, which gives another reason not to take what follows the adverb to be its complement.

Habitual adverbs like *solitamente* 'usually' precede the negative adverb *mica*:<sup>5</sup>

- (1)a Alle due, Gianni non ha *solitamente mica* mangiato, ancora  
 At two, G. has usually not eaten yet  
 b \*Alle due, Gianni non ha *mica solitamente* mangiato, ancora  
 At two, G. has not usually eaten yet

The same appears to be true in French. The habitual adverb *généralement* precedes *pas*, and cannot follow it:

- (2)a A deux heures, Gianni n'a *généralement pas* mangé, encore  
 b \*A deux heures, Gianni n'a *pas généralement* mangé, encore<sup>6</sup>

In Italian, the negative adverb *mica* necessarily precedes the adverb *già* 'already':<sup>7</sup>

- (3)a Non hanno *mica già* chiamato, che io sappia  
 They have not already telephoned, that I know  
 b \*Non hanno *già mica* chiamato, che io sappia  
 They have already not telephoned, that I know

The corresponding French adverbs *pas* and *déjà* show an analogous relative order:<sup>8</sup>

<sup>5</sup> In standard Italian, this element has no autonomous negative force in postverbal position, and must cooccur with the preverbal negative element, *non* (\**Vengo mica* 'I come not'; cf. *Non vengo mica*). See Cinque (1976) for some discussion of its pragmatic import, which, to judge from Espinal (1993), seems to correspond rather closely to that of Catalan *pas*, and to what Zanuttini (to appear) calls 'presuppositional' negation (cf. chapter 5, §5.5). On *mica* preceding a finite verb, see chapter 2 (§2.3). On the position of *guère* in French, see fn. 20 below.

<sup>6</sup>Cf. also the order of the two adverbs when they constitute an elliptical answer: *Tu fumes? Généralement pas* (\**Pas généralement*). Irrelevant, from this point of view, is the well-formedness of *Il ne fume pas, généralement* (where *généralement* is 'deaccented' and takes scope over *pas* - cf. §1.5 and §1.7 for relevant discussion). *Généralement* and other habitual adverbs in French (and in Italian) have two additional usages that should be kept distinct. One is a 'focusing' usage (for which see fn.13 and §1.7 below), as in *C'est généralement à Marie qu'il accorde toutes ses attentions* 'It is generally to Marie that he dedicates all his attentions'. The other, observed in Mørdrup (1976, 321), is a usage in absolute initial position as a 'domain' adverb (for which see fn.42).

<sup>7</sup>Although the past participle can precede both *mica* and *già* separately (*Non ha mangiato mica* 'He hasn't eaten not'; *Ha mangiato già* 'He has eaten already'), it cannot apparently precede the two together (\**Non ha mangiato mica già*), unless some other constituent follows (cf. *Non ha mangiato mica già tutto* 'He hasn't eaten not yet everything'). This has possibly to do with the fact that *già* cannot be the only element falling under the scope of negation (cf. \**Non ha mangiato già* 'He hasn't eaten already'). The reinforced variant, *di già*, which can bear focal stress, however can: *Non ha mangiato (mica) di già*.

<sup>8</sup>Differently from Italian, where the order *già mica* is never possible, the order *déjà pas* as such is attested, but irrelevantly for our concerns as *déjà* here appears to form a constituent with (to be in the specifier of) *pas*. Togeby (1984, 219) notes that "*Déjà peut renforcer la négation*", citing the following example: *Ce n'est*

- (4)a Si tu n'as *pas déjà* mangé, tu peux le prendre  
 'If you have not already eaten, you can take it'  
 b \*Si tu n'as *déjà pas* mangé, tu peux le prendre  
 'If you have already not eaten, you can take it'

The adverb *già* necessarily precedes the adverb *più* 'any longer':

- (5)a All'epoca non possedeva *già più* nulla  
 At the time (s)he did not possess already any longer anything  
 b \*All'epoca non possedeva *più già* nulla  
 At the time (s)he did not possess any longer already anything

The same holds for French (cf. Togeby 1984,259):

- (6)a A l'époque, il ne possédait *déjà plus* rien  
 b \*A l'époque, il ne possédait *plus déjà* rien

Given that *mica* precedes *già* and *già* precedes *più*, by transitivity we expect *mica* to precede *più*; a correct expectation:

- (7)a Non hanno chiamato *mica più*, da allora<sup>9</sup>  
 They haven't telephoned not any longer, since then  
 b \*Non hanno chiamato *più mica*, da allora  
 They haven't telephoned any longer not, since then

The analogous expectation that *pas* in French precedes *plus* is at first sight not borne out. The two cannot cooccur (in either order):

---

*déjà pas si mal* 'It is already not so bad'. Quite generally, *pas*, in French, as opposed to *mica* in Italian, may take specifiers (*Elle ne proteste pas a haute voix, ou presque pas* 'she does not protest loudly, or almost not' - Togeby 1984, 259, Déprez 1995 - vs. Italian \*..., *o quasi mica*. Thus, the possibility of [*déjà [pas]*], [*toujours [pas]*] (cf. fn.15), etc., in French, contrasts significantly with the impossibility of [*già [mica]*], [*sempre [mica]*], etc. in Italian.

<sup>9</sup>There is evidence that *mica più* can also form a single constituent, with the negative adverb *mica* directly modifying (in the specifier of) *più*. For example, the sequence can be fronted under Focus Movement (*MICA PIU' l'ho visto* 'Not any longer have I seen him'), and can constitute a well-formed answer by itself (*Lo vede ancora? Mica più*. 'Does he still see him? Not anylonger'). This is not the case with other combinations of adverbs, such as *mica mai* 'not never' (\**MICA MAI l'ho visto* 'Not never have I seen him'; *Lo vede ancora? \*Mica mai*. 'Does he still see him? Not never '), *mica ancora* 'not yet' (\**MICA ANCORA l'ho ricevuto* 'Not yet have I received it'; *Lo hai ricevuto? \*Mica ancora*. 'Have you received it? Not yet'). These systematic contrasts follow if *mica più*, but neither *mica mai*, nor *mica ancora*, may function as a single constituent. This, of course, does not necessarily imply that *mica più* always is a constituent. The fact that the past participle can intervene between the two elements indicates that it need not: *Non l'ha mica fatto più, da allora* 'He hasn't not done it any longer, since then'. On *mai più* necessarily forming a single constituent, cf. fn.17 below.

- (8)a \*Ils n'ont *pas plus* téléphoné  
 They haven't not any longer telephoned  
 b \*Ils n'ont *plus pas* téléphoné  
 They haven't any longer not telephoned

It could be thought that they cannot cooccur because they occupy the same position in the clause. But this is not a correct conclusion. First, the fact that *pas* precedes *déjà*, and *plus* follows *déjà*, argues against identifying the two positions. Such relative orders are only compatible with *pas* occupying a position higher than *plus*. A second piece of evidence for taking *pas* to be higher than *plus* comes from the syntax of infinitives. As Pollock (1989, 413) notes, for some speakers a lexical infinitive can precede *plus* (as well as follow it): *Ne dormir plus..* (and *Ne plus dormir..*) 'Not to sleep any longer'. But, apparently no speaker allows a lexical infinitive to precede *pas*: \**Ne dormir pas..* vs. *Ne pas dormir* 'Not to sleep..<sup>10</sup>

In the spirit of his verb movement analysis of infinitives in French, the systematic contrast just noted can be accounted for if *pas* is indeed higher than *plus* and the infinitive is able to rise to a head to the left of *plus*, but is unable to rise any higher:<sup>11</sup>

- (9) [  $\overline{\quad}$  [ *pas*  $\overline{\quad}$  [ *plus ... dormir* ] ] ]

If they occupied the same structural position, their different behavior with respect to lexical infinitives would remain unexplained.

So far, then, we have evidence for the following relative orders:

<sup>10</sup>The point is not really affected by the existence of few cases of an infinitival verb preceding *pas* in literary works (cf. Engver 1972, 18ff).

<sup>11</sup>Except in the literary variety referred to in the previous footnote. The impossibility of cooccurrence of *pas* and *plus* in French (as opposed to *mica* and *più* in Italian) appears to be related to the general ban against the cooccurrence of *pas* with inherently negative elements (*Il n'a (\*pas) rien dit* 'He said nothing', *Il n'a (\*pas) vu personne* 'He saw nobody', etc. , vs. Italian *Non ha mica detto niente*; *Non ha mica visto nessuno* - cf. Acquaviva 1995 and references cited there).

As pointed out to me by Anna Cardinaletti, *plus* in French (as opposed to *più* in Italian) appears to carry autonomous negative force in that it may constitute the sole negation in such small clause contexts as the following: *Je (\*ne) considère [Jean plus capable de faire ça]* 'I consider J. no longer capable of doing that' vs. \**Considero J. più capace di far questo*. Consistent with this is the possible use of *plus* without *ne* noted in Pollock (1989,418, fn.44) (*C'est bien de plus fumer* 'it's good to no longer smoke' vs. *E' una buona cosa \*(non) più fumare*, in Italian) and the use, noted in Muller (1991,291), of *plus* as an autonomous negative answer (*Tu revois Marie? ?Plus* 'Will you see M. again? No more'), which contrasts again with Italian *più* (*Rivedi Maria? \*(Non) più*). In Québec French *pas* can cooccur with *rien* and *personne*, but, for some reason, still cannot cooccur with *plus* (M.-T. Vinet, p.c.). A potential problem. This contrasts with the possibility of the sequence *pa pi* in Piedmontese and other dialects of Northern Italy (cf. Zanuttini to appear). For an interesting analysis of negation in different French varieties and French based Creoles, see Déprez (1995).

- (10)a *solitamente* > *mica* > *già* > *più*<sup>12</sup>  
 b *generalmente* > *pas* > *déjà* > *plus*

Consider now the relative position of such adverbs with respect to *sempre/toujours* 'always'. As the following sentences show, in Italian, *sempre* follows *più* and, a fortiori, *già*, *mica* and *solitamente*:

- (11)a *Da allora, non ha più sempre vinto*  
 b \**Da allora, non ha sempre più vinto*  
 'Since then, he has no longer always won'

- (12) (Quando si presenta un problema.. 'When a problem arises..')  
 a *..lui sa già sempre come fare* 'he knows already always how to act'  
 b \**..lui sa sempre già come fare* 'he knows always already how to act'<sup>13</sup>

- (13)a *Gianni non ha mica sempre vinto*  
 b \**Gianni non ha sempre mica vinto*  
 'G. hasn't not always won'

- (14)a *Ha solitamente sempre ragione lui*  
 He is usually always right  
 b \**Ha sempre solitamente ragione lui*  
 He is always usually right

The same is true when three (or more) adverbs occur together:

- (15)a *Da allora, non accetta mica più sempre i nostri inviti*  
 Since then, he doesn't any longer always accept our invitations  
 b \**Da allora, non accetta mica sempre più i nostri inviti*  
 c \**Da allora, non accetta sempre mica più i nostri inviti*

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<sup>12</sup>Though heavy, the cooccurrence of the four adverbs in Italian appears to be possible:

- (i) *A quest'ora, non ha solitamente mica già più fame*  
 'At this time, he isn't usually not already any longer hungry'

<sup>13</sup>The apparently inconsistent order of *Hanno sempre già mangiato* 'They have always already eaten', with *sempre* unexpectedly preceding *già*, can be reconciled with (12) if *già* is also able to modify the participle (and whatever follows it), much as other 'focusing' adverbs (Rooth 1985, Bayer 1996) like *solo* 'only', *anche/perfino* 'even' (for the structural location of which wrt their modiftees I refer to §1.7). This seems supported by the fact that *già* can be fronted together with the participle plus whatever follows it (*Già mangiato le paste, credo che non abbiano* 'Already eaten the cakes, I believe they have not') while non 'focusing' adverbs cannot (\**Spesso mangiato le paste, credo che non abbiano* 'Often eaten the cakes, I believe they have not'; \**Mai parlato a GIANNI, credo che abbia* 'Never spoken to G. (focus), I believe he has'). The 'focusing' usage of 'already' is also apparent in the following Norwegian sentences provided by Øystein Nilsen, where, for V/2 reasons, *allerede* must form a constituent with the following DP and the AdvP, respectively:

- (i)a *Allerede Jon gjennomskuet dette komplottet* 'Already J figured out this plot'  
 b *Allerede i går gjennomskuet Jon dette komplottet* 'Already yesterday figured out J. this plot'

See §1.7 below for similar 'focusing' uses of 'higher' adverbs like *probabilmente* 'probably', *fortunatamente* 'luckily', etc.

- d \*Da allora, non accetta *sempre più mica* i nostri inviti  
 e \*Da allora, non accetta *più mica sempre* i nostri inviti  
 f \*Da allora, non accetta *più sempre mica* i nostri inviti

Analogously, in French, *toujours* 'always' follows *plus*, and cannot precede it:

- (16)a A partir de ce moment là, il n'a *plus toujours* vaincu  
 b \* A partir de ce moment là, il n'a *toujours plus* vaincu  
 'Since then, he has no longer always won'

By transitivity, as in Italian, *toujours* is also correctly predicted to follow *déjà*, *pas* and *généralement*:

- (17) (Quand il y a un problème..) 'When there is a problem..'  
 a ..il sait *déjà toujours* comment faire '..he already always knows how to act'  
 b \*..il sait *toujours déjà* comment faire '..he always already knows how to act'<sup>14</sup>

- (18)a Elle ne chantera *pas toujours* 'She will sing not for ever'<sup>15</sup>  
 b \*Elle ne chantera *toujours pas* 'She will sing for ever not'

- (19)a C'est lui qui a *généralement toujours* raison  
 It's him who is usually always right  
 b \*C'est lui qui a *toujours généralement* raison  
 It's him who is always usually right

*Sempre/toujours* 'always' appears to necessarily precede an adverb like *completamente/ complètement* 'completely', if present:

- (20)a Gianni ha *sempre completamente* perso la testa per lei  
 'G. has always completely lost his mind for her'  
 b \*Gianni ha *completamente sempre* perso la testa per lei  
 'G. has completely always lost his mind for her'

- (21)a Jean a *toujours complètement* perdu la tête pour elle  
 b \*Jean a *complètement toujours* perdu la tête pour elle

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<sup>14</sup>The conjecture in the previous footnote about the possibility for *già*, in its 'focusing' usage, to also directly modify a lexical (or functional) constituent may extend to the apparently inconsistent order *toujours déjà* of such examples as *Quand je le rencontre, il est toujours déjà ivre* 'When I meet him, he's always already drunk'.

<sup>15</sup>Togebly (1984, 221) observes that the opposite order is also attested (with the meaning of 'encore'): *On ne démarrait toujours pas* 'We were not beginning yet'. We must assume that *toujours*, here, is in the Spec of *pas* (cf. fn.8, above). Confirmation of that comes from the fact that *pas* can be separated from *toujours* when it precedes it ((i)a), but not when it follows it ((i)b):

- (i)a Ne pas être toujours invité est normal 'Not to be always invited is normal'  
 b \*Ne toujours être pas invité est normal 'Not to be yet invited is normal'

(22) gives the fixed relative order of the elements so far examined:

- (22)a *solitamente* > *mica* > *già* > *più* > *sempre* > *completamente*  
 b *généralement* > *pas* > *déjà* > *plus* > *toujours* > *complètement*

Consider now the relative order of *completamente/complètement* 'completely', (unstressed) *tutto/tout*, and (unstressed) manner adverbs like *bene/bien, male/mal, etc.*

(Unstressed) *tutto/tout* precede (unstressed) *bene/bien/male/mal/etc.*, at least in the position we are focussing on here, which is the position preceding the complements of the participle (and the participle itself in French). Cf. Kayne (1975,26f), from which (24) is drawn, and Sportiche (1988,433):<sup>16</sup>

- (23)a Ha già detto *tutto bene* Gianni 'Has already said everything well G.'  
 b \*Ha già detto *bene tutto* Gianni (irrelevantly possible with nuclear, or contrastive, stress on *tutto*, and with *Gianni* 'deaccented')

- (24)a Elle a *tout très mal* compris 'She understood everything very poorly'  
 b \*Elle a *très mal tout* compris 'She understood very poorly everything'

This, in fact, is the unmarked position of *tutto* and *bene* (and manner adverbs in general) -cf. Lepschy and Lepschy (1977,184)- unless they are modified, coordinated or focussed (cf. Kayne 1975, sect.1.6; Lonzi 1991,358ff; Cardinaletti and Starke 1994).

If *tutto* is either modified, coordinated or focussed, it can appear after *bene*:

- (25)a Hanno spiegato *bene pressoché tutto* alla maestra  
 They explained well almost everything to the teacher  
 b Hanno spiegato *bene tutto o quasi (tutto)* alla maestra  
 They explained well everything or nearly everything to the teacher  
 c Hanno spiegato *bene TUTTO*, alla maestra  
 They explained well EVERYTHING (focus) to the teacher

If *bene* is likewise modified, coordinated or focussed, it can occur after the complements of the participle:

- (26)a Hanno detto *tutto* alla maestra *veramente bene*  
 They have said everything to the teacher really well  
 b Hanno detto *tutto* alla maestra *bene o quasi (bene)*  
 They have said everything to the teacher well or almost well  
 c Hanno detto *tutto* alla maestra *BENE*  
 They have said everything to the teacher WELL

The former and latter positions of *tutto/tout* and *bene/bien* are explicitly equated in Cardinaletti and Starke (1994) to the 'derived' and 'base' positions of pronouns, respectively, which display an analogous pattern:

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<sup>16</sup>For arguments that *tutto* occupies a derived position in (23) as well, see Belletti (1990,77ff) and references cited there. Also see Cinque (1992b).

- (27)a Janice called up the man/\*him  
 b Janice called the man/him up

- (28)a Janice called up only him  
 b Janice called up him and her  
 c Janice called up HIM (cf. Baker 1989,156)

In each of these cases only the strong variant (the one modified, coordinated or focussed) can apparently occupy the 'base' position, while the other (the 'weak' one) must occupy a special derived position<sup>17</sup>.

As to the relative order of *completamente (parzialmente) / complètement (partiellement)* 'completely/partially', and *tutto/tout* 'everything', and *bene/bien* 'well', we observe that the former must precede the latter two:

- (29)a Ha rifatto *parzialmente tutto bene* Gianni  
 Has done again partially everything well G.  
 b \*Ha rifatto *tutto parzialmente bene* Gianni<sup>18</sup>  
 Has done again everything partially well G.

- (30)a Il a *complètement tout* perdu  
 He lost completely everything

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<sup>17</sup>*Più* (but neither *mica* nor *già*) can also occur after a verb complement when modified, coordinated or focussed (the latter, in fact, only marginally):

- (i)a Da allora, non diede il suo aiuto a Carlo mai PIU' 'Since then, he gave his help to C. never any longer'  
 b Da allora, non dà il suo aiuto più o quasi più 'Since then, he gives his help no longer or almost no longer'  
 c ??Da allora, non dà il suo aiuto a Carlo PIU' 'Since then, he gives his help to C. no longer (focus)'

As a consequence of that, it may be found to follow *completamente* 'completely', *tutto* 'everything', and *bene* 'well', differently from the unmarked (unfocussed) *più* examined earlier (for further discussion on this apparent VP-final position, cf. §1.4 below):

- (ii)a Non perderà completamente la testa più o quasi più 'He will not completely lose his mind any longer'  
 b Non perderà tutto mai PIU' 'He will not lose everything never any longer'  
 c Da allora, non si comportò bene mai PIU' 'Since then, he did not behave well any longer'

*Mai più* can only occur as a single constituent (with *mai* in the specifier position of *più*). See the ungrammaticality of (iii) noted in Belletti (1990, 59), with *mai* separated from *più* by the past participle, and the discussion below of *jamais plus* and *plus jamais* in French:

- (iii) \*Maria non ha mai parlato più con Gianni 'M. hasn't ever spoken any longer with G.'

<sup>18</sup>This sentence is (irrelevantly) grammatical in the reading in which *parzialmente* modifies just *bene*, plausibly in its specifier position ('partially well/almost well').

Indirect confirmation that *completamente (parzialmente)* precedes *tutto* derives from the fact that the past participle cannot be to the right of *tutto* (\**Lui ha tutto perso* 'He has everything lost') though it can be to the right of *completamente/parzialmente* as well as to its left (Cf. *Lui ha completamente/parzialmente perso tutto* 'He has completely/partially lost everything'; *Lui ha perso completamente/parzialmente tutto*). This becomes understandable if *completamente/parzialmente* is higher than *tutto* and if the past participle has to move to a head to the left of *tutto*, but may fail to move any higher (cf. chapter 2).



b \*?Il a *tout complètement* perdu<sup>19</sup>

The overall order of the adverbs seen so far is shown in (31):

(31)a *solitamente* > *mica* > *già* > *più* > *sempre* > *completamente* > *tutto* > *bene*  
 b *généralement* > *pas* > *déjà* > *plus* > *toujours* > *complètement* > *tout* > *bien*<sup>20</sup>

Each adverb in (31) is representative of a larger class of adverbs, whose exhaustive list is beside the point here. I will limit myself to indicating few other members for each class (as remarked in the literature, no more than one member of each class can appear in a clause - Steinitz 1969, 50f; Jackendoff 1972,87; Quirk et al. 1985,487f). The few more classes of 'lower' adverbs which have remained excluded here will be discussed in chapter 4 below.

In the same class of *solitamente/généralement*, are adverbs like *di solito*, *abitualmente*, *usualmente*, *normalmente*, etc./ *habituellement*, *normalement*, *d'habitude*, *ordinairement*, etc.

Other negative adverbs which seem to occupy the same position as *mica* are *affatto* '(not) at all', *no* '(emphatic) not' *neanche/nemmeno/neppure* 'not even'.<sup>21</sup>

<sup>19</sup>I thank Marie-Therèse Vinet for these judgements. As Marie Christine Jamet pointed out to me (p.c.), with other lexical choices, both the order *complètement tout* and the order *tout complètement* appear to be possible: (i)a Tu as *complètement tout* refait?

b Tu as *tout complètement* refait?

They differ, however, in interpretation. In (i)a, *complètement* appears to modify both the verb and the object (in which case, it can be naturally answered with *Non! Je n'ai fait que la cuisine*). In (i)b, the adverb appears to modify just the verb (it can be naturally answered with: *Non! Je n'ai fait que la peinture*).

This may suggest that in (i)b *complètement* is reinterpreted as a 'focusing' adverb, which modifies just the verb.

<sup>20</sup>*Guère* does not appear to occupy the same position as *pas*. It follows *plus* (Togebly 1984,269; Muller 1991,271f), and *toujours*, while preceding *complètement* and *tout* (also see Pollock 1989,413f).

(i) Je ne pourrai (\*guère) plus (guère) venir 'I could not come any more (much)'

(ii) Il n'a (\*guère) toujours (guère) accepté 'He has not always accepted (much)'

(iii) Il n'a (?guère) complètement (\*guère) perdu la tête 'He has not (much) completely lost his mind'

(iv) Il n'a (?guère) tout (\*guère) mangé 'He has not (much) eaten everything'

I thank Marie Christine Jamet and Jean-Yves Pollock for sharing their intuitions with me on this point.

Relevant here is also the fact that a lexical infinitive can precede *guère* (Togebly 1984,264), but not *pas*.

*Guère* would seem to be the negative counterpart of quantity adverbs like *beaucoup*, *peu*, *trop*, etc., but, as noted in Vikner (1978, 106) it does not occupy the same position. While the latter are found between the passive and the lexical past participle (*Ce livre a été beaucoup/peu lu l'année dernière* 'This book has been much/little read last year'), *guère* has to precede both (*Ce livre n'a guère été lu l'année dernière* 'This book has not been read last year').

All this suggests the presence of a second NegP, lower than that hosting *pas/mica*, apparently to be identified with that hosting *no* (as opposed to *minga/mia*) in Milanese and Pavese (Zanuttini, to appear, chapter 3), and possibly *nicht* in German (Brugger and Poletto 1993). On the position of Norwegian *ikke* (apparently the same as Italian *mica*), see §1.8 below. For the postulation of different NegPs in different positions of the clause, see the discussion in chapter 5 and in Zanuttini (to appear, chapter 3).

<sup>21</sup>On *affatto*, see Acquaviva (1995). On *no*, Poletto (forthcoming). Belletti (1990,39ff; 1994) interprets 'affirmative' *ben* and *pur* (cf. 'affirmative' *bien* in French) as the positive counterpart of negative adverbs. Indeed, they appear to follow habitual adverbs and to precede *già*, exactly like *mica*, *affatto*, etc. See:

(i)a Lui ha di solito *ben/pur* mostrato di apprezzare la musica 'He has usually indeed shown he appreciates music'

To the same class of *già* 'already' appear to belong *poi* '(literally) after', and *non...ancora* 'not..yet'. *Poi* follows *mica* and precedes *più*, just as *già* (*Non ha mica poi più detto se veniva* 'he has not after any longer said if he was coming').<sup>22</sup> As we expect, it cannot cooccur with *già*, in whatever order: *\*Non ha mica già poi più detto se veniva; \*Non ha mica poi già più detto se veniva*.

*Non...ancora* 'not yet' is the negative counterpart of *già* (cf. Pecoraro and Pisacane 1984,54, and, for the English equivalents, Traugott and Waterhouse 1969).<sup>23</sup> It follows *mica* (*Non l'ho mica ancora letto* 'I have not yet read it' vs. *\*Non l'ho ancora mica letto*), and must, if anything, precede *più* (*?Non ha ancora più ricevuto nulla* 'He hasn't yet any longer received anything' vs. *\*Non ha più ancora ricevuto nulla* 'He hasn't any longer yet received anything').<sup>24</sup>

Another adverb belonging to the same class (and position) of *più* is its positive counterpart *ancora* 'still' (cf. Pecoraro and Pisacane 1984, 55; and Vikner 1978, 93f for French *plus* and *encore*).<sup>25</sup> Indeed,

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b *\*Lui ha ben/pur di solito mostrato di apprezzare la musica* He has indeed usually shown he appreciates music'  
(ii)a *Avrai ben/pur già cenato* 'You will have indeed already eaten'

b *\*Avrai già ben/pur cenato* 'You will have already indeed eaten'

See, however, chapter 5 (§5.5) for the possibility that affirmative adverbs occupy a position contiguous to, but distinct from, negative adverbs.

Another affirmative adverb, which corresponds to the affirmative use of *do* in English (Pecoraro-Pisacane 1984,62), is *sì* 'yes', which can occupy more than one position, as shown in Poletto (forthcoming).

<sup>22</sup>This positioning of *poi* is observed in a number of northern Italian dialects in Zanuttini (to appear).

<sup>23</sup>The close relationship between the two terms is further shown by the fact that their English equivalents, *already* and *yet*, form in questions a suppletive pair of the *some/any* kind (Traugott and Waterhouse 1969), in which "*already* expects an affirmative answer whereas *yet* leaves open whether the answer is negative or positive" (Quirk et al. 1985,581):

(i)a Have you already seen him?      b Have you seen him yet?

<sup>24</sup>In French, *encore* precedes *plus*, as in Italian, but can apparently either follow or precede *pas*, though Togeby (1984) says that "l'ordre *pas encore* est bien plus courant que *encore pas*" (p.219):

(i)a *Il n'a encore plus rien reçu* 'He has not yet any longer received anything'

b *\*Il n'a plus encore rien reçu* 'He has no longer yet received anything'

(ii)a *Elle ne l'a pas encore lu* 'She it has not yet read'

b *Elle ne l'a encore pas lu* 'She it has yet not read'

As usual, the unexpected order (*encore pas*) should necessarily have *encore* in the Spec of *pas* (a possibility open to *pas* in French, though not to *mica* in Italian, as noted in fn.8 above).

The test of inserting a verb in between the two goes in the expected direction (cf. (iii)a-b), although the judgement appears to be less clear here than with *déjà pas/pas déjà, toujours pas/pas toujours*:

(iii)a *Ne pas avoir encore lu ce livre est inadmissible* 'Not to have yet read this book is inadmissible'

b *?N'encore avoir pas lu ce livre est inadmissible*

On *ancora/encore* preceding the (negated) finite verb, see chapter 2 (§2.3).

<sup>25</sup>*Ancora* signals the 'continuation' of a certain state or process while *più* indicates its 'termination' (cf. chapter 4 for their relation to Continuative and Terminative aspect, respectively). This ('positive') *ancora* (=still) has a different interpretation from the *ancora* of *non...ancora* (=yet), entering, as noted, into a different suppletive set. This is not to say that the two uses, and the use in which *ancora* means 'again' (cf. fn. 27 below), are not (semantically) related. For the intricate interrelationships among these adverbs and *già* and *più*, see van der Auwera (1993), and references cited there.

just as *più*, it is found to the left of *sempre*:<sup>26</sup> *Lui ha ancora sempre il coltello dalla parte del manico* 'he still always has an advantage' vs. *\*Lui ha sempre ancora il coltello dalla parte del manico* 'he always still has an advantage'.<sup>27</sup>

A plausible candidate for the same class as *sempre* is its negative counterpart *mai* '(n)ever', though at first sight, this appears dubious since *sempre* follows *più*, as noted, whereas *mai* appears to obligatorily precede it. Compare (32) with (33):

- (32)a *Lui non ha più sempre vinto, da allora*  
He has not any longer always won, since then  
b *\*Lui non ha sempre più vinto, da allora*  
He has not always any longer won, since then

- (33)a *\*Lui non ha più mai vinto, da allora*  
He has not any longer ever won, since then  
b *Lui non ha mai più vinto, da allora*  
He has not ever any longer won, since then

However, we have seen evidence that the sequence *mai più* is necessarily a constituent, with *mai* in the Spec of *più* ([*mai* [*più*]]), whence the correct consequence that no head position is available for the past participle between *mai* and *più* (cf. the discussion around (iii) in fn.17). This, plus the assumption that the sequence *più mai* is, for some reason, blocked in modern standard Italian, makes it still possible to maintain that *mai* occupies the same position as *sempre*.<sup>28</sup>

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<sup>26</sup> French, once again, allows both orders (cf. (i)a-b), but the impossibility of inserting anything between *toujours* and *encore* (cf. (ii)a-b) provides evidence that, in the unexpected order (*toujours encore*), *toujours* is in the Spec of *encore*:

- (i)a *Il a encore toujours les meilleurs chances* 'He still always has the best chances'  
b *Il a toujours encore les meilleurs chances* 'He always still has the best chances'  
(ii)a *Encore avoir toujours les meilleurs chances..*  
b *\*Toujours avoir encore les meilleurs chances..*

<sup>27</sup> Differently from *più*, it cannot cooccur with *già*, possibly for semantic reasons (the same is true of *déjà* and *encore*, in French). It can, however, cooccur with *poi* 'after', which we have seen belongs to the same class as *già*, and it follows it, as expected:

- (i)a *Ce l'hai poi ancora, quel libro?* 'Do you after still have it, that book'  
b *\*Ce l'hai ancora poi, quel libro?* 'Do you still after have it, that book'

The order *sempre > ancora* is also possible, but with *ancora* meaning 'again' rather than 'still'. Note that in this case, though not in the one where *ancora* means 'still', *ancora* preferably follows the past participle:

- (i)a *??Lui lo ha sempre ancora rivisto* 'He has always seen him again'  
b *Lui lo ha sempre rivisto ancora* 'He has always seen him again'

See chapter 4 for some discussion of *ancora* = 'again', and the Repetitive aspect found in many languages, which indeed occupy a lower position.

<sup>28</sup> The sequence *più mai* was possible in Old Italian, along with *mai più* (cf. Battaglia 1986,485), and is found in literary Italian up to the XIX century, as pointed out to me by Paola Beninca' (Cf. U.Foscolo's poem *A Zacinto*: "Né più mai toccherò le sacre sponde.." 'No longer ever will I touch the sacred banks..').

Interestingly, in Old Italian, but not in Modern Italian, the sequence *mai più* can appear separated by a finite verb (cf. Battaglia 1986,485). A reasonable conjecture is that this possibility is crucially related to the

In this respect, French corresponds more directly to the expectations in that the unmarked sequence is indeed *plus* preceding *jamais* (just as *plus* precedes *toujours*), although the other order is also possible (albeit less common):<sup>29</sup>

- (34)a Il n'a plus jamais rien su d'elle 'He hasn't any longer ever learnt anything about her'  
 b Il n'a jamais plus rien su d'elle 'He hasn't ever any longer learnt anything about her'

But, again, there is reason to think that the two sequences are structurally rather different, the second having *jamais* necessarily in the Spec of *plus*, just as with the sequence *mai più* of Italian. Evidence for this comes from certain observations made in Engver (1972). He reports (p.24) that in his corpus the infinitive may be found following *plus jamais* (the preferred option), or preceding it, or in between *plus* and *jamais*. He, however, reports no case in which the infinitive intervenes between *jamais* and *plus*. We can take this to be a consequence of the fact that the sequence *jamais plus*, in contrast to *plus jamais*, has *jamais* necessarily in the Spec of *plus*, which leaves no room for the infinitive in between the two adverbs (the same reason that excluded the past participle between *mai* and *più* in Italian).<sup>30</sup>

Just as *già* precedes *sempre*, *non..ancora*, the negative counterpart of *già*, is expected to precede *mai*, the negative counterpart of *sempre*. This is indeed what we find:

- (35)a Non te l'avevo ancora mai detto? (N.Ginzburg, *Ti ho sposato per allegria*, Torino, Einaudi, 1966, p.67)  
 'Hadn't I yet ever told you?'  
 b \*Non te l'avevo mai ancora detto  
 'I hadn't ever yet told you'

The same contrast is found in French, according to my informants (cf. (36)a-b), even though, in some contexts, the opposite order (*jamais encore*) is apparently also possible (cf. *Je trouverai bien un endroit où personne ne sera jamais encore venu* 'I will find a place where nobody will have never yet

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availability of the sequence *più mai*, in which the two do not necessarily form a constituent, plus fronting (focalization) of the sole *mai* (if no independent Focalization of the specifier of an AdvP is possible, *mai* cannot be separated from *più* in Modern Italian).

<sup>29</sup>Cf., e.g. Wartburg and Zumthor (1958,63) "l'usage moderne préfère l'ordre *plus jamais*" (cited in Engver 1972,25).

<sup>30</sup>There is evidence that *plus jamais* can also form a constituent, with *plus* in the specifier position of *jamais*. The sequence can appear preposed (focalized) in front of the subject, not differently from *jamais plus* (cf. (i)a-b, from Muller 1991, 276), and can constitute an isolated answer (cf. (ii), again from Muller 1991,339):

- (i)a Plus jamais il ne m'a écrit 'No longer ever he wrote to me'  
 b Jamais plus il ne m'a écrit 'Never any longer he wrote to me'  
 (ii) Tu y retournes? Plus jamais! (in addition to *Jamais plus!*)  
 You go back there? No longer ever!

Also, the fact that the infinitive may precede *plus jamais* (Engver 1972,24) can be taken as additional evidence for the location of *plus* in the Spec of *jamais*. This is because an infinitive can precede *jamais*, but not *plus* (for most speakers).

Given this, the impossibility of the sequence *più mai* in Italian is all the more surprising in that it must now be excluded both as a constituent and as a non constituent. I have no suggestions to offer.

been', cited in Togeby, 1984,219):

- (36)a Je n'ai encore jamais lu ce livre  
 I haven't yet ever read this book  
 b \*Je n'ai jamais encore lu ce livre  
 I haven't ever yet read this book

The two sequences are however expected to differ in structure. The one with the 'unexpected' order (*jamais encore*) should have *jamais* in the Spec of *encore*. And the facts conform to the expectation. While an infinitive can intervene between *encore* and *jamais* ((37)a), no infinitive (nor any other material, for that matter) can intervene between *jamais* and *encore* ((37)b):

- (37)a (?)N'encore être jamais venu ici est inadmissible  
 Not yet to have ever come here is not to be admitted  
 b \*Ne jamais être encore venu ici est inadmissible  
 Not ever to have yet come here is not to be admitted

Other AdvPs filling the position of *completamente* are *interamente*, *parzialmente*, *del tutto*, *in parte*, etc. Similarly in French.

Whether *niente* (and *nulla*) 'nothing' can fill the same position as *tutto* (just as *rien* in French is taken to fill the same position as *tout* - Kayne 1975,§1.3) is at first sight dubious. Differently from *tutto*, *niente* can precede the light manner adverb *bene* only if it receives the most prominent stress (and *bene*, and whatever follows it, is deaccented):

- (38)a Ha fatto tutto bene Gianni  
 Has done everything well G.  
 b \*Non ha fatto niente bene Gianni  
 Not has done anything well G.  
 c Non ha fatto NIENTE, bene, Gianni

This, however, is not particularly telling, given that the same effect is found when VP final complements follow *niente*:

- (39)a \*Non manderò niente a casa a Gianni  
 I will send nothing home to G.  
 b Non manderò NIENTE, a casa, a Gianni

This effect is suspended if another negative constituent is found in sentence final position and receives the most prominent stress of the sentence:

- (40) Non manderò niente a casa a nessuno  
 I will not send anything home to anybody

In exactly the same circumstances *niente* (but no other negative phrase) can indeed precede the light

manner adverb *bene*.<sup>31</sup>

- (41)a Non spiegò mai niente bene a nessuno  
 'He never explained anything well to anybody'  
 b \*Non spiegò mai nessuna istruzione bene a nessuno  
 'He never explained any instruction well to anybody'

The position occupied by *bene* (*bien* in French) in the sequence (31) appears to be a position for manner, and possibly few other classes of, adverbs, like the measure adverbs *molto/ beaucoup* 'much', *poco/peu* 'little', etc..Cf. (42) and (43):<sup>32</sup>

- (42)a Ha apprezzato tutto molto anche Gianni  
 Has appreciated everything much G. too  
 b \*Ha apprezzato molto tutto anche Gianni  
 Has appreciated everything much G. too

- (43)a Il a tout beaucoup apprécié  
 He has everything much appreciated  
 b \*Il a beaucoup tout apprécié  
 He has much everything appreciated

We thus have the following classes of AdvPs coming in the relative order shown in (44):

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<sup>31</sup>Pointing to the same conclusion is the contrast, observed by Anna Cardinaletti, between (i)a and b, which shows that *niente* has to precede the (inverted) subject position (which is presumably in Spec VP):

- (i)a Non ha fatto niente nessuno 'Not has done nothing nobody'  
 b \*Non ha fatto nessuno niente 'Not has done nobody nothing'

*Niente* also contrasts with ordinary DPs, as can be seen by comparing (i)a with (ii):

- (ii) %Non ha fatto nessuna/questa cosa nessuno 'Not has done no/that thing nobody'

While (ii) is (marginally) possible only with *nessuno* in focus (and the rest presupposed), (ia) is also possible in a context where nothing is presupposed.

<sup>32</sup>But this might not be correct. In the rare contexts in which *molto/poco* combine with *bene* (without directly modifying it), they seem to precede *bene*: (?)*Ballava molto assai bene anche il fratello* 'Even his brother danced much very well' vs. \**Ballava assai bene molto anche il fratello*. On the apparent possibility of coordinating *molto* and *bene* (*Ballava molto e bene* 'He danced much and well', see the discussion in chapter 4 (§4.26, fn.69). Vinet (1995a) reports a sentence where *beaucoup* is to the left, rather than to the right, of *tout*. Cf. (i) (= her ex. (20)a), which, however, is not accepted by all speakers:

- (i) J'ai pas toujours beaucoup tout bien nettoyé 'I have not always a lot everything well cleaned'  
 Perhaps, for certain speakers, *beaucoup* can also belong to the class of *complètement*, which we saw is to the left of *tout*.

(44)a *solitam* > *mica* > *già* > *più* > *sempre* > *complet* > *tutto* > *bene*<sup>33</sup>  
 di solito neanche poi ancora mai parzialm niente male  
 abitualm neppure non ancora

b *généralm* pas déjà plus toujours complèt tout bien  
 habituelm (pas) encore encore jamais partiell rien mal

**1.3 "Higher" (Sentence) AdvPs in Italian and French.** Except for a well-defined apparent exception having to do with 'speech time' adverbs, to which we return, a fixed relative order also characterizes higher adverbs.

So, for example, it is known, since Jackendoff (1972,89), that 'subject-oriented' adverbs like *intelligently*, *clumsily*, etc. follow 'speaker-oriented' adverbs like *probably* (also see Sueur 1978,247). As a matter of fact, Jackendoff's class of 'speaker-oriented' adverbs is not homogeneous, but conflates at least the following distinct classes, as shown on syntactic and semantic grounds by Bellert (1977):

(45)a domain adverbs (*politically, legally,...*)<sup>34</sup>

b pragmatic adverbs (*frankly, sincerely, honestly,...*)

c evaluative adverbs (*luckily, fortunately, happily,...*)

d modal adverbs (*probably, certainly, presumably,...*)<sup>35</sup>

e *Perhaps*

Although Bellert (1977) does not consider it, additional evidence for subdividing, as she does, Jackendoff's class of 'speaker-oriented' adverbs comes from the observation that the adverbs of each category of (45) can indeed cooccur (in a certain order): something unexpected if they were members

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<sup>33</sup>On the two positions occupied by *spesso* (and related adverbs), neither of which corresponds to that hosting *sempre* (and *mai*), see §1.5 below, and chapter 4.

It is interesting to note that the semantic contribution of *mica* 'not', *non..ancora* 'not..yet', *più* 'any longer' and *ancora* 'still' is not truth-functional but presuppositional (cf. Cinque 1976, Zanuttini, to appear, chapter 3, on *mica*, and Ladusaw 1978 on *yet*, *anymore* and *still*). The same holds of *già* 'already': *Gianni è già arrivato* 'G. has already arrived' asserts the same thing as *Gianni è arrivato* 'G. has arrived' (without *già*), and merely adds the presupposition (or conventional implicature) that "G.'s arrival was prior than now (and perhaps earlier than expected)". Ladusaw (1978) assigns *again* to the same class. Interestingly, *ancora*, qua 'again', in Italian, will be seen in chapter 4 to fall in the same 'presuppositional' "space".

<sup>34</sup> Bellert's 'domain adverbs' correspond to Kuno's (1975) and Ramat and Ricca's (1994,313) 'adverbs of setting', to Schlyter's (1977,81ff) 'adverbes cadre' (which comprise 'adverbes de point de vue', 'adverbes de temps', et 'adverbes de norme'), to Quirk et al.'s (1985) 'viewpoint adverbs', and to Parsons' (1990, 211f) 'frame adverbials'. For further discussion, see fn. 42 below, and Ernst (1984,39-56).

<sup>35</sup>For the distinction between 'evaluative' and 'modal' (the latter called 'epistemic' by Huang 1975, 46ff; Ernst 1984,56-64; Travis 1988, 299; Baker 1989, 279; Nuyts 1993), also see Schreiber (1971), Parsons (1990,62f).

of the same class (by Jackendoff's own criteria - cf. Jackendoff 1972,87f). What we find is that *forse* 'perhaps', besides preceding, as expected, 'subject-oriented' AdvPs (cf. (46)a-b), can follow 'modal' adverbs like *probabilmente* (cf. (47)a-b):<sup>36</sup>

(46)a Gianni accetterà forse saggiamente il vostro aiuto<sup>37</sup>

G. will perhaps wisely accept your help

b \*Gianni accetterà saggiamente forse il vostro aiuto

G. will wisely perhaps accept your help

(47)a Gianni sarà probabilmente forse ancora in grado di aiutarci

G. will probably perhaps still be able to help us

b \*Gianni sarà forse probabilmente ancora in grado di aiutarci

G. will perhaps probably still be able to help us

'Modal' adverbs, in turn, have to follow 'evaluative' adverbs like *(s)fortunatamente*, *per (s)fortuna* '(un)luckily', *purtroppo* 'unfortunately', etc. (cf.(48)a-b):<sup>38</sup>

(48)a Gianni ha per fortuna probabilmente accettato

G. has luckily probably accepted

b \*Gianni ha probabilmente per fortuna accettato

G. has probably luckily accepted

This is noted, for French, in Sueur (1978,238); for Dutch, in Koster (1978,205ff), and, for German,

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<sup>36</sup>By transitivity, 'subject-oriented' adverbs should follow 'modal' adverbs; which is what we find (as already noted above with reference to Jackendoff 1972,89).

<sup>37</sup>*Forse* in (46)a can (irrelevantly) also be construed as directly modifying the 'subject-oriented' adverb. Care should be taken not to give *forse*, in (46)b (or, for that matter, *per fortuna* in (48)b, *francamente* in (52)b, etc.) a 'parenthetical' intonation, which appears to partially rescue the sentence. On this parenthetical usage of AdvPs, cf. §1.7.

<sup>38</sup>'Evidential' adverbs (Chafe 1986; Fraser 1966) such as *allegedly*, *obviously*, *clearly*, *evidently*, etc.), which are sometimes assigned to the class of 'modal' (epistemic) adverbs, should perhaps be assigned to a distinct class. This is suggested by the fact that, whereas the relative order *probabilmente* > *evidentemente* is unacceptable ((i)a), the opposite order appears possible (I differ here from Belletti 1990,130fn29):

(i)a \**Probabilmente* Gianni ha evidentemente deciso di partire 'Probably G. has evidently decided to leave'

b (?)*Evidentemente* Gianni ha probabilmente deciso di partire

Bowers (1993, fn13 and p.607) mentions such sentences as *John obviously will probably soon learn French* and *Clearly John probably will quickly learn French perfectly*, noting for the latter that no other order of the adverbs is possible. 'Evidential' adverbs have to follow 'evaluative' adverbs:

(ii)a Gianni ha purtroppo chiaramente esagerato 'G. has unfortunately clearly exaggerated'

b \*Gianni ha chiaramente purtroppo esagerato

Siewierska (1992,418) notes a parallel contrast in English. Cf. (iii):

(iii)a Fortunately, he had evidently had his own opinion of the matter

b \*Evidently, he had fortunately had his own opinion of the matter

Also see the discussion in chapters 3 and 4 concerning the 'evidential' suffixes present on the verb in a number of languages .



in Doherty (1985,112f) (cf. also Bartsch 1976, 235ff), where contrasts like the following are given:

- (49)a *Heureusement, sans doute que Pierre viendra*  
 Luckily, undoubtedly P. will come  
 b \**Sans doute, heureusement que Pierre viendra*  
 Undoubtedly, luckily P. will come

- (50)a *Het is zo dat hij helaas waarschijnlijk ziek is*  
 It is the case that he unfortunately probably sick is  
 b \**Het is zo dat hij waarschijnlijk helaas ziek is*  
 It is the case that he probably unfortunately sick is

- (51)a *Konrad is leider vermutlich verreist*  
 K. has unfortunately presumably left  
 b \**Konrad is vermutlich leider verreist*  
 K. has presumably unfortunately left

As Koster and Doherty note, the relative order of the two AdvPs can not even be altered by movement of one of the two to COMP; a question to which I return in §1.5.<sup>39</sup>

'Evaluative' adverbs, in turn, follow 'pragmatic' adverbs like *francamente* 'frankly', *sinceramente* 'sincerely', etc. (also called 'illocutionary' adverbs - Vendler 1984 - or 'speech act' adverbs - Roberts 1985b). See:<sup>40</sup>

- (52)a *Francamente ho purtroppo una pessima opinione di voi*  
 Frankly I unfortunately have a very bad opinion of you  
 b \**Purtroppo ho francamente una pessima opinione di voi*  
 Unfortunately I have frankly a very bad opinion of you

Temporal adverbs anchored to speech time, like *ora*, *adesso* 'now', *allora* 'then', etc. seem to enjoy a partially freer distribution. Though they have to precede 'subject-oriented' adverbs (cf. (53)a-b), and (preferably) *forse* (cf. (54)a-b), they can apparently either follow or precede 'modal', 'evaluative' and

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<sup>39</sup>Travis (1988, 301) also claims that speaker-oriented adverbs (which, for her, comprise both 'pragmatic' adverbs like *frankly*, and 'evaluative' adverbs like *unfortunately*) have to precede 'epistemic', or S-adverbs, like *probably*, which in turn have to precede 'subject-oriented' adverbs like *carefully*, which have to precede manner adverbs. In observing that "[c]ombinations of two speaker-oriented adverbs are often unacceptable", Jackendoff (1972,88f), also notes tangentially that *Happily Max has evidently been trying to decide whether to climb the walls* contrasts with \**Evidently Max has happily been trying to climb the walls*. Schlyter (1977, 183) observes the contrast between: *Malheureusement/évidemment il faut nécessairement y aller* 'Unfortunately/evidently, one has necessarily to go' and \**Nécessairement, il faut malheureusement/évidemment y aller* 'Necessarily, one has unfortunately/evidently to go'.

<sup>40</sup>By transitivity, 'pragmatic' adverbs should likewise precede 'modal' adverbs, *perhaps*, and 'subject-oriented' adverbs. And indeed they do. See (i)a-b, noted in Schreiber (1972,330), and (ii)a-b (similar facts hold in Italian):  
 (i)a Frankly, John obviously/wisely left early  
     b \*Obviously/wisely, John frankly left early  
 (ii)a Frankly, John perhaps exaggerated  
     b \*Perhaps, John frankly exaggerated

'pragmatic' adverbs. See (55)-(57)a-b:

- (53)a Gianni ha ora saggiamente ceduto  
G. has now wisely surrendered  
b \*Gianni ha saggiamente ora ceduto  
G. has wisely now surrendered
- (54)a Gianni è ora forse partito  
G. has now perhaps left  
b \*?Gianni è forse ora partito  
G. has perhaps now left
- (55)a Probabilmente ora ci ascolterà  
(s)he probably now will listen to us  
b Ora probabilmente ci ascolterà  
(s)he now probably will listen to us
- (56)a Fortunatamente ora sei con noi  
Luckily now you are with us  
b Ora fortunatamente sei con noi  
Now luckily you are with us
- (57)a Francamente ora mi hai stufato  
Frankly now you have annoyed me  
b Ora francamente mi hai stufato  
Now frankly you have annoyed me

This distribution makes sense if speech time adverbs are generated to the left of *forse* (and 'subject-oriented' adverbs) and to the right of 'modal', (and 'evaluative' and 'pragmatic') adverbs, but, crucially, can also appear in a ('Topic') position to the left of all sentence adverbs - plausibly, in the position of 'domain adverbs (cf. fn.42).<sup>41</sup>

If so, speech time adverbs will appear either to the right or to the left of 'modal', 'evaluative', and 'pragmatic' adverbs but will only be able to appear to the left of *forse* and 'subject-oriented' adverbs, in agreement with the observed facts.<sup>42</sup>

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<sup>41</sup>This is explicitly suggested in Schlyter (1977, §2.4.2.3). I set aside the question whether speech time adverbs are moved into, or, more plausibly (cf. § 1.5), "base generated" in, this Topic position.

<sup>42</sup>The already cited class of 'domain' adverbs (*politically, legally, etc.*) is plausibly generated in the same Topic position. Like 'speech time' (locative, and other classes of) adverbs, 'domain adverbs' also provide the relevant frame within which to evaluate the truth (or appropriateness) of a given speech act. Indeed, it appears that 'domain adverbs' have to precede the other sentence adverbs:

- (i)a Politicamente, non c'è francamente da stare allegri 'Politically, there are frankly no grounds for being merry'  
b \*Francamente, non c'è politicamente da stare allegri
- (ii)a Politicamente, non c'è purtroppo soluzione 'Politically, there is unfortunately no solution'  
b \*Purtroppo, non c'è politicamente soluzione
- (iii)a Politicamente, non c'è probabilmente nulla da fare 'Politically, there is probably nothing to do'

This gives us the following relative order for the "higher" adverb classes (I omit the preceding 'Topic' position hosting 'adverbs of setting'):

- (58)a *francam* > *fortunatam* > *evidentem* > *probabilm* > *ora* > *forse* > *intelligentem*  
*sinceram*      *puttroppo*      *chiaram*      *presumibilm*      *allora*      *per caso*      *goffamente*
- b *franchem* > *heureusem* > *évidem* > *probablem* > *mainten* > *peutêtre* > *intelligentem*

The sequence (58) linearly precedes the sequence of "lower" adverbs in (44) above.

**1.4 "Lower" (pre-VP) AdvPs in VP-final position.** In this section, I will briefly consider the special option, for some of the AdvPs in pre-VP position, to be found in VP-final position following the complement(s) of the verb. This being a largely uncharted territory, the conclusions to be reached will necessarily be very tentative. The discussion will, however, have at least a methodological virtue in that it will expose an important source of apparent exceptions and counterexamples to the hierarchy of AdvPs proposed above.

Consider, for example, (15)a-f, repeated here, which shows the only permitted relative order of the AdvPs *mica*, *più* and *sempre* in pre-VP position:

- (15)a *Da allora, non accetta mica più sempre i nostri inviti*  
 Since then, he doesn't any longer always accept our invitation
- b \**Da allora, non accetta mica sempre più i nostri inviti*
- c \**Da allora, non accetta sempre mica più i nostri inviti*
- d \**Da allora, non accetta sempre più mica i nostri inviti*
- e \**Da allora, non accetta più mica sempre i nostri inviti*
- f \**Da allora, non accetta più sempre mica i nostri inviti*

The impossible order *sempre mica più* of (15)c becomes unexpectedly possible if the object is cliticized and *mica più* is more heavily stressed, and is separated from *sempre* by a slight pause:

- (59) *Da allora, non li accetta sempre (#) mica PIU'*

I interpret this as an indication that *mica più* in (59) does not belong to the same pre-VP adverbial "space" to which *sempre* belongs, but to a distinct adverbial "space"; a VP-final one, following the complements (not overt in (59)). This is confirmed by comparing the impossible (15)c, where the three AdvPs precede the complement, with the possible (60), where *sempre* precedes the complement and *mica* and *più* follow it (bearing some stress):

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- b \**Probabilmente, non c'è politicamente nulla da fare*
- (iv)a *Politicamente, non c'è ora nulla da fare* 'Politically, there is now nothing to do'
- b \**Ora, non c'è politicamente nulla da fare*
- (v)a *Politicamente, non c'è forse via d'uscita* 'Politically, there is perhaps no way out'
- b \**Forse, non c'è politicamente via d'uscita*
- (vi)a *Politicamente, non c'è saggiamente che da attendere* 'Politically, there isn't wisely but to wait'
- b \**Saggiamente, non c'è politicamente che da attendere*

- (60) Da allora , non accetta sempre i nostri inviti mica PIU'  
 Since then, he doesn't accept always our invitations not any longer

Now we can see better why (59) is also possible. Because it is compatible with a structure analogous to (60), where the trace of the clitic is between *sempre* and *mica più*.

Virtually all of the AdvPs which can appear in the "space" preceding the complements in Italian, can also occur in the "space" following the complements. See (61). As they must be able to bear heavy stress when they occur in that "space", they are most natural there when reinforced by a specifier (as is the case, we take, with the PIU' modified by *mica* in (59)-(60)). Some have even a morphologically heavier variant which is the one preferentially chosen in the post-complement "space" (*di già*, *neancora* - the latter possible only in northern varieties).<sup>43</sup>

- (61)a \*Gianni non ha vinto la lotteria MICA (o quasi mica)  
 G. has not won the lottery not (or almost not)  
 b Gianni ha ricevuto la notizia \*(DI) GIA'  
 G. has received the news already  
 c Gianni non legge l'alfabeto (NE)ANCORA  
 G. does not read the alphabet yet  
 d Gianni non vince le partite mica PIU'/PIU' o quasi PIU'  
 G. does not win his matches not any longer/any longer or almost any longer  
 e Gianni vede Maria ANCORA  
 G. is seeing M. still  
 f Gianni ha dato a Maria TUTTO  
 G. has given to M. everything  
 g Gianni ha rifatto i compiti BENE  
 G. has redone his homework well

When they occur in the post-complement "space", the "lower" AdvPs of § 1.2 appear to obey the same ordering restrictions operative in the pre-VP "space". See, for example, (62):

- (62)a Gianni non vince le sue partite *già più sempre BENE*  
 G. does not win his matches already any longer always well  
 b \*Gianni non vince le sue partite *già sempre più BENE*  
 c \*Gianni non vince le sue partite *già bene più SEMPRE*  
 d \*Gianni non vince le sue partite *sempre già più BENE*  
 e \*Gianni non vince le sue partite *già più bene SEMPRE*

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<sup>43</sup>This recalls Cardinaletti and Starke's (1994) weak/strong opposition in pronouns, which they in fact explicitly extend to adverbs. I return to the theoretical interpretation of this opposition concerning adverbs in §1.5. *Mica* is apparently the only one which cannot occur in the post-complement "space" (cf. (61)a - the same is true of *ikke* 'not' in Norwegian, as Øystein Nilsen points out to me). Apparently, it can in cases such as *Gianni, da allora, non ha fumato i suoi sigari mica più completamente* 'G., since then, has not smoked his sigars not any longer completely', but the contrast with (61)a suggests that here *mica* is necessarily in the Spec of *più*. Indeed, when *mica* cannot qualify as the specifier of the following adverb (cf. *L'hai conosciuto? \*Mica mai* 'Have you met him? Not ever'), the result is one of ungrammaticality: *\*Non ha incontrato mio fratello mica mai* 'He has met my brother not ever' (cf. *Non ha mica mai incontrato mio fratello*)

It seems, then, that the only "exceptions" to the rigid order of AdvPs established above arise when we mix AdvPs from both "spaces". But clearly, this does not compromise the existence of the rigid order noted (now relativized to each "space"). In the next section the question of how best to relate these two "spaces" will be taken up.

If we extend our examination to the "higher" (sentence) AdvPs of § 1.3 we find that they (and habitual adverbs, for that matter) cannot occur in the post-complement "space", unless they are 'deaccented'. Compare (63) with (64):

- (63)a \*Non posso sopportare neanche Carlo onestamente  
 I can't stand C. honestly  
 b \*Mario si è rimesso dalla sua malattia fortunatamente  
 M. recovered from his illness luckily  
 c \*Prenderò il treno probabilmente  
 I will get the train probably  
 d \*Vedrò Gianni forse  
 I will see G. perhaps  
 e \*Ho aspettato Gianni saggiamente  
 I waited for G. wisely  
 f \*Gianni beve vino solitamente  
 G. drinks wine usually

- (64)a Non posso sopportare neanche Carlo, onestamente  
 I can't stand C., honestly  
 b Mario si è rimesso dalla sua malattia, fortunatamente  
 M. recovered from his illness, luckily  
 c Prenderò il treno, probabilmente  
 I will get the train, probably  
 d Vedrò Gianni, forse  
 I will see G., perhaps  
 e Ho aspettato Gianni, saggiamente  
 I waited for G., wisely  
 f Gianni beve vino, solitamente  
 G. drinks wine, usually

In fact, more than one deaccented sentence AdvP can appear after the constituent bearing the nuclear stress of the sentence (or a focus stress). In this case, no rigid relative order is found:

- (65)a Sembra che lascerà anche noi/NOI, purtroppo, forse  
 It seems that he will leave us too, unfortunately, perhaps  
 b Sembra che lascerà anche noi/NOI, forse, purtroppo

- (66)a Non sopporto NESSUNO, francamente, di solito  
 I can't stand anybody, frankly, usually  
 b Non sopporto NESSUNO, di solito, francamente

We return to a possible implication of these facts in the next section.

An exception is again provided by 'speech time' adverbs (which were seen above to also occur among the "higher" (sentence) AdvPs), for these can also occur in post-complement position without being deaccented:

- (67) Hanno dato la notizia a Gianni proprio ora/allora/etc.  
They gave the news to G. just now/then/etc.

Just as they were seen above to also occur in the 'adverb of setting' position (qua instances of the larger class of temporal adverbials), I take them to also occur, for the same reason, in the other typical position of temporal adverbials, the one after the complements in VP. This post-complement position of temporal adverbs is just one among many other classes of adverbs and adverbial PPs, also embedding clauses (adverbials of place, time, manner, means, reason, purpose, etc.). These post-complement VP-internal adverbials - as opposed to the classes of AdvPs discussed so far - do not seem to be rigidly ordered (cf. Chomsky 1995, 333). As shown in (68) with a selection of them, all arrangements seem to be possible, modulo perhaps differences in relative scope - a significant property which sets them apart from the classes of AdvPs considered so far (I return to this class of elements in §1.6).

- (68)a Seguirò le lezioni tutti i giorni all'università diligentemente  
I will attend classes every day at the university with great zeal  
b Seguirò le lezioni all'università tutti i giorni diligentemente  
c Seguirò le lezioni all'università diligentemente tutti i giorni  
d Seguirò le lezioni diligentemente all'università tutti i giorni

As (69) shows, when the lower pre-VP AdvPs appear after the complements, they also follow all the (unordered) temporal, locative, manner, etc. adverbials, unless the latter are deaccented:<sup>44</sup>

- (69)a Non seguirò le lezioni tutti i giorni all'università diligentemente mai PIU'  
I will attend classes every day at the university with great zeal never any longer  
b Non seguirò le lezioni tutti i giorni all'università mai PIU', diligentemente  
c Non seguirò le lezioni tutti i giorni mai PIU', all'università, diligentemente  
d Non seguirò le lezioni mai PIU', tutti i giorni, all'università, diligentemente

In other words, when they appear after the complements, "lower" pre-VP AdvPs "close" the VP bearing the nuclear (or focus) stress of the sentence.

To summarize, we have arrived at the following overall ordering of adverbs. An ordered sequence of "higher" (sentence) adverbs precedes an ordered sequence of "lower" adverbs that can either appear in front of the VP, or at the very end of the VP bearing nuclear (or focus) stress. In addition to these classes, we observed the existence of various VP-internal post-complement adverbials which are unordered with respect to each other and precede "lower" AdvPs in VP-final position (or follow them, if deaccented - just like any other type of deaccented material, including "higher" sentence AdvPs):

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<sup>44</sup>Deaccented higher (sentence) AdvPs can also be found finally, or interspersed among these deaccented adverbials.

- (70) "Higher" (sentence) AdvPs > "Lower" AdvPs > (DP<sub>subj</sub>) (V) complements >  
Place,time,manner,etc. adverbials > (focussed) "Lower" AdvPs > deaccented material

An analogous pattern appears to exist in French.

In the next sections, we will try to gain some understanding of the complex distribution of the adverbial classes in post-complement position, beginning with the second VP-final "space" for "lower" AdvPs.

**1.5 Cases of AdvP movement and questions of scope.** The conclusion reached in the preceding section that there exist two distinct "spaces" for "lower" AdvPs (a pre-VP, and a post-complement VP-final, one), formed by the same adverbial classes in the same fixed order, raises the question of how these two "spaces" relate to each other.

A priori, there are two possibilities. Either the adverbs are independently generated in the two "spaces", or the two positions are related by movement.

To decide between these two alternatives, let us consider some clear case of AdvP movement, and compare it with some clear case of AdvPs independently "base generated" in two (or more) distinct positions.<sup>45</sup>

(Certain classes of) AdvPs clearly can move under wh-movement ((71) - cf., most recently, Chomsky 1995, 48 and 390,fn 102), though "higher" AdvPs resist it ((72) - cf. Chomsky 1986,83; Lonzi 1991,397):<sup>46</sup>

- (71)a How elegantly do you think he was dressed?  
b The harbour was destroyed as completely as they think the town was destroyed  
c How often do you think he will visit us?  
d MAI Gianni ti farebbe del male!  
Never (focus movement) G. would hurt you

- (72)a \*How luckily has he won?  
b \*How probably will he arrive late?  
c \*How courageously has he eaten the mushrooms?

Wh-movement, when possible, is apparently allowed to subvert the relative order between two AdvPs. So, for example, although *già* 'already' has to precede manner AdvPs (cf. *Tratta già male il suo assistente* 'He is already treating his assistant badly', vs. \**Tratta male già il suo assistente* 'He is badly already treating his assistant'), it can follow a manner AdvP if this has been wh-moved (*Quanto male tratta già il suo assistente?* 'How badly is he already treating his assistant?'). Scopewise, *già* continues

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<sup>45</sup>Ideally, the theory should leave no choice between these two possibilities. This is in fact what I will argue later.

<sup>46</sup>The availability of wh-movement is not simply related to whether the adverb allows for degree modification or not, since ('subject-oriented') *courageously*, and *probably*, can take degree modifiers (*very courageously*, *most probably*), but still resist wh-movement ((72)b and c).

to take scope over the manner AdvP, which suggests that it is the position of the wh-trace that matters.<sup>47</sup>

The wh-moved AdvP also continues to satisfy the subcategorization requirements of the predicate (*trattare* above, and *dress* in (71)a).

The 'scope under reconstruction' property and the subcategorization property, in particular, are the hallmarks of the presence of an A-bar chain connecting the AdvP in Spec CP to the position of the trace.

But movement of AdvPs via wh-movement is not really the point. The relevant question is whether an AdvP can move from its "base generation" position to another (non wh-operator) position.

Some genuine cases of this sort are reported to exist in the literature. For example, in French, though not in Italian, a number of "lower" AdvPs can apparently move from the 'middle field' of (certain) embedded clauses to the 'middle field' of the matrix clause (retaining the interpretation and scope of the trace). Cf. Kayne 1975,63f; Pollock 1989,416; Cinque 1992b):<sup>48</sup>

- (73)a Il (ne) faut pas que tu parles (in the interpretation "Il faut que tu ne parles pas")  
It is necessary that you do not speak  
b ?Il (ne) faut rien que tu fasses  
It is necessary that you do nothing  
c Il ne faut plus que tu parles (under the interpretation "Il faut que tu ne parles plus")  
It is necessary that you don't speak any longer

In this case too, the AdvPs continue to satisfy the subcategorization requirements of the embedded predicate and retain in their derived position the interpretation associated with their "base" position:<sup>49</sup>

- (74)a ?Vous avez mal dû raccrocher (Kayne 1975,27fn29)  
You must have hung up badly  
b Il a bien dû se comporter (Cardinaletti and Starke 1994,fn.78)  
He has well had to behave

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<sup>47</sup>Cf. The same conclusion is suggested by the following contrast in French, noted in Schlyter (1974,83):

- (i)a \*Énergiquement, il a probablement travaillé 'Energically, he probably worked'  
(cf. Probablement, il a énergiquement travaillé 'Probably, he worked energetically')  
b C'est énergiquement qu'il a probablement travaillé  
'It's energetically that he probably worked'

<sup>48</sup>No comparable movement of the same AdvPs out of an embedded clause is possible in Italian, a fact which is possibly related to the fact that in Italian, again differently from French (cf. (i)), these AdvPs cannot be moved to the COMP "space" either:

- (i)a Pour ne pas que tu viennes.. 'So that you not come..'  
b ??Pour ne rien que tu fasses.. 'So that you do nothing..'  
c Pour ne plus que tu parles.. 'So that you don't speak any longer..'

<sup>49</sup>When a negative AdvP crosses over a universal quantifier in subject position, however, the scope appears reversed. Cf. *Il faut que tous ne fument plus* 'It is necessary that all not smoke any longer' vs. *Il ne faut plus que tous fument* 'It is no longer necessary that all smoke'.

The AdvPs have to respect their "base" relative order in derived position as well. Cf.:

- (i)a Il faut toujours tout bien que tu fasses 'It is necessary always everything well that you do'  
b \*Il faut tout bien toujours que tu fasses 'It is necessary everything well always that you do'



Again, these properties are indicative of the presence of an A-bar chain connecting the two positions (i.e. of a movement relation).

Here, however, the relative order of the AdvPs cannot be subverted:

(75) \*Il a *mal* dû *toujours* raccrocher<sup>50</sup>

This suggests that order subversion is not an automatic effect of movement, but only of a specific type of movement. A comparison between the wh-movement case seen above, and the French case just mentioned, would seem to suggest that only movement to Spec,CP allows for order subversion among adverbs. But the Germanic Verb Second languages provide evidence for a certain qualification of this conclusion. In these languages, movement of an AdvP to Spec CP (to comply with Verb Second requirements) does not automatically allow for subversion of the relative order of two AdvPs. This is very explicitly noted in Koster (1978, 205-9), where it is observed that while the rigid relative order of a predicative AP and a sentence AdvP in embedded clauses (cf. (76)) can be subverted by movement of the AP to first position in matrix clauses (cf. (77)), the relative order of two AdvPs can never be so subverted (i.e., by moving the lower AdvP to first position in a matrix clause). Compare (78) with (79):

(76)a Zij zegt dat hij *waarschijnlijk erg ziek* is  
she says that he probably very sick is  
b \*Zij zegt dat hij *erg ziek waarschijnlijk* is

(77) *Erg ziek* is hij *waarschijnlijk* niet  
very sick is he probably not

(78)a Het is zo dat hij *helaas waarschijnlijk ziek* is  
It is the case that he unfortunately probably sick is  
b \*Het is zo dat hij *waarschijnlijk helaas ziek* is

(79) \**Waarschijnlijk* is hij *helaas ziek*<sup>51</sup> (cf. *Helaas* is hij *waarschijnlijk ziek*)

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<sup>50</sup>The necessity of preventing movement of *mal* from crossing over *toujours* is recognized already in Ruwet (1968,196). Cf. Kayne (1975,27fn29).

Note that (75) is ungrammatical despite the fact that it can be seen as the combination of the following two well-formed possibilities:

(i)a Vous avez *mal* dû raccrocher 'You must have hung up badly'  
b Vous avez dû *toujours* raccrocher 'You must have always hung up badly'

As long as the order between *toujours* and *mal* is respected in either 'field' the two can cooccur:

(ii)a Vous avez dû *toujours mal* raccrocher 'You must have always badly hung up'  
b Vous avez *toujours mal* dû raccrocher 'You always badly must have hung up'

<sup>51</sup>Analogous facts are found in German. Cf (i) and (ii), from Bartsch (1976,229), and Doherty (1985,115f), respectively (also see Lang 1979, Pittner 1995):

(i)a *Wahrscheinlich* kommt Peter oft 'Probably comes P. often'  
b \**Oft* kommt Peter *wahrscheinlich* 'Often comes P. probably'  
(ii)a *Wahrscheinlich* ist Konrad *wirklich* verreist 'Probably has K. really left'  
b \**Wirklich* ist Konrad *wahrscheinlich* verreist 'Really has K. probably left'

Tarald Taraldsen and Øystein Nilsen (p.c.) inform me that the Scandinavian languages appear to behave

Probably is he unfortunately sick

Koster relates the difference between the predicative AP case (77) and the AdvP case (79) to the fact that movement of the AdvP to first position is apparently not a genuine instance of wh-movement, as witnessed by the fact that no *d*-proform exists for AdvPs ((80)), and that no unbounded movement is available to them ((81)) (differently from the AP case):<sup>52</sup>

(80) \*Waarschijnlijk *dat* is hij ziek  
Probably that is he sick

(81) \*Waarschijnlijk, zegt Jan dat hij t, ziek is  
Probably says J. that he sick is

It is therefore plausible to assimilate the derived position of the AdvP in the COMP "space" of Verb Second languages to a (non-operator) A-bar position of essentially the same nature as the (non-operator) A-bar position of "base generation" of AdvPs. This will induce a Relativized Minimality (Rizzi 1990) (or 'Shortest Movement' - Chomsky 1995) violation whenever another A-bar position of the same type is crossed over.<sup>53</sup>

Similar, though less sharp, judgements are found with the movement of certain "higher" (sentence) AdvPs to the COMP "space" in French. AdvPs which have this possibility are *peut-être*, 'epistemic modal' AdvPs like *probablement*, *sans doute*, *certainement*, etc., and 'evaluative' AdvPs like *heureusement*, etc.<sup>54</sup> Sueur (1978,238) notes contrasts like the following (to be compared with (49)a-b

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similarly.

Focalization of the adverb in initial position ameliorates the sentence (as Friederike Moltmann pointed out to me). This may have the effect of turning the movement of the AdvP into a genuine case of wh-movement (focus movement), making it more similar to the unexceptionable *Sehr oft hat Karl wahrscheinlich Marie gesehen* 'Very often has K. probably seen M.' I take the order reversals via movement of a "lower" adverb to Spec,CP over a "higher" adverb, judged possible in German, in Hetland (1992,162), to be cases of Focus-movement.

<sup>52</sup>In a 'Split' COMP analysis one might think of the landing site of AdvPs as a Spec position distinct from the one hosting wh-phrases (cf. Rizzi 1995, and references cited there).

<sup>53</sup>Koster (1978), in fact, suggests a proto-Relativized Minimality account of these facts in terms of his Locality Condition (p.208).

<sup>54</sup>As noted in the literature, these adverbs do not enter exactly the same construction, though. Dubuisson and Goldsmith (1976,109) note that 'epistemic modal' adverbs like *probablement* can be followed by either *que* or verb-subject inversion (with no *que*) (cf. (i)), while *évidemment* is compatible only with the former possibility (cf. (ii)):

- (i)a *Probablement/Sans doute/Certainement qu'il viendra* 'Probably/Undoubtedly/Certainly that he will come'  
b *Probablement/Sans doute/Certainement (\*que) viendra-t-il* 'Probably/Undoubtedly/Certainly will he come'  
(ii)a *Evidemment qu'il viendra* 'Evidently that he will come'  
b *\*Evidemment viendra-t-il* 'Evidently will he come'

*Peut-être* behaves like the adverbs in (i). *Heureusement*, like *évidemment*, can only be followed by *que*, while *malheureusement* is only compatible with subject-verb inversion. It would seem, then, that only negative and non-realis sentence adverbs can (must) trigger subject-verb inversion (I-to-C movement), but further work is needed before the correct generalization can be established. Also see Sueur (1978, 237ff), Rochette (1990,fn.15),

above, also from Sueur 1978, which showed that within the same "space" 'evaluative' adverbs have to precede 'epistemic modal' adverbs):

- (82)a *Heureusement que sans doute, Pierre viendra*  
 Luckily that, undoubtedly, P. will come  
 b ??*Sans doute que heureusement, Pierre viendra*  
 Undoubtedly, luckily, P. will come

All of this, thus, suggests that only movement to an A-bar *operator* position (*wh-* or focus) permits subversion of the relative order of two AdvPs. Any other (clear) movement of a non operator type does not (plausibly, as a consequence of Relativized Minimality).

Let us now consider some clear case of independent "base generation" of one AdvP in distinct positions in the clause. A good example is represented by Jackendoff's (1972) class I adverbs, which can occupy different positions in the clause with a concomitant change in interpretation:

- (83)a John has answered their questions cleverly  
 b John cleverly has answered their questions  
 c John has cleverly answered their questions

In (83)a *cleverly* has a pure manner interpretation (the way John answered their questions was clever). In (83)b this interpretation is no longer available and the adverb has what he calls a 'subject-oriented' interpretation (It was clever of John to have answered their questions), witness the fact that the two possibilities can be combined, as in (84):<sup>55</sup>

- (84) John cleverly has answered their questions cleverly/stupidly

(83)c is according to Jackendoff ambiguous between these two interpretations because it is structurally ambiguous. Being adjacent to the main verb, the AdvP can be a VP adverb (hence the availability of the manner interpretation). But it can also be located outside the VP (possibly in the same position it occupies in (83)b, modulo the raising of *has* past it), which gives the equally possible 'subject-oriented' interpretation. As expected, if another auxiliary is inserted, the structural ambiguity disappears. See (85)a, where only the manner interpretation survives, and (85)b, where only the 'subject-oriented' interpretation is possible:

- (85)a John has been cleverly answering their questions  
 b John has cleverly been answering their questions

It is, however, dubious that the manner interpretation of the adverb in "auxiliary position" in (85)a is exactly the same manner interpretation of the adverb in (83)a.

That the two positions of 'manner' interpretation should be distinguished is shown by the fact that only one (the post-verbal, and post-object position), but not the other (the pre-verbal one) can satisfy

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and Laenzlinger (1996b, §2.11.3).

<sup>55</sup>Cf. Dik (1975, 104f).

subcategorization requirements ((86)), and can license the middle interpretation ((87)):<sup>56</sup>

- (86)a John has worded the letter carefully  
 b \*John has carefully worded the letter

- (87)a This bag opens up easily  
 b This bag easily opens up

Moreover, both can be simultaneously filled:

- (88) John has been cleverly answering their questions cleverly/stupidly

These facts clearly indicate that the pre-verbal 'manner' position of the adverb in (85)a is not transformationally related to the post-verbal (and post-object) 'manner' position of the adverb in (83)a, at least in the same way in which a wh-moved 'manner' AdvP is transformationally related to the post-verbal (and post-object) 'manner' position (witness the systematic contrasts displayed: *How carefully has John worded the letter?*(vs. (86)b); *How easily does this bag open up?*(vs. (87)b); *\*How cleverly has John been answering their questions stupidly?* (vs. (88)).

The same conclusion, of course, holds for the 'high' position of the adverb in (83)b, (85)b (cf. *\*John carefully has been wording the letter*, and *\*John has carefully been wording the letter*).

This means that there are three positions of independent "base generation" of the same adverb, which appear to correspond to three different interpretations (even if the difference may be obscured in certain contexts, as happens with the pre-verbal and VP-final positions in (85)a and (83)a).

In fact, a restrictive theory should force a one-to-one relation between position and interpretation (i.e. one specific, and distinct, interpretation for each position of "base generation"). Consequently, whenever one AdvP seems to have exactly the same interpretation in two apparently distinct positions, either (A) it in fact occupies the same position and something else has moved around it (as I would claim happens in *John probably has been sick* and *John has probably been sick*),<sup>57</sup> or (B) it itself has moved from one position to the other, retaining the interpretation associated with the position of the trace (as in *How cleverly has John worded the letter?*), or (C) it only deceptively has exactly the same interpretation in the two positions. Cf. (87) above and the case of Jackendoff's class II adverbs (such as *quickly*, *slowly*, etc.), which seem to have the same interpretation in initial, auxiliary and VP-final position, but really only apparently:

- (89)a Slowly (,) John dropped his cup of coffee

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<sup>56</sup>The contrast in (86) is cited in Jackendoff (1972,64), after an observation of Emonds'. The contrast between (87)a and b was pointed out to me by Tom Roeper. But see Keyser and Roeper (1984,fn.7) for some cases where the middle interpretation is apparently licensed even by a preverbal adverb.

<sup>57</sup>Evidence for this conclusion comes from a generalization noted in Baker (1989, §11.3.4). Baker observes that the adverbs that can appear immediately after a (stressless) modal or a (stressless) finite form of the auxiliaries *have* and *be* "are exactly the same as those that can occur in the position before the finite verb" (p.291). This suggests that the latter is the basic position available to all verbs, and the former the same position crossed over only by those few verbs (stressless modals and auxiliaries) that are allowed to rise. Cf. Baker (1971, 1981, 1989), and references cited there, for more careful discussion.

- b John slowly dropped his cup of coffee  
 c John dropped his cup of coffee slowly

As Travis (1988,292ff), and Rochette (1990,63f), among others, have observed, the apparently identical interpretation is a misleading impression arising in certain (perhaps, most) contexts. In others, the different interpretations associated to the different positions reemerge. For the pre-VP and VP-final positions, see, for instance, (90)a-b, adapted from Thomason and Stalnaker (1973, 200) (also see Rochette 1990,64):

- (90)a He has been slowly testing some bulbs  
 b He has been testing some bulbs slowly

In (90)a, *slowly* qualifies the entire event (each test could well have been rapid), whereas in (90)b it qualifies each test individually.<sup>58</sup>

Concomitant properties of the (B) case above, where the adverb itself moves (as opposed to the (A) and (C) cases), is that the adverb also retains, in its derived position, the scope and subcategorization properties of the trace position (cf. Chomsky 1995,48), and (where movement is of the unbounded wh-type) the possibility of subverting the rigid relative ordering of the AdvPs.

Having compared clear cases of AdvP movement with clear cases of "base generation", let us go back to the case observed in §1.4 of the "lower" AdvPs appearing in two different "spaces" (one preceding and one following the verb's complements).

Should an AdvP appearing in either of the two "spaces" be "base generated" in one or the other, independently? Or should it be "base generated" in only one of them and 'optionally' moved to the other?

The properties of the relation would seem to suggest a movement derivation (from the lower to the higher "space", given 'proper binding' considerations).

First, there is no perceptible change in interpretation between the pre-VP and the VP-final positioning of the AdvPs (if we abstract from focus-presupposition differences). Cf. (91):

- (91)a Da allora, non ha *mai più* rivisto Maria  
 Since then, he hasn't ever any longer seen M.  
 b Da allora, non ha rivisto Maria *mai PIU'*

Secondly, there may be a subversion of the rigid relative order of two AdvPs, as already noted. See, for example, (92):

- (92)a Da allora, non accetta i nostri inviti *mica più sempre*  
 Since then, he doesn't accept not any longer always our invitations

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<sup>58</sup> An analogous case is provided by the adverb *completely* in its pre-verbal and post-object positions: *John completely forgot her instructions* vs. *John forgot her instructions completely*. The second sentence is ambiguous. It can either mean that John forgot every part of each of her instructions, or that they did not occur to him at the appropriate moment (cf. Moltmann 1995, §6.5). The first has only the latter reading. It is tempting to derive the ambiguity of the second sentence from a structural ambiguity, the reading it shares with *John completely forgot her instructions* being derived by raising [*forgot her instructions*] to the left of *completely*, as proposed below for other cases.

- b Da allora, non accetta *sempre* i nostri inviti *mica PIU'*  
 (Cf. \*Da allora, non accetta i nostri inviti *sempre mica più*)

Thirdly, the AdvP in the lower "space" takes scope over the AdvP(s) in the higher "space". So, for example, *sempre* in (92)b is understood in the scope of the negative AdvP (*mica PIU'*) (meaning "he no longer always accepts our invitations", rather than "he always no longer accepts our invitations"). With right adjunction unavailable (Kayne 1994), this can be made sense of if their relative scope is computed under reconstruction of *sempre*, respecting their rigid relative order (*mica > più > sempre*). The movement of the AdvP in overt syntax, from the lower to the higher "space" could be conceived of as motivated by the need to check certain features in the Spec of a higher functional projection (Chomsky 1995), and/or by the morphological 'weak' status of the AdvP (in the spirit of Cardinaletti and Starke 1994).

There are, however, certain difficulties with taking an AdvP to move by itself from one "space" to the other.

It was noted above that subversion of the relative order of two AdvPs appears to be admitted with a certain kind of movement only (wh-/operator-movement), which is also "unbounded".

But the putative movement of AdvPs from the VP-final "space" to the pre-VP "space" does not seem to be of the wh-movement type. The AdvPs show no wh-modification, nor are they focussed, as in Focus movement (a covert case of wh-movement); moreover their landing site is not one open to wh-movement, nor is their movement unbounded: the AdvPs cannot be extracted from the clause in which they originate (cf. (93)a-b, recalling that *di già* precedes *completamente* in the same "space"):<sup>59</sup>

- (93)a A Natale, credo che avesse completamente perso la testa di GIA'  
 At Christmas, I think he had completely lost his mind already  
 b \*A Natale, credo completamente<sub>i</sub> che avesse t<sub>i</sub> perso la testa di GIA'  
 At Christmas, I think completely that he had lost his mind already

A possible way to reconcile the observed movement properties of the relation between the two "spaces" with the generalization that subversion of relative order goes together with unbounded operator movement only is to deny that the AdvP moves by itself, and to assume that it moves within a larger constituent.

Consider what the derivation of (93)a would look like under this alternative.

From a "base" structure such as (94), in which *di già* precedes *completamente* and the VP, (93)a above is derived by raising the constituent including *completamente* and whatever follows *completamente* to the left of *di già*, as indicated by the arrow:<sup>60</sup>

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<sup>59</sup>If anything, just as with AdvP movement from one 'middle field' to the next in French, or with AdvP movement to Spec CP in the Germanic V2 languages, we should expect movement of one AdvP from the lower to the higher "space" to induce a Relativized Minimality violation. But this is not the case.

<sup>60</sup>That adverbs may move leftward within larger constituents is also suggested in Sportiche (1993). The derivation in (94), modulo the leftward, rather than rightward, movement recalls Schlyter (1977,171) transformation "Rotation", deriving *Pierre a soigneusement chargé la voiture immédiatement* from *Pierre a immédiatement soigneusement chargé la voiture*.

(94) A Natale, credo che avesse di già [ completamente perso la testa ]<sup>61</sup>

Under this alternative, we can account for the 'scope under reconstruction' property typical of movement (whereby *completamente* is under the scope of *di già* to its right), and at the same time derive the apparent subversion of the relative order of the AdvPs, otherwise unexpected in a non wh-type of movement because of the ensuing Relativized Minimality violation. Given that the AdvP *di già* is crossed over not by the AdvP *completamente* directly, but by a larger phrase containing *completamente*, no Relativized Minimality violation takes place.

This derivation has certain other advantages over the alternative of moving just the AdvP from one "space" to the other.

For one thing, we can dispense with the post-complement "space" for "lower" AdvPs entirely. Its existence, under this view, is only an illusion created by moving lower portions of the clause around one or more AdvPs higher up in the structure of the clause.

This, in turn, will allow us to dispense with an ad hoc ordering principle specific to AdvPs. If there is just one pre-VP "space", where, as I will argue in later chapters, the AdvPs are in distinct Specs of different functional heads, their order will follow from the order of the respective heads under Spec/head agreement. Since it would make little sense to generate functional projections twice, once to the left, and once to the right of the verb (and its complements), in the two-"space" analysis, the same rigid order of the AdvPs in post-complement position would have to be enforced through a specific principle duplicating the ordering principle for the functional heads in the pre-VP "space".<sup>62</sup> The derivation in (94) also makes it understandable why everything preceding the post-complement "space" of "lower" AdvPs is necessarily presupposed, the AdvP(s) being the only element(s) in focus. So, for example, in (93)a, no portion of the sentence except *di GIA'* is part of the focus. This is what happens ordinarily when a lower constituent is raised for informational reasons across a higher element, to set this into exclusive focus (cf. Cinque 1993, Reinhart 1995). Thus, while in (95) any of the constituents indicated can represent the focus of the sentence, depending on context (the rest being the presupposition), in (96), the only constituent in focus is necessarily the direct object, due to the raising past it of the constituents following it (cf. Larson's (1990, 606ff) notion of "Light Predicate Raising", as reinterpreted in Cinque (1993,266), Kayne (1994,72)):

(95) [ Hanno [ dato [ uno schiaffo [al figlio [ di Maria ]]]]]  
They have given a slap (in the face) to the son of Mary

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<sup>61</sup>In conformity with Kayne (1994), I assume that the movement is to a Spec position (perhaps created by the movement itself, along with a corresponding head).

<sup>62</sup>Also note, as observed, that the VP-final "space" has only "lower" AdvPs, and no "higher" (sentence) AdvP. While this can not easily be seen as a consequence of anything else in the two-"space" analysis, in the one-"space" plus XP-movement alternative, it can plausibly be seen as an indirect effect of the limited possibility of "scrambling" lower portions of the clause up the functional structure of the sentence. If AdvPs in CPs correspond structurally to A(djective) P(hrase)s in DPs (Cinque 1994b), the fact that no attributive AP is found NP-finally (after the N's complements - cf. \**La ragione del suo rifiuto successiva e principale* 'the reason for his refusal next and main') could perhaps be attributed to the more limited amount of scrambling of lower portions of the DP up the DP functional structure (in Italian-type languages).

(96) [ Hanno [ dato [al figlio [ di Maria ]][ uno schiaffo][ ]]]]  
 ↑ \_\_\_\_\_ ↓

Thus (94) is to (93)a just as (95) is to (96).

Interestingly, the "lower" AdvP in focus may follow not only the verb's complements but also the (unordered) VP-internal adverbials of place, time, manner, etc., which appear to originate within the VP. Cf. §1.6 below.

This is, in fact, expected if it is the VP (or some larger constituent) which raises past the AdvP in focus:<sup>63</sup>

(97) Da allora, Gianni non ha [ seguito le lezioni all'università diligentemente] mai PIU'  
 Since then, G. has not attended classes at the University with zeal ever any longer

No comparable effect on the informational structure of the sentence is found when *tutto/tout* raises singularly from its "base" position within VP to its "derived" position between *completamente/complètement* and *bene/bien*.<sup>64</sup>

As (98) shows, the entire embedded clause can constitute the (contrastive) focus, not necessarily the most embedded 'emphatic' pronoun:

(98) Gianni ha deciso [di rispiegargli completamente tutto bene lui], piuttosto che fargli dare un'altra lezione dalla maestra  
 'G. decided to explain him completely everything well himself, rather than have the teacher give him another lesson'

By the same token, if the position of *bene*, between *tutto* and the 'emphatic' pronoun (in Spec of VP) is a derived position, as often assumed, with *bene* originating in the post-complement position of place, time, manner, etc. adverbials, (98), once again, shows that singular movements (presumably motivated by checking requirements) have no effect on the informational structure of the sentence.<sup>65</sup>

In addition to such conceptual arguments for the derivation shown in (94), some empirical considerations exist which favor it over the alternative which allows AdvPs to move on their own from a VP-final "space" to the pre-VP "space".

Even putting aside the problem it faces with Relativized Minimality, the latter analysis fails in allowing for many more possibilities than are actually found.

For example, it permits the following cases, where two AdvPs are moved separately to the pre-VP "space":

<sup>63</sup>If any of these, or any "higher" AdvPs, or extraposed constituents, appear after the focalized *mai PIU'* in (97), they are deaccented (see below for a speculative analysis).

<sup>64</sup>In the case of *tutto*, it is independently plausible that its position between *completamente* and *bene* is a "derived" position, from where *tutto*, qua quantifier, binds a variable in the "base" position of the object. Cf. Kayne(1984,89f), Belletti (1990,77f), Cinque (1992b). Its being a bare QP (binding a variable) is plausibly what allows it to cross over AdvPs without inducing a Relativized Minimality violation.

<sup>65</sup>This also seems to imply that an approach à la Cardinaletti and Starke (1994) may still be viable for the "derived" and "base" positions of *tutto* and *bene*, but should not extend to the case of "lower" AdvPs in pre-VP and VP-final position, which have been argued not to move singularly.



(99)a \*Lui non ha sempre<sub>i</sub> rivisto bene<sub>k</sub> i suoi appunti mica più<sub>t<sub>i</sub></sub> completamente<sub>t<sub>k</sub></sub>  
 He hasn't always corrected well his notes any longer completely

b \*Lui non ha mica più<sub>i</sub> completamente<sub>k</sub> rivisto i suoi appunti<sub>t<sub>i</sub></sub> sempre<sub>t<sub>k</sub></sub> bene  
 He hasn't any longer completely corrected his notes always well

That 'crossing' be responsible for the ungrammaticality of (99) is dubious, as there are various cases (in Italian) where crossing paths are admitted. See (100)a-b, among other cases:

(100)a Quale libro<sub>i</sub> non sai a chi<sub>k</sub> dare<sub>t<sub>i</sub></sub> t<sub>k</sub>?  
 Which book don't you know to whom to give

b Gianni<sub>i</sub> non le<sub>k</sub> è mai stato presentato<sub>t<sub>i</sub></sub> t<sub>k</sub>  
 G. was never introduced to her

Besides, the following case is also unacceptable even though it involves no crossing paths.<sup>66</sup>

(101) \*Lui non ha sempre<sub>i</sub> rivisto i suoi appunti mica più<sub>t<sub>i</sub></sub> bene  
 He hasn't always corrected his notes any longer well

(99)a-b and (101) all involve movements of one AdvP over another. So they could be taken to be independently filtered out by Relativized Minimality. But that wouldn't be sufficient. For the two-"space" analysis still fails in the two directions, both in permitting outputs complying with Relativized Minimality (in that analysis) which are unacceptable (cf. (102) below), and in excluding outputs apparently violating Relativized Minimality (in that analysis), which are acceptable, as (93)a above, repeated here as (103), with an indication of the putative derivation in question:

(102) \*Lui non ha [mai più]<sub>i</sub> recitato la poesia<sub>t<sub>i</sub></sub> sempre bene  
 He hasn't ever any longer declaimed the poem always well

(103) A Natale, credo che avesse completamente<sub>i</sub> perso la testa di GIA'<sub>t<sub>i</sub></sub>

On the other hand, the one-"space" plus XP-movement analysis sketched in (94) correctly predicts the grammaticality of (103) and the ungrammaticality of (99)a-b, (101) and (102), in that it derives (103) (in the way shown in (94)), but is simply unable to derive the ungrammatical cases. Consider why. If there is just one pre-VP "space", with the relative order (*mica* più > *sempre* > *completamente* > *bene*), and if reversals of this order are only brought about by scrambling to the left of a higher AdvP one of the successively larger constituents shown in (104), then only the forms in (105) (with the derivations indicated) are predicted to be possible:

(104) Lui non ha mica più [<sub>XP</sub> sempre [<sub>YP</sub> completamente [<sub>ZP</sub> rivisto bene i suoi appunti ]]]  
 He hasn't any longer always completely corrected well his notes

(105)a Lui non ha [<sub>ZP</sub> rivisto bene i suoi appunti ] mica più [<sub>XP</sub> sempre [<sub>YP</sub> completamente [<sub>ZP</sub> ]]]

<sup>66</sup>Note that in each "space" of (99) and (101) the relative ordering of the AdvPs is respected (with *sempre* > *bene*; *più* > *completamente*; *più* > *bene*).

b Lui non ha mica più [<sub>ZP</sub> rivisto bene i suoi appunti ] [<sub>XP</sub> sempre [<sub>YP</sub> completamente [<sub>ZP</sub>]]

c Lui non ha mica più [<sub>XP</sub> sempre [<sub>ZP</sub> rivisto bene i suoi appunti ] [<sub>YP</sub> completamente [<sub>ZP</sub>]]

d Lui non ha [<sub>YP</sub> completamente [<sub>ZP</sub> rivisto bene i suoi appunti ] ] mica più [<sub>XP</sub> sempre [<sub>YP</sub> ] ]

e Lui non ha mica più [<sub>YP</sub> completamente [<sub>ZP</sub> rivisto bene i suoi appunti ] ] [<sub>XP</sub> sempre [<sub>YP</sub> ] ]

f Lui non ha [<sub>XP</sub> sempre [<sub>YP</sub> completamente [<sub>ZP</sub> rivisto bene i suoi appunti ] ] ] mica più [<sub>XP</sub> ]

If the "base" structure is (104), scrambling of the constituent comprising *sempre*, and everything following it, around the higher *mica più* must necessarily drag along *completamente* (which is between *sempre* and *bene*), and *bene* itself. Hence the ungrammaticality of (99)a and (101), where *completamente* and *bene*, respectively, have 'remained behind'.

For the same reason, (99)b has no well-formed derivation. If what moves is the constituent YP of (104), there is no way in which *bene* could have been left behind.<sup>67</sup>

Similar considerations apply to (102).

This kind of analysis may shed some light on certain adverbial scope facts noted in the literature, but not fully accounted for.

Recall that, in (93)a, *completamente* 'completely' is within the scope of *di GIA* 'already' to its right. In the analysis sketched above, this was seen as a consequence of *di GIA* asymmetrically c-commanding the trace (or the copy - Chomsky 1995, chapter 3) of the larger constituent containing *completamente*, moved across *di GIA* (scope, here, being computed 'under reconstruction').<sup>68</sup>

In this light, consider (106)a-b, discussed in Andrews (1983). As he notes there, (106)a involves "two instances of intentional knocking"; (106)b "one intentional instance of knocking twice" (p.695):

- (106)a John knocked on the door intentionally twice  
 b John knocked on the door twice intentionally

In each case, the adverb to the right takes scope over the adverb to its left ( a "comma intonation"

<sup>67</sup>The a priori possible derivation whereby *bene* is first extracted out of YP, and then YP is moved across *mica più* violates Relativized Minimality (*bene* having crossed over *completamente*), and possibly 'proper binding' (*bene* ending up in a position not c-commanding its trace).

<sup>68</sup>This is in agreement with Kayne's (1994) conclusion that elements to the right cannot asymmetrically c-command elements to their left (and take them under their scope). Under that theory, if the scope of  $\infty$  is the domain of those elements (asymmetrically) c-commanded by  $\infty$ , the only way for  $\infty$  to take scope over some element to its left is via "reconstruction" (with that element originating to the right of  $\infty$ , and then moved to its left).

apparently separating the two adverbs - cf. Fillmore 1994, 170).

When both precede the verb, it is the one to the left that takes scope over the one to the right, as expected. Cf. (107)a-b, ignoring for the time being their (different degrees of) marginality noted by Andrews:

- (107)a ?John twice intentionally knocked on the door  
 b ??John intentionally twice knocked on the door

To account for the wider scope of *twice* in (106)a/(107)a, and of *intentionally* in (106)b/(107)b, Andrews proposes the following nested V' representations, coupled with the semantic principle "Apply an adverb to what it is sister of" (p.695):

- (108)a John [<sub>v</sub>[<sub>v</sub>[<sub>v</sub> knocked on the door ] intentionally ] twice ]  
 b John [<sub>v</sub>[<sub>v</sub>[<sub>v</sub> knocked on the door ] twice ] intentionally ]

- (109)a ?John [<sub>v</sub> twice [<sub>v</sub> intentionally [<sub>v</sub> knocked on the door ]]]  
 b ??John [<sub>v</sub> intentionally [<sub>v</sub> twice [<sub>v</sub> knocked on the door ]]]

He also notes that, when the two adverbs appear on either side of the most embedded V', the resulting sentences ((110)a-b) are ambiguous (as predicted by the nested V' theory, for "an Adv-V'-Adv sequence will be able to be structured either as [<sub>v</sub> Adv [<sub>v</sub> V' Adv ]]] or as [<sub>v</sub>[<sub>v</sub> Adv V'] Adv ]" (p.696):

- (110)a John intentionally knocked on the door twice  
 b John twice knocked on the door intentionally

Though attractive as it may seem, this analysis raises some problems.

First, as Andrews himself admits, it provides "no explanation for the apparent predominance of the [(106)a] reading for [(110)b]" (p.696) (namely for the predominant wide scope reading of *twice* in (110)b).<sup>69</sup>

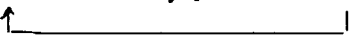
Secondly, if Kayne's (1994) antisymmetry theory is correct, the representations (108)a-b are problematic as "base generated" representations of the relative scope of *twice* and *intentionally*, as they involve right adjunctions. From that point of view, the scope facts of (106)a-b suggest, if anything, that the first of the two adverbs has raised, within a larger phrase, across the second, which takes wider scope as a consequence of being generated higher (just like the case of *di GIA'* in (93) above). It is thus tempting to derive (106)a from the (virtually) unambiguous (110)b, via movement of the constituent [*knocked on the door intentionally*] around *twice*, as shown in (111) (whence the characteristic "comma intonation" before *twice*, noted by Fillmore 1994 - corresponding to that before *di GIA'* in (93)a - and the wider scope of *twice*):

- (111) John twice [ knocked on the door intentionally ]  
 ↑ \_\_\_\_\_ |


<sup>69</sup>He later says that the "difficulty of interpreting [(110)b] as [(106)b] and the questionability of [(107)b] seem to point to a difficulty in applying *intentionally* to a V' with preverbal *twice*".

Although, as we see directly, the correlation seems correct, why applying *intentionally* to a V' with preverbal *twice* should be difficult remains mysterious in this analysis.

(106)b, by the same token, must be derived from (110)a by moving the constituent [*knocked on the door twice*] around *intentionally*:

(112) John intentionally [ knocked on the door twice ]  


We should be more accurate, though, since (110)a is in fact ambiguous. If we take the representations in (113)a-b to correspond to the two readings of (110)a, then (106)b is more accurately derived from (113)a, as was shown in (112):

(113)a John [ intentionally [ knocked on the door twice ] ]  
 b John [ intentionally [ knocked on the door ] ] [ twice t ]  


This seems to have led us to a paradox, since we have postulated both the structure (111), with *twice* higher than *intentionally*, and the structure (112), with *twice* lower than *intentionally*.

(111) underlies the (virtually) unambiguous (110)b; (112) underlies (106)b with the movement indicated, and one of the two interpretations of (110)a, if the movement indicated does not take place. The paradox, however, is only apparent, as there is evidence that *twice* belongs to a class of adverbs (*many/few/etc. times, often, rarely, frequently*, etc.) which are systematically ambiguous between two interpretations, each associated with a different position. The higher position quantifies over the entire event (saying how *frequently* it takes place). In (111), for example, it says that there were two events of knocking on the door (intentionally).

The lower position, instead, just indicates the *repetition* of the act denoted by the verb. So, (113)a says that there was a single event of (intentional) repetition of the act of knocking on the door.<sup>70</sup>

The different semantics associated with the two positions also shows up in a case like the following (with *often* replacing *twice*, to make the judgement sharper):

(114)a Texans often drink beer  
 b Texans drink beer often

The higher *often* of (114)a, though not the lower one of (114)b, may act as an "adverb of quantification" (in the sense of Lewis 1975). It is able to unselectively bind the bare DP subject inducing the interpretation "Most Texans drink beer" (without saying how frequently they drink it).<sup>71</sup> *Often* in (114)b, instead, cannot bind the bare DP subject (which is rather bound by a generic operator - Chierchia 1994 -roughly meaning "typically all"). Rather, it says that beer drinking takes place more

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<sup>70</sup>For the more precise location of these two positions of *twice/often/etc.* with respect to other adverb classes, see chapter 4 below, and Obenauer's (1994, chapter 2, §1) discussion about *souvent* in French. The two distinct interpretations associated with the two positions are possibly the consequence of applying the same basic meaning to two different portions of the clause. In chapter 4, below, we will see that they appear to correspond rather accurately to two distinct verbal aspects, traditionally known as *frequentative* and *iterative* (cf. Bybee et al. 1994, 127).

<sup>71</sup>As McCawley (1990) notes, this is particularly clear in such cases as (i) below, where the predicate "denotes something an individual can do at most once" (p.426):  
 (i) Nineteenth-century composers frequently died young

times than is usually the norm.<sup>72</sup>

A clear indication that there are indeed two distinct positions is the fact that they can be simultaneously filled. In this case, the higher one unambiguously quantifies over the event; the lower over the repetition of the act.<sup>73</sup>

- (115)a John twice(/often/rarely/..) knocked on the door three times(/often/..)  
 b John twice(/often/rarely/..) knocked three times(/often/..) on the door

We may now ask whether having recognized the existence of two different positions for *twice* suffices to provide a full account of Andrews' observations. The derivations (111) and (112) sketched above would seem to suggest that not only *twice*, etc., but also *intentionally* must be able to occur in two distinct positions.

The latter conjecture, however, does not seem empirically well motivated.

For one thing, the sentence *John intentionally knocked on the door intentionally* makes little sense in contrast to the perfectly sensible *John twice knocked on the door twice*.

Secondly, the right core orders and scopes appear to be derivable from the single underlying structure (116), with one position for *intentionally* and the observed two positions (and interpretations) for *twice*:

- (116) John ( *twice*<sub>1</sub> ) [<sub>XP</sub> intentionally [<sub>YP</sub> knocked on the door ( *twice*<sub>2</sub> )]]

Consider how.

If *twice*<sub>2</sub> is absent, and nothing moves, (107)a is obtained, with (frequentative) *twice* taking scope over *intentionally*. As for the marginality of (107)b, I take it to be due to the low acceptability of a sentence initial positioning of *intentionally*, to the left of *twice*<sub>1</sub> (cf. ??*Intentionally John twice knocked on the door*, from which (107)b is derived by moving the subject across *intentionally*).

The interpretation of (110)a, involving "one intentional instance of knocking twice" is derived from (116) if *twice*<sub>2</sub>, but not *twice*<sub>1</sub>, is present, and nothing moves (this should correlate with the absence of a "comma intonation" before *twice*).

The other interpretation of (110)a, that involving "two instances of intentional knocking", is instead derived from (116) if *twice*<sub>1</sub>, but not *twice*<sub>2</sub>, is present, and XP moves around *twice*<sub>1</sub> (this reading should correlate with a "comma intonation" before *twice*).<sup>74</sup>

<sup>72</sup>As Luca Dini pointed out to me, the two readings also differ in that the second, but not the first, is compatible with the progressive form in Italian (cf. (i)). I have no explanation for this contrast:

(i)a \*(Di questi tempi), Gianni sta spesso andando a Roma 'These days, G. is often going to Rome'

b (Di questi tempi), Gianni sta andando (spesso) a Roma (spesso) 'These days, G. is going to Rome often'

<sup>73</sup>I take the position that *three times (often..)* occupies in (115)a to be the same that it occupies in (115)b, the apparent difference being due to the movement of the PP *on the door* to the left of *three times (often..)* (for informational reasons).

<sup>74</sup>The appearance of both *twice*<sub>1</sub> and *twice*<sub>2</sub> disambiguates the sentence, as expected:

(i) John twice intentionally knocked on the door twice

Furthermore, the prediction is that a "comma intonation" before the second *twice* should make the sentence ungrammatical.

If "comma intonation" arises as a consequence of XP movement around *twice*<sub>1</sub>, we then expect the following

(106)a is instead derived if *twice*<sub>1</sub>, but not *twice*<sub>2</sub>, is present, and, first, YP moves around *intentionally*, and then the resulting XP (*knocked on the door intentionally*) moves around *twice*<sub>1</sub>. Here, the expectation is that *intentionally* continues to take scope over *knocked on the door*, and that *twice* takes scope over *knocked on the door intentionally* and is separated from it by a "comma intonation". If *twice*<sub>2</sub> were also present, it would then appear either after, or before, the PP *on the door*. Cf. (117)a-b:

- (117)a John knocked twice on the door intentionally twice  
 b John knocked on the door twice intentionally twice

(106)b is derived if *twice*<sub>2</sub>, but not *twice*<sub>1</sub>, is present, and YP moves around *intentionally*, which should then be preceded by a "comma intonation".

If *twice*<sub>1</sub> were also present, we would either have (118)a or (118)b (or the better sounding (118)c, with *on the door* staying put -cf. fn.73), according to where YP (of (116)) moves:

- (118)a John twice knocked on the door twice intentionally  
 b John knocked on the door twice intentionally twice  
 c John knocked twice on the door intentionally twice

Also note that the virtual non-ambiguity of (110)b, with the predominance of the wide scope reading of *twice* (mysterious in Andrews' analysis), becomes understandable under the present analysis. The predominant reading is derived from (116) with *twice*<sub>1</sub>, but not *twice*<sub>2</sub>, present, and with movement of YP around *intentionally*.<sup>75</sup>

The other reading, with *intentionally* taking scope over *twice* is not derivable from (116). It could only be derived from a structure like (119), in which *intentionally* is higher than *twice*<sub>1</sub>, by moving XP around *intentionally*. But, as already observed by Andrews, the order *intentionally* > *twice*<sub>1</sub> is very marginal.<sup>76</sup>

- (119) John intentionally [<sub>XP</sub> ( *twice*<sub>1</sub> ) [<sub>YP</sub> knocked on the door ( *twice*<sub>2</sub> ) ] ]

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to be possible (correctly, it seems):

- (ii)a John intentionally knocked on the door twice, twice  
 b John intentionally knocked twice on the door, twice

<sup>75</sup>If *twice*<sub>2</sub> were also present, we would then have either (i)a or b:

- (i)a John twice knocked on the door twice intentionally  
 b John twice knocked twice on the door intentionally

<sup>76</sup>Roberts (1987,78) also gives the two possibilities in (i), saying that (i)a is ambiguous between (106)a and b, while (i)b "shows a preference for the reading with wide-scope *intentionally*":

- (i)a John knocked twice on the door intentionally  
 b John knocked intentionally twice on the door

A possibility is that (i)b is derived from (116) via movement of just the verb around *intentionally* (note that *twice* here can only be *twice*<sub>2</sub>). The first interpretation of (i)a can instead be seen as deriving from (116) via movement of XP around *intentionally*, followed by movement of *knocked* past *twice*<sub>1</sub>; the second, simply via movement of XP containing *twice*<sub>2</sub> around *intentionally*.

**1.6 Circumstantial adverbials of "place, time, manner, etc."** In this section I briefly consider the class of adverbials, sometimes called 'circumstantial' (cf. Ruwet 1968,353; Lonzi 1991,381, Fillmore 1994, among others), which follow the verb's complements within the VP. They comprise a varied selection of elements: place, time, manner, means, company, reason, purpose, etc.

As noted in §1.4, they appear to differ from the adverb classes considered above (the AdvPs proper) in not being rigidly ordered with respect to each other. Cf. Chomsky (1995, 333) and (68) above.

In contrast to AdvPs proper, they can also be interchangeably in the scope of each other depending on their mutual structural relation. In (120)a, for example, the place adverbial (containing an indefinite DP) is in the scope of the time adverbial containing a universal quantifier. In (120)b it is the other way round:

- (120)a He attended classes every day of the week in a different university  
 b He attended classes in each university on a different day of the week

A similar case is exemplified in (121), with place and company PP adverbials:

- (121)a He attended classes in each university with a different friend  
 b He attended classes with each friend in a different university

Circumstantial adverbials also differ from AdvPs proper in that they are typically realized, with the partial exception of manner adverbials) in prepositional form (*for three hours, in the kitchen, with great zeal, for your love, in a rude manner, with a bicycle, etc.*), or in bare NP form (*the day after, tomorrow, this way, here, etc.* - cf. Larson 1985, Stroik 1992).

Furthermore, possibly as a consequence of that, they cannot appear in any of the pre-VP positions open to AdvPs proper (except for the absolute initial position of 'adverbs of setting', a topic-like position).<sup>77</sup>

Finally, as pointed out to me by Øystein Nilsen, they also appear to differ semantically from AdvPs proper. While the latter are characteristically operators (functions mapping propositions to propositions, or predicates to predicates), circumstantial adverbials can be seen (after Davidson 1967) as modifiers predicated of an underlying event variable. For semantic arguments to this effect, cf. Parsons (1990, chapter 4), who also treats in the same way the pre-verbal class of manner adverbs.

These five properties, distinguishing circumstantial adverbials from the AdvPs proper examined above, suggest an entirely separate treatment for them.

If AdvPs proper occupy the specifier position of distinct functional projections above VP, as will be argued in the following chapters, it seems natural not to assume the same for the circumstantial phrases. This is particularly natural if the rigid ordering of AdvPs is a consequence (via Spec/head agreement) of the rigid ordering of the respective functional heads (cf. chapter 4 below). In this view, the 'free' order of circumstantial phrases would correlate with the fact that they are not generated in specifier positions of functional projections: something rendered independently plausible by the standard view that functional projections are 'shells' external to the lexical projection, here VP, not its most deeply embedded ones.

If so, what is the structural position of circumstantial phrases?

One possibility would be to follow Chomsky's (1995) tentative conclusion that "if a shell structure is relevant at all, the additional phrases might be supported by empty heads below the main

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<sup>77</sup>Cf. \**John will tomorrow/there attend classes; Bill quickly/\*with a crash dropped the bananas* (Jackendoff 1977, 73).

verb..."(p.333).<sup>78</sup>

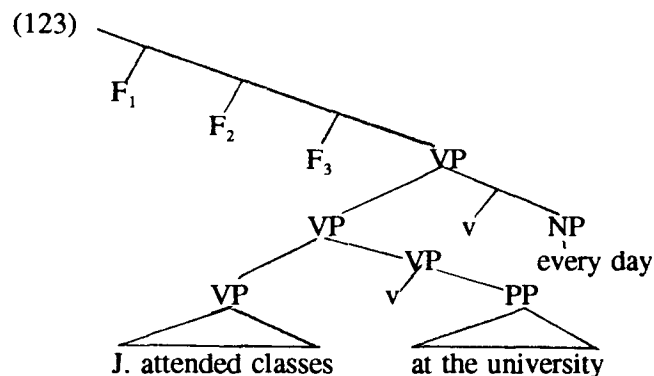
Another possibility, perhaps an enriched variant of the former, is suggested by Øystein Nilsen in forthcoming work, based on a parallelism between the structure of clauses and that of DPs.

Just as DPs have, in addition to attributive adjectives (in pre-NP position), *predicative* adjectives (ultimately, small, or reduced relative, clauses) as their most deeply embedded constituents within the NP (Cinque 1994, Kayne 1994, §8.4), so should clauses have "attributive" adverbials (in pre-VP position) and "predicative" adverbials as their most deeply embedded constituents within VP.

Taking the parallelism strictly implies, according to Nilsen, that the post-complement circumstantial adverbials are actually 'predicates' predicated of VP (in a way reminiscent of the semantic treatment of circumstantial adverbials in the Davidsonian tradition mentioned above).<sup>79</sup>

This would amount to assigning a sentence such as (122) a structure like (123), where *at the university* is predicated of the VP *John attended classes*, and *every day* is predicated of the larger VP *John attended classes at the university*.

(122) John attended classes at the university every day



A variant of this idea would be to take a configuration such as (123) not as "base generated", but as derived from an underlying structure like (124), with the adverbial PPs in the spec of distinct VP 'shells', followed by obligatory successive leftward movements of the lower VPs to higher specifiers (perhaps to establish the required predication):

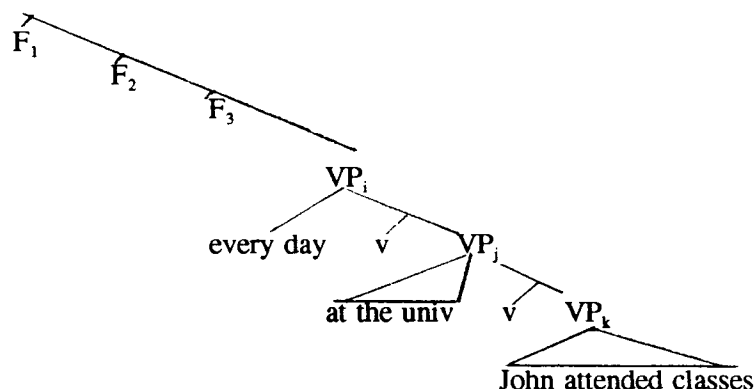
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<sup>78</sup>These additional phrases involve, in Chomsky's examples (131) and (151)a-b, circumstantial phrases of place, time, manner, as well as extraposed PPs and relative clauses.

<sup>79</sup>Though influential, the Davidsonian treatment of adverbial phrases as predicates of events is not universally accepted. Another influential approach, the 'predicate-modifier' approach, stemming from Montague (1974), considers them "as making a more complex predicate out of a simpler one" (Cresswell 1985, 4), essentially treating all adverbial elements as operators. Cf. Thomason and Stalnaker (1973); and Cresswell (1985), Parsons (1990), for discussion and references.



(124)



The latter analysis would, in fact, seem appropriate to account for the scope facts of (120)/(121) above, and for the stranding of PPs and relative clauses in final or intermediate positions within the (layered) VP, but further work is needed to determine with accuracy the proper analysis of this class of adverbial elements.

**1.7 'Focusing' and 'parenthetical' uses of AdvPs.** The aim of this section is not to discuss 'focusing' and 'parenthetical' uses of adverbs in general, but rather to expose certain potential sources of counterevidence to the ordering of AdvPs examined earlier, arguing for their irrelevance.

In footnote 13 above, I already suggested that certain unexpected orders of *già* 'already' in Italian, and its Norwegian equivalent *allerede*, could be understood as instances of a 'focusing' usage of the adverb. By that I meant, perhaps slightly extending the term, the possibility for the adverb to modify directly different types of constituents (whence its apparent multiple positioning).

This is a prototypical property of such (exclusively) 'focusing' adverbs as *only* and *even*, which are found preceding DPs, APs, AdvPs, PPs, VPs, as well as various clausal functional projections (Rooth 1985, Bayer 1996, 11ff).<sup>80</sup>

- (125)a He likes only himself  
 b The success was only partial  
 c He solved the problem only partially  
 d He will have been beaten only by John  
 e He will have been only beaten by John  
 f He will have only been beaten by John  
 g He will only have been beaten by John  
 h ?He only will have been beaten by John  
 g He said only that he doesn't like it

<sup>80</sup>I take Jackendoff's (1972, 59 and 82) class of 'auxiliary position' adverbs (*merely*, *simply*, etc.) to be 'focusing' adverbs. This may allow an account of certain puzzling facts noted in Lonzi (1990) for Italian. While *Ha meramente annuito* 'He has merely nodded' is grammatical, and *Meramente annuire (è inutile)* 'Merely to nod (is useless)' is also marginally possible, *\*Annui meramente* 'He nodded merely' is not. *Meramente* patterns with *perfino* 'even', rather than with *solo/solamente/soltanto*, in not allowing its complement to raise past it. Cf. *Ha perfino/solo/.. annuito*; *Perfino/solo/.. annuire (è inutile)*; *Annui solo/solamente/soltanto/\*perfino*.

Just as with *già*, we find that many more adverbs admit of such a usage (hence of certain unexpected orders).

So, for example, there is evidence that most classes of "higher" AdvPs admit it too.

"Higher" AdvPs in Italian, as a rule, cannot occur after a finite verb (in sentence final position, unless they are 'deaccented'). See (126):<sup>81</sup>

- (126)a \*Gianni lo merita francamente/ fortunatamente/ evidentemente/ probabilmente/ forse/..  
       'G. deserves it frankly/luckily/evidently/probably/perhaps/..'
   
b Gianni lo merita, francamente/ fortunatamente/ evidentemente/ probabilmente/ forse/..

The same position, however, becomes immediately available if another constituent follows the adverb, in which case, as noted in Belletti (1990,130,fn.29), the adverb takes scope not over the sentence but just over that constituent:<sup>82</sup>

- (127) Gianni lo merita francamente/ fortunatamente/ evidentemente/ probabilmente/ forse/..  
       per più di una ragione  
       'G. deserves it frankly/luckily/evidently/probably/perhaps/.. for more than one reason'

Additional evidence for the conclusion that they indeed can form a constituent with the phrase following them is the fact that they can be fronted together under Focus Movement, or Clefting (cf. (128)); and the fact that they can intervene between a verb and a (light) object (cf. (129)), a possibility not open to non 'focusing' adverbs (Ernst 1984,111ff; 1991,752f; Rooth 1985) (cf. (130)):<sup>83</sup>

- (128)a Probabilmente per questa RAGIONE, lo hanno licenziato  
       Probably for this reason (focus), they have fired him  
       b E' probabilmente per questa ragione che lo hanno licenziato  
       It is probably for this reason that they fired him

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<sup>81</sup>An exception to this generalization is provided by the subclass of (realis) mood adverbs comprising *sicuramente/di sicuro* 'surely', *certamente/di certo* 'certainly', *senz'altro* 'surely', etc. (but not *senza dubbio* 'undoubtedly'). Cf. (i):

(i) Gianni lo merita sicuramente/ di sicuro / etc. / ??senza dubbio 'G. deserves it surely/undoubtedly'  
 Perhaps, (i) involves a 'focusing' use of *sicuramente*, with *sicuramente* patterning like *solo*, rather than *perfino* (i.e. allowing its complement to rise past it). Some evidence in this direction is provided by the acceptability of *A NOI SICURAMENTE, lo darà* 'To us surely (focus), he will give it' (alongside *SICURAMENTE A NOI, lo darà*) vs. *??A NOI SENZA DUBBIO, lo darà* 'To us undoubtedly (focus), he will give it' (cf. *SENZA DUBBIO A NOI, lo darà*). Also see *\*A NOI PROBABILMENTE/FORTUNATAMENTE, lo darà* 'To us probably/luckily (focus), he will give it' vs. *PROBABILMENTE/FORTUNATAMENTE A NOI, lo darà*.

<sup>82</sup>Belletti proposes that in such cases these adverbs (*probabilmente* in her examples) are directly adjoined to the following constituent. A similar suggestion is made in McCloskey (1992,fn.2), where sentence adverbs in this usage are explicitly equated to *only* and *even*. Cf. also Laenzlinger (1996a,fn.1).

<sup>83</sup>Even clearer evidence is provided by their fronting together with another constituent in the first position of root clauses in V/2 languages. See the German example in (i) (from Bartsch 1976):

(i) Vermutlich das Buch hat Peter gestohlen 'Presumably the book has P. stolen'

c C'est heureusement Paul qui a vendu sa voiture<sup>84</sup>  
It's luckily P. who sold his car

(129)a He hates probably everybody  
b He has drunk already seven beers

(130) \*He forgot often his name<sup>85</sup>

Assuming simple adjunction to a maximal projection to be excluded (Kayne 1994), it is plausible to treat 'focusing' adverbs as heads taking their modiftees as complements (cf. Bayer 1996, chapter 1). This appears natural in those cases where the 'focusing' adverb immediately precedes the phrase in focus.

Such alternations as (131)a-b, and a comparison between (132)a and b, would seem to suggest raising of the complement of *solo* 'only' and *too* to the Spec, across the head:<sup>86</sup>

(131)a Solo MARIA hanno visto  
Only M. (focus) they saw  
b Maria SOLO hanno visto  
Mary only (focus) they saw

(132)a Even Mary was available  
b Mary too was available

However, when they do not immediately precede the phrase in focus (e.g. *I only invited MARY*), 'focusing' adverbs appear not to behave as heads. For example, in Italian, they do not block head-movement of clitics (in contrast to negation - cf. Rizzi 1982, Kayne 1989):

(133) Gli vorrebbe solo dire QUESTO  
To-him he would like only to say this (focus)

This might be related to the fact, discussed in Bayer (1996, 30f and chapter 2), that, when they do not immediately precede the phrase in focus, 'focusing' adverbs also show no evidence of LF movement (cf. his discussion of the contrast between the ambiguous *We are required to study only syntax* and the non-ambiguous *We are required to only study syntax*, based on work by J. Taglicht). I leave the question open. What is relevant here is that the unexpected ordering of "higher" adverbs

<sup>84</sup>Vs. \*C'est heureusement que Paul a vendu sa voiture 'It's luckily that P. sold his car'. Contrasts such as these were noted by Robert Martin (cf. Nølke 1997, 119).

<sup>85</sup>That *spesso/often/etc.* do not admit of focusing usages is shown by the contrast between (128) and (i) (cf. Schlyter 1977, 179f):  
(i) \*E' spesso per questa ragione che si arrabbia 'It is often for this reason that he gets angry'

<sup>86</sup>This is not possible with *perfino* 'even'. Cf. (i):  
(i)a Perfino a suo FIGLIO lo dirà 'Even to his son he will say that'  
b \*A suo figlio PERFINO lo dirà 'To his son even he will say that'

after "lower" ones in such contexts as (134)a-b can plausibly be seen as a consequence of their 'focusing' usage:

- (134)a Lo avrà *già* detto *probabilmente* a tutti  
 He will have already said that probably to everybody  
 b Ha *sempre* presentato *purtroppo* la stessa versione  
 He always presented unfortunately the same version  
 c Non legge *più* romanzi *forse* proprio per questo  
 He doesn't any longer read novels perhaps just for this reason

Besides *già*, other "lower" adverbs also admit 'focusing' uses: one example is *ancora* = 'again', and, more marginally, the *ancora* of *non..ancora* 'not yet' (though not the *ancora* meaning 'still') (cf. (135)a-c). Analogously, 'frequentative', though not 'repetitive', *spesso* 'often' can be used as a 'focusing' adverb (cf. (136)):

- (135)a Visiterà (ancora) Maria a Roma (ancora) due volte  
 He will visit (again) M. in Rome (again) twice  
 b Gianni non ha (ancora) ricevuto biglietti di auguri (?ancora) da nessuno  
 G. hasn't (yet) received cards (yet) from anybody  
 c Gianni manda (ancora) biglietti di auguri (\*ancora) agli amici  
 G. sends (still) cards (still) to his friends

- (136) Gianni ha mandato i biglietti di auguri agli amici spesso in ritardo  
 G. sent his cards to his friends often late

A more systematic survey is beyond the scope (and the aims) of this work.<sup>87</sup>

Finally, I should mention that another potential source of unexpected orders is the 'parenthetical' usage of (typically "higher") adverbs; something for which I have no interesting account to propose. As shown in (137), such "higher" adverbs as *purtroppo* 'unfortunately', *forse* 'perhaps', *francamente* 'frankly' are possible even after "lower" adverbs if set off by "comma intonation" from the rest:<sup>88</sup>

- (137)a Da allora, non è *più*, *purtroppo*, venuto a trovarci  
 Since then, he has no longer, unfortunately, come to visit us  
 b Riuscirò a leggere *tutto*, *forse*, per la prossima settimana  
 I will manage to read everything, perhaps, for the next week  
 c Lui mi è *sempre* parso, *francamente*, una persona difficile  
 He always seemed to me, frankly, a difficult person

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<sup>87</sup> Also not investigated here are the restrictions on what constituents each adverb can attach to, when used as a 'focusing' adverb.

<sup>88</sup> As observed in Browning (1996,238,fn.2), a parenthetical (or 'interjection') intonation of the adverb ("which signals that it is not actually part of the syntactic representation") even allows apparent violations of the adjacency requirement on verbs and objects in English. Cf. (i):

- (i)a \*He bought unfortunately a Yugo  
 b He bought, unfortunately!, a Yugo

**1.8 Some crosslinguistic evidence for a universal hierarchy of AdvPs.** In this section, I will shift the attention to some other languages (and language families) to see if the conclusions on the order of AdvPs reached on the basis of Romance have more general validity.

Although, by the logic of the inquiry, no certainty can be attained, the striking consistency found in the languages reviewed below will drive me to the bold claim that a universal order, or hierarchy, of AdvPs does exist, in spite of the questions that remain to be clarified (and of the problems that a closer look will almost certainly reveal).

I will consider two Germanic languages (English and Norwegian), a Slavic language (Bosnian/Serbo-croatian), a Semitic language (Hebrew), a Sino-Tibetan language (Chinese), and Albanian.

I will keep the commentary to a minimum, in most cases just listing the crucial pairs of sentences that point to a certain relative order between two (or more) adverbs.

### 1.8.1 *English*

The literature cited in §1.3 above shows that English "higher" (sentence) adverbs are ordered as in Romance.

Speech act adverbs precede evaluative adverbs (*Honestly I am unfortunately unable to help you* vs. *\*Unfortunately I am honestly unable to help you*). Evaluative adverbs precede evidential adverbs (*Fortunately, he had evidently had his own opinion of the matter* vs. *\*Evidently, he had fortunately had his own opinion of the matter* - Siewierska 1992,418). Evidential adverbs precede epistemic adverbs (*Clearly John probably will quickly learn French perfectly* vs. *\*Probably John clearly will quickly learn French perfectly* - Bowers 1993,fn. 13 and p.607). Epistemic adverbs precede (past) tense adverbs (*Probably he once had a better opinion of us*), although they can also follow them, when these are generated in a higher 'scene setting' position (cf. §1.3: *Once he probably had a better opinion of us*). Tense adverbs precede *perhaps/(almost) certainly* (*He was then almost certainly/perhaps at home* vs. *\*He was almost certainly/perhaps then at home*).<sup>89</sup> *Perhaps* precedes subject-oriented adverbs (*John will perhaps wisely withdraw* vs. *\*?John will wisely perhaps withdraw*). Concerning the order of "lower" adverbs, some words are required as English seemingly differs from Romance on certain points. For example, while in Italian (Romance) (*non..*) *più* '(not..) any longer' was seen to precede *sempre* 'always', English would seem to show the opposite order:

(138)a John doesn't **always** win **any longer**

The appearance is however deceiving. When it follows *always*, (*not..*) *any longer* necessarily follows the verb, and its objects, if any, just as is possible in Italian, as noted, when *più* is emphasized. Cf. (139)a-b:

(139)a John doesn't **always** win his games **any longer**  
 b J. non vince sempre le sue partite, PIU'

I assume (139)a to be derived as the Italian cases discussed in §1.5, through movement of some

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<sup>89</sup>By transitivity, an adverb like *probably* should precede an adverb like *perhaps* or *(almost) certainly*. While this appears to be true for *probably* and *perhaps* (which do show this order, if cooccurring at all: *Probably he will perhaps try again* vs. *\*?Perhaps he will probably try again*), *probably* and *(almost) certainly*, according to Richard Kayne (p.c.), seem to admit either order, which, in the present context, may be problematic.

projection containing *always*, the verb, and its complements, to the left of *any longer*.

In fact, when both *always* and (*not..*) *any longer* appear before the verb, their order is just like that found in Italian (Romance). Cf. (140) and (141).<sup>90</sup>

- (140)a John doesn't **any longer always** win his games  
 b \*John doesn't **always any longer** win his games

- (141)a Gianni non vince **più sempre** le sue partite  
 b \*Gianni non vince **sempre più** le sue partite

A similar situation is found with other lower adverbs (cf., e.g., *He hasn't completely ruined it yet, He hasn't yet completely ruined it* vs. *\*He hasn't completely yet ruined it*).

Once these, and similar, cases are clarified, the order of "lower" adverbs in English does appear comparable to that found in Romance, with habitual adverbs preceding *already*, which precedes *no longer/(not..) any longer*, which precedes *always*, which precedes *completely*, which precedes *well* (and other manner adverbs).

In sum, the order of the various classes of AdvPs in English corresponds to that found in Romance, and includes the following:

(142) *Frankly* > *fortunately* > *allegedly* > *probably* > *once/then* > *perhaps* > *wisely* > *usually* > *already* > *no longer* > *always* > *completely* > *well*.

### 1.8.2 Norwegian<sup>91</sup>

ærlig talt 'honestly' > heldigvis 'fortunately'

- (143)a Per forlater ærlig talt heldigvis nå selskapet  
 Peter leaves honestly spoken fortunately now the party  
 b \*Per forlater heldigvis ærlig talt nå selskapet  
 Peter leaves fortunately honestly spoken now the party

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<sup>90</sup>The sentences are preferable with *no longer*:

- (i)a John no longer always wins his games  
 b \*John always no longer wins his games

*No more/(not..) any more* minimally differs from *no longer/(not..) any longer* in being compatible with only one of the two possibilities. See (ii)-(iii):

- (ii)a \*John no more always wins his games  
 b John always wins his games no more  
 (iii)a \*John doesn't any more always win his games  
 b John doesn't always win his games any more

In (my interpretation of) Cardinaletti and Starke's terms, *no more/(not) any more* are only *strong* adverbs, requiring leftward movement of the constituent following them.

<sup>91</sup>For the sentences and judgements reported here, I am indebted to Øystein Nilsen. Also see Nilsen (1997).

heldigvis 'fortunately' > tydeligvis 'evidently'

- (144)a Per har **heldigvis tydeligvis** gått  
 Peter has fortunately evidently left  
 b ??Per har **tydeligvis heldigvis** gått  
 Peter has evidently fortunately left

tydeligvis 'evidently' > sannsynligvis 'probably'

- (145)a Per skjønner **tydeligvis sannsynligvis** problemet godt  
 Peter understands evidently probably the problem well  
 b \*Per skjønner **sannsynligvis tydeligvis** problemet godt  
 Peter understands probably evidently the problem well

sannsynligvis 'probably' > nå 'now'

- (146)a Per forlater heldigvis **sannsynligvis nå** selskapet<sup>92</sup>  
 Peter leaves fortunately probably now the party  
 b Per forlater heldigvis **nå sannsynligvis** selskapet  
 Peter leaves fortunately now probably the party

nå 'now' > kanskje 'perhaps'

- (147)a Han er **nå kanskje** hjemme  
 He is now perhaps at home  
 b \*Han er **kanskje nå** hjemme  
 He is perhaps now at home

kanskje 'perhaps' > klokkelig 'wisely'

- (148)a Per ble **kanskje klokkelig** allerede sent hjem klokken ti  
 P. was maybe wisely already sent home at ten o'clock  
 b \*Per ble **klokkelig kanskje** allerede sent hjem klokken ti  
 P. was wisely maybe already sent home at ten o'clock

klokkelig 'wisely' > vanligvis 'usually'

- (149)a Klokken to har Per **klokkelig vanligvis** allerede spist  
 At two o'clock has P. wisely usually already eaten  
 b \*Klokken to har Per **vanligvis klokkelig** allerede spist  
 At two o'clock has P. usually wisely already eaten

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<sup>92</sup>As Øystein Nilsen points out (p.c.), speech time adverbs like *nå* 'now' can also precede speech act adverbs, as was noted above for Italian (*Per forlater nå ærlig talt heldigvis sannsynligvis selskapet* 'Peter leaves now honestly spoken fortunately probably the party').

vanligvis 'usually' > allerede 'already'

- (150)a Klokken to har Per vanligvis allerede spist  
 At two o'clock has P. usually already eaten  
 b \*Klokken to har Per allerede vanligvis spist  
 At two o'clock has P. already usually eaten

allerede 'already' > ikke lenger 'no longer'<sup>93</sup>

- (151)a Per elsker allerede ikke lenger sin kone  
 P. loves already no longer his wife  
 b \*Per elsker ikke lenger allerede sin kone<sup>94</sup>  
 P. loves no longer already his wife

ikke lenger 'no longer' > alltid 'always'

- (152)a Jon aksepterer ikke lenger alltid vår invitasjon  
 J. accepts no longer always our invitation  
 b \*Jon aksepterer alltid ikke lenger vår invitasjon  
 J. accepts always no longer our invitation  
 c \*Jon aksepterer ikke alltid lenger vår invitasjon  
 J. accepts no always longer our invitation

alltid 'always' > helt 'completely'

- (153)a De forstår enda ikke alltid helt hva jeg snakker om  
 They understand still not always completely what I talk about  
 'They do not yet always completely understand what I talk about'  
 b \*De forstår enda ikke helt alltid hva jeg snakker om  
 They understand still not completely always what I talk about  
 'They do not yet completely always understand what I talk about'

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<sup>93</sup>Not yet' is realized either as *ikke enda* ('not still'), or *enda ikke*. There is some indication that the latter, as opposed to the former, is not a single constituent. As Øystein Nilsen pointed out to me, *enda* and *ikke* can be separated by other elements. Cf. (i), possible with stress on *ikke*, and *igår*:

(i) Igår forsto enda Per det ikke helt godt

Yesterday understood still P. that not completely well

'Yesterday P. didn't understand that completely well yet'

The fact that nothing can interrupt the sequence *ikke enda*, and that it, but not generally *enda ikke*, can constitute an isolated answer, suggest that *ikke enda* is a constituent.

<sup>94</sup>As Øystein Nilsen notes, the sentential negation *ikke* can (and must) precede *allerede* (See *Per har vel ikke allerede/\*allerede ikke vunnet!* 'P. has really not already/already not won' - cf. the order *mica già* vs. *\*già mica* in Italian, discussed in §1.2 above); however, it cannot if *lenger* follows *allerede* (*\*Per elsker ikke allerede lenger sin kone* 'P. loves not already any longer his wife'), which suggests that the *ikke* of *ikke lenger* is not the sentential *ikke*, but a *ikke* directly modifying *lenger*.



helt 'completely' > godt 'well'

- (154)a ..at han ikke lenger alltid **helt** sov (så) **godt**  
 ..that he not any longer always completely slept (so) well  
 b \*..at han ikke lenger alltid sov (så) **godt helt**  
 ..that he not any longer always slept (so) well completely

This gives the following relative order of the main adverb classes of Norwegian:

(155) *ærlig talt* 'honestly' > *heldigvis* 'fortunately' > *tydeligvis* 'evidently' > *sannsynligvis* 'probably' > *nå* 'now' > *kanskje* 'perhaps' > *klokelig* 'wisely' > *vanligvis* 'usually' > *allerede* 'already' > *ikke lenger* 'no longer' > *alltid* 'always' > *helt* 'completely' > *godt* 'well'

### 1.8.3 *Bosnian/Serbo-croatian*<sup>95</sup>

Iskreno 'frankly' > nažalost 'unfortunately'

- (156)a **Iskreno**, ja **nažalost** imam jako loše mišljenje o vama.  
 frankly, I unfortunately have very bad opinion about you  
 b \***Nažalost**, ja **iskreno** imam jako loše mišljenje o vama.

Nažalost 'unfortunately' > očigledno 'evidently'

- (157)a Ja **nažalost očigledno** imam potpuno pogrešnu predstavu o vama.  
 I unfortunately evidently have completely wrong perception about you  
 b \*Ja **očigledno nažalost** imam potpuno pogresnu predstavu o vama.

Očigledno 'evidently' > možda 'perhaps'<sup>96</sup>

- (158)a On je **očigledno možda** pretjerao u svojim izrazima zahvalnosti.  
 he is evidently perhaps gone too far in his expressions (of) gratitude  
 b \*On je **možda očigledno** pretjerao u svojim izrazima zahvalnosti.

Neizostavno 'necessarily' > inteligentno 'intelligently'

- (159)a On će **neizostavno inteligentno** odgovoriti na svako neprijatno pitanje.  
 he will necessarily intelligently answer every unpleasant question  
 b \*On će **inteligentno neizostavno** odgovoriti na svako neprijatno pitanje.

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<sup>95</sup>The relevant sentences and judgements were kindly provided by Nedžad Leko and Ljiljana Progovac.

<sup>96</sup> *Možda* 'perhaps' is not felt possible with *vjerovatno* 'probably'.

Intelligentno 'intelligently' > obično 'usually'

- (160)a **Intelligentno**, on **obično** nikad ne odgovorit na neprijatna pitanja.  
 'Intelligently, he never answers unpleasant questions'  
 b \***Obično**, on **intelligentno** nikad ne odgovorit na neprijatna pitanja.<sup>97</sup>

Obično 'usually' > često 'often'

- (161)a On **obično često** navraća u moju kancelariju.  
 he usually often comes in my office  
 b \*On **često obično** navraća u moju kancelariju.

Često 'often' > već 'already'

- (162)a On **često već** rano ujutro navrati u moju kancelariju.  
 He often already early in morning comes in my office  
 b \*On **već često** rano ujutro navrati u moju kancelariju.

Već 'already' > više 'no longer'

- (163)a U to vrijeme nije **već više** ništa imala.  
 in that time negAUX already no longer nothing have-FEM  
 'At that time, she already did not have anything any longer.'  
 b. \*U to vrijeme nije **više već** ništa imala.

Više 'no longer' > uvijek 'always'

- (164)a On **više uvijek** ne pobjedjuje  
 he no longer always not win-3SG  
 b \*On **uvijek više** ne pobjedjuje

uvijek 'always' > upravo 'just'

- (165)a Kad god ga sretnem, on se **uvijek upravo** vraća is grada  
 Whenever him I-meet, he REFL always just returns from town  
 b \*Kad god ga sretnem, on se **upravo uvijek** vraća is grada  
 Whenever him I-meet, he REFL just always returns from town

upravo 'just' > gotovo 'almost'

- (166)a Ja sam **upravo gotovo** pao  
 I have (lit. 'am') just almost fallen  
 b \*Ja sam **gotovo upravo** pao  
 I have (lit. 'am') almost just fallen

---

<sup>97</sup>Nedžad Leko informs me that this sentence, if it receives any interpretation at all, forces a manner (not a subject-oriented) reading of *intelligentno*.

gotovo 'just' > potpuno 'completely':

- (167)a Ja sam ga **gotovo potpuno** zaboraviti.  
I have him just completely forgot  
b \*Ja sam ga **potpuno gotovo** zaboraviti.  
I have him completely just forgot

Potpuno 'completely' > dobro 'well':

- (168)a **Potpuno dobro** shvatam tvoje razloge za odbijanje te ponude.  
completely well understand your reasons for rejecting that offer  
b \***Dobro potpuno** shvatam tvoje razloge za odbijanje te ponude.

brzo 'quickly' > opet 'again'

- (169)a **Brzo opet** ponovi sta si rekao  
quickly again repeat what (you) said  
b \***Opet brzo** ponovi sta si rekao

The overall order thus seems to be:

*Iskreno* 'frankly' > *nažalost* 'unfortunately' > *očigledno* 'evidently' > *možda* 'perhaps' > *neizostavno* 'necessarily' > *inteligentno* 'intelligently' > *obično* 'usually' > *često* 'often' > *već* 'already' > *više* 'no longer' > *uvijek* 'always' > *upravo* 'just' > *gotovo* 'almost' > *potpuno* 'completely' > *dobre* 'well' > *brzo* 'quickly' > *opet* 'again'

#### 1.8.4 *Hebrew*<sup>98</sup>

Speech act adverb > evaluative adverb

- (170)a Dani **be'emet le-mazal-o ha-ra** hifsid 'et ha-rakevet  
D. in-truth in-luck-his the-bad missed Acc the-train  
'D. in earnest unluckily missed the train'  
b \*Dani **le-mazal-o ha-ra be'emet** hifsid 'et ha-rakevet<sup>99</sup>  
D. in-luck-his the-bad in-truth missed Acc the-train  
'D. unluckily in earnest missed the train'

Evaluative adverb > epistemic adverb

- (171)a **Le mazal-a kanir'e** Rina tenaceax  
Luckily apparently R. win-fut  
'Luckily probably R. will win'

<sup>98</sup>I am grateful to Ur Shlonsky for providing the relevant sentences and judgements.

<sup>99</sup>Ur Shlonsky points out that (170)b is acceptable if *be'emet* is interpreted as 'really' rather than as a speech act adverb.

- b \***Kanir'e le mazal-a** Rina tenaceax<sup>100</sup>  
 Apparently luckily R. win-fut  
 'Probably luckily R. will win'

epistemic adverb > 'perhaps'

- (172)a Hu **kanir'e 'ulay** yaskim  
 He apparently perhaps agree-fut  
 'Probably he will perhaps agree'  
 b \*Hu **'ulay kanir'e** yaskim<sup>101</sup>  
 He perhaps apparently agree-fut  
 'Perhaps he will probably agree'

'ulay 'perhaps' > subject-oriented adverb

- (173)a Dani **'ulay be-xoxma** yitpater  
 D. perhaps with-intelligence will resign  
 'D. perhaps will intelligently resign'  
 b \*Dani **be-xoxma 'ulay** yitpater  
 D. with-intelligence perhaps will resign

subject-oriented adverb > habitual adverb

- (174)a Hu **kanir'e be-dere**x klal mea'xer  
 He apparently usually late  
 'Probably he is usually late'  
 b \*Hu **be-dere kanir'e** klal mea'xer  
 He usually apparently late  
 'Usually he is probably late'

kvar 'already' > tamid 'always'

- (175)a Hu **kvar tamid** yodea 'et ha-tšuva  
 He already always knows the answer  
 b \*Hu **tamid kvar** yodea 'et ha-tšuva

---

<sup>100</sup> *Kanir'e* 'probably' can apparently precede *le mazal-a* 'luckily' if it is in the COMP space: *Kanir'e še le mazal-a Rina tenaceax* 'Apparently that luckily R. will win', differently from the situation found in French.

<sup>101</sup> The sequence *?ulay kanir'e* is grammatical with *?ulay* interpreted as an optative particle (Ur Shlonsky, p.c.), which I take to involve a shift to the speech act adverbial class.

kver lo 'no longer' > tamid 'always'<sup>102</sup>

- (176)a Hu **kvar lo tamid** yodea 'et ha-tšuva  
 He already not always knows the answer  
 'He no longer always knows the answer'  
 b \*Hu **tamid kvar lo** yodea 'et ha-tšuva  
 He always no longer knows the answer

tamid 'always' > bidiuk 'just'

- (177)a (kše-'ani pogeš 'oto) John **tamid bidiuk** xozer me-xul  
 (When I meet him) J always just return from abroad  
 b \*(kše-'ani pogeš 'oto) J. **bidiuk tamid** xozer me-xul

tamid 'always' > legamrey 'completely'

- (178)a Hu **tamid hores legamrey** 'et ma še-hu ose  
 He always destroys completely what he does  
 b \*Hu hores **legamrey tamid** 'et ma še-hu ose  
 He completely always destroys what he does

kim'at 'almost' > legamrey 'completely'

- (179)a John **kim'at, legamrey** haras et ha-misxak  
 J. almost, completely destroyed the game  
 b \*John **legamrey kim'at** haras et ha-misxak  
 J. completely almost destroyed the game

legamrey 'completely' > heitev 'well'<sup>103</sup>

- (180)a Hu **tamid hevin legamrey heitev** 'et dvarexa  
 He always understands completely well your words  
 b \*Hu **tamid hevin heitev legamrey** 'et dvarexa

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<sup>102</sup>'No longer' is expressed by the combination 'already not' (as in other languages - cf. van der Auwera 1991):

- (i)a Hu **kvar me ašen** 'he already smokes'  
 (ii) Hu **kvar (bixlal) lo ohev ota**  
 He already (at all) not loves her  
 'He doesn't any longer (at all) love her'

<sup>103</sup>The (finite) verb has to precede the adverb 'well' (cf. \*Hu *heitev hevin ?et dvarexa* 'He well understands your words'), and in general also precedes the 'completely' adverb (though it may marginally follow it in particular contexts - Ur Shlonsky, p.c.). For the similar situation of Italian, Norwegian (and related languages) see chapter 5 below.

The hierarchy thus seems to be:

*be'emet* 'truly' > *le-mazal-o ha-ra* 'unluckily' > *kanir'e* 'probably' > *ulay* 'perhaps' > *be-xoxma* 'intelligently' > *be-derex* 'usually' > *kvar* 'already' / *kvar lo* 'no longer' > *tamid* 'always' > *bidiuk* 'just' / *kim'at* 'almost' > *legamrey* 'completely' > *heitev* 'well'

### 1.8.5 *Chinese*<sup>104</sup>

laoshi-shuo 'honestly' > buxing 'unfortunately'

- (181)a **laoshi-shuo wo buxing dui tamen you pian-jian** (H)  
 honestly I unfortunately to them have prejudice  
 'Honestly I unfortunately have prejudice against them'  
 b **\*buxing wo laoshi-shuo dui tamen you pian-jian**

buxing 'unfortunately' > xianran 'evidently'<sup>105</sup>

- (182)a **buxing tamen xianran dui ni wuhui hen shen** (H)  
 unfortunately they evidently to you misunderstanding very deep  
 'Unfortunately they evidently have a deep misunderstanding of you'  
 b **?\*xianran tamen buxing dui ni wuhui hen shen**

xianran 'evidently' > xianzai 'now'

- (183)a **xianran xianzai ni yinggai qu le** (C)  
 evidently now you must go PERF  
 b **\*xianzai xianran ni yinggai qu le**

xianzai 'now' > yexu 'perhaps'

- (184)a **Ta xianzai yexu qicheng le** (C)  
 He now perhaps left PERF  
 'He has now perhaps left'  
 b **Ta yexu xianzai qicheng le**

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<sup>104</sup>The examples come from Camporese (1996), and from personal communications from James Huang, and Liejiong Xu. The source will be indicated between parentheses as (C), (H) and (X), respectively.

<sup>105</sup>The same contrast is noted in Camporese (1996, §2.3), who reports the following examples:  
 (i)a **Buxing, xianran wo dui nimen sangshi xinxin**  
 Unfortunately evidently I in you lost faith  
 'Unfortunately I have evidently lost my faith in you'  
 b **\*Xianran, buxing wo dui nimen sangshi xinxin**

yexu 'perhaps' > mingzhide 'wisely'<sup>106</sup>

- (185)a Ta **yexu mingzhide** lihai le (X)  
 He perhaps wisely left PERF  
 b \*Ta **mingzhide yexu** lihai le

mingzhide 'wisely' > yiban 'usually'<sup>107</sup>

- (186)a Ta **mingzhide yiban** bu biaotai (X)  
 He wisely usually does not commit himself  
 b Ta **yiban mingzhide** bu biaotai

yiban 'usually' > changchang 'often'

- (187)a xiatian wo **yiban changchang** qu haibian (C)  
 In the summer I usually often go to the sea  
 b \*xiatian wo **changchang yiban** qu haibian

changchang 'often' > yijing 'already'<sup>108</sup>

- (188)a Mei tian ba dian, ta **changchang yijing** chi guo fan le (C)  
 Every day 8 hours, he often already eat ASP food  
 'Every day at 8, he often has already eaten'  
 b \*Mei tian ba dian, ta **changchang yijing** chi guo fan le

yijing 'already' > bu-zai 'no longer'

- (189)a Ta **yijing bu-zai** xiangnian ta (H)  
 he already not-again misses him/her  
 He already no longer misses her  
 b \*Ta **bu-zai yijing** xiangnian ta

<sup>106</sup>By transitivity, *xianzai* 'now' should precede *mingzhide* 'wisely'. This is indeed what we find. Cf. (i), from Camporese (1996,§2.3):

- (i)a Ta **xianzai mingzhide** rangbu le  
 He now wisely withdraw PERF  
 'He has now wisely withdrawn'  
 b \*Ta **mingzhide xianzai** rangbu le

<sup>107</sup>For Liejiong Xu both orders of *mingzhide* 'wisely' and *yiban* 'usually' appear possible. I do not know how this should be interpreted.

<sup>108</sup>Given (187) and (188), by transitivity, we expect *yiban* 'usually' to necessarily precede *yijing* 'already', which is the case, as noted in Camporese (1996,§2.3). Cf. (i):

- (i)a Ba dian, ta **yiban yijing** kaishi gongzuo le  
 At 8, he usually already has begun work PERF  
 b \*Ba dian, ta **yijing yiban** kaishi gongzuo le

bu-zai 'no longer' > zongshi 'always'

- (190)a ta **bu-zai zongshi** gen da-ge zhengcao (H)  
 he not-again always with big-brother quarrel  
 'he no longer always quarrels with Big Brother'  
 b \*ta **zongshi bu-zai** gen da-ge zhengcao

zongshi 'always' > yizhi 'continuously'<sup>109</sup>

- (191)a Zheyang de wenti, women **zongshi yizhi** yao taolun liang ge xiaoshi (C)  
 Such DE question, we always continuously must discuss two GE hours  
 b ??Zheyang de wenti, women **zongshi yizhi** yao taolun liang ge xiaoshi

zongshi 'always' > ganggang 'just'

- (192)a mei ci wo pengjian ta, ta **zongshi ganggang** cong guowai huilai (H)  
 every time I meet him, he always just from abroad return  
 'every time I meet him, he has always just returned from abroad'  
 b \*mei ci wo pengjian ta, ta **ganggang zongshi** cong guowai huilai

ganggang 'just' > wanquan 'completely'

- (193)a wo **ganggang wanquan** wang-le ta-de dizhi (H)  
 I just completely forgot his address  
 'I have just completely forgotten his address'  
 b \*wo **wanquan ganggang** wang-le ta-de dizhi

wanquan 'completely' > hao 'well'

- (194)a ta **wanquan gaixie de hen hao** (H)  
 he completely revise till very well  
 'he completely revised it very well'  
 b \*ta **hen hao de wanquan** gaixie

This gives the following hierarchy:

*laoshi-shuo* 'honestly' > *buxing* 'unfortunately' > *xianran* 'evidently' > *xianzai* 'now' > *yexu* 'perhaps' > *mingzhide* 'wisely' > *yiban* 'usually' > *changchang* 'often' > *yijing* 'already' > *bu-zai* 'no longer' > *zongshi* 'always' > *yizhi* 'continuously'/*ganggang* 'just' > *wanquan* 'completely' > *hao* 'well'

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<sup>109</sup>Note that given the order *yijing* 'already' > *bu-zai* 'no longer' > *zongshi* 'always' > *yishi* 'continuously', we expect *yijing* 'already' to precede *yishi* 'continuously'. This is what we find. Cf. (i), from Camporese (1996, §2.3):

- (i)a Wo **yijing yizhi** pao le wushi gongli, keshi hai bu lei  
 I already continuously run Asp fifty Km, but still not be tired  
 'I have already run for fifty Km, but I'm not yet tired'  
 b \*Wo **yizhi yijing** pao le wushi gongli, keshi hai bu lei



1.8.6 *Albanian*<sup>110</sup>

Speech act adverb > evaluative adverb

- (189)a **Sinqerisht** ka **mjerisht** një opinion jo të mirë për ju  
Sincerely has unfortunately one opinion not good of you  
'To be earnest he unfortunately hasn't a good opinion of you'  
b \***Mjerisht** ka **sinqerisht** një opinion jo të mirë për ju  
Unfortunately has sincerely one opinion not good of you  
'Unfortunately he to be earnest hasn't a good opinion of you'

Evaluative adverb > *ndoshta* 'perhaps'

- (190)a **Fatmirësisht** Beni **ndoshta** do t-ia hedhë edhe këtë radhë  
Fortunately Beni perhaps FUT Subj-cl make it even this time  
'Fortunately B. perhaps will make it even this time'  
b \***Ndoshta** Beni **fatmirësisht** do t-ia hedhë edhe këtë radhë  
Perhaps Beni fortunately FUT Subj-cl make it even this time  
'Perhaps B. fortunately will make it even this time'

speech time adverb > *ndoshta* 'perhaps'

- (191)a **Tani ndoshta** Beni ka ikur  
Now perhaps B. has left  
b \*?**Ndoshta tani** Beni ka ikur  
Perhaps now B. has left

habitual adverb > negative adverb

- (192)a Në orën 2, Beni **zakonisht as nuk** ka ngrënë ende  
At two, B. usually not not has eaten yet  
'At two, B. usually hasn't eaten yet'  
b \***Në orën 2, Beni as nuk** ka ngrënë **zakonisht** ende  
At two, B. not not has eaten usually yet

ende 'still' > *gjithnjë* 'always'

- (193)a Ai **ende gjithnjë** ka fuqi  
He still always has power  
  
b \***Ai gjithnjë ende** ka fuqi  
He always still has power

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<sup>110</sup>The Albanian data and judgements were kindly provided by Dalina Kallulli.

gjithnjë 'always' > tërësisht 'completely'

- (194)a Ai nuk i kupton **gjithnjë tërësisht** vërejtjet  
 He not them understands always completely remarks  
 'He does not always understand the remarks completely'  
 b \*Ai nuk i kupton **tërësisht gjithnjë** vërejtjet  
 He not them understands completely always remarks

pjesërisht 'partially' > mirë 'well'

- (195)a Ka ribërë **pjesërisht gjithçka mirë** Beni  
 Has redone partially everything well B.  
 'Beni has partially done everything well again'  
 b \*Ka ribërë **gjithçka mirë pjesërisht** Beni  
 Has redone everything well partially B.

The overall order thus seems to be:

*sinqerisht* 'sincerely' > *mjerisht* 'unfortunately' > *tani* 'now' > *ndoshta* 'perhaps' > *zakonisht* 'usually'  
 > *as* 'not yet' / *ende* 'still' > *gjithnjë* 'always' > *tërësisht* 'completely' > *mirë* 'well'

## CHAPTER 2

### A Case for Adverbial Phrases in Spec

#### 2.1 Introduction

#### 2.2 Active Past Participle Movement in Italian

#### 2.3 Finite V movement in Italian

#### Appendix: Some remarks on other verbal forms and other Romance varieties

- i. Infinitives in French and Italian
- ii. Past participles in some Romance varieties
- iii. Absolute past participles, present participles and gerunds in Italian
- iv. Finite verbs in some Romance varieties

**2.1 Introduction.** Though adjunction of AdvPs to (non argumental) maximal projections is very commonly assumed in the current literature, there seem to be both conceptual and empirical reasons for locating them in the (unique) Spec positions of distinct maximal projections.

The relative order of AdvPs established in the previous chapter, in interaction with the distribution of (active) past participles and finite verbs in Italian, will offer us an empirical argument for locating AdvPs in Spec.

Before examining this argument, I mention possible conceptual considerations also favoring the location of AdvPs in Spec.

A system that countenances both specifiers and adjuncts is clearly less restrictive than a system which does away with one or the other (while still expressing all the correct empirical generalizations).

Suppose we find positive evidence for locating some adjunct XPs in Spec. Then, the desirable possibility arises of doing away with the competitor (adjunction) entirely. See Cinque (1992a; 1994a), and Sportiche (1993) for general discussion.

One desirable direct formal consequence of Kayne's (1994) restrictive version of X-bar theory, more generally of his antisymmetric view of syntax, is precisely the availability of a single specifier per projection (or adjunct - their difference being in fact neutralized). Secondly, while the existence of a rigidly fixed relative order of AdvPs is entirely unexpected under adjunction, it is understandable under the "location-in-Spec" hypothesis, at least if it can be argued to follow from the fixed relative order of the heads via the general Spec/head agreement relation (as we attempt below).

Moreover, the fact that AdvPs are arguably on left branches is something that would have to be stipulated under the adjunction hypothesis, while it follows under the "location-in-Spec" hypothesis

as Specs *are* normally (necessarily in Kayne's theory) taken to be on left branches.<sup>1</sup>

Let us now consider the empirical argument, which will be based on the presence of one head position to the immediate left and one head position to the immediate right of each AdvP.

**2.2 Active Past Participle Movement in Italian.** Restricting our attention, for the time being, to the "lower" pre-VP AdvPs isolated in § 1.2, we observe that an active past participle can be found preceding, or following, each AdvP in the sequence (except for the last two, *tutto* and *bene*, to which I return). Consider (1):

- (1)a Da allora, non hanno **rimesso** di solito mica più sempre completamente tutto bene in ordine  
 b Da allora, non hanno di solito **rimesso** mica più sempre completamente tutto bene in ordine  
 c Da allora, non hanno di solito mica **rimesso** più sempre completamente tutto bene in ordine  
 d Da allora, non hanno di solito mica più **rimesso** sempre completamente tutto bene in ordine  
 e Da allora, non hanno di solito mica più sempre **rimesso** completamente tutto bene in ordine  
 f Da allora, non hanno di solito mica più sempre completamente **rimesso** tutto bene in ordine  
 'Since then, they haven't usually not any longer always put everything well in order'

In the spirit of Pollock's (1989, 1993) analysis, according to which AdvPs are assumed to occupy fixed positions, and what is taken to move is the verb, the different word orders shown in (1) suggest the presence of a distinct head position to the left of the habitual adverb *di solito* and in between all following adverbs (except *tutto* and *bene*). (2) suggests the same conclusion relatively to (*mica* *già* (and *più*) (which are exemplified separately, as *già* does not fit well, semantically, in (1)).

- (2)a Non ha mica già **ricevuto** più niente  
 b Non ha mica **ricevuto** già più niente  
 'he has not already any longer received anything'

In other words, (1) and (2) point to the structure in (3) where the capital X's indicate head positions:

- (3) ...[ X [solitam X [mica X [già X [più X [sempre X [completamente X [tutto bene [vp ]]]]]]]]]

If correct, this conclusion provides the promised evidence for the "AdvP-in-Spec hypothesis", in that standard X-bar theory (Chomsky 1970, Kayne 1994) leaves room for just one XP specifier in between two X<sup>0</sup>'s (heads).<sup>2</sup> If AdvPs were adjoined to (possibly different) maximal projections, one would not necessarily expect the past participle to be able to appear in between (virtually) any two AdvPs.

This conclusion depends on the assumption that verbs move, and adverbs stay put: by no means a

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<sup>1</sup>That AdvPs should be specifiers is not only suggested in Kayne (1993b,fn.42; 1994,137n30), but also in Laenzlinger (1993, 1996a,b), Alexiadou (1994), among others, as well as in earlier unpublished work of mine (Cinque 1992a, discussed in Belletti 1994b). Laenzlinger's idea that AdvPs are licensed via a Spec/head relation with a head (his Adverb Criterion) bears some similarity to the idea presented here, though the specifics of his analysis are rather different, and, in fact, incompatible with the conclusion defended here of a unique (left-hand) specifier per head. Also see Rivero (1992), Ojea López (1994) for the suggestion that aspectual and temporal adverbs are adjuncts of Aspect and Tense projections.

<sup>2</sup>I will return to the relevance of these facts for other versions of X-bar theory (such as that in Chomsky 1995), which allow for multiple specifiers in between two heads.

necessary (or universally accepted) assumption. In a moment, I will consider an alternative which rejects this assumption, and will compare the different predictions of the two analyses. But before that, some comment is in order for the unexpected behavior of *tutto* and *bene*, for, as (4) shows, an (active) past participle cannot be found in between them, or to the right of *bene*:

- (4)a \*Da allora, non hanno di solito mica più sempre completamente tutto **rimesso** bene in ordine  
 b \*Da allora, non hanno di solito mica più sempre completamente tutto bene **rimesso** in ordine  
 'Since then, they haven't usually not any longer always put everything well in order'

This fact could be interpreted as suggesting that even under the "AdvP-in-Spec" hypothesis one would still need adjunction, as there is no evidence for a head position in between *tutto* and *bene* nor for one to the right of *bene*, which would create room for two specifier positions hosting them.

But there is a more interesting interpretation of (4) which is compatible with *tutto* and *bene* each being in a distinct specifier position, like all the other AdvPs; namely, to assume that, in Italian, (active) past participles must obligatorily move to the head to the left of *tutto* (having passed through the head to the right of *bene* and that in between *tutto* and *bene*); after which they may raise to higher heads in what looks like optional movement.<sup>3</sup>

Although Italian offers no direct evidence for such lower heads, other Romance varieties do, filling in the links missing in (3). So, for example, in the variety of Logudorese Sardinian spoken in Suni (Patrizia Ruggiu, p.c.), an active past participle can be found to the right of *tottu* (*tutto*) 'everything' and to the left of *bene*, though it cannot occur to the right of *bene*.<sup>4</sup>

*Logudorese Sardinian:*

- (5)a \*Apo bene mandigadu ('I have well eaten')  
 b Apo mandigadu bene ('I have eaten well')  
 c Apo **tottu mandigadu** ('I have everything eaten')  
 d Apo mandigadu tottu ('I have eaten everything')

This variety, then, gives overt evidence for a head position in between *tutto* and *bene*.

French, on the other hand, appears to offer overt evidence for a head position to the right of *bien* (*bene*) (presumably distinct from the "base" position of the past participle in the VP, as this can rise past at least some other AdvPs (*presque* 'almost', *à peine* 'hardly', *souvent* 'often', etc.), as pointed out in Pollock (1989, 417):

*French:*

- (6)a **Il en a bien compris à peine la moitié** ('He has of it well understood hardly half')  
 b \*Il en a compris bien à peine la moitié ('He has of it understood well hardly half')

As a matter of fact, various Romance varieties appear to differ as to the particular head to which the movement of an (active) past participle is obligatory (cf. the appendix to this chapter).

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<sup>3</sup>This raises the interesting question of what it is that triggers the obligatory and the optional instances of (active) past participle movement. I will come back to (some speculations about) such questions.

<sup>4</sup>The possibility for *tottu* to precede an (active) past participle is attributed more generally to Sardinian in Jones (1993,209). (Logudorese) Sardinian appears to be just like Italian for all higher (apparently optional) movements of the past participle (Patrizia Ruggiu, p.c.).

The analysis sketched so far, in the spirit of Pollock's (1989,1993), takes the word order pattern of (3) to be a function of the movement of the past participle over one or more AdvPs, ordered in a rigidly fixed sequence.<sup>5</sup>

Let us now compare this analysis (which I will call Alternative I) with one which, instead, takes (3) to be due to the free adjunction of AdvPs to (or to their generation in the multiple Spec's of) different maximal projections, either to the left or to the right of the past participle, which occupies a fixed position (call it Alternative II).

Consider first the following facts.

Observationally, in Italian, an adverb like *mica* can be found either preceding, or following, an (active) past participle (cf. (7)a-b). And the same is true for an adverb like *più* (cf. (8)a-b):

- (7)a Non hanno mica mangiato ('They haven't not eaten')  
 b Non hanno mangiato mica ('They haven't eaten not')

- (8)a Non hanno più mangiato ('They haven't any longer eaten')  
 b Non hanno mangiato più ('They haven't eaten any longer')

If analogy were at work (if language acquisition were based on analogy), we would expect both of the following sentences to be acceptable which combine (7a) with (8b), and (7b) with (8a). But only one is grammatical (the one combining (7a) with (8b)):

- (9)a Non hanno mica mangiato più ('They haven't not eaten any longer') ((7a) + (8b))  
 b\* Non hanno più mangiato mica ('They haven't any longer eaten not') ((7b)+(8a))

Alternative II (the one with free adjunction, or multiple Spec's) offers no immediate solution to the puzzle. If anything, the possibility of freely generating *mica* and *più* both in position A, to the left of the past participle, and in position B, to the right of the past participle, would lead one to expect (9)b to be possible.

One would need to complement Alternative II with an additional filter to the effect that the otherwise free generation of *mica* and *più* either to the left or to the right of the past participle leads to ungrammaticality just in case *più* is generated in position A, on the left, and *mica* in position B, on the right. This filter, however, simply recapitulates the ordering principle needed to account for the orders possible within position A (cf. (10)), and within position B (cf. (11)), where *mica* precedes *più*.<sup>6</sup>

- (10)a Non hanno mica più mangiato ('They haven't not any longer eaten')  
 b \*Non hanno più mica mangiato ('They haven't any longer not eaten')

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<sup>5</sup>Note that this analysis is compatible with taking (certain) AdvPs to move, as long as they end up forming a fixed sequence within a particular portion, or "space", of the clause, as discussed in the previous chapter (§ 1.5).

<sup>6</sup>It could be claimed that the same ordering principle needed to determine the correct order of adjunction within position A, and position B, with *mica* > *più*, is sufficient to account for the ungrammaticality of (9)b; at least if the principle is abstract enough (possibly a semantic principle) to hold *across* positions A and B as well. But even so, Alternative II compares unfavorably with Alternative I, which needs no separate ordering principle for AdvPs qua specifiers, as their ordering can plausibly be made to follow from the independent ordering of the heads (via Spec/head agreement), as I will claim below.

- (11)a Non hanno mangiato mica più ('They haven't eaten not any longer')  
 b \*Non hanno mangiato più mica ('They haven't eaten any longer not')

Alternative I needs nothing special to account for (9)b. Under it, there is simply no way of deriving (9)b. The only way for the past participle to precede *mica* is for it to rise to a head higher than *mica*. But given that *più* is lower than *mica* in the unique, fixed, sequence of specifiers, *più* could not possibly be found to the left of the past participle.<sup>7</sup> (7)/(8)/(9a)/(10a)/(11a) are instead all correctly derived by raising the past participle to different heads on the fixed sequence of AdvPs (as noted in fn.6, the order of the AdvPs/specifiers does not need to be stipulated under Alternative I, if it can be made to follow from the order of the respective heads).

Alternative I is also conceptually superior to Alternative II, in that it is inherently more restrictive. It excludes on principled grounds the existence of a considerable number of possible Romance varieties not excluded by Alternative II, thus exposing itself to being falsified more substantially than Alternative II. For example, it predicts that no Romance variety could exist which is (virtually) the inverse of Logudorese Sardinian; compare (5), repeated here, with (12):

*Logudorese Sardinian:*

- (5)a \*Apo bene mandigadu ('I have well eaten')  
 b Apo mandigadu bene ('I have eaten well')  
 c **Apo tottu mandigadu** ('I have everything eaten')  
 d Apo mandigadu tottu ('I have eaten everything')
- (12)a **Apo bene mandigadu** ('I have well eaten')  
 b \*Apo mandigadu bene ('I have eaten well')  
 c \***Apo tottu mandigadu** ('I have everything eaten')  
 d Apo mandigadu tottu ('I have eaten everything')

The reason why no variety could display the pattern in (12) under Alternative I is the following: if the bare quantifier (*tout/tutto/tottu/etc.*) occupies (comes to occupy) a specifier position higher than the one hosting *bene*; and if the past participle may be found to the right of *bene* ((12)a), a fortiori it will be able to occur to the right of the bare quantifier. In other words, under Alternative I, the grammaticality of (12a) implies that of (12c).

Note that Alternative II has nothing to say about (12). Under that analysis, adjunction of a certain AdvP (by generation or movement) to the left or to the right of the past participle is not theoretically constrained (apart from the ordering principle mentioned in fn.6, not relevant here). In other words, there is nothing under Alternative II which forces the bare quantifier to be adjoined to the left of the past participle if *bene* is. Hence a pattern like (12) is not excluded under that alternative as a matter of principle.

For similar reasons, Alternative I, but not Alternative II, excludes a Romance variety displaying the pattern in (13) (say, another variant of Logudorese Sardinian):

- (13)a Apo bene mandigadu ('I have well eaten')  
 b \***Apo mandigadu bene** ('I have eaten well')

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<sup>7</sup> Neither can (9)b be derived from (10)a by moving [*più mangiato*] across *mica*. As noted in chapter 1, fn.43, *mica* is the only one of the "lower" adverbs which cannot occur focalized in VP-final position.

- c Apo tottu madigadu ('I have everything eaten')  
 d Apo mandigadu tottu ('I have eaten everything')

If the past participle can appear to the left of the bare quantifier ((13)d), a fortiori it will be able to appear to the left of the lower AdvP *bene*. In other words the grammaticality of (13)d implies that of (13)b.

Again, no comparable prediction is made by Alternative II.

More generally, Alternative I predicts that a) whenever the order V AdvP<sub>i</sub> is obligatory, the order V AdvP<sub>j>i</sub> (where AdvP<sub>j</sub> follows AdvP<sub>i</sub> in the fixed sequence) is also obligatory; and b) whenever the order V AdvP<sub>i</sub> is possible, the order V AdvP<sub>j>i</sub> is also possible. Cf. the appendix to this chapter for comparative evidence confirming this prediction.

If no Romance variety of the type in (12) or (13) exists, we have one more reason to conclude that the word order patterns in (1) and (2) should indeed be analysed as required by Alternative I, with movement of the past participle "around" the AdvPs. This, in turn, provides, as noted, a clear argument for locating AdvPs in the (unique) specifier positions of distinct maximal projections.<sup>8</sup>

**2.3 Finite V movement in Italian.** The above argument can be replicated for "higher" AdvPs, modulo the nature of the verb. Past participles cannot rise as high, but finite verbs (whether lexical or auxiliary) can.

Consider the word order patterns in (14)-(16), parallel to (1) and (2):<sup>9</sup>

- (14)a **Mi ero** francamente purtroppo evidentemente formato una pessima impressione di voi  
 b Francamente **mi ero** purtroppo evidentemente formato una pessima impressione di voi  
 c Francamente purtroppo **mi ero** evidentemente formato una pessima impressione di voi  
 d Francamente purtroppo evidentemente **mi ero** formato una pessima impressione di voi  
 Frankly I unfortunately had clearly formed a very bad opinion of you

- (15)a Evidentemente **mi ero** probabilmente allora formato una pessima impressione di voi  
 b Evidentemente probabilmente **mi ero** allora formato una pessima impressione di voi

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<sup>8</sup>If AdvPs have to be in the 'checking domain' of head, because of the special relation they have with it, then they must be in Spec positions also in a system like that of Chomsky (1995) (which also allows for adjunctions). The reason is that only specifiers, and no adjuncts, fall inside the 'checking domain' of a head (cf. Chomsky 1995, 319 and fn.47).

As noted, the evidence discussed here also favors single-specifier, over multiple-specifier, phrases. If the latter were possible hosts of AdvPs, one would then expect heads to be barred in between AdvPs (and argument DPs, as well). Taking the V to rise in between the AdvPs found in multiple Spec's only in the phonological component (in analogy with what is proposed in Chomsky 1995, 368) may not be appropriate here, as the different location of the past participle among the AdvPs has often semantic consequences (cf. chapter 4, §4.25). Also see the contrast between (i)a and b:

- (i)a Gianni ha sempre avuto i capelli lunghi 'G. has always had long hair'  
 b Gianni ha avuto sempre i capelli lunghi

(i)a, with the past participle to the right of *sempre* implies that Gianni still has long hair (a non-"perfect" interpretation), whereas (i)b is compatible with a "perfect" interpretation as well as a non-"perfect" one.

<sup>9</sup>In (14)-(16), I have abstracted from the position of the subject to avoid introducing too many variables at a time. I will come back to this question in chapter 5, after discussing the position of AgrPs in the clause.



c Evidentemente probabilmente allora **mi ero** formato una pessima impressione di voi  
Clearly I probably had then formed a very bad opinion of you

- (16)a Allora **aveva** forse saggiamente deciso di non presentarsi  
b Allora forse **aveva** saggiamente deciso di non presentarsi  
c Allora forse saggiamente **aveva** deciso di non presentarsi  
Then he had perhaps wisely decided not to go

Here, the finite auxiliary can be found to the left of the 'pragmatic' adverb *francamente* 'frankly', in between all of the following "higher" adverbs, and to the right of the lowest of these, the 'subject-oriented' *saggiamente* 'wisely'. Under Alternative I, this word order pattern, taken to be a function of the movement of the finite V "around" the AdvPs, suggests the structure shown in (17):

(17) [ X [francam X [purtroppo X [evidentem X [probabilm X [allora X [forse X [saggiam X ...]]]]]]]]

Once again, we can check the superiority of Alternative I over Alternative II, which would freely adjoin these "higher" adverbs (or generate them in multiple Spec's) either to the left or to the right of the finite V taken to occupy a fixed position.

Consider the facts of (18). Given that a 'subject-oriented' adverb like *saggiamente* 'wisely' can precede a finite auxiliary ((18)a), and that an 'evaluative' adverb like *fortunatamente* 'luckily' can follow it ((18)b), one could expect it to be possible to combine the two orders, to yield (18)c:

- (18)a Gianni saggiamente ha accettato 'G. wisely has accepted'  
b Gianni ha fortunatamente accettato 'G. has luckily accepted'  
c \*Gianni saggiamente ha fortunatamente accettato 'G. wisely has luckily accepted'

But (18)c is ungrammatical. If the auxiliary occupied the same position in (18)a-b and 'subject-oriented' and 'evaluative' adverbs were freely adjoinable either to the left or to the right of the auxiliary, this result would be unexpected. Some filtering principle would be needed to reduce the overgeneration induced by free adjunction (or free generation in multiple Spec's).

The ungrammaticality of (18)c is, instead, expected under Alternative I. In that analysis, (18)c simply cannot be derived. 'Evaluative' adverbs are in a Spec higher than that hosting 'subject-oriented' adverbs. The position of the auxiliary in (18)a-b is only deceptively the same. In (18)a it occupies a lower head than in (18)b.

Another use of *mica* (the preverbal one), not considered in the previous chapter, may be construed as additional evidence that the finite verb does not occupy a fixed position within the clause.

Besides occurring post-verbally in construction with a preverbal *non* (see fn.5 of chapter 1), *mica* can occur in front of a finite verb (in which case it is incompatible with *non*):<sup>10</sup>

- (19) Gianni (\*non) mica (\*non) gli telefonerà  
G. (not) not (not) to-him will-telephone

First, note that the word order of (19) is not the effect of focalizing the negative element and of

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<sup>10</sup>The pragmatics of this use are slightly different from those of post-verbal *mica*. Preverbal *mica* can be used only as the denial of someone's positive assertion (not just as the denial of a generic expectation).

dislocating the subject, as is arguably the case in (20):

- (20) Gianni, NIENTE gli ha dato  
G., nothing (focus) to-him has given

This can be seen from the fact that a focalized XP can precede the subject ((21)a), whereas *mica* cannot ((21)b), from the fact that focalized negative phrases can cooccur with a preverbal *non* ((22)a), whereas *mica* cannot, as noted, ((22)b), and from the fact that focalization is "unbounded" ((23)a), whereas the 'movement' of *mica* is not ((23)b):

- (21)a NIENTE Gianni gli ha dato!  
Nothing (focus) G. to-him has given  
b \*Mica Gianni gli telefonerà. Gli scriverà solo.<sup>11</sup>  
Not G. to-him will telephone. He will only write to him

- (22)a NIENTE (non) gli ha dato  
Nothing (focus) (not) to-him has given  
b Mica (\*non) gli telefonerà  
Not (not) to-him will telephone

- (23)a NIENTE ha detto che gli darà  
Nothing (focus) (he-)said that to-him (he-)will give  
b \*Mica ha detto che gli telefonerà<sup>12</sup>  
Not (he-)said that to-him (he-)will telephone

The preverbal position of *mica* in (19) is not due to its being "base generated" in (or having moved to) an IP preverbal position either. If this were the case, we could expect (25) to be possible alongside (24):

- (24) Gianni non l'ha fortunatamente mica trovato  
G. hasn't luckily not found it  
(25) \*Gianni mica l'ha fortunatamente trovato  
G. not has luckily found it

Of course, under the "base generation" option, (25) could be excluded by recourse to the independent semantic filter mentioned in fn.6 above; and under the movement one by Relativized Minimality.<sup>13</sup>

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<sup>11</sup>Note that *mica* can precede a subject, but in this case it contrastively negates just the subject: *Mica Gianni ci telefonerà. Ci telefonerà Mario.* 'Not G. will call us. Mario will.'

<sup>12</sup>(22)b is grammatical in the irrelevant reading in which *mica* modifies the matrix clause.

<sup>13</sup>The movement analysis proves, in fact, untenable, as it leads to a paradox. Consider (i) and (ii):  
(i)a Gianni non è mica ripartito 'G. hasn't not left'  
b Gianni mica è ripartito 'G. not has left'  
(ii)a Probabilmente Gianni è ripartito 'Probably G. has left'

The point, however, is that Alternative I accomodates the ungrammaticality of (25) more naturally and directly, by simply assuming that it is verbs that can occupy different positions, not AdvPs, within a certain (here, the post-C° and pre-VP) "space". This means that *mica* has not really moved at all. It is the verb which has stopped in the head corresponding to the Spec occupied by *mica*, as witnessed by the fact that this preverbal *mica* is preceded and followed by exactly the same adverbial classes which precede and follow post-verbal *mica* (compare (1) and (14)-(16), above, with (26)):<sup>14</sup>

- (26)a Gianni purtroppo forse stupidamente mica gli ha più telefonato  
 G. unfortunately perhaps stupidly not to-him has any longer telephoned
- b \*Gianni purtroppo forse mica gli ha stupidamente più telefonato  
 G. unfortunately perhaps not to-him has stupidly any longer telephoned
- c \*Gianni purtroppo mica gli ha forse stupidamente più telefonato  
 G. unfortunately not to-him has perhaps stupidly any longer telephoned

If we are to conclude, then, that AdvPs are indeed in the unique Spec positions of different maximal projections, what heads are these maximal projections of? We take up this question in

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b Gianni probabilmente è ripartito 'G. probably has left'

c Gianni è probabilmente ripartito 'G. has probably left'

Suppose it was adverbs that moved. If raising, but no lowering, is admitted, (i)a and (ii)c should represent the "base generated" position of *mica* and *probabilmente*, with (i)b derived by fronting *mica*, and (ii)a-b derived by fronting *probabilmente* ((ii)b, perhaps, further involving topicalization of the subject - Belletti 1994a). But, then, a perfectly acceptable sentence such as (iii) should be ungrammatical as it would involve a violation of Relativized Minimality (due to *probabilmente* having eventually crossed over *mica*):

(iii) Probabilmente Gianni mica è ripartito

Probably G. not has left

If, on the other hand, an AdvP were allowed to cross over another, in disdain of Relativized Minimality, we should expect (iv)b to be possible, along (iv)a, contrary to fact:

(iv)a Tu francamente avresti probabilmente dovuto fermarti

You frankly would probably have had to stop

b \*Probabilmente tu francamente avresti dovuto fermarti

Probably you frankly would have had to stop

A movement analysis thus leaves no way out. For further arguments against a movement analysis of adverbs, cf. Ernst (1991).

<sup>14</sup>The *ancora* of *non..ancora* 'not yet' can also, apparently, occupy a distinct pre-verbal position preceding *non* (cf. Belletti 1990,127fn.7): *Ancora non l'ha visto* 'Yet not he has seen it'.

This position, however, can once again be shown not to be a function of *ancora* moving to a higher position. Rather, it seems to be due to the finite verb stopping in a lower head position as its relative order with respect to the other classes of AdvPs remains constant, apparently. Cf. (i), (ii), etc.:

(i)a \*Ancora non l'ha mica visto 'Yet not he has not seen it'

b Mica ancora l'ha visto 'Not yet he has seen it'

(ii)a \*Ancora non l'ha certamente visto 'Yet not I have certainly seen it'

b Certamente ancora non l'ha visto 'Certainly yet not he has seen it'

For further evidence that finite verbs in Italian can stop in various lower heads to the right of (most) "lower" AdvPs, see chapter 5 below.

chapter 4, suggesting that they are the functional heads of the clause, the nature and order of which can be independently arrived at.

The second step in the plausibility argument will then consist in establishing the order of clausal functional heads on independent grounds. This will be attempted in chapter 3.

## APPENDIX: Some remarks on other verbal forms and other Romance varieties

- i) Infinitives in French and Italian
- ii) Past participles in some Romance varieties
- iii) Absolute past participles, present participles and gerunds in Italian
- iv) Finite verbs in some Romance varieties

The aim of this appendix is not so much that of pursuing a systematic analysis of the other verbal forms of Italian, or of other Romance varieties, but rather that of providing a wider, comparative, argument for the analysis presented in chapter 2 (namely, for the conclusion that word order differences involving verb forms and adverbs is a function of verb movement 'around' the adverbs, found in a rigidly fixed sequence).

The logic of the argument is the following: the differences involving the position of the same verb form across varieties, or of two verb forms within the same variety, can be stated in a simple and restrictive way if a single hierarchy of AdvPs is assumed, and if the verb is taken to rise to one (or more) of the different head positions interspersed in the sequence of AdvPs, with variations depending on the specific verbal form and variety:

(1) ... — AdvP<sub>1</sub> — AdvP<sub>2</sub> — AdvP<sub>3</sub> — AdvP<sub>4</sub> ... V

In either case, it is expected that if a verb can be found to the left of a certain AdvP, say AdvP<sub>2</sub> of (1), then it will also be found to the left of all lower AdvPs (AdvP<sub>3</sub> and AdvP<sub>4</sub> of (1)).

An analysis which instead freely adjoined AdvPs to maximal projections to the left and to the right of a verb would make it accidental that if AdvP<sub>2</sub> (of (1)) can only be adjoined to the left of the verb (and not to its right), so must AdvP<sub>1</sub>. In such an analysis, the implication just mentioned is not naturally derivable, as the relative order of the verb and the adverbs does not interact with the relative order of the AdvPs among each other.

Subjecting various verbal categories to this probe will also reveal certain patterns which have gone unnoticed in the literature and which bear on the proper analysis of the relevant constructions.

The level of inquiry will necessarily be descriptive. We have not yet determined precisely the nature of the heads in between the various AdvPs (but even with the insight of the next chapters, the question of what triggers the movement to a particular position still remains to be understood).

**i) Infinitives in French and Italian.** As pointed out in Pollock (1989,412) and Belletti (1990,70ff) (lexical) infinitives in Italian rise more than the corresponding infinitives in French, resembling finite verbs.

Focussing on their relative order with respect to various classes of AdvPs, we may ask to which positions infinitives, in the two languages, rise obligatorily, and to which they rise in an apparently optional way.

From Engver's (1972) careful study on adverb/infinite order in (literary) French, and from Pollock (1989), one can draw the following conclusions for French:

(I) Infinitives apparently do not have to move obligatorily to any higher functional head, as they can follow all the AdvPs isolated in §1.2, just like past participles (cf. (1) and (3)-(4)).<sup>1</sup>

(II) Differently from past participles, they can optionally rise to various heads, up to the head between *plus* and *toujours*, but not any higher (cf. (2) and (3)):<sup>2</sup>

- (1)a Il faut très bien le loger 'it is necessary to stock it very well' (Engver 1972,74)  
 b La liberté de penser, et de mal penser.. 'the freedom to think and to think badly'  
 (Engver 1972,74)  
 c Tu a du beaucoup souffrir 'you had to suffer a lot' (Engver 1972,88)  
 d J'ai recommandé [...] de ne guère s'arrêter 'I recommended not to stop' (Engver 1972,28)  
 e Je pensais ne jamais te revoir 'I thought I would never see you again' (Engver 1972,25)  
 f Il faut toujours le loger 'it is necessary always to stock it' (Engver 1972,75)
- (2)a Il faut le loger bien 'it is necessary to stock it well' (Engver 1972,74)  
 b Le temps de répondre e de répondre mal.. 'the time to answer, and to answer badly'  
 (Engver 1972,98)  
 c Il a du souffrir beaucoup 'He had to suffer a lot' (Engver 1972,88)  
 d Car ce objet paraît ne vous préoccuper guère 'Because this object seems not to worry you'  
 (Engver 1972,28)  
 e J'ai cru n'arriver jamais 'I thought I would never arrive' (Engver 1972,26)  
 f Il faut le loger toujours 'it is necessary always to stock it' (Engver 1972,75)
- (3)a Je pensais ne plus te revoir/ \*ne te revoir plus  
 'I thought I would no longer see you/ see you no longer'  
 b Il voulait ne pas partir/ \*ne partir pas  
 'He wanted not to leave/ to leave not'

Even if Engver (1972) does not provide examples, *complètement* and *tout* can also be found either preceding or following an infinitive; as expected, given that they come between *toujours* and *bien*. See (4) and (5):

- (4)a Il faut complètement le refaire 'One must completely do it again'  
 b Il faut le refaire complètement 'One must do it again completely'

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<sup>1</sup>Actually, if we consider lower "lower" adverbs (like *tôt* 'early'), we see that even in French infinitives have to rise a little (but I will not pursue this question here):

- (i)a \*Il faut tôt se réveiller 'One must early wake up'  
 b Il faut se réveiller tôt 'One must wake up early'

<sup>2</sup>As noted in chapter 1, after Pollock (1989,413), there are speakers who allow the infinitive even to rise past *plus* (this is also true of one author (Montherlant) cited in Engver 1972, 22ff), but they appear to be a minority. It is interesting from our perspective that such oscillations among speakers occur at the "cutting points" of verb movement on the adverb hierarchy; not at any lower point (with the effect, say, that some speakers, but not others, allow the infinitive to the left of *bien*, while all speakers allow it to the left of *toujours*).

- (5)a Il faut tout faire très bien 'One must everything do very well'  
 b Il faut faire tout très bien 'One must do everything very well'

Concerning Italian, we mentioned Belletti's (1990,70ff) observation that infinitives in Italian appear to rise as high as finite verbs.

Considering their distribution with a number of adverbs in infinitival relatives (p.75f), she notes a complete parallelism with the movement of finite verbs. Just like finite verbs, they appear to necessarily rise past "lower" adverbs ((6)a, her (107)b), but to be able to remain to the right of sentential adverbs ((6)b, her (106)a), respectively):<sup>3</sup>

- (6)a\*?Ho trovato qualcuno a cui spesso affidare questo tipo di incarico (ok:...a cui affidare spesso...)  
 I found someone to whom often to assign this kind of task  
 b Cerco un uomo al quale possibilmente/forse presentare Maria  
 I'm looking for a man to whom if possible/perhaps to introduce Maria

If we extend our examination to other infinitival contexts (and to the rest of the "higher" adverbs of §1.3) an interesting contrast emerges. To begin with, while infinitives in *wh*-constructions behave essentially as finite verbs in their obligatory and optional movements, as Belletti observed, infinitives in subject and complement clauses appear to rise obligatorily to the highest head to which finite verbs rise only optionally. So, the infinitive in such clauses turns out to obligatorily precede 'speech act' AdvPs (and all AdvPs following in the hierarchy), whereas finite verbs rise to the left of *bene* 'well' obligatorily, but to the left of all higher AdvPs only optionally.<sup>4</sup> Compare (i) of fn.8 in chapter 5 below and (14)(16) of chapter 2 above with (7)-(8):

- (7)a Mi mette in imbarazzo, (\*francamente) disporre (francamente) di mezzi così limitati  
 'It embarrasses me frankly to have so limited means'  
 b Lo salvò, (\*per fortuna) godere (per fortuna) del loro appoggio  
 It saved him (fortunately) to avail himself (fortunately) of their support  
 c Lo lusingava, (\*probabilmente) conservare (probabilmente) la loro stima  
 It flattered him (probably) to maintain (probably) their esteem  
 d Lo elettrizzava, (\*ora) prendere (ora) l'iniziativa<sup>5</sup>  
 It excited him (now) to take (now) the initiative

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<sup>3</sup>Cf. also Rizzi (1982,103).

<sup>4</sup>Lonzi (1990,142ff) mentions some cases where the infinitive of a subject clause is preceded by an adverb, as in *meramente annuire (è da bambini)* 'to merely nod (is childish)', but this possibility seems restricted to 'focussing' adverbs, which can modify any constituent (cf. §1.7). To judge from Ojea López (1994, 414), infinitives (in subject and object clauses) in Spanish also rise obligatorily past adverbs which can remain to the left of finite verbs (cf. section iv below) and (i):

(i)a Protestar siempre no te va a ayudar (cf. \*Siempre protestar...)  
 'To always protest will not help you'

b Todos queremos marcharnos ahora (cf. \*...ahora marcharnos)  
 Lois (1989,43) gives comparable examples as marginal rather than ungrammatical.

<sup>5</sup>Zanuttini (to appear, chapter 4, fn.54) also notes that temporal adverbs like *ora* cannot precede such infinitives.

- e Non lo entusiasma, (\*forse) ottenere (forse) la loro fiducia  
 It did not arouse his enthusiasm (perhaps) to obtain (perhaps) their trust  
 f (\*Intelligentemente) rifiutarsi (intelligentemente) di firmare lo ha salvato  
 (Intelligently) to refuse (intelligently) to sign saved him

- (8)a (\*Francamente) esser (francamente) meno ricco, e meno importunato, vorrei!  
 (Frankly) to be (frankly) less rich, and less bothered, I would like  
 b (\*Purtroppo) essere (purtroppo) arrivato tra gli ultimi, detestava!  
 (Unfortunately) to have (unfortunately) arrived among the last, he hated  
 c (\*Probabilmente) essere (probabilmente) il migliore, avrebbe voluto!  
 (Probably) to be (probably) the best, he would have liked  
 d (\*Ora) avere (ora) il loro appoggio, avrei desiderato!  
 (Now) to have (now) their support, I would have liked  
 e (\*Forse) ottenere (forse) un risultato migliore, avrei preferito!  
 (Perhaps) to obtain (perhaps) a better result, I would have preferred  
 f (\*Astutamente) essermi (astutamente) rifiutato di firmare, vorrei!<sup>6</sup>  
 (Smartly) to have (smartly) refused to sign, I'd like

Notice that it cannot be claimed that the infinitive precedes all "higher" AdvPs because it moves to C°. Subject infinitives, and complement infinitives, in Italian (except for those under verbs of thinking and saying - Rizzi 1981, 1982,80) do not allow for Aux-to-COMP. See (9)-(10):

- (9) \*Esser Gianni disposto a restare ci meraviglia  
 It surprised us that G was willing to stay
- (10) \*Vorrei/preferirei/detesto/occorre/etc. esser Gianni disposto a restare  
 I would like/ would prefer/ hate/ it is necessary/ to be G. willing to stay

The head to which the infinitive rises in (7)/(8) has thus to be in the complement of C°.<sup>7</sup>

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<sup>6</sup>Note that these sentences all involve verbs not requiring their infinitival complement to be introduced by an overt (prepositional) complementizer. As Belletti (1990, 137,fn.63) pointed out, the clitic nature of infinitival complementizers could interfere with the presence of an adverb. Indeed, in general, no material can intervene between *di* or *a* and the following infinitive (Rizzi 1982,97ff), except in higher stylistic levels (cf. Cinque 1983,fn.13). In fact, given the latter possibility, it is tempting to reinterpret the ban against material intervening between the infinitival complementizer and the infinitive as not due to the clitic nature of the complementizer, but to the obligatory movement of the verb to the head immediately below C° (in non stylistically marked sentences).

The complement, in (8), is preposed (focalized) to prevent the pre-infinitival adverbs from being interpreted as modifiers of the matrix clause.

<sup>7</sup>When the infinitive moves to C°, in Aux-to-COMP constructions, all "higher" AdvPs expectedly follow the infinitive (and the nominative subject - cf. Belletti 1990,49; 1994a,36f): *L'aver io per fortuna/probabilmente/ ora/ forse/ stupidamente risposto in maniera brusca..* 'I fortunately/ probably/ ora/ perhaps/ stupidly having answered in a brusque manner ..' vs. *\*L'aver per fortuna/ probabilmente/ ora/ forse/ stupidamente io risposto in maniera brusca..* Cf. also *Should he unfortunately/ probably be angry,..* vs. *\*Should unfortunately/ probably he be angry* (Kayne 1984, 215). "Higher" adverbs analogously follow the finite verb moved to C° in V/2 contexts in West Germanic and in Scandinavian languages (unless they themselves move



Infinitival wh-interrogatives pattern with infinitival relatives in allowing the infinitive to stay to the right of "higher" AdvPs. See (11):

- (11)a Non so di chi (francamente) potermi (francamente) fidare  
I do not know whom (frankly) to be able (frankly) to trust  
b Credo di sapere a chi (per fortuna) poter (per fortuna) affidare i miei risparmi  
I think I know to whom (luckily) to be able (luckily) to entrust my savings  
c Si chiedeva di chi (probabilmente) potersi (probabilmente) maggiormente fidare  
He wondered whom (probably) to be able (probably) to trust  
d Non so da chi (ora) farmi (ora) aiutare  
I don't know by whom (now) get (now) myself helped  
e Mi chiedo perché (forse) non dimostrargli (forse) più fiducia  
I wonder why (perhaps) not to show him (perhaps) more trust  
f Non so se (intelligentemente) rifiutarmi (intelligentemente) di firmare, o no  
I don't know if (intelligently) to refuse (intelligently) to sign, or not

The presence of a focalized or (clitic) left dislocated phrase at the front of an infinitival complement sentence also permits the infinitive to stay lower (perhaps, with some degree of marginality). See (12):<sup>8</sup>

- (12)a Avrei preferito A GIANNI/ a Gianni (?francamente) non dover (francamente) affidare anche questo compito  
I would have preferred to G.(focus)/ (topic) (frankly) not to have (frankly) assigned this task too  
b Occorre A LORO/ a loro (?purtroppo) affidare (purtroppo) anche questo compito delicato  
It is necessary to them (focus)/(topic) (unfortunately) to (unfortunately) assign this delicate task too  
c Vorrei A LORO/ a loro (?probabilmente) non dover (probabilmente) rispondere delle mie azioni  
I would like to them (focus)/topic (probably) not to have (probably) to account for my acts  
d Avrei preferito A GIANNI/ a Gianni (?allora) poter (allora) affidare l'incarico  
I would have preferred to G. (focus)/ to G. (topic) to be able to assign this task  
e Avrei preferito A GIANNI/ a Gianni (?forse) poter (forse) affidare anche questo incarico  
I would have preferred to G. (focus)/ to G. (topic) (perhaps) to be able (perhaps)to assign this task as well  
f Avrei preferito A GIANNI/a Gianni (?intelligentemente) aver (intelligentemente) affidato tutti i miei risparmi  
I would have preferred to G. (focus)/to G. (topic) (intelligently) to have (intelligently) entrusted

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to Spec CP) - cf. Koster 1978; Taraldsen 1983; Platzack 1986; Vikner 1995; Áfarli 1995. For the position of the subject w.r.t. AdvPs in Scandinavian, see § 5.2 below.

<sup>8</sup>Subject infinitival clauses appear to allow for dislocated phrases only very marginally. Cf. (i)b with (i)a (a case of focalization):

- (i)a A GIANNI scrivere (non a Mario) sarebbe opportuno!  
To G. (focus) (not to M.) to write would be in order  
b \*?Quell'informazione, averla già avuta ci dà un vantaggio  
That piece of information, to have already had it gives us an advantage

all of my savings

Finally, it was noted in Cinque (1983) that (in all styles) some "higher" adverbs can intervene between an infinitive and a real preposition taking it as a complement, differently from the case of prepositional complementizers. See, for example, (13)-(14):

- (13)a Gli hanno parlato più volte senza forse riuscire a convincerlo  
 They talked to him a few times without perhaps managing to convince him  
 b \*Sono riuscito a forse convincerlo  
 I managed to perhaps convince him

- (14)a Si è voluto dimettere per mai più dover subire ingiurie simili  
 He decided to resign never to have to put up with such affronts again  
 b \*Cercherò di mai più rivedere quell'individuo  
 I will try never to see that person again

ii) **Past participles in some Romance varieties.** As noted in §2.2 above, active past participles rise obligatorily to distinct heads in different Romance varieties; hence are (obligatorily) found to the left of different classes of adverbs in a way that is consistent with the fixed order of adverbs seen above. While in French, as seen, an active past participle does not need to (cannot) rise past *bien* 'well' (only past *tôt* 'early', and few other adverbs, - Togeby 1984,208), in most other varieties it must. In Sardinian, it rises past *bene* but need not rise any higher. In Italian, instead, it must rise higher than *tutto* 'everything' (and *bene* 'well' and *presto* 'early'). In Bellunese, it must apparently rise obligatorily to the left of *del tut* 'completely', and in Catalan higher still.<sup>9</sup>

Various (northern Italian) Romance varieties appear to differ also with respect to the heads to which the (active) past participle rises 'optionally'. See (15), which summarises the findings relative to some such varieties:<sup>10</sup>

- 
- 9
- Bellunese:* (i)a L\*ha del tut pers la testa 'He completely lost his mind'  
 b L'ha pers del tut la testa 'He lost completely his mind'  
 c L'è sempre 'gnest 'He has always come'  
 d ??L'è 'gnest sempre 'He has come always'  
 e No l'è mia pi andat 'He has not any longer gone'  
 f \*No l'è mia andat pi 'He has not gone any longer'
- Catalan:* (ii)a \*No he mai vist na Maria ('I haven't never seen M.)  
 b No he vist mai na Maria ('I haven't seen never M.)  
 c \*No he pus(maiorc)/mes(maiorc/valenc) dormit ('I haven't any longer slept')  
 d No he dormit pus/mes ('I haven't slept any longer')  
 e No he pas vist na Maria ('I have not seen M.)  
 f No he vist pas na Maria ('I have seen not M.)

<sup>10</sup>Part of the data concerning Pavese, Milanese and Piedmontese are from Zanuttini (to appear, chapter 3, table 143). For the remaining facts of these varieties I am indebted to Andrea Moro, Massimo Vai and Alda Rossebastiano, respectively. For Paduan, I thank Paola Beninca'; for Trevisan Antonietta Bisetto; for Bellunese Nicola Munaro; for Venetian Cecilia Poletto and Delfina Mayer.

(15)

Italian: ✓ mica ✓ già ✓ più ✓ sempre ✓ completamente ✓ tutto \* bene \*  
 Venetian: \* miga \* già ?? più ? sempre ✓ del tuto ✓ tuto \* ben \*  
 Trevisan: \* mia \* za ✓ più ✓ sempre ✓ del tuto ?? tuto \* ben \*  
 Paduan: \* miga ✓ za ✓ più ✓ sempre ✓ del tuto \* tuto \* ben \*  
 Bellunese: \* mia \* za \* pi ?? sempre ✓ del tut \* tuto \* ben \*  
 Pavese: ✓ mia ✓ giamò ✓ pü ✓ sempar ✓ no ✓ dal tut \* tut (cos) \* ben \*  
 Milanese: \* minga ✓ gemò ✓ pü ✓ semper ✓ no \* dal tüt \* tüscòs/tüt \* ben \*  
 Piedmontese: \* pa \* già \* pi nen ✓ sempre ✓ dal tüt ✓ tüt \* ben \*

Passive past participles appear to be able to rise lower than active ones (under certain circumstances). In Italian, for example, while, as noted, active past participles cannot be to the right of *tutto* and *bene* (cf. (16)a-c), passive ones can, in generic contexts (cf. (17)a-c):

(16)a \*Ho tutto bene arrangiato  
 I have everything well arranged  
 b \*?Ho tutto arrangiato bene  
 I have everything arranged well  
 c Ho arrangiato tutto bene  
 I have arranged everything well

(17)a (?) Per fortuna, è stato tutto bene arrangiato  
 Luckily, has been everything well arranged  
 b Per fortuna, è stato tutto arrangiato bene  
 Luckily, has been everything arranged well  
 c Per fortuna, è stato arrangiato tutto bene  
 Luckily, has been arranged everything well

Apparently similar facts hold in Rumanian (cf. (18)-(19) - Carmen Dobrovie-Sorin, p.c.) and Spanish (cf. (20)-(22) - Lois 1989,34,40).

While active past participles cannot be separated from finite auxiliaries, passive past participles can:<sup>11</sup>

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<sup>11</sup>Very few adverbs (*mai* 'again', *și* 'even', *tot* 'still') can in fact be found between the auxiliary and the active past participle in Rumanian; but they have been argued to be clitic, like the auxiliary (cf. Dobrovie-Sorin 1990, 1994,26).

Following an observation by Celia Jakubowicz, Lois notes (p.34) that in Spanish too (certain) adverbs can intervene between the auxiliary and the active past participle, if heavily stressed (*Juan ha SIEMPRE hecho lo que ha querido* 'J. has always done what he liked').

No adjacency is required with infinitival auxiliaries. See (i), from Lois 1989,58). Cf. also Suñer 1987,684):

(i)a (El) no haberla nunca visto (The) not having ever seen her'  
 b (El) haberlos siempre invitado (The) having always invited them'

Some also allow adverbs to intervene with polysyllabic finite auxiliaries (*había, habría, hubiera*, etc.). Cf., for example, *Platero me había ya saludado con un rebuzno* 'P. had already greeted me with a bray' (Suñer 1987,685), though this is not possible, apparently, with *mas* (*\*Juan no había mas vuelto* 'J. had no longer returned').

- (18)a \*Am tot organizat 'I have everything organized'  
 b \*N-am niciodata citit cartea 'I have never read the book'

- (19)a A fost tot organizat 'Everything has been organized'  
 b Cartea n-a fost niciodata citit 'The book has been never read'

(20)\*Juan (no) ha/había nunca/evidentemente/siempre/bien/pues/todavía/ya visto a María  
 'J. has/had (not) ever/evidently/always/etc. seen M.'

vs.

(21) Juan no ha/había visto nunca/evidentemente/ siempre/ pues/ todavía/ ya a María

(22) Los estudiantes (no) fueron nunca arrestados (por la policía)  
 han sido siempre  
 desgraciadamente  
 pues  
 todavía  
 ya

The contrast between (21) and (22) might be interpreted as evidence that passive past participles rise less than active ones, but this is unclear. Alongside the order in (21), given in Lois (1989,34), in which the active past participle is found to the left of the various adverb classes, the order in (23) also appears possible in which the auxiliary and the adjacent past participle have apparently remained lower, to the right of the same classes of AdvPs:

(23) Juan nunca/evidentemente/siempre/bien/pues/todavía/ya ha/había visto a María

This may suggest that the contrast is due to some other property distinguishing the two types of participles, one by which active, but not passive, past participles must be adjacent to the finite auxiliary.

**iii) Absolute past participles, present participles and gerunds in Italian.** Absolute past participles in Italian appear to move to distinct positions depending on whether they enter a control construction ((24)a) or a nominative subject construction ((24)b). For the latter, there is evidence that they move to C° (See Kayne 1989a; Cinque 1990,fn.25; Belletti 1990):

(24)a Arrivato puntuale, Gianni si indispettì del nostro ritardo  
 Having arrived punctual, G. got annoyed at our delay

b Arrivato puntuale anche Gianni, potemmo partire subito  
 Even G. having arrived punctual, we could leave immediately

We should thus expect the latter to precede all AdvPs, even the highest, which is what we find:<sup>12</sup>

- (25)a Arrivato *fortunatamente* anche Gianni, potemmo partire subito  
Even G. having arrived luckily, we could leave immediately  
b \**Fortunatamente* arrivato anche Gianni, potemmo partire subito  
Luckily even G. having arrived, we could leave immediately  
c Arrivato anche Gianni *fortunatamente* \*(in tempo), potemmo partire subito  
Even G. having arrived luckily (in time), we could leave immediately
- (26)a Arrivato *evidentemente* anche Gianni, hanno deciso di partire  
Even G. having arrived evidently, they decided to leave  
b \**Evidentemente* arrivato anche Gianni, hanno deciso di partire  
Evidently even G. having arrived, they decided to leave  
c Arrivato anche Gianni *evidentemente* \*(in tempo), hanno deciso di partire  
Even G. having arrived evidently (in time), they decided to leave
- (27)a Arrivato *allora* anche Gianni, potemmo partire alle cinque  
Even G. having arrived then, we could leave at five  
b \**Allora* arrivato anche Gianni, potemmo partire alle cinque  
Then even G. having arrived, we could leave at five  
c Arrivato anche Gianni *allora*, potemmo partire alle cinque  
Even G. having arrived then, we could leave at five
- (28)a Arrivato *forse* anche Gianni, Maria decise di restare  
Even G. having arrived perhaps, M. decided to stay  
b \**Forse* arrivato anche Gianni, Maria decise di restare  
Perhaps even G. having arrived, M. decided to stay  
c Arrivato anche Gianni *forse* \*(in ritardo), Maria decise di restare  
Even G. having arrived perhaps (late), M. decided to stay
- (29)a Arrivato *intelligentemente* anche Gianni, poterono aiutarlo  
Even G. having arrived intelligently, they could help him  
b \**Intelligentemente* arrivato anche Gianni, poterono aiutarlo  
Intelligently even G. having arrived, they could help him  
c Arrivato anche Gianni *intelligentemente* \*(puntuale), poterono aiutarlo  
Even G. having arrived intelligently (punctual), they could help him

As expected, the past participle in the Aux-to-COMP absolute construction also precedes all lower AdvPs (I omit relevant examples).

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<sup>12</sup>For pragmatic reasons, it is difficult to construct examples with speech act adverbs (*francamente* 'frankly', etc.). The examples c. show that no adjacency between the past participle in C and the subject is required (and, in fact, possible) if no other constituent follows. This appears related to their impossibility in post-finiteV position when no other constituent follows (\**Gianni arriva fortunatamente* 'G. arrives luckily'). They become possible if "right-dislocated".

As shown by (27)c, an exception is represented by speech time adverbs (see §1.2). Their well-formedness in final position may be related to their occurrence also as VP-final adverbs (cf. §1.3).

In the control construction, instead, the past participle can follow (as well as precede) all "higher" AdvPs (of §1.2), which is compatible with it not necessarily moving to C. See:<sup>13</sup>

- (30)a *Fortunatamente* arrivato in anticipo, Gianni potè rimediare  
 b Arrivato *fortunatamente* in anticipo, Gianni potè rimediare  
 Having luckily arrived early, G. could remedy
- (31)a *Evidentemente* attratto dalla prospettiva del guadagno, Gianni accettò  
 b Attratto *evidentemente* dalla prospettiva del guadagno, Gianni accettò  
 Being attracted by the prospect of earning money, G. accepted
- (32)a *Probabilmente* arrivato in anticipo, Gianni se ne riandò  
 b Arrivato *probabilmente* in anticipo, Gianni se ne riandò  
 Having probably arrived early, G. went away again
- (33)a *Anche allora* arrivato in anticipo, Gianni si sedette  
 b Arrivato *anche allora* in anticipo, Gianni si sedette  
 Having even then arrived early, G. sat down
- (34)a *Forse* arrivato in anticipo, Gianni se ne riandò  
 b Arrivato *forse* in anticipo, Gianni se ne riandò  
 Having perhaps arrived early, G. went away again
- (35)a *Saggiamente* arrivato in anticipo, Gianni potè rimediare  
 b Arrivato *saggiamente* in anticipo, Gianni potè rimediare  
 Having wisely arrived early, G. could remedy

If we consider the "lower" pre-VP AdvPs of §1.2, we can observe the same "cutting point" characterizing active past participles. Absolute past participles can be found to either precede, or follow, habitual adverbs, negative adverbs, *già*, *più*, *sempre* and *completamente*, but they have to precede *bene*. See:

- (36)a *Solitamente* arrivato sempre puntuale, Gianni da quella volta arrivò in ritardo  
 b Arrivato *solitamente* sempre puntuale, Gianni da quella volta arrivò in ritardo  
 Having usually arrived always punctual, G. since then arrived late
- (37)a *Non affatto* arrivato sempre puntuale, Gianni da quella volta arrivò tardissimo<sup>14</sup>  
 b Arrivato *non affatto* sempre puntuale, Gianni da quella volta arrivò tardissimo  
 Having not at all always arrived punctual, G. since then arrived very late

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<sup>13</sup>The fact that the b. examples are perhaps slightly more natural may suggest that movement to C is preferred even in the control construction.

<sup>14</sup>Possibly due to its presuppositional content, *mica* is incompatible with subordinate clauses not carrying the primary assertion of the sentence (in Ertshik-Shir's 1973 sense); whence the ungrammaticality of: *\*(Non) mica arrivato sempre puntuale, Gianni si scusò* 'Not arrived always punctual, G. excused himself'.

- (38)a *Già* arrivato verso le sei, Gianni decise di restare  
 b Arrivato *già* verso le sei, Gianni decise di restare  
 Having already arrived towards six o'clock, G. decided to stay
- (39)a Non *più* arrivato in ritardo, Gianni, da allora, fu apprezzato da tutti  
 b Arrivato non *più* in ritardo, Gianni, da allora, fu apprezzato da tutti  
 Having no longer arrived late, G., since then, was appreciated by everybody
- (40)a *Sempre* arrivato puntuale, Gianni quella volta sorprese tutti<sup>15</sup>  
 b Arrivato *sempre* puntuale, Gianni quella volta sorprese tutti  
 Having always arrived punctual, G. that time surprised everybody
- (41)a (Pur) *completamente* bruciata, la torta fece la sua bella figura  
 b (Pur) bruciata *completamente*, la torta fece la sua bella figura  
 (although) being completely burned, the cake made a good impression
- (42)a *\*Bene* arrivata, la cassa si aprì senza difficoltà  
 b Arrivata *bene*, la cassa si aprì senza difficoltà  
 Having arrived well, the chest opened with no difficulty

Similar facts are found with present participles and gerunds. See (43)-(54) and (55)-(58):<sup>16</sup>

- (43)a Gli aspetti fortunatamente riguardanti il nostro caso  
 b Gli aspetti riguardanti fortunatamente il nostro caso  
 The aspects luckily concerning our case
- (44)a Gli aspetti evidentemente riguardanti il primo dei due casi  
 b Gli aspetti riguardanti evidentemente il primo dei due casi  
 The aspects evidently concerning the first of the two cases
- (45)a Le disposizioni probabilmente concernentici più da vicino  
 b Le disposizioni concernentici probabilmente più da vicino  
 The dispositions probably concerning us most closely
- (46)a L'edificio allora sovrastante la piazza del paese  
 b L'edificio sovrastante allora la piazza del paese  
 The building then dominating the village square
- (47)a Il ritratto forse raffigurante la compagna dell'artista

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<sup>15</sup> *Mai*, when it precedes the past participle, is incompatible with *non*, differently from *più* (cf. (i)a). This is possibly related to its being an inherently negative element (differently from *più* - cf. chapter 1, fn.11)

(i)a (*\*Non*) mai arrivato puntuale in vita sua, quella volta Gianni sorprese tutti  
 b Non arrivato mai puntuale in vita sua, quella volta Gianni sorprese tutti  
 Not having ever arrived punctual in his life, G. that time surprised everybody

<sup>16</sup> Present participles in French appear instead to obligatorily precede all adverbs. Cf. Kayne (1975,20f).

- b Il ritratto raffigurante forse la compagna dell'artista  
The painting perhaps representing the artist's partner
- (48)a I pannelli stupidamente simboleggianti il potere del regime  
b I pannelli simboleggianti stupidamente il potere del regime  
The panels stupidly symbolizing the government power
- (49)a Gli argomenti normalmente riproducenti i risultati voluti  
b Gli argomenti riproducenti normalmente i risultati voluti  
The arguments normally reproducing the desired results
- (50)a I documenti già riguardanti il nostro caso  
b I documenti riguardanti già il nostro caso  
The documents already concerning our case
- (51)a Gli argomenti non più dirimenti le questioni di fondo  
b Gli argomenti non dirimenti più le questioni di fondo  
The arguments no longer settling the fundamental questions
- (52)a ?I valori sempre determinanti lo stesso risultato  
b I valori determinanti sempre lo stesso risultato  
The values always determining the same result
- (53)a ?Gli unici risultati completamente inficanti l'argomento  
b Gli unici risultati inficanti completamente l'argomento  
The results completely impugning the argument
- (54)a \*Le descrizioni bene riproducenti l'esperimento  
b Le descrizioni riproducenti bene l'esperimento  
The descriptions well reproducing the experiment
- (55)a Me ne andai    francamente    non sospettando nulla  
                         fortunatamente  
                         evidentemente  
                         probabilmente
- b Me ne andai, non sospettando    francamente    nulla  
   fortunatamente  
   evidentemente  
   probabilmente
- 'I left frankly/luckily/evidently/probably not suspecting anything
- (56)a Se ne andava,    allora                    non sospettando nulla  
                         forse  
                         stupidamente  
                         solitamente



b Se ne andava, non sospettando allora nulla  
 forse  
 stupidamente  
 solitamente

'He used to leave then/perhaps/stupidly/usually not suspecting anything

(57)a Cominciava già travisando lo spirito dell'iniziativa  
 non più  
 sempre  
 completamente

b Cominciava travisando già lo spirito dell'iniziativa  
 non più  
 sempre  
 completamente

'He used to start already/no longer/always/completely distorting the spirit of the initiative

(58)a \*Cominciava bene interpretando lo spirito dell'iniziativa

b Cominciava interpretando bene lo spirito dell'iniziativa

'He used to start interpreting well the spirit of the initiative

**iv) Finite verbs in some Romance varieties.** In the unmarked case, finite verbs in Italian precede *mica* and all adverbs following *mica* (*già, più, ancora, sempre, appena, subito, brevemente, quasi, completamente, bene, presto*), while preceding or following all higher adverbs (*rapidamente, spesso, di nuovo, di solito, stupidamente, forse, obbligatoriamente, volentieri, necessariamente, ora, probabilmente, evidentemente, fortunatamente, francamente*).<sup>17</sup>

In this they appear to contrast with finite verbs in Rumanian and Spanish, which typically follow a number of "lower" adverbs (cf. (59)-(61)). But this difference remains to be better investigated:

(59)a Nu mai cred că e posibil (Dobrovie-Sorin 1994,10)

b \*Nu cred mai că e posibil

'I no longer think that it is possible'

(60)a Prea poate spune ce vrea (Dobrovie-Sorin 1994,26)

b \*Poate prea spune ce vrea

'(He) can too much say what (he) wants'

(61)a Juan a menudo/rara vez está deprimido (Lois 1989,23)

'J. often/rarely is depressed'

b El niño casi/apenas camina

'The child almost/just walks'

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<sup>17</sup>In more careful styles of Italian finite verbs can however remain much lower, following *completamente* 'completely' (and all adverbs higher than *completamente*), though not *bene* 'well' nor *presto* 'early' (cf. chapter 5, fn.8, and relative text).

- c Juan en seguida/inmediatamente piensa que nadie lo quiere  
'J. soon/immediately thinks that no one loves him'
- d Juan ya llegó  
'J. already has arrived'

## CHAPTER 3

### On the Order of Clausal Functional Heads<sup>1</sup>

#### 3.1 Introduction

3.2 Evidence from the order of non-'closing' (agglutinating) suffixes<sup>2</sup>

3.3 Evidence from the order of 'closing' (inflectional) suffixes and auxiliaries

3.4 Evidence from the order of functional particles

3.5 Evidence from mixed cases

3.6 Some remarks on prefixes, derivation and inflection

3.7 Towards a universal hierarchy of functional heads (a first approximation)

Appendix: A synopsis of the orders of overt functional heads in individual languages

**3.1 Introduction.** The aim of this chapter is to try and determine the order of clausal functional heads independently of any considerations involving AdvPs, and their relative order.

We will look at different types of evidence bearing on this question; namely, the order of 'non-closing' (agglutinating) suffixes, the order of 'closing' (inflectional) suffixes and auxiliaries, the order of functional particles, and the order of various combinations of these elements in mixed cases.

The picture that will emerge is the following.

If we ignore agreement and negation, the partial relative orders of functional heads for which there is overt evidence (of one of the above four kinds) in different languages appear to be compatible with a single overall order. In other words, if we put together the partial relative orders of functional heads found in different languages into a single, more comprehensive, order, we seem to get no contradiction, at least at a more careful examination.

I take this to be significant, i.e. non accidental.

In the interpretation I suggest, this is so because the partial orders found overtly in different languages are subsequences of a single universal sequence of functional heads, present in all languages.

As this conclusion is far from being obvious (or necessarily correct), I return in the next chapters to some considerations which may support it.

The 'generative' and 'functional'/'typological' literature on the order of suffixes is quite rich, and some

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<sup>1</sup>The material discussed in this chapter was presented in lectures at the Universities of McGill, Lund, Groningen, Amsterdam and Rome. I am indebted to those audiences for comments and criticism, and in particular to Mark Baker, Christer Platzack, Lisa Travis, Sten Vikner, and Jan Wouter Zwart. I also thank Paola Beninca, Michel DeGraff, Richard Kayne and Cecilia Poletto for comments to an earlier version of the chapter.

<sup>2</sup>With 'closing'/'non-closing' suffixes I refer, after Nida (1974<sup>12</sup>,85), to those suffixes that close off/do not close off the word, thus disallowing/allowing further suffixation (cf. also fn.44 below).

of it explicitly uses the order of suffixes to motivate a particular ordering of functional heads, under (a generalized version of) Baker's Mirror Principle (cf. Pollock 1989, 1993, Belletti 1990, Chomsky 1995, chapter 2, and much subsequent work of the early Nineties).<sup>3</sup>

In §3.2, §3.3 and the appendix to this chapter (which gives a synopsis of the orders of overt functional heads in selected languages), I review some of this work, with no pretense to exhaustiveness, nor detail, merely giving some illustrative examples on which conclusions about the order of functional heads have been, or can be, based, referring to the cited works for fuller discussion.

The only goal of this survey is to see whether the different orders of functional heads motivated for each particular language by its suffix order, under the Mirror Principle, are compatible with one another, thus lending support, under a certain view, to the postulation of a single overall order valid for all languages.

In §3.4, I turn to the evidence from free functional morphemes (particles), and in §3.5 to the evidence from mixed cases. We will see that the orders suggested by such cases are compatible with that based on the order of suffixes.

§3.6 will discuss, somewhat speculatively, the status of prefixes *vis-à-vis* the (generalized) Mirror Principle. A general discussion, and a specific overall order of functional heads, compatible with the different orders motivated separately for each language, will be presented in §3.7.

In this chapter, I deliberately ignore agreement and negation. They appear to occur in more than one position (sometimes simultaneously), and are thus a potential source of apparent counterexamples to a fixed hierarchy of heads. Their case will be taken up in chapter 5.

### 3.2 Evidence from the order of 'non-closing' (agglutinating) suffixes.

In this section, I consider the case of non-closing' suffixes (namely, suffixes which can be stacked one on to the other), beginning with Korean.

In the complex verbal form in (1), as described by Sohn (1994, §2.1.3), *-hi* is a suffix marking passive voice, *-si* a subject honorific suffix, *-ess* a suffix marking either anterior or past tense (the pluperfect, or anterior of the past, when duplicated), *-keyss* a suffix marking 'conjunctural' (epistemic) modality; *-sup* an addressee honorific suffix, and *-ti* an 'evidential' mood suffix (cf. fn.14 below) used to recall "a fact that one has witnessed" (p.342) (Sohn calls it 'retrospective mood'). Finally, the suffix *-kka* marks the speech act mood 'interrogative' (contrasting with 'declarative' *-(ta)*, and other speech act moods):<sup>4</sup>

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<sup>3</sup>In the early work, the inflected word was taken to be literally built up in the syntax via successive adjunctions. If words with inflectional features are more plausibly taken to come already formed from the lexicon, with inflectional features to be 'checked' during the syntactic derivation (Chomsky 1995, chapter 3, pp.195f), Baker's generalization retains its validity if the order in which the features are checked reflects the order in which they were assigned to the word during the morphological derivation (which remains to be determined precisely. Cf. Speas 1991b, 409ff. and §3.6 below).

An advantage of this approach is that it makes it more natural that derivational suffixes (which even more plausibly originate in the lexicon) should fall under the Mirror Principle. In fact, in many languages "lower" functional heads are often realized with derivational rather than inflectional (or agglutinating) suffixes.

As derivational suffixes are closer to the stem than inflectional (or agglutinating) ones, certain predictions follow for the order of the functional heads to which they correspond: an issue to which I return in §3.6.

<sup>4</sup>Yoon (1990) treats declarative *-ta* as a kind of complementizer, while Ahn and Yoon (1989), Bhatt and Yoon (1991), and Cho (1994) treat it as a sentence mood verbal suffix, followed, when embedded, by the

- (1) Ku pwun-i cap - hi - si - ess - ess - keyss - sup - ti - kka ?  
 The person-NOM catch-PASS-AGR-ANT-PAST-EPISTEM-AGR-EVID-Q  
 'Did you feel that he had been caught?'

As shown by (2) and (3), also from Sohn (1994,354), another class of suffixes may intervene between evidential and speech act mood suffixes (which Sohn calls 'apperceptive mood' suffixes). As they carry a sense of "surprise" (p.353f), thus introducing an evaluation of the proposition by the speaker, I will call them 'evaluative mood' suffixes:

- (2) Ku say-ka cwuk-ess-keyss-kwun-a  
 That bird-NOM die-ANT-EPISTEM-EVALUAT-DECL  
 'That bird must have died!'
- (3) Minca-nun ttena-ss-te-kwun-yo  
 M.-TOP leave-PAST-EVID-EVALUAT-POLITE  
 'I noticed that M. had left!'

If we ignore the honorific suffixes *-si-* and *-sup-* in (1), and the 'politeness' suffix *yo* in (3), which are plausibly agreements (cf. the 'addressee agreement' of Basque -Oyarçabal 1993), the relative order of the Korean suffixes in (1)-(3), under the Mirror Principle, provides evidence for the order of the functional heads shown in (4):

- (4) Mood<sub>speech act</sub> > Mood<sub>evaluative</sub> > Mood<sub>evidential</sub> > Modality > T(Past) > T(Anterior) > Voice (>V)

Turkish is another language with rich agglutinating morphology. The examples shown in (5) point to the order of suffixes in (6), which, again, under the Mirror Principle, suggests the relative order of functional heads shown in (7):

- (5)a Ali gel-me-di-mi (Tura 1981,317)  
 A. come-neg-PAST-Q  
 Hasn't A. come?
- b Oku - y - abil - ecek - ti - m (Jaklin Kornfilt, p.c.)  
 read-y-MOD-FUT-PAST-1sg  
 'I was going to be able to read/ I would be able to read'
- c oku - n - uyor (Jaklin Kornfilt, p.c.)  
 read-PASS-PROG  
 'It is being read'

- (6) V-PASS-PROG/MOD-FUT-PAST-Q<sup>5</sup>

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general subordinator *-ko*.

I leave open here the question whether these speech act moods should be identified with the head of Rizzi's (1995) ForceP, within the complementizer "space", returning to the question in chapter 4 (§4.5).

<sup>5</sup>Also see Aksu-Koç and Slobin (1985), who claim (p.841) that the sequence of suffixes in Turkish conforms to the order (stem-)reflexive-reciprocal-causative-passive-potential-negation-necessitative-tense-conditional-person-number.

b Mood<sub>speech act</sub> > T(Past) > T(Future) > Modality / Aspect<sub>progressive</sub> > Voice > V<sup>6</sup>

The Turkish evidence for Modality 'lower' than Tense seems, at first, to contrast sharply with the evidence from Korean for Modality 'higher' than Tense (cf. (1)). The contrast, however, is only apparent. The modals in the Korean and Turkish sentences (1) and (5)b are two different types of Modals. The former is epistemic, the latter a root modal.

Although this traditional semantic difference is generally not related to a difference in structure, some evidence exists that the two modals do not occupy the same position, and that epistemic modals are higher than root modals. In double modal varieties of English, like Scots English (Brown 1992,76f), and in various American varieties (cf. Boertien 1986, Battistella 1991, Cunningham 1992,46f and Thrainsson and Vikner 1994, among others), the first modal has an epistemic, and the second a root sense:<sup>7</sup>

- (8)a He should can do it (=he likely can do it) (from Brown 1992,77)  
 b He must can do it (=he surely can do it)

Confirming evidence comes from the richly agglutinating language, Una, an Irian Jaya language of New Guinea. According to Louwrese (1988), the 'probabilitiv mode' suffix is outside absolute tense suffixes, which in turn are outside 'aptative' or 'abilitative' modal suffixes. Cf. (9):<sup>8</sup>

- (9)a Er bin - kwan - de - darib                      (Louwrese 1988, 55)  
       She go-FUT-3sg-PROBAB  
       'She might go'  
 b Ni buk - ti - nyi                                      (Louwrese 1988, 25)

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<sup>6</sup>Although the modal suffix cannot be directly affixed on to the progressive aspect suffix (requiring instead the insertion of an auxiliary), the relative order of the corresponding heads is arguably Mod > Asp<sub>progressive</sub>. Cf. (64)b below.

<sup>7</sup>In the American varieties discussed by Boertien and Battistella the first modal (*might*) shows an exceptional pattern with respect to negation, inversion, and tag-formation, which suggests that it may have been reanalysed as an adverb (= maybe), though problems remain (for discussion, cf. Roberts 1993,333,fn.5).

<sup>8</sup>Another (Papuan) language apparently showing epistemic modal suffixes outside the (future) tense suffix (and inside speech act suffixes) is Tauya:

- (i)a Ni - ?e - rafo - ?a                              (MacDonald 1990, 207)  
       eat-3sgFUT-DUB-DECL  
       'Maybe he'll eat'

Differently from MacDonald (1990), I have rendered the suffix ?a as DECL(arative) rather than IND(icative), as it alternates with such other speech act suffixes as 'interrogative', 'exclamative', 'imperative', etc.

A "probable mood" suffix also occurs to the right of present and past tense suffixes in Oksapmin, of New Guinea (ii), and in the Sino-Tibetan language Garo (cf. (iii)):

- (ii) go haanip di-kin-o poripti                      (Lawrence 1972,33)  
       you person eat.PAST-PROBABLE-quotation marker say then  
       '"You probably attacked the person" we say, then..'  
 (iii) anti-ci re'an-aha-kon                              (Bybee 1985,180)  
       market-to go-PAST-PROBABLE

I sit-ABIL-PRES  
'I can sit'

Again, under the Mirror Principle, this suggests the order of heads in (10):

(10) ..Mod<sub>epistemic</sub> > T(absolute) > Mod<sub>root</sub><sup>9</sup>

Chinese, though far from being a richly agglutinating language, nonetheless displays some cases of 'stacked' suffixes, such as the 'completive' and 'perfect' suffixes shown in (11) (from Smith 1987,96ff):<sup>10</sup>

(11) Ta zuotian xie-wan-le yifeng xin  
He yesterday write-compl-perf a letter  
'He wrote a letter (to the end)'

The Korean, Turkish, Una, Tauya, and Chinese examples seen above are thus compatible with the single overall order shown in (12):

(12) Mood<sub>speech act</sub> > Mood<sub>evaluative</sub> > Mood<sub>evidential</sub> > Mod<sub>epistemic</sub> > T(Past) > T(Future) > Mod<sub>root</sub> > T(Anterior) > Aspect<sub>perfect</sub> > Aspect<sub>progressive</sub> / Aspect<sub>completive</sub> > Voice (> V)<sup>11</sup>

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<sup>9</sup>As a matter of fact, there is evidence even internal to Korean for the order Mod<sub>epistemic</sub> > T > Mod<sub>root</sub>. Alongside (3) (showing the order Mod<sub>epistemic</sub> > T), one also finds cases such as (i) (from Yoon 1990, 358), which arguably suggest the order T > Mod<sub>root</sub>:

(i) Chelswu-nun keki ka-ci mos ha-ess-ta  
C. TOP there go-ci cannot do-PAST-DEC  
'C. could not go there'

In (i), the verb (with the nominalizer *-ci*) is followed by a (negative) root modal *mos*, in turn followed by the Tense and 'speech act' Mood suffixes attached to the dummy verb *ha* 'do' (the Korean equivalent of *do*-support in English).

This 'analytic' verbal sequence can be accounted for if *mos* is taken to be a free head morpheme blocking adjunction of the lexical verb *ka* 'go', and its further movement to Tense and Mood (thus requiring insertion of *ha*), and if the VP is raised past *mos* and the resulting constituent is raised past *ha-ess-ta*, in the way characteristic of OV languages as analysed in Kayne (1994, §5.5).

If this interpretation of the facts is correct, root Modality, then, is lower than (Tense and) epistemic Modality even in Korean.

<sup>10</sup>"*Le* indicates termination rather than completion" (Smith 1987,96); i.e. stopping an activity with a natural end point at an arbitrary point. Completion, marked by *-wan-*, means instead stopping at the natural end point of that activity. As Smith notes, (11) without *-wan-* (but not (11)) can be followed by a sentence like *jintian hai zai xie* 'today still PROG write (and today he is still writing it)'. For further discussion, see chapter 4.

<sup>11</sup>The slash between progressive and completive aspect is meant to express the fact that no evidence based on suffixes exists in the languages examined so far to determine their relative order. I return to this question in chapter 4. On the order perfect aspect > progressive aspect, also underdetermined here, see the next

In support of this first conclusion, we may add Bybee's (1985) typological observation that the order of suffixes appears to be consistent across languages (p.201), with aspect markers closer to the stem than tense and mood markers (p.34).<sup>12</sup>

As to the relative order of tense and mood, Bybee says (p.35) that in her sample tense is generally closer to the stem than mood, with some exceptions. Under mood, however, she collapses 'speech act' mood (imperative, interrogative, optative, etc.), evidentials, root and epistemic modality, and 'grammatical mood' (subjunctive vs. indicative): a heterogeneous class of elements, which in fact appear to occupy distinct positions (some lower, and some higher, than Tense). This, I would argue, is at the basis of the exceptions she alludes to, and of the apparent inconsistency she mentions between her generalization on suffix ordering and Foley and Van Valin's (1984). Once finer distinctions are introduced, and the terminology is clarified, Bybee's and Foley and Van Valin's generalizations appear to become consistent.

The elements falling under *Mood* in Bybee's system are distributed in Foley and Van Valin's (1984, 213ff) into three grammatical categories: *Illocutionary Force* (corresponding to what I called above 'speech act' mood), *Status* (essentially expressing realis/irrealis distinctions such as indicative vs. subjunctive), and (root) *Modality* (mental and physical ability, permission, etc.).<sup>13</sup>

They claim that Modality is closer to the verb stem than either Status or Tense (p.215f). This, they claim, is suggested for the relation between Modality and Tense in such languages as Lisu, among others (note that (13) involves root modals):

- (13)a Ása nya ami khwa *kwa-a*  
 Á. TOP field hoe mentally able-nonpast 'Á. is able (knows how) to hoe the field'  
 b Ása nya ami khwa *da-a*  
 Á. TOP field hoe able-nonpast 'Á. is (physically) able to hoe the field'

As to the relative ordering between Status (grammatical mood) and Tense, Foley and Van Valin tentatively suggest (p.216ff) that the former is inside the latter (a suggestion which will find support

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section.

<sup>12</sup>Similarly, Foley and Van Valin (1984) claim that in languages which have aspect and tense as separate inflectional categories, "[a]spect occurs closer to the verb stem, the nucleus, than does tense [...]. We know of no cases of the inverse order of the two inflectional categories, in which tense is closer to the stem than aspect" (p.210).

The same conclusion (limited to polysynthetic languages) is found in Baker (1995): "[A]spect morphemes in the polysynthetic languages consistently appear as suffixes placed between the verb root and the tense/mood inflection, a position that is explained if they head a phrase that is lower than IP but higher than the lowest VP" (p.231). Blansitt (1975) observes that "[w]hen the progressive marker is a suffix and any tense, mode, or person markers are also suffixes, all the latter follow the progressive marker" (p.10). In Payne (1985, 215) it is noted that in the Tungus languages "the negative auxiliary carries tense, mood, person and number markings, whereas other verbal categories such as aspect and voice are indicated by the lexical verb", which consistently points to the latter being lower than the former. Also see Ouhalla (1991,76), Speas (1991b,401f).

Aspects (frequentative, perfect, durative, predispositional, inchoative, etc.) are also lower than tense in American and Swedish Sign Languages (cf. Klima and Bellugi 1979,243ff; Aarons, Bahan, Kegl and Neidle 1992,1995; and Bergman and Dahl 1994).

<sup>13</sup>Under *status* they also collapse a set of notions ('obligatory', 'acceptable', etc.), which should rather be assigned to Modality, it seems (with no ensuing inconsistency, as far as I can see).



in the next sections).

They then consider the category of evidential mood suffixes (which, when present, appear after Tense suffixes - cf. (14)-(17))<sup>14</sup>, and Illocutionary Force suffixes, which are the outermost suffixes, only followed by subordination suffixes (if any) - cf. fn.4 above, and Foley and Van Valin 1984, 220ff).<sup>15</sup>

- (14)a *Íra-a-na* (Kewa, from Foley and Van Valin 1984, 218)  
 cook-3sgPAST-seen 'He cooked it (I saw it)'  
 b *Íra-a-ya*  
 cook-3sgPAST-unseen 'He cooked it (hearsay, I didn't see it)'
- (15) *Yağmur yağ-acak-mış* (Turkish, from Aksu-Koç and Slobin 1986, 161)  
 rain[NOUN] rain[VERB]-FUT-quotative evid  
 'It is reported that it will rain'
- (16) *Kaya shamu-nga-shi* (Ecuadorian Quechua, from Muysken 1977, 27)  
 Tomorrow come-3FUT-hearsay  
 'They say he'll come tomorrow'
- (17) *tukua-tuka-na-puga-vaaci* (Ute, from Givón 1982b, 40)  
 meat-eat-HAB-PAST-EVID (hearsay) '(She) used to eat meat (so I hear)'

To summarize, the data seen so far, and Bybee's (1985) and Foley and Van Valin's (1984) typological generalizations, are compatible with the overall relative order of verbal suffixes shown in (18), which gives evidence, under the Mirror Principle, for the relative order of functional heads shown in (19):

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<sup>14</sup>These suffixes qualify the speaker's commitment about the truth of the proposition on the basis of the evidence he/she has: direct (visual, auditory, etc.), or indirect (hearsay, etc.). They are a common feature of verbal inflection in American Indian languages, but they are also attested in other language families: South Slavic languages (and Albanian), Altaic (Turkish, Japanese, Korean) and other South Asian languages; and Australian and Bantu languages; etc. See Givón (1982b), Chafe and Nichols (1986), Hoff (1986), Palmer (1986), Willet (1988), Dendale and Tasmowsky (1994). Other languages (such as Basque - cf. Ortiz de Urbina 1989, 129) use instead evidential *particles*.

In languages lacking evidential suffixes or particles other ways exist to express the same notions. I return to these questions in chapter 4.

<sup>15</sup>Foley and Van Valin (1984,223f) try to derive this order from their three layered analysis of the clause into a *nucleus* (the predication), a *core* (embedding the nucleus and its arguments), and a *periphery* (embedding both), by viewing Modality as a *core* operator, and Status, Tense, Evidentiality and Illocutionary force as *periphery* operators (Aspect being a *nucleus* operator). They represent the layered structure of the clause with operators as in (i) (their Fig.9, p.224):

(i) (ILLOC FORCE (EVID (TENSE (STATUS (L..In (MOD [NP (NP) ( (ASPECT [Predicate]))]))))))))

A similar model has been developed by Simon Dik and others, also working within a functional theory of the sentence. See Dik (1989), Hengeveld (1989, 1990), Cuvalay (1995), and, for a comparison between the two approaches, Van Valin (1990). An insight of Dik's functionalist model particularly relevant here is the assignment of adverbial classes to different layers, in association with different functional operators. See in particular Dik et al. (1990), and Nuyts (1993), Hengeveld (to appear a).

Foley and Van Valin (1984, 223), citing Johanna Nichols, note that a comparable universal order of verbal affixes (voice, aspect, tense (of aspect), mode (tense of mode)) is also proposed in Tesnière (1939).

(18) V - voice / completive aspect / progressive aspect - perfect aspect - anterior tense / habitual aspect - root modality - grammatical mood - future tense - past tense - epistemic modality - evidential mood - evaluative mood - speech act mood<sup>16</sup>

(19) Mood<sub>speech act</sub> > Mood<sub>evaluative</sub> > Mood<sub>evidential</sub> > Mod<sub>epistemic</sub> > T(Past) > T(Future) > Mood<sub>(ir)realis</sub> > Mod<sub>root</sub> > Aspect<sub>habitual</sub>/T(Anterior) > Aspect<sub>perfect</sub> > Aspect<sub>progressive</sub>/ Aspect<sub>completive</sub> / Voice > V

We now turn to the case of 'closing' suffixes and auxiliaries, to see whether the evidence for the relative order of functional heads based on them is compatible with (19).

**3.3 Evidence from the order of 'closing' (inflectional) suffixes and auxiliaries.** In inflectional (as opposed to agglutinating) languages, suffixes typically close off the word (or require, as in Romance, a word-marker to close off the word - cf. Harris 1991), disallowing further affixation.

As a consequence of that, when more suffixes occur in a sentence, more verbs are needed to 'bear' them (typically, one for each functional suffix).<sup>17</sup>

In 'head-initial' languages like English, or Spanish, where no (successive) leftward movements of lower portions of the clause plausibly take place (Kayne 1994), the sequence of the various V + (functional) suffix combinations may thus be taken to provide *direct* evidence for the relative order of the corresponding functional heads.<sup>18</sup>

If so, a sentence such as (20)a in English, and its equivalent (20)b in Spanish, give evidence for the

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<sup>16</sup>From the present perspective it is of no significance that possibly no language displays the whole array of such suffixes, nor that languages which have specific subsequences of such suffixes do not allow them to occur all together, although the reasons for that merit to be understood. For further discussion, cf. the next chapters.

Extreme polysynthetic languages such as West Greenlandic Eskimo appear essentially to conform to the relative ordering in (18). Fortescue (1980,261f) indicates the following as the gross order of suffix classes, with those to the left being in the semantic scope of those to the right: V...manner - degree - aspect - tense - epistemic modality - affixes of subjective coloration - inflection (marking speech act mood, person and number). Also see Fortescue (1984, §2.1.3). On the case of Navajo, see §3.6 below.

<sup>17</sup>Ouhalla (1991,77ff) and Poletto (1993), take these additional verbs ('auxiliaries') to be directly inserted under distinct functional heads rather than heading a VP of their own. Cf. also Drijkoningen (1986). An advantage of directly generating auxiliaries under functional heads would seem to be the possibility of assigning one and the same structure to sentences with compound and simple verb forms. But see chapter 6 below (§6.2) for some evidence at variance with this assumption.

Auxiliary insertion may also occur in agglutinative languages when a morpheme does not admit (further) affixation. An example of this (the negative root modal *mos* of Korean) was discussed in fn.9 above. Additional cases will be discussed in §3.5 below.

<sup>18</sup>In other words, "the order of auxiliaries is a direct reflex of the order of the affixes" (Drijkoningen 1986, 58). This is true even if (some of) the V+ suffix combinations undergo head-to-head movement. As Relativized Minimality bars raising a head over another head (or its trace), the relative positioning of two heads will still reflect the relative order of the positions in which they were inserted.

order of functional heads shown in (21):<sup>19</sup>

- (20)a These books *have been being read* all year  
 b Esos libros *han estado siendo leídos* todo el año

(21) Tense > Aspect<sub>perfect</sub> > Aspect<sub>progressive</sub> > Voice (> V)<sup>20</sup>

We expect to find the mirror-image situation in those 'head-final' languages in which suffixes also 'close off' the word (requiring insertion of auxiliaries), and in which leftward movements of nonheads apply successively, as shown in (22): a derivation which Kayne (1994, §5.5) originally suggested as the other possible source (in addition to the more familiar head-raising type) of "sequences of inflectional morphemes in a 'head-final' language" (p.52):

(22) ...X [<sub>YP</sub>...Y ZP ]... --> ...X [<sub>YP</sub>ZP Y t ]... --> ...[<sub>YP</sub>ZP Y t<sub>ZP</sub> ] X t<sub>YP</sub>...

Here I take the nonhead-raising derivation in (22) to be operative in 'head-final' languages like Hindi, where sequences of V + functional suffix combinations are found which are the mirror-image of the English case seen in (20)a. Cf. (23) and (24):<sup>21</sup>

- (23)a Kis-ko raam-ne socaa ki siitaa-ne dekhaa thaa (Mahajan 1990,39)  
 Who Raam thought that Sita see-ANT be-PAST  
 'Who did R. think that S. had seen?'  
 b Raam roTii khaataa rahtaa thaa (Mahajan 1990,78)  
 Raam bread eat PROG be.PAST  
 'R. used to keep on eating bread'

These cases seem best analysed as involving verbal heads (Aux + suffix) which force their complements to move leftward to a specifier in between them and the next higher head .

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<sup>19</sup>(20)a-b are drawn from Zagona (1988,5). The order in (21) is already recognized in Chomsky (1957). Foley and Van Valin (1984, 225) (cf. also Bybee 1985, 197) notice the "perfect match-up", in terms of closeness to the verb, of the English auxiliary order and the universal template of the operators arrived at on the basis of the relative order of suffixes.

The question of auxiliary choice (*have, be*, etc.) for each suffix, within and across languages, is orthogonal to present concerns, and will not be addressed here. For discussion, I refer to Kayne (1993a).

<sup>20</sup>This order is compatible with the order of functional heads arrived at on the basis of the order of suffixes. (21), in fact, determines the order between perfect aspect and progressive aspect, for which the order of suffixes considered above did not say anything.

<sup>21</sup>Basque is another case, although the presence of aspect, mood and modal particles makes it a mixed system. Cf. (56) below, and also Laka (1990, 18ff). Apparently, negation (in root clauses) prevents the complement of the auxiliary from rising leftwards. Cf. (i)a-b, from Laka (1990, 25f):

- (i)a \*Etxea erori ez da  
 house-the fallen not has 'The house has not fallen'  
 b Ez da etxea erori  
 Not has house-the fallen 'The house has not fallen'

As Kayne notes, the type of derivation in (22) "produces a YX that is not a constituent" (p.53), and indeed the sentence final sequence of verbs in Hindi does not form a constituent, as Mahajan (1989,222) explicitly notes (the verbs can, for example, be separated by various types of lexical material).

Standard German, instead, possibly instantiates a case of successive leftward adjunctions of the lower verbal heads to the next higher ones, with the non-head subparts of IP rising leftward over the verb cluster, either individually (Kayne 1994,141fn.15; cf. also Zwart 1993,334ff), or within a single constituent.<sup>22</sup> Differently from Hindi, nothing can interrupt the sentence final sequence of verbs in German, whose order is also the mirror image of that found in English, due to the successive incorporations of the verbs to the left of the next one up:

- (24) ... daß er von der Bank angestellt worden sein muss  
 ... that he by the bank employed been have must  
 ... that he must have been employed by the bank

If so, Hindi (and German) virtually duplicate the evidence from English (and Spanish) for the order of functional heads shown in (21) above.

**3.4 Evidence from the order of functional particles.** Free functional morphemes (particles), differently from bound functional morphemes, bar adjunction to them of the immediately lower head (but see fn.28 below for an apparent case of a particle adjoining to another) and also prevent it from raising past them.<sup>23</sup> This means that in 'head-initial' languages particles allow us to directly observe the order of functional heads. One such case is provided by creole languages, which characteristically display all their functional particles before the verb.<sup>24</sup>

In the literature on Creoles, it has long been observed, and assumed, that the ordering of such particles is T(ense)-M(ood/modal)-A(spect). Cf. Bickerton (1974), and Singler (1990) for even earlier sources of the same observation (cf. also the articles contained in Singler (ed.)). This ordering is essentially endorsed by Muysken (1981), who, in fact, suggests, after Woisetschlaeger (1977), that a principle

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<sup>22</sup>This constituent would contain the trace (at least) of the raised lexical verb, which I take to be properly bound under Reconstruction, as is apparently the case in (i):

(i) [<sub>XP</sub> tutto t<sub>i</sub> [bene t<sub>i</sub> [ t<sub>i</sub> a TUTTI ]]] dovrai spiegare<sub>i</sub> t<sub>XP</sub>  
 everything well to everybody(focus), you'll have to explain

<sup>23</sup>Although categorially both are heads, I take particles to differ from auxiliaries in being *invariant* (*inflectionless*) free morphemes. Particles may also differ from auxiliaries in being less prone to movement (perhaps as a consequence of their being poorer in features). But see the evidence for the movement of *to* in English, discussed in Bernstein (1994) (Baltin (1995) discusses similar facts, reaching different conclusions).

<sup>24</sup>This is at least true of the so-called basilect, the variety least influenced by the superstrate language (English, French, etc.), the acrolect being the one most influenced. The mesolect is an intermediate variety, which can show certain features of the superstrate language. So, for example, Rottet (1992) shows that in the Louisiana Creole basilect verbs do not move (cf. DeGraff 1994 for a similar claim about Haitian Creole), while they move at least partially in the corresponding mesolect.

Analogously, in the Guyanese Creole basilect verbs are completely uninflected while some inflection is found in the corresponding mesolect (cf. Gibson 1986 and the discussion below, based on it). Only basilects will be considered here.

of Universal Grammar requires that Aspect be interpreted before Mood, and Mood before Tense (Cf. the similar suggestions on verbal suffixes by Foley and Van Valin, and Dik and al. mentioned in fns.12 and 15 above).

Though in essence correct, this ordering is somewhat gross, and must be qualified. For one thing, various aspectual particles can cooccur, so that their relative order needs to be determined. Secondly, there are occasional claims in the literature for the order Modal > Tense rather than Tense > Modal (cf., for example, Gibson's 1986 study of Guyanese Creole).

I begin with Guyanese Creole, which is particularly rich in functional particles and which Gibson (1986) takes, as noted, to instantiate a Modal > Tense > Aspect order (in contrast to other creoles).

### 3.4.1. Guyanese Creole.

The basilect has four distinct aspectual particles: *a* for progressive aspect, *de* for durative aspect, *a* for habitual aspect, and *don* for what is probably better termed 'relative or anterior tense' (in the sense of Reichenbach's 1947). Cf. the discussion in chapter 4 below, §4.16.<sup>25</sup>

The two *a* particles must be kept distinct. They can cooccur, separated by the durative aspect particle *de*, and by such adverbs as *aalweez* 'always' and *neva* 'never':<sup>26</sup>

- (25) Shi a aalweez/neva de a sing (Gibson 1986, 582f)  
 She HAB always/never DUR PROG sing  
 'She usually always/never keeps singing'

The particle *don* precedes the particle *de*, though its order with respect to the habitual particle *a* is not discussed by Gibson:<sup>27</sup>

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<sup>25</sup>Gibson translates it as *already* with stative predicates (*Meeri don gat di buk* 'Mary already has the book' 1986,584; *shi don noo wu fu duu* 'she already knows what to do' 1992,60), and as present perfect with non-stative predicates (*Wen you get de, shi gu/gon don sing* 'When you get there, she will have sung' 1992,60). On T(Anterior) (T3), cf. the discussion in chapter 4.

<sup>26</sup>The durative aspect particle *de* expresses the fact that "a given situation is conceived of as lasting for a certain period of time" (Gibson 1992,57) (whence, presumably, its incompatibility with stative verbs). In the mesolectal variety, habitual aspect is expressed with the particle (or auxiliary) *doz*, and progressive aspect with the suffix *-ing*:

- (i) Shi doz aalweez de singing (cf. Gibson 1986,572f)  
 She HAB always DUR sing-PROG  
 'She is usually always singing'

<sup>27</sup>*Don* is apparently the only particle which can follow the verb (and its complements). See (i):  
 (i) Shi get tuu piknii don (= (b) of Gibson 1986, fn.7)  
 'She already has two children'

In a way reminiscent of the observed reversals of adverb orders in chapter 1, I take (i) to involve the (optional) raising of [*get tuu piknii*] to a Spec preceding *don*.

For the analogous behavior of Sea Island Creole *done* and of the Sranan particle *kba*, see Cunningham (1992, 52) and Seuren (1983, fn.5), respectively. Leblanc (1989, 60f), following a suggestion of Lumsden's, reaches the same conclusion for sentence final *deja* in Haitian Creole.

- (26) *Da taim dem don de somwee a big maarkit* (= (a) of Gibson 1986, fn.7)  
'By that time, they are already somewhere in Big market'

This gives us the partial order in (27):

- (27) ... Aspect<sub>habitual</sub>/T(Anterior) > Aspect<sub>durative</sub> > Aspect<sub>progressive</sub> > V

Aspectual particles follow (absolute) Tense particles. In Guyanese, there are two such particles, *gu*, for the future, and *bin*, for the past, which in fact turn out to combine, to yield a future of the past or conditional meaning (with the order *bin gu*). See Gibson (1986,574):<sup>28</sup>

- (28) *Jaan bin gu riid* (Gibson 1986, 585)  
John PAST FUT read  
'J. would have read'

Finally, Gibson mentions a class of modals ("of condition"), *shud(a)* 'should (have)', *mait(a)* 'might (have)', *kud(a)* 'could (have)', which are found preceding Tense (e.g. *bin* 'Past', though it is possible that it is the lower Anterior - cf. chapter 4 for discussion):

- (29) *Jaan shuda bin kyaan get fu gu* (Gibson 1986, 585)  
J. MOD<sub>epistemic</sub> PAST MOD, MOD, go  
'J. should not have been able to be allowed to go'

They appear to be epistemic, thus patterning as the Korean epistemic modal suffixes, which were seen

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<sup>28</sup> Cf. the similar case of the Melanesian language Anejom, (25b) in the appendix, and the mirror-image order of Future and Past tense suffixes in Turkish above (example (5)b), and Lezgian and Mongolian (exx. (6b) and (3b) in the appendix), which provide evidence for the same order: T(Past) > T(Future). Cf. also the discussion in chapter 4 (§4.3).

In this connection, it is tempting to interpret 'conditional' *would* in English as the result of *will* (future) raising to T(Past). The complex ('conditional') pre-verbal particle *yi-a* (lit. FUT-PAST) of Koyo (a Kru language of West Africa) is not an exception to the order T(Past) > T(Future) if taken to derive, by adjunction of the lower T(Future) particle *yi* to the higher T(Past) particle *ya*. Cf. (i)a-c, from Kokora (1976,65):

- (i)a *Abi yi (ta) sakaa-a lu*  
A. FUT (NEG) rice-the eat  
'A. will (not) eat the rice'  
b *Doffi ya duN mo*  
D. PAST town-in go  
'D. went to town'  
c *N ka-a leyeru lu O yi-a saka lu*  
I COND-PAST wealth eat he FUT-PAST rice eat  
'If I were rich he would eat rice'

Another case plausibly derived through the incorporation of a lower to a higher particle is what Mosel and Hovdhaugen (1992,354) refer to as the "Progressive-Perfect" compound particle '*olo'ua*', in (head-initial) Samoan, which combines the Perfect particle *ua* and the Progressive particle '*olo'o*' (or *o*), reversing the expected order. Cf. (26c) in the appendix.

above to be outside tense suffixes.<sup>29</sup>

Putting these various elements together, we arrive at the following order of functional heads for Guyanese Creole:

(30) Mod<sub>epistemic</sub> T(Past) T(Future) Asp<sub>habitual</sub>/T(Anterior) Asp<sub>durative</sub> Asp<sub>progressive</sub> V  
 (*shud*) (*bin*) (*gu*) (*a*) (*don*) (*de*) (*a*)

### 3.4.2. Sranan

The neighbouring creole Sranan gives us apparently explicit evidence that root modals occupy a position to the right of the T(Past) and T(Future) particles. Cf. (31) and (32), from Seuren (1983,227):

(31) A ben kan nyan  
 He PAST can eat  
 'He could eat'

(32) A ben o kan nyan  
 He PAST FUT can eat  
 'He would be able to eat'

Modals, however, can also occur to the left of the (Past) Tense particle *ben* (cf. (33), from Seuren 1983,227), in which case they appear to be interpreted epistemically:

(33) A kan ben e nyan  
 He may PAST PROG eat  
 'He may have been eating'

This might be taken as evidence for an order Mod<sub>epistemic</sub> > T(Past) > T(Future) > Mod<sub>root</sub> > Asp<sub>progressive</sub> > V, reminiscent of the situation found in Korean.

But the conclusion is not necessarily right.

In most creoles a verb without particles is typically understood as non-past if stative, and past if non-stative (cf. Bickerton 1974). This appears true also for Sranan, for which Seuren renders a form like *mi nyan* (lit.: 'I eat') as 'I have eaten/ I ate', and *mi ben nyan* as 'I had eaten' (the present being *mi e nyan* 'I am eating'). Cf. also Haitian Creole below). Seuren (1983, 227f and fn.8) analyses a sentence like (34) as containing underlyingly two occurrences of *ben* (one marking 'past' - *ben*<sub>1</sub> -, and the other 'past perfect' - *ben*<sub>2</sub>), the second of which is deleted by rule:

(34) A ben sa nyan (from *A ben*<sub>1</sub> *sa ben*<sub>2</sub> --> *0 nyan*)  
 He PAST FUT eat  
 'He would have eaten'

Evidence for that comes from such sentences as (35)a below, where *ben* surfaces to the right of *sa*, and more clearly from such (rarer) cases as (35)b, where both *ben*'s are simultaneously realized:

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<sup>29</sup>(29) also shows two root modals (of ability, and permission, respectively) following the past tense particle; similarly to what found in Korean and Turkish, above. Gibson proposes to analyse them as main verbs.

- (35)a A sa ben nyan (cf. (34))  
 He FUT PAST (Anterior) eaten  
 'He will have eaten'  
 b A taigi mi taki yu ben sa ben du en  
 He told me that you [Subjunctive] had done it

Generalizing Seuren's *ben* deletion rule, it may be possible to account for the ambiguity of *mi nyan* by taking it to derive from either *mi ben<sub>1</sub>* --> *0 nyan* (I ate), or *mi ben<sub>2</sub>* --> *0 nyan* (I have eaten).<sup>30</sup> If this is so, the possibility arises that (33) contains an instance of *ben<sub>2</sub>*, (plausibly to be identified with T(Anterior)), rather than with *ben<sub>1</sub>* (T(Past)); in which case no argument can be made for a Mod<sub>epistemic</sub> preceding Tense (T(Past)).

I leave the question open here returning to it after introducing the case of Haitian.

### 3.4.3. Haitian Creole.

Haitian Creole also has a rich number of functional preverbal particles for Tense, Mood and Aspect (cf. Sylvain 1979, the articles in Lefebvre, Magloire-Holly and Piou 1982, Leblanc 1989, Spears 1989, 1990, DeGraff 1993,1994, Lefebvre 1995, 1996 among others).

Aspectual particles are *ap*, marking progressive aspect, *konn*, marking habitual aspect, *fèk (sòt)* ("venir de", "to have just"), marking so called 'retrospective' aspect (cf. Binnick 1991,382; Frawley 1991,322).<sup>31</sup>

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<sup>30</sup>Similarly, it may be possible to account for the multiple ambiguity of (i) (cf. Seuren 1981, 1051; 1983,228):

- (i) Mi ben sabi  
 I PAST know  
 a) 'I knew', b) 'I have known', c) 'I used to know', d) 'I had known'  
 (i)a would represent *mi ben<sub>1</sub> sabi*; (1)b *mi ben<sub>2</sub> sabi*; (1)d *mi ben<sub>1</sub> ben<sub>2</sub>* --> *0 sabi*.

<sup>31</sup>'Retrospective aspect' is sometimes called 'immediate past' (cf., Corne 1977,111; Dahl 1985,127; and the discussion in chapter 4, §4.20). (i)a, from Sylvain (1979, 97), and (i)b, from L.H.Desouvrey (p.c.), suggest a certain relative order of the aspectual particles (cf. (ii)):

- (i)a L'té kòn fèk lévé (...)  
 3sg PAST HAB RETRO get up (...)  
 'Il venait d'ordinaire de se lever...' ('He used to have just got up...')  
 b Jan fèk ap kuri  
 J. RETRO PROG run  
 'J. has just been running'

- (ii)a *konn* > *fèk (sòt)* > *ap*  
 b ASP<sub>habitual</sub> > ASP<sub>retrospective</sub> > ASP<sub>progressive</sub>

Other aspectual particles appear to exist: *fin*, marking 'inceptive' aspect (cf. (iii)a-b), apparently intervening between *fèk (sòt)* and *ap*; and the 'prospective' (cf. fn.40 below) particle (*a)pral*, which in Haitian, though not in Fongbe (and Gungbe), is in complementary distribution with the progressive particle (Lefebvre 1995, 165ff; 1996, §§1.1 and 1.2). This might suggest that (*a)pral* in fact incorporates the progressive particle *ap(r)*, which is consistent with the fact that in both Fongbe and Gungbe the prospective particle cannot be used without the progressive one (see below).

- (iii)a Vè 3 è, Mari konn fèk fin ap leve (L.H.Desouvrey, p.c.)  
 Around 3 o'clock, M. HAB RETRO INCEPT PROG get up  
 'Around 3 o'clock, M. usually just began to be getting up'



Progressive *ap* (henceforth *ap*<sub>2</sub>) must be distinguished from a homophonous particle marking Future (henceforth, *ap*<sub>1</sub>). The two occupy different positions in the clause. While *ap*<sub>2</sub> (the progressive particle) has to follow such adverbs as *deja* 'already', *poko* 'not yet', *toujou* 'always', *pa janm* 'never', etc., *ap*<sub>1</sub> (the Future marker) has to precede them. Cf. Leblanc (1989,41 and 45), from which (36)a and b are drawn, and Lefebvre (1995, 171; 1996, §1.1):<sup>32</sup>

- (36)a Jan toujou ap travay fò  
 J. always PROG work hard  
 'J. is always working hard'  
 b Mary ap toujou travay  
 M. FUT always work  
 'M. will always work'

In fact, the two *ap*'s can cooccur (separated by the mentioned adverb classes).<sup>33</sup> Cf. Leblanc (1989, 53 and 56), from which (37)a and b are drawn:

- (37)a Jan ap souvan ap rakonte yon istwa  
 J. FUT often PROG tells a story  
 'J. will often be telling a story'  
 b Mari p'ap toujou ap travay  
 M. NEG FUT always PROG work  
 'M. will not always be working'

(Root) modals (such as *ka/kapab* 'can' (ability), *mèt* 'permission', *dwe* 'necessity', etc.) appear to occur between the future tense particles *a/ap*<sub>1</sub> and the aspectual particles. Cf. (iii)b of fn.31 and (38):<sup>34</sup>

- 
- b Li t'a-mèt-fèk-sòt-fin-prã-kuri,... (Sylvain 1979,101)  
 3sg PAST FUT MOD RETRO INCEPT get running,...  
 'Even if he had just begun to run,...

Most of these aspectual particles are related to full verbs (cf. Magloire-Holly 1982,94), but they can be distinguished from the latter in terms of meaning and position. So, for example, *fin* as a verb meaning 'finish' follows the progressive particle *ap* (*Jan ap fin kuri* 'J. is finishing his running'), while it precedes *ap*, as noted, in its use as an inceptive aspect particle (*Jan fin ap kuri*, with the meaning 'Finally, J. started running'). I thank L.H.Desouvrey for pointing these facts out to me.

<sup>32</sup>Cf. also Koopman and Lefebvre (1982): "*ap* apparaît dans deux positions: MODE et ASPECT"(p.66).

<sup>33</sup>Leblanc (1989,42f) notes that, in contrast to these adverbs, which can occur between INFL particles, neither place nor manner adverbs can (they rather appear in sentence final position). Michel DeGraff tells me that for him (37)a-b are almost impossible (completely, if the adverb intervening between the two *ap*'s is missing). In fact, variation concerning the sequence of two *ap*'s and that of other identical morphemes is reported to exist in Lefebvre (1996), and is attributed by her to a general filter holding in one but not the other variety.

<sup>34</sup>As Magloire-Holly (1982,103) notes, some combinations (e.g. deontic *dwe* and progressive *ap*<sub>2</sub>), however, appear not to be possible.

- (38)a *Žã ap ka vini* (= (14)b of Magloire-Holly 1982)  
 Jean FUT can come  
 'J. will be able to come'
- b *Jan ap dwe vini* (= (30)d of Leblanc 1989)  
 J. FUT must come  
 'J. will have to come'
- c *Žã mèt ap máže* (= (18)b of Magloire-Holly 1982)  
 J. can PROG eat  
 'J. can be eating'
- d *Žã dwe fèk sòti* (= (19) of Magloire-Holly 1982)  
 J. must RETRO go out  
 'J. must have just gone out'

Summarizing, the partial order of the particles so far examined is:

- (39)  $ap_1 > ka/mèt/dwe > konn > fèk (sòti) > ap_2$

Namely, the order of heads: T(Future) > Mod<sub>root</sub> > Asp<sub>habitual</sub> > Asp<sub>retrospective</sub> > Asp<sub>progressive</sub>  
 As was the case in Guyanese and Sranan, in Haitian too T(Future) particles can follow the Past tense particle (*te*), to yield a future of the past, or a conditional. See (40)a and b, containing the realis future particle *ap*, and the irrealis one, *a/va*, respectively:<sup>35</sup>

- (40)a *M pa t ap aksepte sa* (adapted from Forrest 1990,21)  
 1sg NEG PAST FUT accept that  
 'I would not accept that'
- b *Mari t'a travay* (= (14)b of Leblanc 1989)  
 M. PAST FUT work  
 'M. would have worked'

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<sup>35</sup>Koopman and Lefebvre (1982) list *a* under Mode (together with *ap* and *pu*), adding that "la différence entre *a* et *ap* reste à être investiguée" (p.65). Forrest (1990), and Lefebvre (1995, 160ff; 1996, §1.1) characterize the difference as one between 'potential' or 'irrealis' vs. 'definite' or 'realis' future (*viendra peut-être/éventuellement* vs. *viendra*), Spears (1989, 209) as one between subjunctive vs. indicative future. Comparable distinctions are found in Kusaiean (Frawley 1992, 361) and (as pointed out to me by Paola Beninca' and Cecilia Poletto) in the Romance variety spoken in Inverso Pinasca (Piedmont, Italy). The latter also has an irrealis form of the past (Griset 1966,70).

'Irrealis' future may be analysed as a combination of Mood<sub>irrealis</sub> and T(Future) (with Mood<sub>irrealis</sub> rising to T(Future)). The two are realized separately in certain languages, with T(Future) preceding Mood<sub>irrealis</sub>. See, for example, the cases of Ndyuka (another creole language of Surinam) in (i), and of Tigak (a Papuan language) in (ii):

- (i) I **ben** **o** **sa** poi (fu) nyan ete (Huttar and Huttar 1994,519)  
 2sg PAST FUT IRR be-able (for) eat yet  
 'Would you have been able to eat already?'
- (ii)a Vo nak ima (amaua) (Beaumont 1979,79)  
 FUT 1sg come (tomorrow) 'I will come (tomorrow)'
- b Vo nak **min** ima (amaua)  
 FUT 1sg DUB come (tomorrow) 'I may come (tomorrow)'

As expected by transitivity, root modals also appear to follow the Past Tense marker *te*. Cf. (41)a-b:

- (41)a *Zā te ka vini* (= (14)a of Magloire-Holly 1982)  
 Jean PAST can come  
 'J. was able to come'  
 b *Jan te dwe rakonte yon istwa* (= (25)a of Leblanc 1989)  
 J. PAST must tell a story  
 'J. was obliged to tell a story'

Combined with the previous facts, this gives evidence for the overall order T(Past) > T(Future) > Mod<sub>root</sub> > Aspects > V, which confirms Leblanc's (1989) conclusion that "ces catégories se présentent dans l'ordre suivant: négation, temps, mode et aspect"(p.45).

There are however some interesting complications (which bring us back to the order between Tense and epistemic Modality).

The past tense particle *te*, which was seen to precede *dwe* in (41)b, can also be found following it. Cf. the minimal pair (42)a-b (= (23)b-c of Magloire-Holly 1982, 107, who notes that "*te dwe* a toujours le sens déontique et *dwe te*, toujours le sens épistémique").<sup>36</sup>

- (42)a *Žā te dwe maže*  
 J. PAST must eat  
 'J. has had to eat'  
 b *Žā dwe te maže*  
 J. must PAST eat  
 'J. must (possibility) have eaten'

It would seem, then, that epistemic modals precede T(Past) while root modals follow it. This conclusion, however, does not follow if modals in Haitian are not functional particles but main verbs taking a complement clause, as argued for in Magloire-Holly (1982).

Possible evidence for that may be a sentence like (43), which Leblanc (1989,51) reports as being ambiguous between a root reading ((43)a) and an epistemic reading ((43)b), even in the presence of a T(Past) particle preceding the modal.<sup>37</sup>

- (43) *Jan te dwe te rakonte yon istwa*  
 a 'Jean était obligé avoir rakonté une histoire'  
 b 'Jean était supposé avoir rakonté une histoire'

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<sup>36</sup>A conclusion shared by DeGraff (1993, 32ff). The deontic sense is also forced if *dwe* follows the negation *pa*, while the epistemic sense is forced if it precedes *pa*. Magloire-Holly notes that the same holds for *ka/kapab* 'can' in interaction with *te* and *pa*.

<sup>37</sup>Cf. the possibility in Italian (where modals are also main verbs) of an (imperfect) past form of *dovere* ('have to') with an epistemic interpretation:

(i) Allora, dovevano essere (state) le cinque

Then, it had to (have) be(en) 5 o'clock ('Then, it was probably 5 o'clock')

Koopman and Lefebvre (1982) give a comparable example (*m te dwe te vini*) translating it once as 'J'aurais dû être venu' (p.72), once as 'Je devais être venu' (p.89).

Moreover, as already noted above for Sranan, no such conclusion would follow either if two *te* particles existed in Haitian (analogously to Sranan's two *ben*'s), one marking T(Past), the other T(Anterior), with one or the other generally deleted. Indeed, some evidence exists for postulating two *te*'s. So, for example, while *te*<sub>1</sub> (T(Past)) precedes T(Future) (cf. (40)a-b above), and such adverbs as *deja* (cf. (44)a), *te*<sub>2</sub> (T(Anterior)) follows both. Cf. (44)b (also see the different positioning and interpretation of *te* with respect to *pou* discussed in Lefebvre 1996, §1.2):

- (44)a *Pyè te deja ap dòmi* (= (5a) of Leblanc 1989)  
 P. PAST already PROG sleep  
 'P. was already sleeping'  
 b *Mari ap deja te fin dòmi* (= (40d) of Leblanc 1989)  
 M. FUT already ANT finish sleep  
 'M. will already have finished sleeping'

In certain cases, they even appear to cooccur, as in (45) (though not all speakers, apparently, accept this possibility - L.H.Desouvrey, and M.DeGraff rejected it):<sup>38</sup>

- (45) *Jan te toujou te ap rakonte yon istwa* (= (27a) of Leblanc 1989)  
 J. PAST always ANT PROG tell a story  
 'J. had always been telling a story'

In conclusion, differently from Guyanese Creole, neither Haitian nor Sranan may be taken to provide direct evidence for the order  $\text{Mod}_{\text{epistemic}} > T > \text{Mod}_{\text{root}}$  (though neither provides evidence against it, either).

To summarize, the different creoles examined above give evidence for the following sequence of functional heads:

- (45)  $\text{Mod}_{\text{epistemic}} > T(\text{Past}) > T(\text{Future}) > (\text{Mod}_{\text{root}} >) \text{Asp}_{\text{habitual}}/T(\text{Anterior}) > \text{Asp}_{\text{retrospective}} > \text{Asp}_{\text{durative}} > \text{Asp}_{\text{progressive}} (>V)$

This sequence is compatible with the sequence arrived at on the basis of 'closing' and 'non-closing' suffixes in the preceding sections.

#### 3.4.4 Gungbe.

Another group of languages displaying preverbal tense and aspect particles are the West African Gbe

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<sup>38</sup>Certain interpretive facts may suggest that the second (T(Anterior)) *te* (henceforth *te*<sub>2</sub>) may get deleted as was the case for Sranan *ben*<sub>2</sub>. For example, Magloire-Holly (1982) translates *Žā te dwe māže* in the same way as she translates *Žā te dwe te vini*: 'aurait dû'. Secondly, *te* plus non-stative verbs is translated with a past perfect rather than with a simple past (cf. again Sranan above): e.g. *Mwen te rakonte yon istwa* 'I had told a story' (= 13b of Leblanc 1989, 46). Cf. also the discussion in Lefebvre 1996, §§1.1, 1.2, and references cited there). For a case where T(Past) and T(Anterior) are both systematically realized (with two different particles), see the case of Seychelles Creole in the Appendix.

languages, among which Fongbe and Gungbe.<sup>39</sup>

In Gungbe, for example, one finds the following preverbal particles:

*na* (which signals the 'imminence of an action' ('to be about to'), and has to be preceded by the progressive particle *to*):<sup>40</sup>

- (46) Assiba to na ho moto lo  
 A. PROG PROSP buy car the  
 'A. is about to buy the car'

*to* (which marks progressive aspect):

- (47) Sèna to kiklo moto lo  
 S. PROG wash car the  
 'S. is washing the car'

*No* (which marks habitual aspect):

- (48) Sèna no klo moto lo  
 S. HAB wash car the  
 'S. habitually washes the car'

*Ná* (which marks the Future tense):

- (49) Sèna ná wa hwégbe  
 S. FUT come home  
 'S. will come home'

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<sup>39</sup>For Fongbe, see Avolonto (1992a,b), Kinyalolo (1992), Lefebvre (1995,1996), and references cited there; for Gungbe, Aboh (1993,1996), from which most of the examples in the text are taken (others having been directly provided by him in personal communications).

<sup>40</sup>This aspect is often called 'prospective' (cf. Comrie 1976, 64f.; Davies 1981,31; Frawley 1992,322; Kinyalolo 1992; Vonen 1994,387; Lefebvre 1995): "Languages encode not only the beginning and end of an event, but also a point *just prior to* the beginning of an event. This is known as *prospective aspect*" (Frawley 1992,322). In the literature, other terms for the same aspect are *proximative* (Heine 1994), *impending* (Abbott 1991,120), and *immediate (future)* (Mithun to appear). Heine (1992,339) referred to it as the ALMOST-aspect. Here, I follow the prevailing terminology, reserving 'proximative' for the so-called SOON-aspect (the converse of 'retrospective', or JUST-aspect). Cf. chapter 4 for further discussion.

Cram (1983-84) uses the term 'prospective' to characterize the verbal aspectual particle *gu* (lit. 'to') of Scottish Gaelic. It is however dubious that Gungbe *na* and Scottish Gaelic *gu* refer to the same kind of aspect. First, Cram sometimes renders it as 'is to' (cf. *Tha Calum gu bhith faiceallach* 'Calum is to be careful'), in what looks like a root modal meaning. Second, *gu* precedes the progressive particle, whereas *na* follows the progressive particle. Its ability to either precede or follow the perfect particle (Ramchand 1995) in fact contrasts with the rigid order of the other aspectual particles, and may indicate that it is a main predicate. As usual, particular care must be taken concerning the varied terminology for aspects employed in the literature.

*Ní* (which marks injunctive/subjunctive and conditional ):<sup>41</sup>

- (50)a Sèna ní klo moto lo  
 S. INJ wash car the  
 'S. better wash the car!'  
 b Un jro na Kofi ní wa  
 I want for K. SUBJ come  
 'I want for K. to come'  
 c Ní Kofi wa Assiba ná ton  
 COND K. come A. FUT go out  
 'If K. comes A. will go out'

The combinations of these particles mentioned in Aboh (1993) are *ná no* (51a); *ná to* (51b); *no to* (51c); *ná no to* (51d); *to na* ((47) above); *ná to na* (51e) (cf. Aboh 1993,7,11,21,32). Although *ní* and *ná* cannot occur together, there is evidence that the position occupied by *ní* precedes that occupied by *ná*, for *ní* precedes the negative particle *ma* while *ná* follows it (cf. (51)f-g). These various partial orders give the consistent overall order (52), corresponding to the order of heads shown in (53), which is compatible with the orders of heads seen so far.

- (51)a Assiba ná no wa hwégbe  
 A. FUT HAB come home  
 'A. will frequently come home'  
 b Sèna ná to dudu lesi lo  
 S. FUT PROG eat rice the  
 'S. will be eating the rice'  
 c Assiba no to zizé vi lè  
 A. HAB PROG take children the  
 'A. is frequently taking the children'  
 d Assiba ná no to kpikpon vi lé go  
 A. FUT HAB PROG take care of the children  
 'A. will frequently be taking care of the children'  
 e Assiba ná to na ho kèkè lo  
 A. FUT PROG PROSP buy the vélo  
 'A. will be about to buy the vélo'

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<sup>41</sup>Avolonto (1992a,chapter 5) postulates an 'injunctive projection' for (Fongbe) *ní* (and other modal particles) "qui encodent dans leur sémantique le sense d'un ordre" (p.53). Aboh (1993) recognized an additional particle in Gungbe, marking what he called 'aspect révolue' ('temporal priority'): *ko*. More recently, Aboh has come to favor an analysis of *ko* as an AdvP, which he renders as 'already' (cf. Aboh 1996, and also Avolonto 1992a,36ff and Lefebvre 1995 on the adverbial nature of *ko* in Fongbe):

(i) Sèna ko ho moto lo

S. already/temporal priority buy car the 'S. has already bought the car'

In addition to habitual, progressive and prospective aspect, Aboh (1993) discusses another aspect (perfect aspect), which is realized as zero in Gungbe. (ii), for example, is interpreted as perfect even in the absence of any overt particle:

(ii) Sèna ho moto lo

S. buy car the 'S. has bought the car'

- f Kofi d ni d ní ma/\*ma ní wa blo  
 K. tell to-him COMP SUBJ NEG/\*NEG SUBJ come NEG  
 'K. told him not to come'
- g Kofi ma ná/\*ná ma wa  
 K. NEG FUT/\*FUT NEG come  
 'K. will not come'

(52) ní (>ma) > ná > no > to > na (> V)

(53) Mood<sub>speech act</sub> (>NEG) > T(Future) > Asp<sub>habitual</sub> > Asp<sub>progressive</sub> > Asp<sub>prospective</sub> (> V)

'Head-final' languages with functional particles should display all the particles sentence finally, in an order which is the mirror-image of the one found in comparable 'head-initial' languages.

This case would be derived (with particles instead of inflected auxiliaries) by the very same process discussed above which derives Hindi sentence final verb clusters: namely, via successive leftward movements of nonheads across their heads, as shown in (22), from Kayne (1994), repeated here:

(22) ...X [<sub>YP</sub>...Y ZP ]... --> ...X [<sub>YP</sub>ZP Y t ]... --> ...[<sub>YP</sub>ZP Y t<sub>ZP</sub> ] X t<sub>YP</sub>...

Some 'head-final' languages of the Tibeto-Burman area seem to be of this kind. In Kachin, "the invariable base is followed by grammatical markers which generate distinctions of aspect, mood and tense" (Campbell 1991, 691). Indeed, to judge from the example in (54), the relative order of the Tense particle and of the root Modal particle is the mirror image of that found in the creole languages seen above:

- (54) Ngai galaw lu na  
 I do MOD FUT  
 'I shall have to do this'

In Mizo, another 'head-final' language of the same group, the order of sentence final particles for (epistemic) modality and 'prospective' aspect is the reverse of that seen in Haitian. Cf. (55), from Chhangte (1986, 141):

- (55) A kall doonl lou ang2  
 (S)he go PROSP NEG MOD<sub>epistemic</sub>  
 '(S)he may not be going to go'

Similarly, in Basque (which also shows inflection), the evidential particle *omen* appears to follow the root modal particle *ahal*, which in turn follows the verb. Cf. (56), from Ortiz de Urbina (1989, 129):

- (56) Zorrak ordaindu ahal omen dituzte  
 debts pay off be-able QUOTATIVE Aux  
 '(It is said that) they can pay off their debts'

Finally, in Sanio-Hiowe, a 'head-final' language of New Guinea, the order of the perfect aspect particle, of the tense particles, and of the interrogative particle, appears to be the mirror-image of that

found in 'head-initial' languages with particles. See (57)a-b (also see the case of Hidatsa in the appendix):

- (57)a Eiworo urei yei awere (Lewis 1972,15)  
 who stay FUT Q  
 'Who is staying?'  
 b Onu tei ye (Lewis 1972,17)  
 sit PERF PAST  
 'We sat down'

**3.5 Evidence from mixed cases.** In this section, some cases will be considered in which particles or auxiliaries cooccur with bound functional morphemes.

Given the Mirror Principle and the universal Spec-head-complement order coupled with leftward movements of heads (and nonheads in the derivation of 'head-final' languages - cf. Kayne 1994), we expect to find only certain combinations of free and bound morphemes (if indeed there is a fixed hierarchy of functional heads).

Such mixed cases thus provide evidence of a novel and special type for determining the order of functional heads.

Combinations of inflected auxiliaries and aspectual particles preceding the main verb are typically found in Celtic languages. Welsh, for example, has an aspectual particle, *wedi* (lit. 'after'), to express perfect aspect, but expresses Tense and (irrealis) Mood through suffixes (cf. Ouhalla 1988,1991; Hendrick 1991, among others).

When no aspectual particle is present, the Tense (or Mood) suffixes are attached to the main verb (cf. (58) = (7) of Hendrick 1991,173):

- (58) Cana i yfory  
 sing-FUT-1sg I tomorrow  
 'I will sing tomorrow'

When the aspectual particle *wedi* is present, Tense (or Mood) suffixes are attached to an auxiliary which precedes *wedi*. Cf. (59) = (4) of Hendrick 1991,172):

- (59) Bydda i wedi canu erbyn saith o'r gloch  
 be-FUT-1sg I PERF sing by seven o'clock  
 'I will have sung by seven o'clock'

This is expected if Tense/Mood is higher than (perfect) aspect (which in turn is higher than the main verb) as the particle in  $Asp_{perfect}$  prevents the main verb from reaching Tense/Mood, thus requiring the insertion of an auxiliary to bear the Tense/Mood suffix.

Welsh has a progressive aspect particle as well (*yn*, lit. 'at'), which also precedes the main verb. Again, when this is present, Tense (or Mood) suffixes appear on an auxiliary verb. Cf. (60) = (1) of Hendrick (1991,172):

- (60) Bydda i 'n canu yfory  
 be-FUT I PROG sing tomorrow  
 'I will sing (be singing) tomorrow'



More generally, whenever suffixes and particles cooccur, we expect that a suffix expressing a functional head higher than the one associated with the particle will necessarily be found on an auxiliary verb (the main verb being 'trapped' below the particle).

The two aspectual particles of Welsh can cooccur, with the perfect aspect particle preceding the progressive aspect particle. Cf. (61) = (6) of Hendrick (1991,173):<sup>42</sup>

- (61) Oedd y bachgen wedi bod yn ymlad  
 be-PAST the boy PERF be PROG fight  
 'The boy had been fighting'

Welsh thus gives evidence for the order of heads in (62) (a conclusion already explicitly suggested in Ouhalla 1988,71f):<sup>43</sup>

- (62) T/Mood Asp<sub>perfect</sub> Asp<sub>progressive</sub> V

In addition to the combination of agglutinating suffixes and (modal) particles (cf. fn. 9 above), Korean illustrates another kind of mixture: the coexistence of 'closing' and 'non-closing' suffixes.

So, for example, the habitual suffix *-kon* and the progressive suffix *-ko* appear not to tolerate further affixation. What happens, then, is that suffixes corresponding to higher heads (Tense and speech act Mood) require the insertion of an auxiliary verb (*ha-* 'do' and *iss-* 'be', respectively). See (63)a-b (from Song 1995, 253, 261):

- (63)a Chelwu-nun cangnangam-ul mantul-kon ha-ass-ta  
 C.-TOP toy-ACC make-HAB do-PAST-DEC  
 'C. used to make toys'  
 b Dasom-i ppalli talli-ko iss-ess-ta  
 D.-NOM fast run-PROG be-PAST-DEC  
 'D. was running fast'

If the derivation suggested in fn.9 above (in the spirit of Kayne 1994) is correct, we indeed expect

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<sup>42</sup>I take the auxiliary (*bod* 'be') in between the two particles to be inserted under an intermediate functional head: Perhaps, *wedi* selects a non finite verbal form; a requirement which the particle/preposition *yn* cannot satisfy.

One could possibly view *yn* not as the head of Asp<sub>progressive</sub> but as the head of the CP/PP above it (in Kayne's 1993a analysis); a possibility indirectly supported by the Italian (and Spanish) progressive periphrasis *stare* 'stay' + V-*ndo*, if analysed as in (i):

(i) ..[ BE [CP/PP P<sub>Loc</sub> [progressive Aspect -ndo [ ... [ V ]]]]] (with P<sub>Loc</sub>+BE --> *stare* 'stay')

<sup>43</sup>For the similar case of Irish (ia) and Scottish Gaelic (ib), see Ó Baoill (1994,209) and Cram (1983-84,315), respectively:

- (i)a Bhí mé i ndiaidh a bheith ag scríobh leabhair  
 BE-PAST I after to be at writing book-GEN  
 'I had (just) been writing a book'  
 b Tha mi air a bhith a' sgríobhadh litir  
 Am I PERF (lit. 'after') to be PROG (lit. 'at') write a letter  
 'I have been writing a letter'

the auxiliary verb (plus the 'higher' suffixes) to be to the right of the main verb with the 'closing' suffix. This is due to the leftward movement of the XP containing the main verb across the auxiliary verb.

An entirely parallel case is found in Turkish, where neither the perfect aspect suffix *-miş* nor the progressive aspect suffix *-yor* permit the further suffixation of the 'abilitative' morpheme, whence the insertion of an auxiliary to bear the latter. Cf. (64)a-b, provided by Jaklin Kornfilt (personal communication).<sup>44</sup>

- (64)a Oku-muş ol-abil-ir  
 read-PERF be-ABLE-AOR  
 'He might have read'  
 b Gid-yor ol-abil  
 go-PROG be-able  
 'he can be going'

**3.6 Some remarks on prefixes, derivation and inflection.** The relation between the order of (functional) prefixes on the verb and the order of the corresponding functional heads in clausal structure is rarely discussed in the literature, and remains yet to be fully understood, especially in relation to the Mirror Principle.

The first thing to note concerning the order of what are taken to be verbal prefixes in various languages, is the existence of (at least) two major types.

In the first, exemplified by Navajo (and other Athapaskan languages), the order of prefixes (at least, so called 'conjunct' prefixes)<sup>45</sup> *left to right* appears to be just like that of suffixes, with Aspect to the left of Tense (which is to the left of subject Agreement), the only difference apparently being the position of the verb, which comes last, rather than first in the sequence: ..Asp-T-AGR-V (cf. Speas 1990a,b).

In the second major type, exemplified by various Bantu languages, the prefixes appear to directly reflect the order of functional heads, with Agreement to the left of Tense, itself to the left of Aspect (in some Bantu languages, Aspect is found suffixed to the verb root).

Both types seem to provide a challenge to the Mirror Principle, at least under a restrictive theory, such as that of Kayne's (1994) (and Chomsky's 1995), which only allows raising (and no lowering), and left-, but no right-, adjunction.<sup>46</sup>

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<sup>44</sup>In recent work, Kornfilt (cf. Kornfilt, to appear) argues that most agglutination in Turkish is in fact apparent, arising from the juxtaposition of constituents formed by a verb with a closing suffix followed by (sometimes null) clitic auxiliaries with other closing affixes. To judge from certain common properties, it is possible that her arguments carry over to Korean (and to agglutinating languages, more generally). Also see Dobrovolsky (1976).

<sup>45</sup>'Conjunct' prefixes are often opposed to 'disjunct' prefixes, which precede them, and are separated from them by a stronger phonological boundary (cf. Rice 1991a,b, and references cited there). On a speculative remark on 'disjunct' prefixes, see below.

<sup>46</sup>The problematic nature of the Navajo case for the Mirror Principle is noted, and discussed, by Speas (1990a,b).

In a non restrictive theory which allowed both lowering and right- (as well as left-) adjunction, the Navajo case

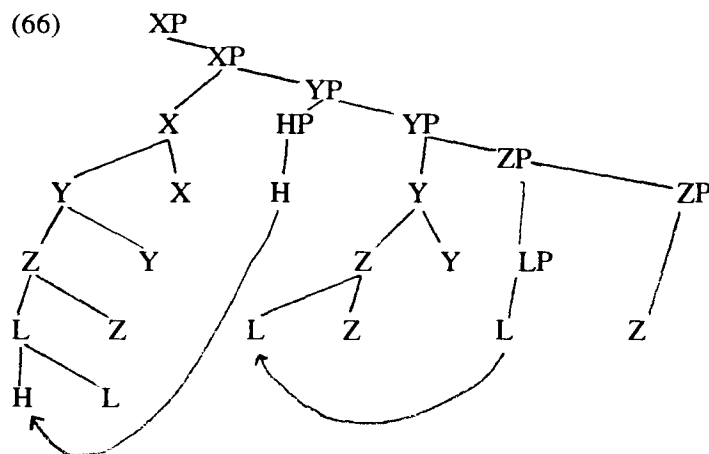
How, then, can these two types of prefix systems be analysed in the restrictive theory (and rendered compatible with the Mirror Principle)? I can only offer some tentative suggestions.

Consider, first, the case of Navajo-type languages.

A possible analysis, suggested to me by Mark Baker and Lisa Travis (p.c.), is to postulate the existence of a null auxiliary, which starts the successive adjunction of lower to higher heads, with the lexical V a phonological clitic to the cluster (cf. also Kornfilt's work cited in fn.44):<sup>47</sup>

(65) ...[Aux]-Agr<sub>o</sub>-Asp-T-Agr<sub>s</sub>#V

As to what are traditionally called 'disjunct' prefixes in the Athapaskan literature, which precede the 'conjunct' prefixes of (65) and "modify the meaning of the verb stem [...] in ways that can be grossly characterized as adverbial" (Rice 1991a,99), I will tentatively assume that, much like standard cases of incorporation (cf. Baker 1988), they arise through the incorporation of the heads of specifiers subjacent to the head successively rising up the tree, as abstractly shown in (66):



This derivation has two consequences: 1) the morphemes in the head positions of the extended projection of Z will appear in an order which is the mirror-image of the underlying order (..Z-Y-X..), as expected under the Mirror Principle; 2) the incorporating heads of the specifiers will instead be prefixed onto Z in a non-mirror fashion, the closest to Z being the head of the lowest specifier (the one which incorporates first), etc.: H-L-Z..

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could be derived by lowering T, and adjoining it to the right of Asp, and then lowering the Asp-T complex head, adjoining it to the left of V.

Needless to say, in such a system almost anything goes, including many unattested cases. Here, I am assuming, after Kayne (1994), that only (single) adjunctions to the left are possible, of heads (to heads), and XPs (to XPs), subject to Relativized Minimality (Shortest Movement), including the successive leftward adjunctions of portions of clausal, and nominal, structure in 'head-final' languages. Cf. the cases discussed in §§ 3.2, 3.3, and in Cinque (1996, §6). The latter adjunctions cannot be to adverb-related functional XPs (to which AdvPs are adjoined). So they must be adjunctions to separate XPs, whose nature remains to be clarified.

<sup>47</sup> Possible evidence for this conjecture may be the fact (discussed in Rice 1991b) that the 'prefixes' in (65), traditionally called 'conjunct' prefixes, are a domain of (phonological) rule application that excludes the verb (and the so-called 'disjunct' prefixes preceding them).

Some evidence for this analysis of Athapaskan disjunct prefixes may come from the following considerations, based on Rice (1991a).<sup>48</sup> Such prefixes (which range from six to nine, according to the language) typically comprise: an object of postposition, a postposition, iterative adverbs, a distributive form (and an incorporated object in some varieties).

Their nature, as well as the fact that they are "framed" by two unequivocally incorporated elements (the object of the postposition and the direct object), makes them natural candidates for an across-the-board incorporation analysis.

Secondly, the limited variation found across the family, which only involves the relative positions of the incorporated object and the adverbs (Rice 1991a, 109), or the distributive quantifier and the iterative adverb (Rice 1991a, 107) is possibly to be attributed to the different positions from which the head of the DP or QP incorporate (after possible DP-movements).

No variation should instead be possible for the positions of the adverbs, if these do not move. And, indeed, none is found, apparently. Cf. Rice (1991a, 118). The order of the adverbial prefixes in Navajo is *reversative* ('back') - *semeliterative* ('again') - *iterative* (which Rice does not gloss, saying that it is the most general, semantically). In the present analysis, the order should directly reflect the order of the corresponding AdvPs in specifier position. And thus it is at least suggestive that in English the most natural order appears to be *back* > *again* > *several times* (cf. *He had to put it back again several times*).<sup>49</sup>

An 'incorporation' analysis for the second major type of prefixes (that of Bantu), appears dubious, especially in relation to the Tense prefixes, for which an incorporation analysis (from the head of a subjacent specifier) looks much less natural. A more plausible analysis would consist in treating them as free morphemes (particles) clitic on the verb:

- (67) n-kà-láá-boomba                    (ChiBemba - Givón 1972)  
       1sg-FUT-PROG-work  
       'I'll be working tomorrow'

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<sup>48</sup>Also see the detailed studies by Rice (1989) on Slave, and Axelrod (1993) on Tense, Mood and Aspect in Koyukon Athapaskan.

<sup>49</sup>I am grateful to Peter Culicover for a clarifying discussion. A comparable case is represented by Yimas, a polysynthetic language of New Guinea. In Foley's (1991, §6.4) description, the verb root, which is followed by Aspect, Tense, and Agreement suffixes (in that order), is preceded by the following sequence of (optional) prefixes: modality - negation - object pronominal - subject pronominal -definitive - incorporated adverbs - directionals - valency - incorporated object.

Some adverbs incorporate optionally (cf. (i)a-b); others obligatorily (cf. (ii)a-b), where "obligatorily incorporated adverbials commonly, but not exclusively, express aspectual or temporal notions, while optionally incorporated adverbials denote the manner or degree to which an action is carried out. [In (ii)b,] the adverbial *nanay* - DUR is [...] in combination with the aspectual suffix *-na* (ŋ) DUR." (Foley 1991, 336f):

- (i)a na-n-**mampi**-ira-wamp<sup>ŋ</sup>kra-ntut  
       3sg-O3sg-**again**-ALL-angry-(Remote)PAST 'He was angry with her again'  
       b **mampi** na-n-ira-wamp<sup>ŋ</sup>kra-ntut  
       **again** 3sg-O3sg-ALL-angry-(Remote)PAST 'He was angry with her again'
- (ii)a impa-**yakal**-cmi-kiantut  
       3DUAL-CONT-say-(Far)PAST 'Those two were talking'  
       b kay na-**nanay**-yamat-<sup>ŋ</sup>na-ntut  
       canoe 3sg-DUR-carve-DUR-(Remote)PAST 'He was making a canoe'

Possible support for this analysis is the fact that in some Bantu languages they can also appear separated from the verb, being in fact cliticized to some other constituent. Cf. (68)a-b, from Ibibio and Nɔmaándɛ, respectively.<sup>50</sup>

- (68)a  $\acute{M}$  - mǎ - sí - sâk      ñkǎ dó      (Essien 1987,163)  
 AGR-PAST-HAB-still go there  
 'I still used to go there'
- b Tu - ti - ké - búl - asɔ́      fána      (Wilkendorf 1991,143)  
 1pl-NEG-FUT-HAB-1pl read  
 'We will not have the habit of reading (from tomorrow)'

Pending deeper studies of prefix systems and their nature, no definitive conclusions can be reached at this stage.

As a final point, I want to mention a general prediction for the order of functional heads which derives from the Mirror Principle if that is taken to hold of derivational and inflectional/agglutinating suffixes alike (cf. fn.3 above).

Given that derivational suffixes are always closer to the stem than inflectional/ agglutinating suffixes, it is to be expected that where both express functional heads, the heads expressed by derivational suffixes are lower than those expressed by inflectional/agglutinating suffixes.

Although the prediction has not been extensively checked in the literature, the little evidence that is available would seem to indicate that it is essentially correct.

So, for example, while one finds in the same language aspectual notions encoded derivationally and mood notions encoded inflectionally (as in Central Alaskan Yup'ik - cf. Mithun and Ali 1996), the reverse is apparently not found.

It may also happen that some languages encode certain aspectual notions derivationally and others inflectionally. But, as Bybee (1985,101f) notes, in such cases there is no complete freedom of expression. For example, inceptive and iterative aspects can be expressed derivationally while perfect and habitual aspects are expressed inflectionally, but not viceversa.

This accords well with the fact that the latter aspects are "higher" than the former. Cf. §3.7.<sup>51</sup> But the whole question should be explored more systematically.<sup>52</sup>

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<sup>50</sup>For the Bantu language Shona (Bellusci 1991) the null auxiliary analysis of the Navajo conjunct prefixes might be more relevant, for aspect prefixes precede tense prefixes, as in Athapaskan:

(i) nd - a - ka - swero - funda      (Bellusci 1991,29)  
 AGR-ASP-PAST-all day long-study  
 'I studied all day long'

<sup>51</sup>In keeping with the fact that habitual aspect is cross-linguistically the "highest" of all aspects, Bybee notes that it does not appear to be expressed derivationally. Rather, "it is either inflectional or marked with free grammatical morphemes (such as auxiliaries)" (p.101). But see the case of Aleut in the appendix, where, according to Bergsland, all aspects are expressed derivationally (including habitual aspect - ex. (16a)), while tense is inflectional.

<sup>52</sup>It also appears that functional notions encoded via modifications of the verb root (as in Semitic non-concatenative morphology) correspond to functional heads "lower" than those encoded via affixation (cf. Bybee 1985,34). So, for example, in Arabic, Voice and Aspect is non-concatenative while mood is affixal (Fassi Fehri 1993,82ff). Similarly, in Chaha (a South Ethiopian Semitic language) aspect is non-concatenative while tense

**3.7 The Universal Hierarchy of Functional Heads (a first approximation).** In this section, I recapitulate, for convenience, the evidence for the pairwise order of the different functional heads. As noted, such relative orders give rise, by transitivity, to a single overall order of heads (cf. (90) below), which seems to be cross-linguistically consistent (Many of the additional relative orders expected from the overall order are indeed attested, but I will not attempt a systematic survey. Some can be seen in the data discussed above and in the appendix below).

Although certain interchanges in the order of suffixes are possible with grammatical function changing suffixes (causative, applicative, passive, etc. - cf. Baker 1985), with nominal suffixes (reflexive/reciprocal, distributive, associative, etc. - cf. Fagerli 1994), and with suffixes expressing negation (cf. chapter 5, fn.47), I have come across no cases in the literature in which suffixes (or particles) involving mood, modality, tense and aspect can vary their relative order.

a) *Mood<sub>speech act</sub>* > *Mood<sub>evaluative</sub>*

This order is motivated by the relative order of suffixes for speech act mood and evaluative mood (expressing 'surprise') in Korean. Cf. (2), repeated here:<sup>53</sup>

(2) Ku say-ka cwuk-ess-keyss-kwun-a  
That bird-NOM die-ANT-EVALUAT-DECL  
'That bird must have died!'

b) *Mood<sub>evaluative</sub>* > *Mood<sub>evidential</sub>*

Evidence for this order is again provided by Korean. Cf. (3), above, repeated here:

(3) Minca-nun ttena-ss-te-kwun-yo  
M.-TOP leave-PAST-EVID-EVALUAT-POLITE  
'I noticed that M. had left!'

c) *Mood<sub>evidential</sub>* > *Mod<sub>epistemic</sub>*

Evidence for this order comes from Korean (cf. (1) above, repeated here), and (possibly) Hixkaryana

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in affixal (Rose, to appear).

This follows naturally if features within the root have to be checked 'before' features on outer morphological layers.

In the same line, it is to be expected that functional notions encoded on the lexical verb (either through root modifications or affixation) systematically correspond to functional heads "lower" than those expressed via independent particles or auxiliary verbs.

<sup>53</sup>Evaluative mood suffixes and particles exist in other languages as well. See chapter 4 below (§4.6).

(cf. (69), from Palmer 1986,54):<sup>54</sup>

(1) Ku pwun-i cap - hi - si - ess - ess - keyss - sup - ti - kka ?  
The person-NOM catch-PASS-AGR-ANT-PAST-EPISTEM-AGR-EVID-Q  
'Did you feel that he had been caught?'

(69) Nomokyan ha-t  
he.come.non past.uncertain intensifier-EVID  
'He is coming (they say)'

d]  $Mod_{epistemic} > T(Past)$

Evidence for this order is found in Korean (cf. again (1)); in Guyanese Creole ((70)a); in the Sino-Tibetan language Garo ((70)b); and in Oksapmin (New Guinea) ((70)c):<sup>55</sup>

(70)a Jaan shuda bin kyaan get fu gu (Gibson 1986,585)

J. MOD<sub>epistemic</sub>PAST MOD<sub>root</sub> MOD<sub>root</sub> COMP go  
'J. should not have been able to be allowed to go'

b anti-ci re'an-aha-kon (Bybee 1985,180)  
market-to go-PAST-PROBABLE  
'He probably went to the market'

c go haanip di-kin-o poripti...  
you person eat.PAST-PROBABLE-quotation marker say then..  
'"You probably attacked the person" we say, then..'

e]  $T(Past) > T(Future)$

Converging evidence for this order comes from the order of the corresponding particles in Guyanese (and other creoles) (cf. (28), repeated below); in Anejom (cf. (71)); and from the mirror-image order of suffixes in Turkish (cf. (5)b, repeated here as (72)a); Lezgian (cf. (72)b); Mongolian (cf. (72)c); and Malayalam (cf. (73)) (also see (50)a, from Zuni, and (4)c, from Abkhaz, in the appendix):

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<sup>54</sup>Palmer (1986) says that:"the 'non-past uncertain' form of the verb appears to be used as a general marker of epistemic modality" (p.65). I assume that the evidential head has been crossed over by its complement.

<sup>55</sup>Recall that the apparent evidence from Haitian and other Creoles for the same order is perhaps irrelevant (cf. §3.4 above). Hidatsa provides evidence for Mood<sub>evidential</sub> > T(Past) (expected by transitivity if Mood<sub>evidential</sub> > Mod<sub>epistemic</sub> and Mod<sub>epistemic</sub> > T(Past). Cf. (39)a in the appendix). Una and Tauya, instead, provide evidence for Mod<sub>epistemic</sub> > T(Future), which is also expected by transitivity if Mod<sub>epistemic</sub> > T(Past) and T(Past) > T(Future). Cf. e) below.

- (28) Jaan bin gu riid (Gibson 1986,585)  
 J. PAST FUT read  
 'J. would have read'
- (71) Is ika aen is pu apam imran (Lynch 1982, 119f)  
 PAST say he PAST FUT come tomorrow  
 'He said he would come tomorrow'
- (72)a oku-y-abil-ecek-ti-m (Jaklin Kornfilt, p.c.)  
 read-y-can-FUT-PAST-1sg  
 'I was going to be able to read/I would be able to read'  
 b Im xizan.di-z jeke kùmek že-da-j (Haspelmath 1993,140ff)  
 this-ABS family-DAT big help be-FUT-PAST  
 'This would be a big help for the family'  
 c ɤx'ɫn-d beləg aw-əx bai-səŋ (Svantesson 1991,200)  
 girl-DAT present buy-FUT(irr.) be-PAST  
 '..he would have bought a present for the girl'
- (73) naan innale aviDe pook-um-aayir-unnu (Babu 1996,12)  
 I-NOM yesterday there go-FUT-be.PAST-PRES  
 'I would have gone there yesterday'

Additional evidence is found in the African languages Bangwa and Northern Sotho.

In Bangwa, the particles for T(Past) precede negation, whereas the particles for T(Future) follow negation (cf. Nguendjio 1992,95):

- (74)a Pò ná' kè kwé mbè wó  
 1pl (remote)PAST NEG eat-ANT meat NEG  
 'We had not eaten meat'  
 b Pò ká' í ŋkwé mbè wó  
 1pl NEG FUT eat-IMPERF meat NEG  
 'We will not eat meat'

In Northern Sotho an auxiliary marking (absolute) past can be followed by the verb in the future, to yield the (past) conditional (cf. (75)):<sup>56</sup>

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<sup>56</sup>If the past auxiliary is followed by the verb in the unmarked form, it yields past progressive (cf. (i)a); if it is followed by the verb in the anterior (=past) form, it yields the anterior of the past (cf. (i)b), all from (Louwrens, Kosch and Kontzé 1995,52ff):

- (i)a Mosadi o-bê a-rêka nama  
 woman AGRs-AuxPAST AGRs-buy meat 'The woman was buying the meat'  
 b Mosadi o-bê a-rêk-ilê nama  
 woman AGRs-AuxPAST AGRs-buy-ANT meat 'The woman had bought meat'
- As expected, the anterior of the future is rendered as in (ii), while (iii) is the future progressive. Present progressive is marked with another prefix. Cf. (iv):
- (ii) Mosadi o-tla-ba a-rêk-ilê nama  
 woman AGRs-FUT-Aux AGRs-buy-ANT meat 'The woman will have bought meat'



- (75) Mosadi o-bê a-tla-rêka nama  
 woman AGRs-AuxPAST AGRs-FUT-buy meat  
 'The woman would have bought meat'

f] *T(Future)* > *Mood<sub>irrealis</sub>*

Evidence for this order is apparently provided by the Creole language Ndyuka (cf. (76)), and by Samoan (cf. (77)= (26)a of the appendix):<sup>57</sup>

- (76) I ben o sa poi (fu) nyan ete? (Huttar and Huttar 1994,519)  
 2sg PAST FUT IRR can (for) eat yet  
 'Would you have been able to eat already?'

- (77) "Ae a lava pe a sei e alu atu e ai lelei  
 But EMPH EMPH Q FUT IRR 2sg go DIR GEN eat good  
 'but if you go and eat well..'

g] *Mood<sub>irrealis</sub>* > *Mod<sub>root</sub>*

Evidence for this relative order comes from Ndyuka (cf. (76)), and from the Austroasiatic language Kammu (cf. (78), from Svantesson 1994,268):<sup>58</sup>

- 
- (iii) Mosadi o-tla-ba a-rêka nama  
 woman AGRs-FUT-Aux AGRs-buy meat 'The woman will be buying meat'  
 (iv) Mosadi o-sa-rêka nama  
 woman AGRs-PROG-buy meat 'The woman is still buying meat'

Note that the translation of (75) would lead one to expect *a-tla-rêk-ilê* (FUT ANT) rather than *a-tla-rêka* (FUT).

<sup>57</sup> Also see the case of Tigak cited in fn.35 above. The Jacalteco example cited in Palmer (1986,45), may be relevant as well:

- (i) x'-'oc heb ix say-a' hun-uj munlabal  
 ASP-start PL woman look for-FUT a-IRR pot  
 'The women started looking for a pot'

<sup>58</sup> The claim that  $c^{\backslash}əð$  is irrealis mood, rather than future tense, is Svantesson's (p.276). To judge from Rottet (1992,fn. 12) (irrealis) mood also precedes root modals in Louisiana Creole. Hawick Scots gives instead evidence for the order *T(Future)* > *Mod<sub>root</sub>* (expected by transitivity if *T(Future)* > *Mood<sub>irrealis</sub>* and *Mood<sub>irrealis</sub>* > *Mod<sub>root</sub>*):

- (i) He'll can get you one (Brown 1992,75)  
 (=He will be able to get you one)

- (78) cə̀ə pǎ́ə p ɪ̃ an p ɔ̀ mə̀h  
 IRR NEG can eat food  
 '[I] will not be able to eat anything'

h] *Mod<sub>root</sub>* > *Asp<sub>habitual</sub>*

In Haitian Creole all aspect particles follow root modals (cf. §3.4), but that may be irrelevant if, as noted, modals are main verbs there taking sentential complements.

i] *Asp<sub>habitual</sub>* > *T(Anterior)/Asp<sub>perfect</sub>*

In many cases it is not easy to tell apart anterior tense (E\_\_\_R of Reichenbach 1947) from perfect aspect, so I will treat them together here in their relation to habitual aspect (but see l], just below, for apparent evidence distinguishing *T(Anterior)* and *Asp<sub>perfect</sub>*, and ordering the former before the latter). If 'imperfect' is the default value of *Asp<sub>perfect</sub>*, Berbice Dutch Creole (44)b in the appendix below is possibly interpretable as evidence for the order *Asp<sub>habitual</sub>* > *Asp<sub>perfect</sub>*. In this creole, *Asp<sub>perfect</sub>* (together with various aspects) is expressed through suffixation on the verb whereas habitual aspect is realized via a preverbal particle (*das*): a situation suggestive of the fact that the particle fills a head higher than the head to which the verb (+ the *Asp<sub>perfect</sub>* suffix) can rise (This interpretation recalls the mesolectal Guyanese creole case mentioned in fn.26 above, where progressive aspect is suffixal and habitual aspect is expressed via a particle: *shi doz aalweez de singing* 'she is usually always singing'). Reasons to order *Asp<sub>habitual</sub>* before *Asp<sub>perfect</sub>* are seemingly also found in Basque, in the Austroasiatic language Kammu, and in Işekiri, a Niger-Congo language (cf. (79), (80) and (81), respectively):

- (79) eda-n ohi du (Ortiz de Urbina 1989,141)  
 drink-PERF HAB Aux.agr  
 'He usually drinks'
- (80) Ò kù p ɔ̀ mə̀h hóoc yem kmrà r ɔ̀ɔt tàa kaaj (Svantesson 1994,273)  
 1sg HAB eat food PERF when wife come to home  
 'I have usually eaten when [my] wife comes home'
- (81) O waá ká rè r ɛ̀n<sup>59</sup> (Omamor 1982,110)  
 He FUT HAB go PERF  
 'He will have started going habitually'

Relevant in this connection may also be Bybee's (1985,144) observation that in Nahuatl and Pawnee "the imperfective marker is closer to the stem than the habitual marker".

l] *T(Anterior)* > *Asp<sub>perfect</sub>*

Evidence for ordering *T(Anterior)* before *Asp<sub>perfect</sub>* is apparently offered by Kristang, a Malaccan

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<sup>59</sup>For the frequent ingressive interpretation of perfective forms, see Comrie (1976,19f).

Creole (and by the neighboring language Malay). The conclusion remains however quite tentative as the relevant data and descriptions are not totally perspicuous. Kristang shows two preverbal particles, *ja* (related to the Portuguese adverb for 'already'), and *kaba* (related to the verb *kabá* 'finish', from Portuguese *acabar*), which cooccur in the order *ja kaba*. Although he glosses them 'Perfect' and 'finish', respectively, Baxter (1988) says that *ja* is a TMA marker with a "'prior' function" (p.121), and *kaba* "a completive aspect marker" (p.132), and that *ja + kaba* is used "to express the prior completion of the action" (p.122):<sup>60</sup>

- (82) Kora yo ja chegá eli **ja kaba** bai  
 when 1sg ANT arrive 3sg ANT PERF go  
 'When I arrived he had already gone out'

Baxter (1988,133) also notes the exact correspondence of the Malay sentence (83):

- (83) bila gua sampai dia (sudah) **habis** pergi  
 when 1sg arrive 3sg ANT PERF go  
 'When I arrived he had already gone'

Another case in point is possibly found in Sea Island Creole, where the perfect aspect particle *done* comes after the past/anterior particle *been*, as in *she might been done cook*, which Cunningham(1992,51) renders as 'she may have cooked [already]' (the *done* of *he done ate it* found in southern American varieties, and which Whitley 1975,94 glosses as 'already', may instead have been reanalysed as an adverb). Cf. also the case of Tokelau in (27) of the appendix.

m]  $Asp_{perfect} > Asp_{retrospective}$

While I know of no evidence for this order, evidence for the order  $T(\text{Anterior}) > Asp_{retrospective}$  is found in Seychelles Creole. See (84):

- (84) Zā ti a n fek pe māze (Papen 1978,362)  
 J. PAST FUT ANT RETRO PROG eat  
 'J. would just have been eating'

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<sup>60</sup>Also see Thurgood and Thurgood (1996). A clue to distinguish T(Anterior) from perfect aspect may also be given by the translation, when the relevant morphology cooccurs with (absolute) past tense morphology. If it is translated as simple past (as in Dagaare - cf. (i) below; Sanio-Hiowe - cf. (57)b above, repeated here as (ii); or Basque- cf. (iii)), it is presumably perfect aspect, not T(Anterior). If it is translated as 'pluperfect' (anterior of the past), it is presumably T(Anterior), though T(Anterior) morphology sometimes expresses perfect aspect syncretically.

- (i) O da kul-ee (vs. kul-o) la (Bodomo 1993,32)  
 (S)he PAST go-home-PERF (vs. go-home-PROG) affirmative marker  
 '(S)he went (vs. was going) home'
- (ii) Onu tei ye (Lewis 1972,17)  
 sit PERF PAST  
 'we sat down'
- (iii) Nik liburnak irakurr-i n-it-u-en  
 I-ERG books-ABS read-PERF 1sgE-PL-have-PAST  
 'I read the books'

n]  $Asp_{retrospective} > Asp_{progressive}$ <sup>61</sup>

For this order, see (84), from Seychelles Creole, and the Haitian sentence (i)b of fn. 30 above, repeated here as (85):

(85) Jan fek ap kuri  
 J. RETRO PROG run  
 'J. has just been running'

o]  $Asp_{progressive} > Asp_{prospective}$

Evidence for this order comes from Gungbe (cf. (51)e above, repeated here as (86), from Thai (cf. (20)a of the appendix, given here as (87)), and from (my interpretation of) Mofu-Gudur. Cf. (7)a (and the related footnote) of the appendix, given here as (88)):

(86) Assiba ná to na ho kèkè lo  
 A. FUT PROG PROSP buy vélo the  
 'A. will be about to buy the vélo'

(87) kháw kamlang ca? thuuk wicaan  
 he PROG PROSP PASS criticize  
 'He is about to be criticized'

(88) Ngaa kwama ya sawa ná, ndaw mayal fá da lá dolá daw  
 Of yesterday I come TOP, man thief PROG PROSP take money my  
 'Yesterday, when I came, a thief was just about to steal my money'

p]  $Asp_{prospective} > Asp_{completive}$

The 'corpus' of the previous sections and of the appendix fails to determine the order between completive and prospective aspect (or between completive and progressive or retrospective aspect, for that matter).

On the basis of Fula/Fulfulde (cf. Arnott 1970, Fagerli 1994), we know at least that completive aspect follows perfect aspect, as the latter precedes 'celerative' aspect (marking an action performed 'quickly'), which in turn precedes completive aspect. Thus a portion of the order of such aspectual heads remains undetermined. Cf. (89), which is meant to represent the fact that no order can be established (on the evidence produced so far) between elements belonging to the top and bottom lines (Also recall that

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<sup>61</sup>Guyanese Creole shows the order  $Asp_{durative} > Asp_{progressive}$ , where durative aspect "refers to the fact that a given situation is CONCEIVED OF as lasting for a certain period of time" (Gibson 1992,57). Since durative aspect follows habitual aspect and Guyanese has no particle for perfect and retrospective aspect (I assume *don* to be T(Anterior)), the exact location of durative aspect w.r.t. the former aspects is underdetermined. For concreteness, I will order it between retrospective and progressive aspect. Some clue will come from the order of the corresponding adverb classes, to be discussed in the next chapter.

I have tentatively ordered durative aspect between retrospective and progressive aspect, without real evidence):

$$(89) \dots \text{Asp}_{\text{perfect}} \left\{ \begin{array}{l} > \text{Asp}_{\text{celerative}} > \text{Asp}_{\text{completive}} > \dots \\ > \text{Asp}_{\text{retrospective}} > \text{Asp}_{\text{durative}} > \text{Asp}_{\text{progressive}} > \text{Asp}_{\text{prospective}} \end{array} \right\}$$

A way to determine the missing relative orders will be discussed in the next chapter.

Following completive aspect are apparently (semel)repetitive ('again'), and iterative ('several times') aspects (cf. Fula/Fulfulde in the appendix). Once again, I refer to the next chapter for a more careful discussion.

Putting together the pairwise relative orders considered so far, we obtain the single overall order shown in (90), at this point with certain indeterminacies and arbitrary choices (e.g. to linearize the underdetermined relative orders in (89) above, and regarding the position of Voice):

$$(90) \text{Mood}_{\text{speech act}} > \text{Mood}_{\text{evaluative}} > \text{Mood}_{\text{evidential}} > \text{Mod}_{\text{epistemic}} > \text{T(Past)} > \\ \text{T(Future)} > \text{Mood}_{\text{irrealis}} > \text{Mod}_{\text{root}} > \text{Asp}_{\text{habitual}} > \text{T(Anterior)} > \text{Asp}_{\text{perfect}} > \\ \text{Asp}_{\text{retrospective}} > \text{Asp}_{\text{durative}} > \text{Asp}_{\text{progressive}} > \text{Asp}_{\text{prospective}} / \text{Voice} / \\ \text{Asp}_{\text{celerative}} > \text{Asp}_{\text{completive}} > \text{Asp}_{\text{(semel)repetitive}} > \text{Asp}_{\text{iterative}}$$

Though not all orders expected by transitivity from (90) are documented in our corpus, at least the many attested are compatible with it.

If indeed the orders found in individual languages turn out not to contradict the more comprehensive order in (90) (or refinements of it), this can be no accident. The observation would in fact become understandable if (90) were an order available to all languages.

This in turn is open to two interpretations. In one (the weaker), (90) would be an order determined by UG, from which individual languages 'pick' their own stock of functional heads. In the other (the stronger), UG would make (90) available in its entirety to all languages.

In the next chapters, I will try to argue for the stronger interpretation, suggesting that adverbs provide direct evidence for the availability of the entire hierarchy in each language.<sup>62</sup>

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<sup>62</sup>A further dilemma is whether the hierarchy is always present, in all sentences of a language, or only those portions of the hierarchy are present which are needed to accommodate morphological material (affixes, adverbs, etc.). Once again, I will try to argue for the second, stronger, alternative, on the basis of the most natural interpretation of the marked and default values of each head (cf. chapter 6 below).

## APPENDIX: A synopsis of the orders of overt functional heads in individual languages

In this appendix, the relative orders of functional heads in a number of languages are given for which overt morphological evidence exists within the language.

Whenever there is some work explicitly proposing a particular order of functional heads, I simply quote that work in parentheses, referring to it for the relevant evidence. Where (to my knowledge) no explicit proposal exists, evidence for the order suggested is given, with an indication of its source.

As above, I ignore the positions of AgrPs and NegPs.

Whenever it was sufficiently clear which particular type of aspect was involved, I have indicated it (also signalling where I adapted the terminology for uniformity reasons). Needless to say, the danger of misinterpreting the facts of unfamiliar languages remains high.

Virtually all of the world's major language groups happen to be represented here (the classification is based on Ruhlen's 1991). This should avoid the risk of basing conclusions about the universal order of functional heads only on languages which are genetically related.

Even though the works and the sources referred to here are of uneven depth and coverage, the survey will have served its purpose if it reveals, or supports, the existence of at least some generalizations.

### INDOEUROPEAN

- English:* T/Mod<sub>root</sub> Asp<sub>perfect</sub> Asp<sub>progressive</sub> Voice V (Chomsky 1957)
- Spanish:* T Asp<sub>perfect</sub> Asp<sub>progressive</sub> Voice V (Zagona 1988, chapter 5)
- Welsh (Celtic):* T Asp<sub>perfect</sub> Asp<sub>progressive</sub> V (§3.5 and Ouhalla 1988; Hendrick 1991)
- Modern Greek:* T Asp Voice V (Rivero 1989)
- Hindi:* T(Past) T(Anterior) /Asp<sub>progressive</sub> V (cf. (23)a-b of chapter 3)

### FINNO-UGRIC

- Finnish:* T/Mood<sub>(tr)realis</sub> Asp<sub>perfect</sub> Voice V (Mitchell 1991; Holmberg et al. 1993)
- Hungarian:* Mood<sub>speech act</sub> T(Past) Mod<sub>root</sub> V

- ( 1)a Meg-javít-t-od-e? (de Groot 1995,40)  
 COMPL-repair-PAST-2sg-Q  
 'Did you repair it?'
- b János meg-javít-hat-ta az órá-t (de Groot 1995,41)  
 J. COMPL-repair-MOD-PAST.3sg the clock-ACC  
 'J. could repair the clock'

## ALTAIC

*Evenki:* Mood<sub>speech act</sub> T(Past) Asp<sub>(im)perfect</sub> Voice/Asp<sub>quickly</sub> V (Nedyalkov 1994,2,12f)

- (2)a Nu an eme-che-n-ʒu, e-che-n-ʒu?  
 3sg come-PAST-3sg-Q, Neg-PAST-3sg-Q  
 'Did (s)he come, or not?'  
 b D'apka e-che-n iche- v-d'e-re  
 shore Neg-PAST-3sg see-PASS-IMPERF-fixed form of the lexical verb  
 'The shore is/was not seen'  
 c Beyumimni e-che-n pektirevun-mi ga-malcha-ra  
 hunter Neg-PAST-3sg gun-RelPoss take-quickly-fixed form of the lexical verb  
 'The hunter did not seize the gun'

*Korean:* Mood<sub>speech act</sub> Mood<sub>evaluative</sub> Mood<sub>evidential</sub> Mod<sub>epistemic</sub> T(Past) T(Future) Mod<sub>root</sub>  
 Asp<sub>habitual</sub>/Asp<sub>progressive</sub> Voice V (cf. §3.2, §3.4 and references cited there)

*(Khalkha) Mongolian:* Mood<sub>speech act</sub> T(Past) T(Future) Asp<sub>progressive</sub> Voice V  
 (cf. Svantesson 1991, 191ff)

- (3)a ta: mini ax-tai ʒ:lz-sə̃n-ʒ  
 you my brother-COMITAT meet-PAST-Q  
 'Have you met my brother?'  
 b ..ɔx'ɪ n-d beləg aw-əx bai-sə̃n  
 girl-DAT present buy-FUT(irr) be-PAST  
 '..he would have bought a present for the girl'  
 c bi: čʒɪʒ aw-č mɔGɔi-g čʒɪʒd-dəg bai-la/sə̃ŋ  
 I stone take-PROG snake-ACC throw-HAB be-PAST  
 'I used to take a stone and throw it at the snake'  
 d ter jaw-čix-sə̃ŋ bai-la/sə̃ŋ<sup>1</sup>  
 he go-INT-ANT be-PAST  
 'He had left'  
 e xaŋ al-əgd-čix-že  
 king kill-PASS-INT-PAST  
 'the king has been killed'

*Turkish:* Mood<sub>speech act</sub> T(Past) T(Future) Mod<sub>root</sub> Asp<sub>perfect</sub>/Asp<sub>progressive</sub> Voice V  
 (cf. §3.2, §3.4 and references cited there)

## CAUCASIAN

*Abkhaz:* Mood<sub>evidential</sub>/T(Past) T(Future) T(Anterior) V (cf. Hewitt 1979,89f)

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<sup>1</sup>-la is a (direct) evidential past, vs. sə̃ŋ (a plain past, morphologically identical to the anterior tense). -že, instead, is an (indirect) evidential past.





- (7)a Ngaa kwana ya sawa ná, ndaw mayal fá da lá dolá daw  
 Of yesterday I come TOP, man thief PROG PROSP take money my  
 'Yesterday, when I came, a thief was just about to steal my money'
- b Mahurá, tá goley cáy  
 Big PAST grow ANT  
 '(He was) big; he had already grown up'
- c A kɔrey málágway lá  
 She grind corn PERF  
 'She will grind corn'
- d Ka gwáw ɲgá layáwa lá máy daw (p.245)  
 You can for take^me^DIR PERF also Q  
 'Can you gather it up for me too?'

[NILO-SAHARAN]

**NIGER-CONGO**

*Dagaare:* T(Past) Asp<sub>habitual</sub> Asp<sub>progressive</sub> V (Bodomo 1993)

*Fula/Fulfulde:*<sup>4</sup> Asp<sub>celerative</sub> Asp<sub>completive</sub> Asp<sub>(semel)repetitive</sub> (cf. Arnott 1970; Fagerli 1994)

*Gungbe:* T(Future) Asp<sub>habitual</sub> Asp<sub>progressive</sub> Asp<sub>prospective</sub> V (cf. §3.4 and Aboh 1993)

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construction: "fá and da can appear together to indicate a close future progressive situation, one which is about to occur"(p.250), and by such examples as (7)a in the text, which encode a 'prospective' situation in the past, not the future (also see the case of Gungbe in §3.4).

Second, I interpret the particles cáy (*sém, sát*) as T(Anterior) rather than "perfect" as they give rise to pluperfect ('anterior of the past') with the past tense particle *ta* (cf. (7)b), and precede a particle which Hollingsworth calls "completive", and which appears to mark Perfect aspect in such cases as (7)c (it is common for non-past perfective to mark the future - Comrie 1976,67).

Finally, I take the postverbal and postcomplement position of T(Anterior) and Asp<sub>perfect</sub> to be due to the raising of a non-head constituent past them; a derivation rendered plausible by the final position of the Question particle in (7)d, also stranded by leftward movement of its complement (in Kayne's 1994 spirit). Raising of the complement of T(Anterior)/Asp<sub>perfect</sub> past it is also common in many African languages, and in Creoles (cf. fn.5 of this appendix and chapter 3, fn.27; also see the case of the Austroasiatic language Kammu in (19)b below, and of the Malayo-Polynesian language Kwaio in (22)c below).

<sup>4</sup>I ignore grammatical function changing suffixes (such as Causative, Reflexive, Reciprocal, etc.), which are interspersed among the lower functional heads.

*Isekiri:* T(Future) Asp<sub>habitual</sub> Asp<sub>perfect</sub> Asp<sub>progressive</sub> V<sup>5</sup> (Omamor 1982,110)

- (8) O waá ká r̀̀ r̀̀ r̀̀  
 He FUT HAB go PERF  
 'He will have started going (habitually)'

*Kom:* T(Past) Asp<sub>perfect</sub> Asp<sub>inceptive</sub> Asp<sub>progressive</sub> V (Chia 1976,73ff)<sup>6</sup>

- (9)a Ivuí tí nà sú su?fà  
 rain PAST<sub>3</sub> IMPERF INCEPT fall  
 'Rain was beginning to fall'  
 b Johnson tí nà ch̀̀ -ch̀̀  
 J. PAST<sub>3</sub> IMPERF dance-PROG  
 'J. was dancing'

*Makaa:* T(Past) Asp<sub>frequentative</sub> Asp<sub>progressive</sub> V (cf. Heath 1991, 4 and 12)

- (10) M̀̀ á d̀̀ ng̀̀ d̀̀ id̀̀w kú ǹ̀ bààg̀̀  
 I PAST<sub>3</sub> FREQ PROG eat food NEG with hot-pepper  
 'I often ate food without hot pepper'

*Northern Sotho:* T(Past) T(Future) T(Anterior) Asp<sub>progressive</sub> V  
 (cf. §3.7, and fn.56, based on Louwrens, Kotsch and Kotzé 1995,52ff)

*Yoruba:* Mood<sub>speech act</sub>/T(Anterior) Asp<sub>progressive</sub> V  
 (cf. Adéwolé 1989, 1991; Awobuluyi 1967,235ff; Oke 1972)

- (11)a Mo tí ǹ̀ l̀̀ (Oke 1972,152)  
 I ANT PROG go  
 'I have been going'  
 b S̀̀ o ǹ̀ b̀̀? (Adéwolé 1991,9)  
 Q you PROG come  
 'Are you coming?'

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<sup>5</sup> Cf. Omamor (1982, 110) and (i) below; cf. also Dahl (1985,178). I take the V in (8) to have moved within a larger constituent to a Spec intermediate between Asp<sub>perfect</sub> and Asp<sub>habitual</sub>. If this constituent is Asp<sub>progressive</sub>-P, it may be possible to explain the 'unexpected' order in (i), in which Asp<sub>progressive</sub> precedes Asp<sub>perfect</sub>:  
 (i) M̀̀ waá wíǹ̀r̀̀n (gba) r̀̀ r̀̀ (Omamor 1982, 119)  
 I FUT PROG go PERF  
 'I will already have been going'

<sup>6</sup> I have rendered as IMPERF(ect) what Chia calls 'durative' as it alternates with, and has the opposite value of, PERFECT, which marks "ceasure of an event" (Perfect aspect is incompatible with Inceptive aspect - p.78). Progressive aspect seems to be the lowest aspect in Kom as it is not marked by a preverbal particle but by reduplication of the verb stem (cf. chapter 3, fn.52).

## [KHOISAN]

## SINO-TIBETAN

*Burmese:* Mood<sub>speech act</sub> T Mod<sub>root</sub> V

- (12) cano di - lau'                      pei: dhin      dha      la: (Goral 1988, 16)  
 I    this approximately pay suitable non-FUT Q particle  
 'Should I have paid that much?'

*Chinese:*        Mod Asp<sub>perfect</sub> Asp<sub>completive</sub> V                      (cf. §3.2, based on Smith 1987,1991)

*Garó:*            Mod<sub>epistemic</sub> T(Past) Asp<sub>terminative</sub> V

- (13)a anti-ci    re'an-aha-kon    (Bybee 1985,180)  
       market-to go-PAST-PROBABLE  
       'I think he went to the market'  
 b ca'-man-jok    (Campbell 1991,487)  
       eat-TERMIN-PAST  
       'He has finished eating'

*Kachin:*        T(Future) Mod<sub>root</sub> V    (cf. ex. (54) of chapter 3)

*Patani:*        T(Past) Asp<sub>progressive</sub> V    (cf. Saxena 1995,6)

- (14) ..krápì        lèki        tó-ì  
       cry-nominal PROG be-PAST/3sg  
       '..she was crying'

*Tshangla:*      T(Future) T(Anterior) Asp<sub>progressive</sub> V (cf. Andvik 1993,89)

- (15) got-chho-wa-uphe  
       look-PROG-ANT-FUT  
       '(he) will have been looking'

## [CHUKCHI-KAMCHATKAN]

## ESKIMO-ALEUT

*Aleut:* Mood<sub>speech act</sub> T(Present) Mood<sub>evidential</sub> T(Past)/T(Future) Asp<sub>habitual</sub> Asp<sub>inceptive</sub> Voice V  
 (cf. Bergsland 1994,351,340,337)

- (16)a Hama-n qalgada-â                      taxa-qa-â                      agun-un                      angâgina-z-iin  
       that    food-sg    store-PAST-sg    be-COND-3PAST.sg    person-PL-to-them

- chisi-lga-qali-za-qa-<sup>â</sup> a-xta-ku-x  
 distribute-PASS-INCEPT-HAB-PAST-1sg be-EVID-PRES-1sg  
 'When that food had been stored it was distributed to the people (it is said)'  
 b Sa<sup>â</sup>ga-tu-laga-aqila-a<sup>â</sup>x-txin  
 sleep-much-NEG-FUT-OPT-you  
 'Don't sleep late'  
 c Qila-ga-n uku<sup>â</sup>ta-duu(ka)-ku-ng  
 tomorrow see-FUT-PRES-1sg  
 'I'll see him tomorrow'

*Central Alaskan Yup'ik:* Mood<sub>irrealis</sub> Asp<sub>habitual</sub> Asp<sub>durative</sub> V (cf. Mithun and Ali 1996)

- (17) ayag-uma-lar-tu-q  
 go-long time-HAB-INTR.INDIC-3sg  
 'He customarily goes for long periods of time'

## DRAVIDIAN

*Malayalam:* T(Present) T(Past) T(Future) T(Anterior)/Asp<sub>progressive</sub> V (cf. Babu 1996,4ff)<sup>7</sup>

- (18)a naan innale aviDe pook-um-aayir-unnu  
 I-NOM yesterday there go-FUT-be.PAST-PRES  
 'I would have gone there yesterday'  
 b pooy-ITTUND-aayir-unn-illa  
 go-ANT-be.PAST-unn-NEG  
 '(he) had not gone'  
 c para<sup>ñ</sup>ñ-ukoNDirikk-unnu  
 say-PROG-PRES  
 '(he) is saying'

## AUSTRIC

*Kammu (Austro-Asiatic):* Mood<sub>speech act</sub> Mood<sub>irrealis</sub>/ Asp<sub>habitual</sub> Asp<sub>perfect</sub> V  
 (cf. Svantesson 1994,271ff)

- (19)a ò c<sup>à</sup>ð práa p<sup>è</sup>ð màh káal kmrà r<sup>ò</sup>çt tàa kàaŋ  
 1sg IRR NegPERF eat food before wife come to home  
 'I will not have eaten before [my] wife comes home'

<sup>7</sup>Although Babu refers to the suffix -ITTUND in (18)b as 'perfect', I have rendered it as T(Anterior) since it yields, with the past, an anterior of the past. The suffix -um, which is traditionally considered Future, according to Babu may be a modal. The negation -illa can also appear before aayir (T(Past)). The suffix -unnu is generally a non-past (present) suffix. Babu does not comment on its apparent occurrence with Past in (18)a and b. Cf. the similar case of Aleut in (16).

- b ò kù p<sup>5</sup>/ màh hóoc yèm kmrà r<sup>00</sup>t tàa kàaŋ<sup>8</sup>  
 1sg HAB eat food PERF when wife come to home  
 'I have usually eaten when [my] wife comes home'
- c béc mèe hóoc p<sup>+</sup>p yòŋ ò  
 Q you PERF meet father 1sg  
 'Have you ever met my father?'

*Thai* (Austro-Tai): Mod<sub>epistemic</sub> T(Future) Asp<sub>progressive</sub> Asp<sub>prospective</sub> Voice V

- (20)a kháw kamlang thuùk náŋs<sup>v</sup>phim wícaan (Wongbiasaj 1979,211)  
 he PROG PASS newspaper criticize  
 'He is being criticized by the newspaper'
- b kháw kamlang cà? pay m<sup>+</sup>awaannii (Steele 1975,46)  
 he PROG PROSP go yesterday  
 'He was going to go yesterday'
- c khong cà? kamlang thamngaan naj hông samùt (Pornsiri Singhapreecha, p.c.)  
 EPISTEM FUT PROG do.work in library  
 'I will probably be working in the library'
- d lom khong cà? kamlang phát<sup>9</sup> (Steele 1975,46)  
 wind EPISTEM FUT PROG blow  
 'The wind must be blowing'
- e kháw kamlang cà? thuuk wícaan (Pornsiri Singhapreecha, p.c.)  
 he PROG PROSP PASS criticize  
 'He is about to be criticized'

## AUSTRONESIAN

*Malay* (Sundic): T(Anterior) Asp<sub>perfect</sub>/Asp<sub>progressive</sub> V

- (21)a bila gua sampai dia sudah habis pergi (Baxter 1988,123)  
 when 1sg arrive 3sg ANT PERF go  
 'When I arrived he had already gone'
- b dia sedang lihat buku (Baxter 1988,130)  
 3sg PROG read book  
 'he is reading a book'

<sup>8</sup>The (non-negative) perfect particle *hóoc* is either found before or after the verb and its complement, or both before and after.

<sup>9</sup>Steele glosses *cà?* as "INCOMPLETE", but by her own description it should be glossed as FUTURE (As Pornsiri Singhapreecha informs me, the *cà?* which precedes the PROGRESSIVE particle *kamlang* is interpreted as Future; the one following it as a PROSPECTIVE aspect particle. The two interpretations are not interchangeable).

*Kwaio*: (Eastern Malayo-Polynesian) T(Future) Asp<sub>perfect</sub>/Asp<sub>proximative</sub> V (cf. Keesing 1985,118ff)

- (22)a ta-goru bi'i aga-si-a<sup>10</sup>  
 FUT-AGRs PROX see-TR-AGRo  
 'we'll see it soon'  
 b ngai e leka no'o  
 he AGRs go PERF  
 'he has gone'

*Ponapean* (Micronesian): T(Future) Asp<sub>habitual</sub> Asp<sub>perfect</sub> Asp<sub>progressive</sub> V (cf. Rehg 1981, 269ff)

- (23)a i pahn kin kangkang rais<sup>11</sup>  
 I FUT HAB eatPROG rice  
 'I will (habitually) be eating rice'  
 b Seriet lingilinginger- ehr  
 that child angryPROG-PERF  
 'That child has been being angry'

*Kiribatese* (Micronesian): T(Future) Asp<sub>terminative</sub> Asp<sub>iterative</sub> V  
 (cf. Groves, Groves and Jacobs 1985,78)

- (24) E na tia n naanako Tarawa..  
 He FUT TERMIN go-ITER to T.  
 'He will be finished going to T.'

*Anejom* (Melanesian): T(Past) T(Future) Asp<sub>perfect</sub> V (cf. Lynch 1982, 119f)

- (25)a Is ñan hag añak  
 PAST PERF eat I  
 'I have eaten'  
 b Is ika aen is pu apam imrañ  
 PAST say he PAST FUT come tomorrow  
 'He said he would come tomorrow'

---

<sup>10</sup>As Keesing notes (p.119), the particle *bi'i* in combination with the future marking particle "indicates that the action of the verb will take place at some (unspecified) time a short while in the future ('after a while' or 'by-and-by)". He also renders it as 'soon'. This corresponds to what is sometimes called 'proximative aspect' (see Fox 1979 on such aspect in Big Nambas and (28) below). He also notes that "[b]y itself it indicates recent completion of the action of the verb, and can usually be translated as 'just': apparently, what is referred to as 'retrospective aspect' (cf. fn.31 and relative text in chapter 3). This may suggest that 'retrospective' and 'proximative' are but two values of one and the same, more abstract, aspect. But see the discussion in chapter 4 (§4.20) below.

Finally, I take the sentence final perfect (or T(Anterior) ?) particle *no'o* of (22)b to arise via movement of its complement around it (as observed in many other languages - cf. the end of fn.3 of this appendix).

<sup>11</sup>Progressive aspect is expressed in Ponapean by reduplication of the stem (cf. the analogous case of Kom in fn.6 of this appendix).

*Samoan* (Polynesian): Mood<sub>speech act</sub> T(Future) Mood<sub>irrealis</sub> Asp<sub>perf</sub> Asp<sub>progressive</sub> V  
 (cf. Mosel and Hovdhaugen 1992,354 and 360f)

- (26)a "Ae a lava pe a sei e alu atu e ai lelei<sup>12</sup>  
 but EMPH EMPH Q FUT IRR 2sg go DIR GEN eat good  
 'But if you go and eat well.'  
 b Nofo mai i lalo sei o ta talanoa  
 Stay DIR LD down IRR PROG 1inclDUAL talk  
 'Sit down here so we can have a talk'  
 c 'A 'o lae 'olo'oua tagi le tama...  
 but PRES this PROG PERF cry art youth  
 'The youth was weeping...'

*Tokelau* (Polynesian): T(Anterior) Asp<sub>perfect</sub> Asp<sub>prospective</sub> V (cf. Vonen 1994,385ff.)<sup>13</sup>

- (27)a ?ko au kua ka fano  
 PREP 1sg PERF PROSP go  
 'I have become about to go'  
 b Na kua pā kœ ki Niu Hila  
 ANT PERF reach you PREP New Zealand  
 'Have you ever been to New Zealand?'

*Big Nambas* (Oceanic languages): T(Future)/Mood<sub>(ir)realis</sub> Mod<sub>root</sub> T(Anterior) Asp<sub>proximative</sub>  
 Asp<sub>repetitive</sub> V (cf. Fox 1979)

- (28)a p'e-pəh-ma  
 FUT-PROXIM-come  
 'I shall soon come'  
 b i - k - d - a - ruh  
 he/realis - NECESS - ANT - NEG - run away  
 'He mustn't run away yet'  
 c a - d - a - v - mur - ma  
 They/realis - ANT - NEG - pl. - REPET - come  
 'They haven't yet ever come'

<sup>12</sup>I have rendered *sei* as IRR(ealis mood) even though Mosel and Hovdhaugen gloss it in these two examples as 'optative'. The reason is that, in their words, it indicates "that the event has not been realized yet" (p.357), and because they gloss it elsewhere (p. 359, 582, etc.) as 'Subjunctive'.

<sup>13</sup>Vonen glosses *na* in (27)b as PAST, but says that it is "a marker of relative past tense" (p.384), and glosses *kua* as INCH(oative), saying however that "it must be seen in the perfective aspect" (p.386); hence my gloss. On the systematic relation between perfective and inchoative (called by him 'ingressive'), see Comrie (1976,19f).

## AUSTRALIAN

*Walmadjari:* T(Past) Mood<sub>irrealis</sub> Asp<sub>continuative</sub> V

- (29) natjita pa yan-an-ta-la (from Hudson 1976,656)  
 not he go-CONT-IRR-PAST  
 'He didn't keep on going'

*Ngiyambaa:* Mood<sub>evaluative</sub> T(Future) Mod<sub>root</sub> Asp<sub>durative</sub> Asp<sub>progressive</sub>/Asp<sub>repetitive</sub> V  
 (cf. Donaldson 1980, 183ff, the example below, and chapter 4)

- (30) yana-buna-biya-y-aga  
 go-back-NECESS-CM-FUT  
 'We will have to go back'

## INDO-PACIFIC

(Papuan languages)

*Fore:* Mood<sub>speech act</sub> T(Past) Asp<sub>terminative</sub> V (cf. Foley 1986,145)

- (31) na-kai-?ta-i-e  
 eat-TERMIN-PAST-3SG-DECL  
 'He had finished eating'

*Menya:* Mood<sub>speech act</sub> T(Present) Asp<sub>progressive</sub> V

- (32) yakä hiŋuä ä-w-g-n-ätäq-ŋ-qäqu-i... (cf. Whitehead 1991,266)  
 bridge eye ?-AGR-strike-DETRANS-PROG-PRES-AGR-DECL  
 'While we were looking at the bridge..'

*Sanio-Hiowe:* Mood<sub>speech act</sub> T(Past)/T(Future) Asp<sub>perfect</sub> V (cf. (57)a-b of chapter 3)

*Tauya:* Mood<sub>speech act</sub> Mod<sub>epistemic</sub> T(Future) Asp<sub>habitual</sub> Asp<sub>conative</sub> Asp<sub>perfect</sub>/Asp<sub>durative</sub>/Asp<sub>progressive</sub> V  
 (cf. § 3.2 above and MacDonald 1990, §3.3.2.1)

- (33)a ya ni-we-pope-e-?a  
 1sg eat-CONAT-HAB-1/2-DECL  
 'I always try to eat'  
 b sen-ni nen-tu-fe-we-ene-?a  
 1pl-ERG 3pl-give-PERF-CONAT-1/2pl-DECL  
 'We tried to give (it) to them'  
 c sawi ni-?afe-a-?a  
 banana eat-PROG-3sg-DECL  
 'She is eating bananas'  
 d mene-tei-pe-i-na...  
 stay-DUR-HAB-3pl-INCONS  
 'They stayed for a long time and..'



*Una*: Mod<sub>epistemic</sub> T Mod<sub>root</sub> T(Anterior) V  
(cf. (9)a-b of chapter 3, and (33), from Louwse 1988.66)

- (34) E-an-se  
say-ANT-PAST.1sg  
'I had said'

*Yareba*: T Asp<sub>habitual</sub> Asp<sub>frequentative</sub> V (cf. Weimer 1972,61)

- (35) yau-r-edib-eb-a-su  
sit-class marker-FREQ-HAB-PRES-3sg/masc  
'He (habitually and repeatedly) sits down'

*Wahgi*: Mood<sub>speech act</sub> T(Future) Asp<sub>habitual</sub> V (cf. Phillips 1976,97)

- (36) na-pi-l-tang-n-a-mbił-mo  
NEG-hear-CM-HAB-CM-FUT-DUAL-Q  
'Will the two of them always not hear?'

#### NA-DENE

*Navajo*: T Asp V (Speas 1991)

#### AMERIND<sup>14</sup>

*Canela-Crahô* (Ge-Pano-Carib): Mood<sub>speech act</sub> T(Past) Asp<sub>habitual</sub> Asp<sub>progressive</sub> V  
(cf. Popjes and Popjes 1986, 157 and 182)

- (37)a xà capi te po curan  
Q C. PAST deer kill  
'Did Capi kill a deer?'  
b pê wa ajco apu to hane<sup>15</sup>  
PAST(Distant) 1sg HAB PROG do thus  
'I always used to do that'

*Diegueño* (Hokan): Mood<sub>speech act</sub> Mod<sub>epistemic</sub> T(Future) V

- (38)a wa:m-x-kəx (Bybee 1985,179)  
he.goes.away-FUT-must.be  
'he might go'  
b wa:m-x- kəx-a (Bybee 1985,174)  
go-FUT-PROBABLE-Q  
'Might he go?'

<sup>14</sup>The Amerind unity is however quite controversial.

<sup>15</sup>*Apu* is called 'continuative', but is almost always rendered with the progressive form.

*Hidatsa* (Siouan): Mood<sub>evidential</sub> T(Past)/Asp<sub>iterative</sub> Asp<sub>inchoative</sub> V

(39)a wíra i ápári ki stao wareac (De Groot 1995,40)  
tree 3sg grow INCHO (remote)PAST EVID  
'they say the tree began to grow a long time ago'

b wfo i hrawe ki ksa c (Hengeveld, to appear, ex. (42))  
woman 3sg sleep INCHO ITER EVID  
'the woman fell asleep again and again'

*Ika* (Chibchan): Mod<sub>epistemic</sub> T(Future) Asp<sub>inceptive</sub> Asp<sub>progressive</sub> V (cf. Frank 1990,108,57)

(40)a KΛni- mus-Λn n^ -ngua ni  
cane grind-PROG 1s-FUT CERTAINTY  
'I will grind sugar cane'

b Ingî-ri tšoutšo kΛnak-Λm-pana keiwž...  
little-TOP afraid become-PROG-INCEPT right away  
'He began to get scared..'

*Macushi* (Ge-Pano-Carib): T(Past) Asp<sub>finally</sub> T(Anterior)/Asp<sub>perfect</sub>/Asp<sub>iterative</sub> V  
(cf. Abbott 1991,113ff)

(41)a to' erapamî-'pi wanî-'pî  
3pl arrive-ANT be-PAST  
'they had arrived (before)'

b atî-sa' wanî-'pi  
3sg.go-PERF be-PAST  
'he had gone' (he was gone)<sup>16</sup>

c aa-ko'man-pî-sa'  
3sg-remain-ITER-PERF  
'he has remained (repeatedly)'

d i'-po'-pîtu-tu'ka-'pî-i-ya  
3-whip-ITER-finally-PAST-3-ERG  
'he finally whipped him'

*Ute* (Uto-Aztecan): Mood<sub>evidential</sub> T(Past) Asp<sub>habitual</sub> V (cf. §3.2 above and Givón 1982b)

*Yavapai* (Hokan): Asp<sub>progressive</sub> Asp<sub>repetitive</sub> V (cf. Kendall 1976,30)

(42) əala-c mi:-yi-km  
e. cry-REPET-PROG  
'e. is crying again'

*Waorani*: Mood<sub>speech act</sub> Mod<sub>epistemic</sub>/T(Past) Asp<sub>inceptive</sub> V (Peeke 1994,276,288)

(43)a ...tóbēgã wae-kae-kã-î-pa  
(s)he cry-INCEPT-3sg-EPISTEM-DECL  
'(S)he will surely be sorry'

<sup>16</sup>Abbott calls it 'completed action'.

b Wiĩ, botõ kãe-dãbaĩ ỹ-ta-bo-pa  
 Not, I eat-NEG be-PAST-1sg-DECL  
 'No, I didn't eat'

## CREOLES

*Berbice Dutch Creole:* T(Past) T(Future) Asp<sub>habitual</sub> T(Anterior) Asp<sub>repetitive</sub> V  
 (cf. Kouwenberg and Robertson 1988; Robertson 1990; Kouwenberg, 1994, chapter 3)<sup>17</sup>

(44)a  $\epsilon$ k wa sa ku-t $\epsilon$  en or twe fan eni an tem eni  
 1sg PAST FUT(IRR) catch-ANT one or two of 3pl and tame 3pl  
 'I would have caught one or two of them, and tamed them'

b alwes, di hari das j $\epsilon$ nda, bãja di toro  
 always, the hair HAB be=there cover-IMPF the face  
 'The hair always covers the face'

*Guyanese Creole:* Mod<sub>epistemic</sub> T(Past) T(Future) Asp<sub>habitual</sub>/T(Anterior) Asp<sub>durative</sub>  
 Asp<sub>progressive</sub> V (cf. §3.4 and Gibson 1986)

*Haitian Creole:* T(Past) T(Future) Asp<sub>habitual</sub> Asp<sub>retrospective</sub> Asp<sub>progressive</sub>/Asp<sub>prospective</sub> V  
 (cf. §3.4 and references cited there)

*Kristang:* T(Anterior) Asp<sub>perfect</sub> Asp<sub>progressive</sub> V (Baxter 1988, chapter 5)

(45)a kora yo ja chegá eli ja ta kumí  
 when 1sg ANT arrive 3sg ANT PROG eat  
 'when I arrived he was already eating'

b kora yo ja chegá eli ja kaba bai  
 when 1sg ANT arrive 3sg ANT PERF go  
 'when I arrived he had already left'

*Louisiana Creole:* T Mood<sub>irrealis</sub> Mod<sub>root</sub> Asp<sub>perfect</sub> Asp<sub>progressive</sub> V  
 (Rottet 1992, 274 and fn. 12)

*Ndyuka:* T(Past) T(Future) Mood<sub>irrealis</sub> Mod<sub>root</sub> Asp<sub>progressive</sub> V  
 (46) I be o sa poi (fu) nyan ete? (cf. Huttar and Huttar 1994, 519)

2sg PAST FUT IRR can (for) eat yet  
 'Would you have been able to eat already?'

<sup>17</sup>Although Kouwenberg (1994) calls it 'perfective', I have glossed -t $\epsilon$  with T(Anterior) as she notes that with the (absolute) past tense particle *wa* it yields the anterior of the past (p.64):

(i) en moi j $\epsilon$ rmatoko wa la-t $\epsilon$  hiso  
 one good woman=child PAST arrive-t $\epsilon$  here=so  
 'A nice girl had come here'

As with Sranan IRR future particle *sa*, I take Berbice Dutch *sa* to be generated in Mood<sub>irrealis</sub> and to rise to T(Future). Cf. fn.35 of chapter 3.

She also notes that "[r]eduplication of the verb root marks repetitive or iterative aspect" (p.63).

*Nigerian Pidgin:* T(Past) T(Future) T(Anterior) Asp<sub>progressive</sub> V (cf. Ofuani 1981, 1982)<sup>18</sup>

*Seychelles Creole:* T(Past) T(Future) T(Anterior) Asp<sub>retrospective</sub> Asp<sub>progressive</sub> V  
(Papen 1978,362; cf. also Corne 1977,94ff)

(47) Zā ti a n fek pe māze  
J. PAST FUT ANT RETRO PROG eat  
'J. would just have been eating'

*Sierra Leone Krio:* T(Past) T(Future) T(Anterior) Asp<sub>progressive</sub> V (Jones 1990,849)

(48) a bin go d n de it  
1sg PAST FUT ANT PROG eat  
'I should have been eating'

*Sranan:* T(Past) T(Future) Mod<sub>root</sub> T(Anterior) Asp<sub>progressive</sub> V  
(cf. §3.4 and Seuren 1981,1983)

## LANGUAGE ISOLATES

*Basque:* Mood<sub>evidential</sub> T Mod<sub>root</sub> Asp<sub>habitual</sub> Asp<sub>perfect</sub> Voice V  
(cf. (56) and the examples and references cited in fn.20  
and fn.60 of chapter 3; and the example below):

(49) eda-n ohi du  
drink-PERF HAB AUX  
'He usually drinks'  
(Ortiz de Urbina 1989,141)

*Zuni:*<sup>19</sup> T(Past) T(Future) Asp<sub>progressive</sub> V (cf. Nichols 1993,99 and 104)

(50)a ?a:n-uwa-nkya  
go-FUT-PAST  
'he should have gone'  
b hom-?an ten-e:?a  
1sg.ACC-DIR sing-PROG-PRES  
'he is singing for you'

---

<sup>18</sup>Ofuani (1982,229) mentions the cooccurrence of the preverbal particles *go* (future), *don* (anterior) and *de* (progressive), in that order. Furthermore, to judge from their relative position w.r.t. negation, the particle *bin* (past) precedes *go* (future). See (i)a-b:

(i)a ai bin no de du mai wok dat taim (Ofuani 1982,236)

I PAST NEG PROG do my work at that time

'I wasn't doing my work at that time'

b ai no go foget

(Ofuani 1981,315)

I NEG FUT forget

'I will not forget'

<sup>19</sup>Zuni is a linguistic isolate spoken in North Western New Mexico. Cf. Nichols (1993,fn.1).

## CHAPTER 4

### Matching and refining the hierarchies of AdvPs and functional heads<sup>1</sup>

- 4.1 Introduction
- 4.2 Moods and Modals
- 4.3 Theories of tense: evidence for Vikner's (1985) three relations theory
- 4.4 'Lexical' and 'grammatical' aspect
- 4.5 Speech Act adverbs and Speech Act mood
- 4.6 Evaluative adverbs and Evaluative mood
- 4.7 Evidential adverbs and Evidential mood
- 4.8 Epistemic adverbs and Epistemic modals
- 4.9 Time adverbs and T(Past), T(Future)
- 4.10 'Perhaps' and irrealis mood
- 4.11 '(Not) necessarily'/'possibly' and alethic modals
- 4.12 Subject-oriented adverbs and root modals
- 4.13 Habitual adverbs and Habitual aspect
- 4.14 Repetitive/Frequentative adverbs and Repetitive/Frequentative aspects (I)
- 4.15 'Quickly/rapidly' and Celerative aspect (I)
- 4.16 'Already' and T(Anterior)
- 4.17 'No longer' and Terminative aspect
- 4.18 'Still' and Continuative aspect
- 4.19 'Always' and Perfect/Imperfect aspect (?)
- 4.20 'Just', 'soon' and Retrospective and Proximative aspects
- 4.21 Durative adverbs and Durative aspect
- 4.22 ? and Generic/Progressive aspect
- 4.23 'Almost/Imminently' and Prospective aspect
- 4.24 *Completamente* and *tutto*, and the two types of Completive aspect
- 4.25 'Well'(manner adverbs) and Voice
- 4.26 'Quickly/fast/early' and Celerative aspect (II)
- 4.27 'Completely' and Completive aspect (II)
- 4.28 Repetitive/Frequentative adverbs and Repetitive/Frequentative aspects (II)
- 4.29 Speculative remarks on other aspects and adverb classes
- 4.30 Towards a universal hierarchy of clausal functional projections (a second approximation)

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<sup>1</sup>I thank Gerhard Brugger, Peter Culicover, Hubert Haider, Cecilia Poletto and Sten Vikner for comments on different parts of this chapter.

**4.1 Introduction.** If we match, left to right, the independently established hierarchies of AdvPs ((58)+(44)) of chapter 1) and functional heads ((90) of chapter 3), we can observe some striking correspondences (cf. (1) below). In many cases a transparent specifier/head relation between a certain adverb class and the right-adjacent functional head is immediately recognizable.

This makes it plausible to assume that such relation should hold across the board, even in those cases where a functional head apparently finds no corresponding adverb class to its left or where an adverb class finds no corresponding appropriate functional head to its right.

In such cases we should not be too discouraged. It could simply be that we have failed to recognize the existence of the relevant adverb class, or of the relevant functional head (and projection).

In many cases, this is what I will argue has happened. But, no doubt, other adverb classes and functional heads will have gone unnoticed.

- (1) [*Frankly* Mood<sub>speech act</sub> [*surprisingly* Mood<sub>evaluative</sub> [*allegedly*  
 Mood<sub>evidential</sub> [*probably* Mod<sub>epistemic</sub> [*once* T(Past) [ ? T(Future)  
 [*perhaps* Mood<sub>irrealis</sub> [*cleverly* Mod<sub>root</sub> [*usually* Asp<sub>habitual</sub> [*already*  
 T(Anterior) [*no longer* Asp<sub>perfect</sub> [*always* ? [ ? Asp<sub>retrospective</sub>  
 [ ? Asp<sub>durative</sub> [ ? Asp<sub>progressive</sub> [ ? Asp<sub>prospective</sub>  
 [*completely* Asp<sub>completive</sub> [*tutto* ? [*well* ? [ ? Voice  
 [ ? Asp<sub>celerative</sub> [ ? Asp<sub>semirepetitive</sub> [ ? Asp<sub>iterative</sub> ...

Before trying to substantiate the claim that each adverb class enters into a special spec/head relation with one particular functional head, and viceversa, in §§ 4.2 to 4.4 I will briefly sketch the analyses of mood, modality, tense and aspect that seem to me most promising, and the evidence for representing each in terms of several functional heads.

The literature on these topics is extensive (to use an understatement), so I will have to be selective and synthetic, yet trying to do justice to the subject matter. Surely, no easy task.

**4.2 Moods and Modals.** Mood and modality are here treated together. In part, this follows the tradition (see Palmer 1986, for a recent, particularly valuable general and typological, characterization of the two categories); in part, it reflects the fact that the same category may be expressed via mood in one language and with a modal in another, thus suggesting a close link between the two.

'Mood' is traditionally restricted to modal categories (i.e. categories mostly having to do with the speaker's opinion or attitude towards the proposition - Lyons 1977,452) *which are expressed in verbal morphology* (Palmer 1986,21). Modals instead are typically independent words (verbs, auxiliaries, or particles).

In chapter 3, we have already seen some reasons to distinguish between different types of moods. In terms of both interpretation and position (in the sequence of verbal suffixes), one must distinguish indicative/subjunctive (or realis/irrealis) mood from speech act mood (declarative/interrogative/imperative/etc.).

The two further categories of Evaluatives and Evidentials, of which more will be said below, are either

expressed through verbal morphology, or with modal verbs or particles (cf. §§4.6 and 4.7). Nevertheless, they will be referred to here as 'evaluative' and 'evidential' *moods*.

As to modals, we have seen evidence, in chapter 3, that the traditional interpretive distinction between epistemic and root (uses of) modals correlates with a structural distinction. Epistemic modals are located higher in clausal structure than root modals, in fact higher than T(Past)/T(Future) (and negation), apparently.

Root modals, in turn, are not a monolithic class of elements. They comprise different semantic subclasses (volition, obligation, ability, permission). So one might wonder whether they all occupy the same position in the functional portion of the clause.

Before considering the question, I want to briefly discuss one usage of the modals *can (could)*, *may (might)* in English (and of their analogues in other languages), which is usually analysed as epistemic, and which I want to suggest should be differently analysed (at least, differently from epistemic *must*). In logic, epistemic modality is sometimes contrasted with alethic modality (cf. von Wright 1951,1f, and Rescher 1968,24ff). The former is concerned with the speaker's deductions or opinions, the latter with *necessary* truths (i.e. propositions which are true in all possible worlds) and with *possible* truths (i.e. propositions which are *not necessarily false*, being true in at least one possible world). Cf. Lyons (1977,791).<sup>2</sup>

The fact that one can distinguish epistemic from alethic modality from a logical point of view is no reason to assume that they should also differ structurally. Palmer (1986,11), for example, says that "there is no formal grammatical distinction in English, and, perhaps, in no other language either, between alethic and epistemic modality".

Some facts from English multiple modal varieties appear, however, to indicate that they may have to be structurally distinguished. As Brown (1992,75) points out, Hawick Scots shows a 'triple modal' construction, where *will*, marking future, is the first modal, *might*, marking 'possibility', the second, and *could*, marking 'ability', the third:<sup>3</sup>

- (2) He'll might could do it for you  
(='he might be able in the future to do it for you')

Brown also notes (p.77) that *can* in *he will can do it* can be interpreted either in an 'ability' or a 'possibility' sense.

If *will* is in T(Future), this is evidence that the 'pure possibility', or 'alethic', (uses of the) modals *might* and *can* follow T(Future), just as root modals do.

As epistemic modals precede T(Past) and T(Future), as observed in chapter 3 (fn.55) (are outside the scope of absolute tense altogether - Spellmire 1994), we have evidence that epistemic modals occupy a position distinct from, and higher than, alethic modals.

<sup>2</sup>The notions of 'alethic' necessity and possibility used here include 'contingent' (*It is necessary that you hand in your homework by tomorrow; It is possible that it will not rain*) as well as 'logical', necessity and possibility. What Iatridou (1990) calls 'metaphysical' modality seems to bear some resemblance to the logicians' notion of alethic modality.

<sup>3</sup>In Turkish, where the corresponding modal notions are expressed by suffixes, one finds the exact mirror-image of Scots. See (i), provided by Jaklin Kornfilt (who also pointed out that the future suffix is perhaps somewhat less natural in (i) than the aorist suffix):

(i) gel-e-me-yebil-ecek  
come-ABIL-NEG-POSSIB-FUT "(S)he may in the future not be able to come'

In this connection, it is, then, interesting that a purely epistemic (i.e. non-alethic) modal like *must* is never found to follow *will* in Hawick Scots.<sup>4</sup>

A comparable situation is found in Danish, where the alethic modal *kunne*, but not the epistemic/evidential modal *skulle*, can be found following the modal *vil* marking the future. See (3)a-b, from Vikner (1988,10) (also see Thráinsson and Vikner 1995,51):

- (3)a Der vil let kunne gå noget galt  
it will easily be possible that something goes wrong  
b \*Han vil skulle have læst bogen  
he will be said to (must) have read the book

Vikner treats *kunne* as epistemic but notes that it differs from the other epistemic modals in that "it may appear in the perfect tense" (fn.4), and in that it, but no other epistemic modal, can occur under an epistemic modal (p.9f).

Treating *kunne* as alethic rather than epistemic (hence lower than the latter modals) may provide an account at least of its second peculiarity.

These facts may thus suggest the existence of a separate modal projection of (alethic) possibility, intermediate between the epistemic and the root modal projections:  $\text{Mod}_{\text{epistemic}\dots} > \text{Mod}_{\text{(alethic) possibility}} > \text{Mod}_{\text{root}}$

As matter of fact, there is evidence for distinguishing a head of alethic possibility from a head of alethic necessity. The two can cooccur in the order 'necessity' > 'possibility' (though not the converse). See (4), which gives, then, evidence for the sequence:  $\text{Mod}_{\text{epistemic}\dots} > \text{Mod}_{\text{necessity}} > \text{Mod}_{\text{possibility}} > \text{Mod}_{\text{root(volition/obligation/ability/permission)}}$

- (4)a Perché le cose andassero a posto, questo si dovrebbe poter verificare presto<sup>5</sup>  
'For things to go well, it should be the case that it were possible that this happened'  
b \*Questo si potrebbe dover verificare presto  
'It could be the case that this should happen soon'

Consider now the root modals. These, in contrast to epistemic, and alethic modalities, are strictly subject-oriented. Volition, obligation, ability, or permission are properties attributed to an (animate) subject.

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<sup>4</sup>"*Will* does not co-occur with epistemic *must* or *would*" (Brown 1992,78). The modal *should*, however, can (which raises the question whether in such cases *should* is a modal of alethic necessity rather than an epistemic modal).

Additional evidence that epistemic modality is higher than alethic modality is possibly given by their position with respect to negation. While negation can precede alethic modality (*it can't be five o'clock*: NEG > POSSIBLE, with incorporation of *can* to *n't*), negation necessarily follows epistemic modality. Cf. chapter 5, below.

Another difference between the two is the well-formedness of alethic modals, and the ill-formedness of epistemic modals, in interrogative sentences (*Could/Might Guido know the answer?* vs. \**Must Guido know the answer?*, from Spellmire 1994). Cf. also §4.8 and §4.11 below.

<sup>5</sup>Here, *dovere* can also be interpreted epistemically, with *potere* retaining a pure possibility (alethic) interpretation: *Questo dovrebbe potersi verificare presto* 'It should be the case that it is possible that this happens soon'. This judgement differs from Picallo's (1990,294f) on the sequence *deu poder* in Catalan.



Concerning the question raised earlier (Do the different subclasses of root modals occupy the same structural head position?), no simple answer is available, one way or the other, from multiple modal varieties. Nonetheless, it appears that they enter a fixed relative scope among each other. To begin, consider *volere* 'want'. It falls under the scope of alethic possibility ((5)a), while it takes scope over 'ability' and 'permission' ((5)b).

- (5)a Gianni potrebbe voler uscire  
 G. could want to go out  
 b Gianni vorrebbe poter cantare  
 G. would want to be allowed/be able to sing

The inverse interpretations are not possible, which suggests, then, the relative order in (6):

- (6) ...Mod<sub>necessity</sub> Mod<sub>possibility</sub> .. Mod<sub>volition</sub>.. Mod<sub>ability/permission</sub>

To judge from (7)a-b, *volere* also takes scope over 'obligation' ((7)a), although the other order, ((7)b), (differently from Danish, in which comparable cases are given as ungrammatical in Vikner (1988,10): \**Hun må ville gå på indkøb* 'She must want to go shopping') does not sound to me entirely unacceptable (in the non-epistemic reading):

- (7)a Gianni vorrebbe dover prendere una decisione subito  
 G. would want to have to take a decision immediately  
 b ?Gianni dovrebbe volerci aiutare  
 G. should want to help us

The interpretation, however, does not seem to be one of real 'obligation' on the subject ('Gianni finds himself obliged to want to help us'). It is rather one of general necessity ('For everybody to be happy, it would be necessary that G. wanted to help us').<sup>6</sup>

I assume (7)b, then, to involve '(alethic) necessity' rather than 'obligation', although finer distinctions might be involved (cf. fn.6).

This yields the relative order in (8):

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<sup>6</sup>I abstract from the further, purely epistemic, interpretation of *dovere* in (7)b ('G. probably wants..'). The ungrammaticality of the Danish example is perhaps due to *må* allowing for a deontic interpretation, but not for one of alethic necessity. *Dovere* preceding *volere* in Italian may also have the particular interpretation of 'conjunctural necessity' which Beninca' and Poletto (1994, 1996) recognize for such cases as (i)b, with *bisogna* ('it is necessary'). Cf. (i)a-b:

- (i)a Deve proprio volerci aiutare, se fa così

He must really want to help us if he acts like that

- b Bisogna proprio che voglia aiutarci se fa così

It is necessary (it is really the case) that he wants to help us, if he acts like that

This usage is not epistemic, as they note, since it is possible with *bisogna*, which does not allow standard epistemic usages (\**Bisogna che siano le cinque* 'It must be five o'clock'). Cf. Beninca' and Poletto (1994,fn.9).

(8) ...Mod<sub>necessity</sub> Mod<sub>possibility</sub> .. Mod<sub>volition</sub> Mod<sub>obligation</sub> /Mod<sub>ability/permission</sub><sup>7</sup>

What about the relation among the 'obligation', 'ability' and 'permission' cases of root modality? It is not entirely clear whether it makes sense, semantically, 'to be obliged to be able to help', or 'to be obliged to have the permission to leave', or 'to be able to have the permission to leave'. However, the inverse scopes ('to be able to be obliged to leave'; 'to have the permission to be obliged to leave'; 'to have the permission to be able to leave'<sup>8</sup>) appear even more unnatural.

Some special contexts would seem to show that, if anything, the relative order among these modal notions is 'obligation' > 'ability/permission' (cf. (9)-(10)), and perhaps 'ability' > 'permission' (cf. the Guyanese Creole sentence (29) of chapter 3, repeated here as (11)):

(9)a ?Non vorrei dover poter risolvere l'equazione in soli 3 minuti  
 'I would not like to have to be able to solve the equation in just three minutes'  
 b \*Non vorrei poter dover risolvere l'equazione in soli 3 minuti  
 'I would not like to be able to have to solve the equation in just three minutes'

(10)a Ci vorremmo dover poter entrare anche noi in quel club  
 We would like to have to have the permission to enter that club  
 b \*Ci vorremmo poter dover entrare anche noi in quel club  
 We would like to have the permission to have to enter that club

(11) Jaan shuda bin kyaan get fu gu  
 J. EPISTEM PAST NEG.ABIL PERMISS to go  
 'J. should not have been able to be allowed to go'

However, given that the evidence for ordering 'ability' with respect to 'permission' is rather slim, I will for simplicity consider these two notions as two different values of one and the same head (though eventually this might prove simplistic).

Altogether, this yields the following strict (scope) hierarchy of modalities:

(12) Mod<sub>epistemic</sub> ... Mod<sub>necessity</sub> Mod<sub>possibility</sub> Mod<sub>volition</sub> Mod<sub>obligation</sub> Mod<sub>ability/permission</sub>

This is perhaps not sufficient by itself to motivate five distinct modal heads, in addition to an

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<sup>7</sup>A similar conclusion (modulo the term 'epistemic possibility' for what is here called 'alethic possibility') is reached in Nuyts (1993) on the basis of the Dutch sentences in (i):

(i)a Jan kan morgen weg moeten  
 J. may have to go tomorrow  
 b Jan moet morgen weg kunnen  
 J. must be able to go tomorrow

"[E]pistemic modality should clearly be higher in the hierarchy than deontic modality (and facultative modality should be even lower in the hierarchy)" (p.961).

<sup>8</sup>Whitley (1975) observes that in the *may can* sequence found in Southern American varieties "*may* can be interpreted only in the sense of possibility, never permission" (p.105).

epistemic one. However, the existence of different classes of AdvPs corresponding to the different modalities, and ordered in a similar fashion (cf. §4.12), can be taken as additional evidence for the hierarchy of modal heads in (12). Furthermore, we should expect that if a language were to provide morphological evidence for any such functional heads, this evidence would be compatible with the semantic hierarchy in (12) (cf. chapter 6 for a discussion on the possible relation between semantic scope and the universal hierarchy of functional projections).

This is at least partially confirmed by Turkish, for which Aksu-Koç and Slobin (1985) give the order of suffixes: ...potential-negation-necessitative... (cf. fn.5 of chapter 3), where 'necessitative' "signals an obligation on the part of the subject" (Bybee 1985,167), and 'potential' seems to correspond to what was called above 'ability'.

**4.3 Theories of tense: evidence for Vikner's (1985) three relations theory.** Two main sorts of theories have been proposed in recent treatments of tense. Theories which view tenses as operators, as in Tense Logic, and those which view them as relations between temporal entities ('times'), as in the tradition stemming from Reichenbach (1947).

Several conceptual and empirical arguments have been pointed out which show the superiority of the latter over the former (cf. in particular Hornstein 1990,92ff and Giorgi and Pianesi forthcoming, §2 of chapter 1). So, here I will not further consider the tense-as-operator approach.<sup>9</sup>

In the studies stemming from Reichenbach (1947) a number of modifications have been introduced to Reichenbach's original system.<sup>10</sup>

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<sup>9</sup>Its most serious conceptual difficulty is its unconstrained character, which fails to predict the existence of all and only the tenses actually found cross-linguistically. The absence of a past past past of the future, for example, does not follow from any internal property of the system. Other conceptual and factual defects are discussed in the references just mentioned.

<sup>10</sup>The essence of Reichenbach's system is the following. Nine different tenses are derived from the different relations which three primitive times (the 'time of speech', S; the 'time of the event', E; and a 'reference time', R) enter on the time axis: whether one precedes (E\_\_R), follows (R\_\_E), or coincides (E,R) with the other(s). The different tenses are given in the table below, adapted from Vikner's (1985,82):

Reichenbach's names	Traditional names	Representations	Examples
1) simple present	present	E,R,S	(works)
2) simple past	past/preterit	E,R_S	(worked)
3) anterior present	present perfect	E_R,S	(has worked)
4) simple future	future	S_R,E	(will work)
5) posterior present	future	S,R_E	(will work)
6) anterior past	past perfect	E_R_S	(had worked)
7) posterior future	---	S_R_E	(will be going to work)
8) posterior past	future of the past	R_E_S	(would work)
		(R_E,S)	" "
		(R_S_E)	" "
9) anterior future	future perfect	E_S_R	(will have worked)
		(S,E_R)	" "
		(S_E_R)	" "

As Comrie (1981) and Vikner (1985) independently pointed out, Reichenbach's theory of tense has one major drawback. Taking tenses to be three-place relations of the points E,R and S forces him to order each point with respect to the others, thus yielding an unsatisfactory ambiguity for the future perfect (and the future of the past). A sentence such as *He will have written his essay by Monday* is compatible with the possibility that "the act of writing has already taken place, is taking place at the time of speech or has yet to take place" (Vikner 1985,88). Reichenbach's system is forced to assign to it three distinct representations (cf. 9 of fn.10), and yet there seems to be no language which has a distinct morphological realization for each such representation. As Comrie (1981,26) points out, "this suggests that the triple characterization is an artefact of the notation rather than a significant fact about language".

A more adequate representation would be one which left the relation between E and S unspecified. This can be achieved if one replaces Reichenbach's three-place relations with two two-place relations (S\_R and E\_R). This solution, which is adopted by virtually all neo-reichenbachian analyses, has the advantage of not establishing any direct relative order between E and S, thus characterizing the future perfect as vague, not ambiguous.

Beyond that there is no general consensus on what precisely the primitives of the theory are, and, as a consequence of that, on what qualifies as a possible tense. Each system makes slightly different claims in this regard.

Rather than attempting a systematic comparison among the different proposals, I will mention the reasons that, to my eyes, render Vikner's (1985) theory the closest approximation to a universal theory of tense. A few comparative remarks are found in fn.15.

In Vikner (1985), three further problems with Reichenbach's original system are pointed out:

- a) the same basic tense (future) is given two distinct representations (cf. 4 and 5 of fn.10). But languages do not seem to make a distinction in the future comparable to that between the present perfect and the simple past.
- b) the system includes a form (the 'posterior future' - cf. 7 of fn.10), for which there is no clear linguistic evidence.<sup>11</sup>
- c) it makes no room for something which *is* a tense form: the future perfect of the past ("..he would have worked").

Vikner suggests that such defects can be remedied by introducing another reference point (which is needed for the future perfect of the past - see his discussion of *She promised in November that they would have received her paper by the first day of term*, and the similar proposals of Comrie 1981, Lindstedt 1985,33f) and by constraining the system to three strictly binary relations (between two times). The two times may either coincide (the unmarked option - Vikner 1985,94) or be in a unique precedence or subsequence relation to each other: 1) E coincides with, or precedes, R<sub>2</sub> (let us call it for convenience T(Anterior)); 2) R<sub>2</sub> coincides with, or follows R<sub>1</sub> (for convenience T(Future)); 3) R<sub>1</sub>

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This yields a total of 9 (supposedly universal) tenses (technically 13, if the multiple representations for the future perfect and the future of the past are taken into considerations).

<sup>11</sup>Reichenbach exemplifies it with the Latin future of the 'future participle' in *-urus (abiturus ero* 'I shall be one of those who will leave'), saying that it "[speaks] not directly of the event E, but of the act of preparation for it" (p.297): an aspectual property, more than a relation between times. Cf. Jespersen's (1924,263) remarks on Madvig's similar proposal for such a tense in Latin and the discussion on the so-called 'prospective aspect' in fn.40 of chapter 3, and below.

coincides with, or precedes, S (for convenience T(Past)).<sup>12</sup>

The actual tenses arise from the combinations of the different values of the three basic two-place relations, as shown in (13):

- |       |   |                     |
|-------|---|---------------------|
| (13)a | $R_1, S; R_1, R_2; E, R_2 =$ present  | (works)             |
| b     | $R_1, S; R_1, R_2; E, R_2 =$ future   | (will work)         |
| c     | $R_1, S; R_1, R_2; E, R_2 =$ past   | (worked)            |
| d     | $R_1, S; R_1, R_2; E, R_2 =$ anterior   | (has worked)        |
| e     | $R_1, S; R_1, R_2; E, R_2 =$ anterior of the past                             | (had worked)        |
| f     | $R_1, S; R_1, R_2; E, R_2 =$ future of the past                               | (would work)        |
| g     | $R_1, S; R_1, R_2; E, R_2 =$ anterior of the future                           | (will have worked)  |
| h     | $R_1, S; R_1, R_2; E, R_2 =$ anterior of the future of the past <sup>13</sup> | (would have worked) |

The system is very restrictive. It claims that the eight tenses of (13)a-h, which exhaust all the possible combinations of the three basic relations, are the only possible tenses to be found across languages.<sup>14</sup> In chapter 3, we saw that certain languages appear to bear this system on their sleeves, so to speak. Seychelles Creole, for example, showed a distinct particle for each of the three relations (in fact combining T(Anterior), T(Future) and T(Past)). See (47) of the appendix to chapter 3.

This direct mapping from abstract tenses to morphemes (which extends to English *-ed*, *will*, and *-ed*) must certainly count as another virtue of the system (cf. Hornstein 1990, §3.7).

In what follows, I will adopt Vikner's (1985) theory essentially as it is, only combining it with one important suggestion of Giorgi and Pianesi's (1991, forthcoming); namely that each (here, strictly binary, and 'oriented') relation corresponds to a functional head of the extended projection of V; a separate T<sup>o</sup>: T(Anterior), T(Future) and T(Past), with the values 'default' (when the two times coincide), and 'marked' (when they do not). The three tenses are in a particular scope relation to each other (with T(Anterior) embedded under T(Future), itself embedded under T(Past), a fact that remains to be derived):<sup>15</sup>

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<sup>12</sup>T(Anterior) corresponds to Comrie's (1981,25f) 'relative past tense' (namely, relative to a point of reference distinct from 'now'), and T(Past) to 'absolute past tense' (which is relative to the point of reference 'now').

<sup>13</sup>Notice that the time of the event ('the receiving of the paper', in Vikner's example above) is not ordered with respect to  $R_1$  ('November'), or S (the speech time); nor is  $R_2$  ('by the first day of term') ordered with respect to the speech time. An apparently correct result. Cf. Vikner (1985) for discussion. The 'future (perfect) of the past' uses of the 'conditional' are characteristically found in narrations ("John left for the front. He would never return"), or in sequence of tense contexts in indirect speech ("He said that he would (have) come"). Cf. Comrie (1981,27). On sequence of tense phenomena, which remain outside of the present discussion, cf. Enç (1987), Hornstein (1990, chapters 4 and 5), Binnick (1991,86ff,353ff), Stowell (1995) and references cited by them.

<sup>14</sup>This system indeed holds in Danish, Dutch, French, German, Italian, Hawaiian, Yoruba (Vikner 1985,84), and Bulgarian (to judge from Lindstedt 1985). The distinction between the 'imperfect' and the 'simple past' found in Romance (and Bulgarian) seems to be aspectual rather than temporal. Cf. Vikner 1986.

<sup>15</sup>So, for example, one should explain why the universal system is not (ii) (with a T(Anterior) embedded under another T(Anterior) embedded under a T(Future)), or some other arrangement of the three relations, instead of (i) :

(14) [... [ T1 (Past) ... [ T2 (Future) ... [ T3 (Anterior) ... V ]]]]

**4.4 'Lexical' and 'grammatical' aspect.** Two quite different things fall under the term 'aspect', which are often, though not always, kept separate in the literature. One is the internal structure of the event, or situation, as lexically expressed by the predicate and its arguments: whether it has a beginning or end, internal stages, etc. Vendler's (1967) classical typology distinguishes among 'activities' (*run, push a cart*), 'states' (*know, desire*), 'accomplishments' (*run a mile, build a house*), and 'achievements' (*reach the top, find a wallet*).<sup>16</sup>

The other refers to the particular way in which the speaker presents the event, or situation, through grammatical means: e.g., as terminated (through the perfect aspect: *John has run a mile*); as on-going (through the progressive aspect: *John was running a mile*); as habitual (through the habitual aspect: *John used to run a mile*); etc.<sup>17</sup>

The terminology employed to distinguish these two 'senses' of 'aspect' varies. Smith (1991), for example, calls the first 'situation aspect', and the second 'viewpoint aspect'. Following Dahl (1985) and

(i) R<sub>1</sub>\_\_S; R<sub>1</sub>\_\_R<sub>2</sub>; E\_\_R<sub>2</sub>

(ii) S\_\_R<sub>1</sub>; R<sub>2</sub>\_\_R<sub>1</sub>; E\_\_R<sub>2</sub>

By letting their (unique) R coincide, precede, or follow S, and E, Giorgi and Pianesi (forthcoming) allow for the nine basic tenses of Reichenbach (1947). While avoiding the problem connected with the adoption of one three-place relation, their system is open to essentially the same criticism moved to Reichenbach's by Vikner (1985). For example, it allows for two distinct representations of the future (S\_R + R,E, and S,R + R\_E), for a future of the future (S\_R + R\_E), while making no room for the future perfect of the past (..would have received..).

Comparable remarks hold for Hornstein's (1990) system, which in fact allows for an even greater number of tenses by treating the two possible linearizations of the times associated by a comma as two distinct representations (e.g. E,R ≠ R,E).

Here I will not consider how Vikner's theory relates to Stowell's (1996) (cf. also Zagona's 1995) treatment of tenses as predicates ordering two temporal points (e.g. past = (roughly) S after E), except to note that Stowell's system would have to contain a further predicate to make room for the future perfect of the past.

<sup>16</sup>Some modifications and additions to Vendler's original classification are proposed in the literature, but I will ignore them here, as our focus will be on the other kind of aspect. See Dowty (1979), Freed (1979), Mourelatos (1981), Smith (1991), among others.

'Accomplishments' and 'achievements' differ from both 'activities' and 'states' in having an inherent *natural end point* (say, when the mile is finished, or the top of the mountain is reached). As such, they are bounded (telic), while 'activities' and 'states' are inherently unbounded (atelic). Even if the latter too have a beginning or an end, that is not part of their meaning.

'Accomplishments' differ from 'achievements' in that they are made up of internal stages, which represent advances towards the final point (Smith 1991,49f). 'Achievements', instead, are instantaneous changes of state (only having *preparatory* stages, if any). 'Activities', differently from 'states' (which present a situation as stable; as not involving stages or changes) are made up of stages (of the same nature as the whole).

A well-known test distinguishing 'activities' from both 'accomplishments' and 'achievements' is the compatibility of the former, and incompatibility of the latter, with 'durative adverbials' introduced by 'for' (and viceversa for those introduced by 'in'). Cf. the references cited above, and §4.21 below for more discussion on durative adverbials.

<sup>17</sup>The grammatical means may be affixes (typically on the verb), particles, auxiliaries, stem modifications, etc.

others, I use here 'lexical' and 'grammatical' aspect, respectively, even if the first term may not be entirely appropriate.<sup>18</sup>

Of course, to distinguish these two kinds of 'aspect' is not to deny the existence of relations between them. So, for example, 'progressive' aspect, which marks an on-going activity, is incompatible with states (cf. \**He is knowing that we like him*). Similarly, so-called 'completive' aspect (which marks the completion of all internal stages up to the attainment of the natural end point) is only applicable to 'accomplishments'.

Interesting as they may be, I will generally leave such questions to the side here, focussing rather on the several types of 'grammatical' aspects found in the languages of the world. They will be discussed separately below, together with the particular adverb class which seems to correspond to them.

From the next section, I will begin to discuss the matching of adverb classes and functional heads, from left to right (top to bottom).

**4.5 Speech act adverbs and speech act mood.** By speech act mood I have indicated above those grammatical means, most often encoded as affixes on the verb, which mark the basic illocutionary force of a sentence. Many languages distinguish a declarative from an interrogative and imperative mood. Others make finer distinctions (cf. Hengeveld, to appear, §2.1).<sup>19</sup>

Speech act mood, when expressed via a suffix, is generally the outermost (only followed by suffixes marking subordination, if any - cf. the case of Korean briefly discussed in chapter 3 (§3.2, fn.4). I took this to indicate that speech act mood is the highest head of the IP "space" (Grimshaw's 1991 extended projection of V).<sup>20</sup> One might also wonder whether speech act mood shouldn't rather be part of the complementizer "space" (if a sharp distinction can be made between the two "spaces"). Rizzi (1995) presents evidence for positing a head, within the complementizer "space", which marks the illocutionary force of the sentence, and which is distinct from, and higher than, other C heads.

It is, however, dubious that Mood<sup>o</sup><sub>speech act</sub> and Rizzi's Force<sup>o</sup> should be identified. If such adverbs as *frankly, honestly, sincerely*, etc., which qualify the speaker's act of declaration, are plausibly to be taken as specifiers of the speech act mood head (they precede evaluative adverbs - cf. chapter 1 -, just as the speech act mood head precedes the evaluative mood head), then we have some indication that the two heads are distinct. The reason is that the illocutionary force C<sup>o</sup> precedes topicalized and focalized phrases (Rizzi 1995), yet such speech act adverbs seem to be able to follow them. Cf. (11):

<sup>18</sup>This is so because to belong to a certain class (say, of 'accomplishments' or 'activities') depends not only on the lexical meaning of the verb but also on the internal make up of its arguments, as pointed out by Verkuyl (1972). For example, a bare object DP, as opposed to a definite one, renders the event an 'activity' rather than an 'accomplishment': *He ate apples for (\*in) a month* vs. *He ate the apples (??for) in a month*. For recent discussion on these questions, see Borer (1996).

<sup>19</sup>The grammatical speech act moods are only indirectly related to the speech (or illocutionary) acts themselves. A sentence in the interrogative mood can, for example, be used to express a command; one in the declarative mood can be used to make a promise; etc. Here, I will ignore the complex relations between linguistic form and the illocutionary force of the sentence.

<sup>20</sup>This, in fact, remains to be seen. Hengeveld (to appear, §2.2) mentions the existence of particles which serve to modify (emphasize or mitigate, often with politeness implications) the illocutionary mood suffixes. Cf. also the Korean peripheral suffix *-yo* of example (3) in chapter 3, and Bybee's (1985, 185) observation that in most cases an emphatic affix "occurs as one of the first prefixes (as in Kutenai, Pawnee and Kiwai) or as one of the last suffixes (as in Diegueño, Tarascan and Kwakiutl)".

- (15) Di questo, A NESSUNO francamente potrei parlare  
About this, to nobody (focus) frankly I could talk

The fact that they can also precede topicalized and focalized phrases, if separated by a pause (*Francamente, di questo, A NESSUNO potrei parlare* 'Frankly, about this, to nobody (focus) I could talk') may indicate that they can also move to the spec of Rizzi's ForceP (just as evaluative and epistemic AdvPs appear to be able to move to the complementizer "space" in French - cf. chapter 1, fn.54 and relative text).<sup>21</sup>

**4.6 Evaluative adverbs and evaluative mood/modals.** In the logic tradition, a class of 'evaluative' modalities is recognized, which Rescher (1968, 24ff) glosses as 'It is a good/perfectly wonderful/bad thing that p' (cf. Palmer 1986,12f).

Across languages, such modalities are either expressed by bound morphemes (suffixes) or by free morphemes (modals or particles). They do not affect the truth of the proposition, but rather express the speaker's (positive, negative, or other) evaluation of the state of affairs described in it.

We have already seen the case of the Korean suffix *-kwun-*, expressing 'surprise' (cf. (2) and (3) of chapter 3, repeated here as (16)a-b. Palmer (1986,120) cites the Australian language Ngiyambaa's 'good job', 'bad job' particles (from Donaldson 1980, §1.5.4), which "express approval and disapproval of certain observed facts" by the speaker (cf. (17)a-b), and the Menomini verbal suffixes *-asah*, *-apah*, which "express failure of expectation, surprise or disappointment" (cf. (18)a-b):<sup>22</sup>

- (16)a Ku say-ka cwuk-ess-keyss-kwun-a  
That bird-NOM die-PAST-EPISTEM-EVALUAT-DECL  
'That bird must have died!'  
b Minca-nun ttena-ss-te-kwun-yo  
M.-TOP leave-PAST-EVID-EVALUAT-POLITE  
'I noticed that M. had left!'

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<sup>21</sup>Other such 'duplications' between the IP and CP "spaces" seem to exist. In certain languages (e.g. Irish - cf. McCloskey 1996), tense distinctions appear not only on verbs but also on complementizers. This, along with other reasons, is at the basis of Rizzi's (1995) postulation of a FiniteP in the complementizer "space", coexisting with a TP in the IP "space". Other languages (e.g. Basque - cf. Laka 1990) show negative complementizers in addition to negation in the IP "space".

<sup>22</sup>Cf. also the 'admirative mood' of Albanian, which expresses surprise for an unexpected event (Kallulli p.c., Friedman 1986,180ff). Derbyshire (1986,527) reports the existence of an evaluative particle (*kabay* 'it is good that...') in Brazilian Arawakan. Thurgood (1986,216f) mentions the existence in the Tibeto-Burman language Akha of sentential particles expressing such contrasts as 'surprise/non surprise', 'luckily/unfortunately'. An affix (*-ni*), meaning that the speaker considers the content of the proposition 'unfortunate', is found in the Amerindian language Piro (cf. Wise 1986, ). In discussing the two Chinese future auxiliaries *hùi* (lit. 'can') and *yào* (lit. 'want'), Myhill (1992) cites text-based data "showing that *hùi* is particularly associated with positive evaluations, as 41 of 100 clauses with *hùi* could idiomatically add *xingkuì* 'fortunately', while only five of 100 clauses with *yào* could" (p.86).





- (21) Hai sentito il telegiornale? Ci sarebbe stato un rapimento importante  
 Have you heard the news? There would have been (=it is said there was) an important kidnapping

Other languages instead have evidential *particles*. See the Basque case reported in (56) of chapter 3, and the Hidatsa cases given in (39)a-b of the appendix to chapter 3.

In those languages lacking evidential affixes, modals or particles, the same basic distinctions can be expressed by periphrasis (*it is said that...*, etc.), or by *evidential adverbs*, which I take to be generated in the specifier position of the Evidential Mood Phrase. Plausible candidates for this class of adverbs (in English) are: *allegedly, reportedly, apparently, obviously, clearly, evidently*, etc.<sup>25</sup>

Again, just as the Korean evidential suffix is ordered between the evaluative and the epistemic suffixes (cf. examples (1) and (3) of chapter 3), so evidential adverbs were seen in chapter 1 to be ordered between evaluative and epistemic adverbs.

So precise a correspondence can hardly be accidental. In fact, it falls out from the restrictive X-bar theory of Kayne (1994) if we set adverbs in a spec/head relation with the semantically corresponding functional heads.

**4.8 Epistemic adverbs and epistemic modals.** While, as noted in § 4.2 above, alethic modality expresses necessary or possible truths, and root modality "obligation, permission, volition or ability on behalf of an agent which usually, but not necessarily, is expressed by the ... subject of the sentence" (Platzack 1979,44), epistemic modality expresses the speaker's degree of confidence about the truth of the proposition (based on the kind of information he/she has).<sup>26</sup>

In English, for example, the epistemic uses of *must* express a confidence stronger than that expressed by the epistemic uses of *should* (but still less than absolute):

- (22)a John must be home, now  
 b John should be home, now

As many people have observed, the same lack of confidence on the part of the speaker can also be expressed by such 'speaker-oriented' or 'epistemic' adverbs as *probably, likely, presumably*.

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such a usage of the 'conditional' would not be possible if the evidential mood head were lower than T(Future) and T(Past), as lowering is not admitted. More generally, it is to be expected that possible acquisitions of new functional values by a head (synchronically or diachronically) will be a function of the universal hierarchy of heads, and of the limitation to upward movements only.

<sup>25</sup>I ignore here the (quite) different 'evidential' nuances of these (and other) adverbs. For an in-depth study of the complex conditions of use of one such adverb (*obviously*), cf. Michell (1975).

<sup>26</sup>Because of that, various authors refer to root modality as 'subject- or agent-oriented' modality, and to epistemic modality as 'speaker-oriented' modality (cf. Bybee 1985,166, Heine 1995, among others). Although certain authors include evidential knowledge in the knowledge relevant for the speaker's epistemic judgements (cf., for example, Palmer 1986,51ff), I have kept the two separate here, for reasons already seen in chapters 1 and 3 (the two categories can cooccur). Nuyts (1993,§1.3) also argues for keeping evidential and epistemic notions separate (with the second in the scope of the first).

I ignore here the possible more abstract common logical structure unifying the epistemic and root uses of modals. For discussion, see Kratzer (1977, 1981).

*supposedly*, etc. (*John is probably home, now*).<sup>27</sup>

This is natural if such adverbs are generated in the specifier position of the projection headed by epistemic modals. In fact, epistemic modals and epistemic adverbs pattern alike with respect to certain properties.

For example, Jackendoff (1972,84 and 102f) notes that neither "feel[s] comfortable in questions" (cf. the ungrammaticality of \**Must it be five o'clock?* and \**Did Frank probably beat all his opponents?*), concluding that "[i]f epistemic modals are treated like speaker-oriented adverbs by the semantic component, this restriction will follow automatically" (p.103).

Secondly, as seen in §3.2, epistemic modals are higher than root modals, and take the latter necessarily in their scope. If epistemic adverbs are generated as specifiers of the same projection, the fact that they necessarily take scope over root modals even when the latter precede them, as in (23), can then be straightforwardly derived (cf. Ernst 1991,754f; 1992,§4 for similar conclusions). What apparently counts for (this type of) scope relations is the representation before (head-)movement (or after 'reconstruction'):

(23) John must probably give his money back

**4.9 Time adverbs and T(Past), T(Future).** The matching between temporal adverbs and T(Past), T(Future) would appear to be straightforward, especially in view of the recurrent observation that languages lacking overt tense distinctions often resort to temporal adverbs to locate the event in time.<sup>28</sup> Analogously, in those languages (such as the Indo-European languages) that make no 'metrical' (or 'remoteness') distinctions in their tense system (i.e. do not distinguish a past located earlier in the same day from one located within the previous day, or weeks/months before, or in the remote times) the same distinctions can be expressed by adding explicit temporal adverbs.<sup>29</sup>

<sup>27</sup>Even adverbs like *certainly*, or *surely*, while expressing an even stronger conviction on the part of the speaker, still betray a lack of knowledge. Cf.: *John is certainly home, now* as opposed to the unmarked *John is home, now*. Only the latter presents the proposition as a fact. Cf. Lyons (1977,809), Perkins (1983,23 and fn.3, with relative text), and Bybee (1985,180)

<sup>28</sup>Cf. Comrie (1985,51). Comrie also notes that in certain languages (Mam, Jamaican Creole) "it is usual to omit tense markers when an overt adverbial of time location is present" (p.31). Tense distinctions may also be surrogated by aspectual distinctions (perfect/imperfect). Cf. Comrie (1976,82ff) and Binnick (1991,434ff).

<sup>29</sup>Some languages show quite elaborate 'metrical' (or 'remoteness') tense systems. Dschang, a Bantu language of Cameroon, distinguishes five pasts, and five futures (i.e., five different, and symmetrical, time intervals in the past and the future). See (i) and (ii), from Chia (1976,68f) (cf. also Hyman 1980, and Comrie 1985,97):

- |      |     |                   |            |   |
|------|-----|-------------------|------------|---|
| (i)a | Ò   | Ó                 | koy' m'ó   |   |
|      | You | PAST <sub>1</sub> | like child | 'You have just liked the child ( <i>a few minutes or hours ago</i> )' |
| b    | Ò   | ÓÓ                | ʒ'koy' m'ó |   |
|      | You | PAST <sub>2</sub> | like child | 'You liked the child ( <i>sometimes this morning</i> )'               |
| c    | Ò   | ke                | k'oy' m'ó  |   |
|      | You | PAST <sub>3</sub> | like child | 'You liked the child <i>yesterday</i> '                               |

No such simple matching seems, however, possible. Adverbials like *ieri* 'yesterday', *domani* 'tomorrow', *due mesi fa* 'two months ago', *l'anno scorso* 'last year', etc. cannot appear between epistemic adverbs and lower adverbs (in fact, cannot appear within the IP functional "space" at all):

- (24)a \*Gianni sarà (probabilmente) domani (stupidamente) licenziato  
 G. will (probably) tomorrow be (stupidly) fired  
 b \*Gianni non ha (probabilmente) ieri (mai) dormito  
 G. didn't (probably) yesterday (ever) sleep

Such adverbs can only appear sentence initially, or sentence finally (positions, which in chapter 1 were seen to be reserved to 'adverbs of setting' and 'circumstantial adverbials', respectively).<sup>30</sup>

The only temporal adverbs admitted in this position are the purely deictic ones: (future and past) *allora* 'then', *ora* 'now' (and, perhaps, *un tempo*, *una volta* 'once').

As (25) to (28) show, their canonical position seems to be between epistemic adverbs and *forse* 'perhaps' (the judgements are rather delicate as they must abstract from the parenthetical, or 'comma intonation', uses, of the adverbs; from the reading of *allora* = 'consequently'; and from the 'focussing' usages of *probabilmente* and *forse*, which form a constituent with the following word):

- (25)a Lei c'era probabilmente anche allora stata  
 She had probably then been there too

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d	Ò	<i>le</i>	<i>koʒɔ mɔ</i>	
		You PAST <sub>4</sub>	like child	'You liked the child <i>the day before yesterday</i> (last week, etc.)'
e	Ò	<i>lelá</i>	<i>ʒ'koʒɔ mɔ</i>	
		You PAST <sub>3</sub>	like child	'You liked the child <i>years ago</i> '
(ii)a	Ò	<i>'ó</i>	<i>ko m</i>	
		You FUT <sub>1</sub>	like child	'You will like the child <i>in a few minutes or hours</i> '
b	Ò	<i>pin</i>	<i>koʒɔ mɔ</i>	
		You FUT <sub>2</sub>	like child	'You will like the child <i>this afternoon or tonight</i> '
c	Ò	<i>lu</i>	<i>koʒɔ mɔ</i>	
		You FUT <sub>3</sub>	like child	'You will like the child <i>tomorrow</i> '
d	Ò	<i>'lá?</i>	<i>koʒɔ mɔ</i>	
		You FUT <sub>4</sub>	like child	'You will like the child <i>the day after tomorrow</i> '
e	Ò	<i>'fú</i>	<i>koʒɔ mɔ</i>	
		You FUT <sub>5</sub>	like child	'You will like the child <i>in years to come</i> '

Similar systems are attested in North American languages (cf. Mithun to appear), and other language groups (cf. Comrie 1985, chapter 4, Frawley 1992, 363, and references cited there). I assume that such distinctions are orthogonal to the only 'real' *Tense* distinctions discussed earlier, which involve different relations among the E, R<sub>1</sub>, R<sub>2</sub>, and S points.

<sup>30</sup>If 'bare' adverbial DPs are headless PPs rather than adverbs (cf., however, Riemsdijk 1996, fn11 and p.18), the fact that they cannot appear in Spec,T(Past) or T(Future) may be no real problem, as PPs are generally barred from the IP functional "space" (cf. Jackendoff 1977, 73). If they are 'predicates', as argued in Stroik (1992), (predicated of the verb's empty temporal argument), their non occurrence within the IP functional "space" is likewise not surprising, as other (secondary) predicates also seem excluded from there. Their distribution is similarly unsurprising if they pattern like argument DPs, as Giorgi and Pianesi (to appear, chapter 3, §2.5) suggest. For general discussion on their distribution and categorial status, see Larson (1985), McCawley (1988), Stroik (1992), Giorgi and Pianesi (to appear).

- b \*?Lei c'era anche allora probabilmente stata  
She had then probably been there too

- (26)a Era allora forse stata fortunata  
She had then perhaps been lucky  
b \*?Era forse allora stata fortunata (ok with *forse allora* a constituent)  
She had perhaps then been lucky

- (27)a Ci sarà probabilmente anche allora stato  
He will probably then have been there too  
b \*?Ci sarà anche allora probabilmente stato  
He will then probably have been there too

- (28)a Sarà allora forse finalmente rifatta  
It will then perhaps be finally restored  
b ??Sarà forse allora finalmente rifatta  
It will perhaps then be finally restored

In chapter 1, *ora* 'now', was seen to canonically occur in between epistemic adverbs and *forse* 'perhaps'. While its meaning makes it the obvious candidate to enter a specifier/head relation with 'present tense', this tense has no specific structural position in Vikner's system reviewed in §4.3. It results 'compositionally', when the time points related by T(Anterior) (E and R<sub>2</sub>), T(Future) (R<sub>2</sub> and R<sub>1</sub>), and T(Past) (R<sub>1</sub> and S) coincide (i.e., have the 'default' values). Nonetheless, it is plausible to view the 'present' to correspond to R<sub>1</sub>,S, the default value of T(Past), provided that the lower T<sup>o</sup>s also have the default value. If so, the distribution of *ora* seen in chapter 1 is no longer surprising.<sup>31</sup> What remains to be seen is whether binary tense systems (where the Present has the same morphological realization as Past vs. Future, or as Future vs. Past - cf. Comrie 1985,48ff; Frawley 1992,360f) can be accommodated naturally within the framework adopted here.

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<sup>31</sup> According to Botne's (1993) glosses, the Bantu language Tumbuka appears to have a Present lower than T(Future) (cf. (i) below). His description makes it clear that the form encodes the default value of T(Anterior): "The lexical verb that appears as the complement of *-va* may be marked as either simultaneous with (*-ku-*) or anterior to (*-a-*) the second tense locus referred to by *-va*" (p.12):

- (i)a ..va-zamu-va va-ku-vina..  
3pl-FUT-be 3pl-PRES-dance '..they will be dancing..  
b ..yi-zamu-va y-a-baba..  
Agr-FUT-be agr-ANT-give birth '..will have given birth..'

The higher position which *ora* (and *adesso* 'now') can occupy, before all sentence adverbs (including speech act ones) was taken in chapter 1 to be the position of 'adverbs of setting'. *Ora/adesso*, however, do not sound impossible between evaluative and evidential adverbs (?*Gianni fortunatamente ora chiaramente potrà aiutarci di più* 'G. luckily now clearly will be able to help us more'). This may indicate that more structure is involved. Some languages, in fact, show present tense morphology cooccurring with, and higher than, T(Past) morphology. See the cases of Aleut and Malayalam (examples (16) and (18), and fn.7) of the appendix to chapter 3. Conceivably, T(Past) could be a relation between two reference points (R<sub>1</sub>—R<sub>0</sub>), with T(Present) providing the anchor to S (R<sub>0</sub>=S), when no sequence of tense is involved. The option R<sub>0</sub>=E of the superordinate clause might account for the so-called 'subordinate' present of certain languages (e.g. Tigrinya - Kócs-Dienes 1984,107), where a special present form is used in clauses dependent from a past verb to convey simultaneity. This is however highly speculative, needless to say.

**4.10 Perhaps and Irrealis Mood.** In chapter 1, we saw that *forse* 'perhaps' can cooccur (somewhat redundantly) with *probabilmente* 'probably', in the order *probabilmente forse* rather than viceversa. Similar judgements seem to hold for Dutch *waarschijnlijk* 'probably' and *misschien* 'perhaps' (Jeannette Schaeffer, Marcel den Dikken p.c.).

Consistent with this order is the observation made in the previous section (and in chapter 1) that *forse* follows *allora/ora*, which in turn follow *probabilmente*. *Forse* also differs from *probabilmente* (and the other epistemic adverbs) in that it can occur in questions, as Bellert (1977,344) observed with respect to English *perhaps*:

- (29)a Gianni è forse già stato qui?  
 Has G. perhaps been here before?  
 b \*Gianni è probabilmente già stato qui?  
 Has G. probably been here before?

*Forse*, *perhaps*, *misschien* etc. cannot then be assigned to the same class of (epistemic) adverbs to which *probabilmente* belongs.

I tentatively suggest that the adverb corresponds to Irrealis Mood. The fact that it comes after time and epistemic adverbs thus meshes well with the fact that Irrealis Mood follows Epistemic Modality, and T(Past) and T(Future), as observed in chapter 3. Hidatsa has a mood, called by Matthews (1965) 'perhaps' mood, which is "used when the speaker doesn't know if the proposition is true and doesn't think the addressee knows either" (Sadock and Zwicky 1985,168).

**4.11 '(Not) necessarily/possibly' and alethic modality.** In discussing alethic modality above, I suggested that it is distinct from both epistemic and root modality, in fact intervening between the two. But its position relative to T(Past), T(Future) and Irrealis Mood was left there undetermined.<sup>32</sup>

If *forse* is in Spec,Mood<sub>irrealis</sub> and *necessariamente/ (non) necessariamente* in Spec,Mod<sub>necessity</sub>, Spec,Mod<sub>possibility</sub>, respectively, the following sentences provide evidence for the order Mood<sub>irrealis</sub> > Mod<sub>necessity</sub>/Mod<sub>possibility</sub> :

- (30)a Saranno forse necessariamente riammessi  
 'They will perhaps necessarily readmitted'  
 b \*Saranno necessariamente forse riammessi  
 'They will perhaps necessarily readmitted'

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<sup>32</sup>As opposed to purely epistemic modals and epistemic adverbs (cf. (i)a-b), alethic modals and alethic adverbs can occur in questions (cf. fn.4 above, (ii) and (iii) below, and Schreiber 1971,88; Corum 1974,91f; Doherty 1987; Perkins 1983,91ff), though Bellert (1977) reports an ungrammatical question with *possibly*:

- (i)a \**Must* it have rained?  
 b \*Is it *probably* five o'clock?  
 (ii)a *Could* Guido know the answer?  
 b *Mustn't* he know the answer?  
 (iii)a Aren't Roman Catholic priests *necessarily* unmarried?  
 b Can he *possibly* have said that?

- (31)a I ricchi non sono forse necessariamente felici  
 The rich aren't perhaps necessarily happy  
 b \*I ricchi non sono necessariamente forse felici  
 The rich aren't necessarily perhaps happy

As T(Past) and T(Future) precede Mood<sub>irrealis</sub>, as seen above, we expect, by extension, that (future and past) *allora* 'then' also precede (*non*) *necessariamente*; a correct prediction, apparently:

- (32)a Neanche loro saranno allora necessariamente dalla vostra parte  
 Not even they will then necessarily be on your side  
 b \*Neanche loro saranno necessariamente allora dalla vostra parte  
 Not even they will necessarily then be on your side  
 c I russi non erano allora necessariamente comunisti convinti  
 The Russian weren't then necessarily convinced communists  
 d \*I russi non erano necessariamente allora comunisti convinti  
 The Russian weren't necessarily then convinced communists

**4.12 Subject-oriented adverbs and root modals.** The special relation between 'subject-oriented' adverbs and (English) root modals is explicitly recognized in the literature. Zubizarreta (1982,35ff and 123ff; 1986) analyses both as adjunct predicates which assign an additional (adjunct)  $\theta$ -role to the subject. "As in the case of S-adverbs ['subject-oriented' adverbs], we then expect that the 'orientation' of modals may change under passive" (1982,129).

In a way parallel to (33), where the adverb retains its orientation on the subject when this changes, root modals also appear to retain their orientation on the subject, as seen in (34), where the permission, or obligation is once on the doctor, and once on John (cf. Roberts 1985b,50; Travis 1988,304):<sup>33</sup>

- (33)a Joe intentionally has seduced Mary (Jackendoff 1972,82)  
 b Mary intentionally has been seduced by Joe
- (34)a The doctor may/must examine John  
 b John may/must be examined by the doctor

Another property which subject-oriented adverbs and root modals share is the fact, observed in

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<sup>33</sup>The property of 'passive sensitivity' is, however, more complex. Adverbs seem to behave (at least in part) differently from root modals. When the adjunct  $\theta$ -role is incompatible with the subject, (pre-auxiliary) subject-oriented adverbs give no good output, apparently (*\*The flowers intentionally have been picked by visitors*). Root modals, instead, appear to be able to assign the adjunct  $\theta$ -role to the agent (*Flowers may be picked by visitors*) (cf. Jackendoff 1972,105; Travis 1988, 305f). Notice, however, that even subject-oriented adverbs can assign their adjunct  $\theta$ -role to the agent, if they appear after the auxiliary (*Flowers have intentionally been picked by the visitors*). I will leave these problems to the side here, also recalling the observation in chapter 1, after Sueur (1978), that in French (and in Italian (Romance?)) the relevant adverb seem to be only agent-oriented. On the subject/agent-orientation of adverbs and modals (which still needs to be completely understood), I refer for discussion to Jackendoff (1972), McConnel-Ginet (1982), Roberts (1985a,b, 1986), Travis (1988), McCloskey (1996b,fn.8), among others.

Roberts (1985a,183) (also see Roberts 1985b,50f; 1986,186ff), that neither can occur in middles. Cf. (35) and (36):

(35) \*The book sold voluntarily

(36)a \*Arabic can read easily (with root interpretation)

b \*Dinner must serve best at 8 (with root interpretation)

Root modals were seen above (§4.2) to enter a particular scope hierarchy, with modals of ability in the scope of modals of obligation, themselves in the scope of modals of volition. Interestingly, different classes of AdvPs exist which seem to correspond to the different classes of root modals; and which seem to display a corresponding relative order. See (37)-(38):<sup>34</sup>

(37)a Gianni si presenta volentieri obbligatoriamente al posto di polizia

G. willingly obligatorily goes to the police headquarters

b \*Gianni si presenta obbligatoriamente volentieri al posto di polizia

G. obligatorily willingly goes to the police headquarters

(38)a Gianni inevitabilmente lascerà goffamente cadere la tazza

G. will inevitably clumsily drop the cup

b \*Gianni goffamente lascerà inevitabilmente cadere la tazza

G. will clumsily inevitably drop the cup

(37)a-b indicate that 'volition' adverbs precede 'obligation' adverbs, and (38)a-b that 'obligation' adverbs precede 'ability' adverbs.

All in all, there is some evidence that the different classes of root modal adverbs mentioned in fn.34 enter into a systematic relation with the three distinct root modals isolated above, thus justifying the postulation of three distinct root modal projections, in the order: ...[ Mod<sub>volition</sub> [ Mod<sub>obligation</sub> [ Mod<sub>ability/permission</sub> ...<sup>35</sup>

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<sup>34</sup>Plausible candidates for the volition, obligation, and permission/ability classes are given in (i)-(iii), respectively:

(i) *Intenzionalmente* 'intentionally', *deliberatamente* 'deliberately', *(in)volontariamente* '(in)voluntarily', *accidentalmente* 'accidentally', etc.

(ii) *obbligatoriamente* 'obligatorily', *per forza* 'per force', *inevitabilmente* 'inevitably', *coercitivamente* 'coercively', etc.

(iii) *legittimamente* 'legitimately', *col suo/mio/.. permesso* 'with his/my/.. permission (permissibly)', *abilmente* 'cleverly/skilfully', *competentemente* 'competently', *goffamente* 'clumsily', *stupidamente* 'stupidly', etc.

In the last class, possibly fall, as different kinds of ability predicated of the subject, manner adverbs used in the 'subject-oriented' way.

<sup>35</sup> The volitional/non volitional affixes found in many languages (for example in the Uto-Aztecan language Cupeño - Hill 1969; in Lhasa Tibetan - Delancey 1986; in Tsova-Tush - Holisky 1987; in Sinhala - Inman 1992; in Malay - Wee 1995; etc.) would seem to find their place in the head of ModP<sub>volition</sub>, although more work (e.g. concerning the relative position of the volitional affix) is needed before any conclusion can be reached.



**4.13 Habitual adverbs and habitual aspect.** As seen in the previous chapter, aspectual heads are invariably lower than mood, (absolute) tense, and modal heads, and enter into a fixed sequence. From this section on, I will consider each aspect in turn (and the adverbial class which seems to correspond to it), beginning with habitual aspect, which is the 'highest', apparently (cf. chapter 3, end of §3.6, and fn.51).

Comrie (1976,27f) defines habitual aspect as describing "a situation which is characteristic of an extended period of time" (in fact, characteristic of the whole period), and explicitly distinguishes it from iterative, or frequentative, aspect, which indicates "the mere repetition of a situation". Cf. also Dahl (1985,97).<sup>36</sup>

The adverb class corresponding to this aspect plausibly comprises such adverbs as *usually, habitually, customarily, generally, regularly*, etc. Dahl (1985), in fact, explicitly says that "the cases where HAB[itual aspect] is typically used are those in which the adverb *usually* is possible in English" (p.97).

In addition to the near-paraphrase relation between habitual morphology and habitual adverbs (cf. *Last year, I used to wake up at 7; Last year, I usually woke up at 7*), the two display a parallel position in the head and adverb hierarchies. Habitual aspect appears to follow root modals (cf. chapter 3,§3.7) and to precede frequentative aspect (as shown, for example, by the order of suffixes in Yareba, in (39)a, and of particles in Rapanui, in (39)b). Similarly, habitual adverbs follow subject-oriented adverbs (cf. §3.7) and precede frequentative adverbs (cf. (40) below).<sup>37</sup>

(39)a *yau-r-edib-eb-a-su* (Weimer 1972,61)

sit-CM-FREQ-HAB-PRES-3sgMasc  
'He (habitually and repeatedly) sits down

b *Pura vara tu'u mai a Nau* (Du Feu 1996,162)

HAB FREQ come towards Pers.sing. N.  
'N. usually comes here'

(40)a *Mario è di solito spesso costretto a rimanere a casa*

M. is usually often obliged to stay home

b *\*?Mario è spesso di solito costretto a rimanere a casa*

M. is often usually obliged to stay home

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<sup>36</sup>As Comrie notes (p.27) "a situation can be referred to by a habitual form without there being any iterativity at all" (cf. *The temple of Diana used to stand at Ephesus*); and in (some) situations, habituality and iterativity are even incompatible (*The lecturer stood up, coughed/\*used to cough five times, and said..*). Also see Delfitto and Bertinetto (1994,141,fn.6).

<sup>37</sup>The same observation is made for French in Schlyter (1977,92f), where the following contrast is given:

(i)  $\left. \begin{array}{l} \text{Habituellement} \\ \text{Normalement} \\ \text{Généralement} \end{array} \right\} \text{ils regardent fréquemment la télé}$  'Usually they frequently watch tv'

(ii)  $\left. \begin{array}{l} \text{Fréquemment} \\ \text{*Quotidiennement} \\ \text{Rarement} \end{array} \right\} \text{ils regardent habituellement la télé}$  'frequently they usually watch tv'

In certain languages (e.g. Italian), a habitual reading is available even in the absence of special (habitual) morphology on the head, or of a habitual adverb, provided that the verb is in a non-perfect form. Cf. (41), and Bertinetto (1994a and c) for discussion.

- (41)a L'anno scorso, mi alzavo alle 7  
 'Last year, I (usually) woke up at 7'  
 b Quest'anno, mi alzo alle 7  
 'This year, I (usually) wake up at 7'

In such cases, the verb (in the past "imperfect" and in the present) perhaps can be assumed to rise and check the marked habitual feature in the Asp<sub>habitual</sub> head.<sup>38</sup>

**4.14 Repetitive/frequentative adverbs and repetitive/frequentative aspects.** In the literature, such terms as 'frequentative', 'iterative', 'repetitive' are used sometimes as synonyms (though maybe applied by different authors to different things), sometimes in opposition to one another, to refer to different kinds of things. So, care must be taken to understand what is referred to each time.

Beyond the terminological problem, there is a question of substance. Languages seem to make distinctions in what we can refer to as 'repetition'.

Even though in certain languages the same form may signal that an action is repeated on a single occasion or on different occasions (Bybee et al. (eds.), 160, Comrie 1976,43,fn.2), there are languages which distinguish these two types via different morphological affixes. So, for example, Sobei distinguishes between performing a certain action *repeatedly*, *several times*, *often* and performing it *again*.<sup>39</sup>

We shall in fact see that the corresponding adverbs can cooccur, with the order *again* > *often*. Both types of repetition may quantify over events in which a certain action is performed, or over the action itself, quantification over events being located higher than quantification over the action.

This is particularly clear with the corresponding AdvPs (which, I take, as expected by now, to be in

<sup>38</sup>Habitual sentences must also be kept distinct from generic sentences. Cf. the discussion in §4.22. Similarly, habitual adverbs must be kept distinct from other 'adverbs of quantification' (*often/rarely*, *always/never*, etc.), which seem to correspond to distinct aspectual heads (see below). Bybee (1985,143) reports the case of Pawnee, which displays a 'usitative' preverb, in addition to a habitual suffix, to mark activities occurring only "now and then" (cf. *occasionally*).

<sup>39</sup>See (i)a vs. b, from Sterner (1975,137 and 142), who calls the first 'repetitive', and the second 'iterative' aspect:

- (i)a Ten - t - i - fun  
 REP-1pl-r-vs 'we hit repeatedly'  
 b y - o - rur - wer - sa  
 1sg-r - vs - ITER-DIR 'I lift up again'

According to Capell and Coate (1984,209), the Australian Northern Kimberley languages have 'iterative' aspect suffixes "expressing the idea of repeating an action", and 'frequentative' aspect suffixes expressing "an action carried out a number of times, not just repeated once".

Here, I will use *repetitive* for actions repeated once ('again') and *frequentative* for actions repeated several times. Also see the case of semeliterative ('again') and iterative prefixes of Navajo cited in §3.6. The term 'semelfactive' is sometimes used "to refer to a situation that takes place once and once only (e.g. one single cough)" (Comrie 1976,42). But this seems to relate to lexical, rather than grammatical, aspect (cf. Smith 1991,55ff).

the specifier position of the respective aspect phrases).

(42) shows that the same 'frequentative' adverb, *spesso* 'often', can occur in two different positions (demarcated by the adverb *già* 'already'). (43), more revealingly, shows that both positions can be simultaneously filled:<sup>40</sup>

- (42)a (Quando troviamo qualcosa) questa è *spesso già* stata scoperta da qualcuno  
 (When we find something) this has often already been discovered by someone  
 b Questa proprietà è *già* stata scoperta *spesso*, negli ultimi cinquant'anni  
 This property has already been discovered often, in the last fifty years

- (43)a Gianni, saggiamente, *spesso* esce con la stessa persona *spesso*  
 G., wisely, often dates the same person often  
 b Gianni *raramente* esce con la stessa persona *spesso*<sup>41</sup>  
 G. rarely dates the same person often

This is not to say that there are two *spesso* (*often*, *souvent*, etc.). Rather, it seems plausible to take the same lexical item to be generable in two distinct (scope) positions..<sup>42</sup>

That the two positions of *spesso*, etc. are specific scope positions (unlike what free adjunction to different phrases would make one expect) is shown by the fact that each is fixed relative to other adverb positions. So, for example, the 'higher' *spesso* follows habitual adverbs (cf. (40)), and precedes *già* (cf. (42)a above vs. ..\* è *già spesso stata scoperta da qualcuno*), while the 'lower' *spesso* follows the much lower adverb *bene* (see below), and at least some of the complements (*Gianni parlava bene*

<sup>40</sup>The leftmost seems to quantify over events, the rightmost over the processes or states represented by the verb. In literary Italian, the former, but not the latter, can be replaced by *spesse volte* 'lit. 'often times'. Also recall the observation, made in chapter 1 around ex. (114) (*Texans often drink beer* vs. *Texans drink beer often*), that the former, but not the latter, can act as an "adverb of quantification".

As pointed out to me by Hans Obenauer (p.c.), the two 'base generation' positions of 'often' also seem to behave differently with respect to 'quantification at a distance' in French. The rightmost position of *souvent*, but not the leftmost, blocks the extraction of *combien* 'how many' (though not all speakers perceive a clear distinction, apparently).

I tentatively assume that 'n times' adverbs belong to the same class as 'often'. Cf. the two positions of *twice* discussed in chapter 1 (§1.5).

<sup>41</sup>Differently from *spesso* 'often', *raramente* 'rarely' seems to quantify preferably, or only, over events. Compare (43)b with \*?*Gianni spesso esce con la stessa persona raramente* 'G. often dates the same person rarely', and \*?*Gianni è stato invitato raramente da tutti* 'G. has been invited rarely by everybody'. I interpret the fact that the sentence becomes possible with *raramente* in VP-final position (*Gianni è stato invitato da tutti raramente* 'G. has been invited by everybody rarely') as due to the leftward movement of [*invitato da tutti*] around a higher (event-quantifying) instance of *raramente*.

<sup>42</sup>This is analogous to other cases of multiple occurrences of the same adverb. In (i), for example (from Vendler 1984,306), the very same lexical item acquires (partially) different senses ('speech act', 'subject-oriented', and 'manner') as a function of its base generation in different, specialized, positions:

(i) Honestly, he, honestly, told the story honestly

What remains to be seen is how a single (more abstract) meaning can yield the different senses in interaction with the semantic contribution of each scope position. In this direction, see Ernst (1987), and Rochette (1990).

(\**spesso*) *di noi* (*spesso*) *con sua madre* 'G. would talk well about us with his mother'.<sup>43</sup>

Although I do not know if there are languages which utilize the same affix twice, to mark a 'higher' and a 'lower' (frequentative) aspect, I will nonetheless assume the existence of two separate aspect phrases corresponding to the two scope positions occupied by *spesso*, etc., calling, for ease of reference, the higher  $Asp_{frequentative(I)}$  and the lower  $Asp_{frequentative(II)}$ . A potential consequence of this assumption is that some language might give the illusion of having a 'frequentative' aspect ordered differently (with respect to another aspect) than some other language. West Greenlandic may be a case in point (cf. the discussion in Fortescue 1984,286).<sup>44</sup>

An analogous double position (and scope) appears to be available for adverbs expressing repetition on a single occasion (*di nuovo*, *nuovamente*, *ancora*, etc. 'again'), and, I take, for the corresponding aspect phrases. See (44):

- (44) Gianni ha di nuovo battuto alla porta di nuovo/ancora  
'G. again knocked on the door again'

The leftmost *di nuovo* quantifies over the event (of knocking on the door, perhaps many times), while the rightmost quantifies over the act itself of knocking.

These adverbs, which I will take to be in the specifier position of an  $Asp_{repetitive(I)}$  and  $Asp_{repetitive(II)}$ , seem to be at the immediate left of the adverbs in the specifier position of  $Asp_{frequentative(I)}$  and  $Asp_{frequentative(II)}$ , respectively. See (45) and the ungrammaticality of (46)a-b with a different order:<sup>45</sup>

- (45) ?Gianni *di nuovo raramente* vede la stessa persona *ancora spesso*  
G. again rarely sees the same person again often

- (46)a \*Gianni *raramente di nuovo* vede la stessa persona  
G. rarely again sees the same person  
b \*Gianni *raramente vede la stessa persona spesso di nuovo*  
G. rarely sees the same person often again

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<sup>43</sup>*Spesso*, *often*, etc. can apparently occupy an additional position, at the beginning of the sentence (*Spesso*, *Gianni sparisce per una settimana intera* 'Often, G. disappears for a whole week'). This can be an effect of the subject and the verb stopping below the higher, event-quantifying, position of *spesso* isolated above (cf. chapter 5, §5.2, for discussion of this possibility). But it may possibly also quantify over larger portions of the clause. In this connection, (107) of chapter 1 (?*John twice intentionally knocked on the door*) could contain *twice* in this higher position (hence to the left of the volitional modal adverb *intentionally*), with *John* topicalized to its left.

<sup>44</sup>Bybee (1985,150) mentions the fact that a "verbal marker that gives *iterative* or *repetitive* meaning [= 'repeatedly' rather than 'again', G.C.] to the verb was found in fifteen of the 50 languages of the sample", but does not discuss its order in the language relative to the other suffixes.

<sup>45</sup>All this suggests the existence of two distinct quantificational 'spaces'; one involving quantification over events, located just below modals, and comprising the habitual, repetitive(I) and frequentative(I) aspects; the other involving quantification over the predicate, comprising the repetitive(II) and frequentative(II) aspects. A comparable distinction will be made for 'quickly/rapidly' (and the so-called 'celerative' aspect). Cf. §§4.15 and 4.27.

**4.15 'Quickly' and Celerative aspect.** As noted in Travis (1988,292), an adverb like *quickly* (also *rapidly*, etc.) may quantify over the event, as in (47)a ("John was quick in.."), or over the process, as in (47)b ("John did it in a quick way") (in (47)a, but not in (47)b, he may actually have lifted the arm with a slow movement):<sup>46</sup>

- (47)a John quickly lifted his arm  
 b John lifted his arm quickly

The different interpretation appears once again to be a function of the (scope) position occupied by the adverb, the leftmost being the one associated with quantification over events.

This position seems to be contiguous to that of Frequentative(I) (and Repetitive(I)) adverbs; in fact, to their right and to the left of *già* 'already'. Cf. (48)-(50):

- (48)a Gianni ha di nuovo rapidamente cambiato opinione  
 G. has again quickly changed his mind  
 b ??Gianni ha rapidamente di nuovo cambiato opinione  
 G. has quickly again changed his mind

- (49)a Gianni ha spesso rapidamente cambiato opinione  
 G. has often quickly changed his mind  
 b \*?Gianni ha rapidamente spesso cambiato opinione  
 G. has quickly often changed his mind

- (50)a Se Mario mi avrà rapidamente già avvisato per le due..  
 If M. will have quickly already warned me by two o'clock..  
 b \*Se Mario mi avrà già rapidamente avvisato per le due..  
 M. will have already quickly warned me by two o'clock..

A lower position hosting 'quickly' adverbs will be discussed in §4.27, in relation to what is known in the africanist tradition as 'celerative' aspect (Arnott, 1970,356; Fagerli 1994,36ff), a particular verbal morphology signaling that the action has been performed quickly.

As with the repetitive and frequentative aspects discussed above, I will assume that corresponding to the higher *quickly* there is a higher aspectual projection (Asp<sub>celerative(I)</sub>).

**4.16 'Already' and T(Anterior).** Abstracting away, for the moment, from the negation position occupied by *mica* (to which I return in chapter 5), the next adverb class down is that represented by *già* 'already' (cf. chapter 1, §1.2).

As noted in the literature, its core meaning is one of *temporal priority* (cf., in particular, Hornstein 1977,547ff, Michaelis 1991); in fact, one of precedence with respect to a reference time. See the discussion on (51)-(52) below.

This makes it plausible to locate it in the specifier position of the lowest TP (TP<sub>anterior</sub>), which marks the relation E\_\_R2 (i.e. Event time precedes Reference time). Consider (51)a-b:

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<sup>46</sup>A similar observation is made in Moltmann (1990) concerning the German pair *..weil Hans schnell das Buch gelesen hat* '..because H. has quickly read the book' vs. *..weil Hans das Buch schnell gelesen hat* '..because H. has read the book quickly'.

- (51)a Haven't we already met?  
 b Last Christmas, hadn't they already met?

The contribution of *already* appears minimal. (51)a-b mean the same as "Haven't we met?" and "Last Christmas, hadn't they met?", with the added presupposition that the encounter is located *before* some reference time (= now and last Christmas, respectively).

As Hornstein (1977) also observes, in a complex sentence of the form Sentence1 *when* Sentence2, "[t]he adverb *already* forces a priority reading for the event expressed in the sentence in which it is found" (p.547). Cf. (52)a-b:

- (52)a John had gone surfing when Harry had gone swimming  
 b John had already gone surfing when Harry had gone swimming

While in (52)a the events expressed by the matrix and the *when* clause can be contemporaneous, in (52)b the presence of *already* in the matrix clause forces the event expressed by it to precede the event expressed by the *when* clause. Whence, also, the ungrammaticality of *\*John had already gone surfing while Harry had gone swimming*, where *when* is replaced by *while*, which is only compatible with the two events being contemporaneous.

Fortescue (1984,278) glosses the affix *-riir-* of West Greenlandic "which indicates an action completed prior to some reference point" with 'already' (also see chapter 3, fn.25, and relative text)<sup>47</sup>

- (53) niri-riir-pugut  
 eat-already-1plIND  
 'We have/had already eaten'

**4.16 'No longer' and 'terminative aspect'.** The next head down, in the hierarchy seen in chapter 3, is *Asp<sub>perfect</sub>*. The next adverb down in the hierarchy of AdvPs seen in chapter 1 is (*non..*) *più* 'not any longer/no longer'. It is, however, unclear whether the latter is in any systematic relation with the former.

Certain classes of verbs, when used in the perfect, do seem to imply that the situation described *no*

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<sup>47</sup> *Già* can also have extended 'scalar' usages (*Ha letto già cinque libri* 'He already read five books'), which I will not consider here. Cf. Michaelis (1991), van der Auwera (1993), and references cited there. In chapter 1, following much literature, I took (*not..*) *yet* as the negative counterpart of *already*, occurring in the same position as *already*. Indeed, its presuppositional contribution is also one of temporal priority. To say that "At 5, John had not yet arrived" is to assert that "At 5, John had not arrived" and to presuppose that "John had not arrived at a time before 5 either" (when he was perhaps expected to arrive). Doowaayãyo is reported to have an *already/yet* verbal suffix (*le* 'he ate'; *le-d* 'he already ate' - Wiering 1974,44). A suffix glossed as *already* is also found in Tuyuca (Barnes 1994,336). A 'not yet' verbal affix is found in Nkore-Kiga (Taylor 1985,156), in the Amerindian language Amuesha (Wise 1986,616), and in Warao (Osborn 1967,46). Also see Comrie's (1985,54) discussion on the 'not yet' tense of Luganda (Bantu).

*longer* obtains (cf. (54)a-b), but this is not true with others (cf. (54)c-d):<sup>48</sup>

- (54)a Gianni ha amato molto Maria (--> non l'ama più)  
 G. has loved M. a lot (--> he no longer loves her)  
 b Gianni ha mangiato (--> non sta più mangiando)  
 G. has eaten (--> he is no longer eating)  
 c Gianni è partito (-/-> non parte più)  
 G. has left (-/-> he is no longer leaving)  
 d Gianni ha raggiunto la vetta (-/-> non la raggiunge più)  
 G. ha reached the summit (-/-> he no longer reaches it)

(*Non..*) *più*, more than with perfect aspect, appears to enter a periphrastic relation with what is sometimes referred to as 'terminative' (or 'cessative') aspect (Binnick 1991,204; Frawley 1992,321), which characterizes a situation as having reached an end point, though not necessarily the natural end point. This aspect is encoded affixally in certain languages (West Greenlandic - Fortescue 1984,283; Hixkaryana - Derbyshire 1985,225), with particles in others (Ewe - Ameka 1988,204f), and via an aspectual verb in others still (English or Italian - Freed 1979):<sup>49</sup>

- (55)a Gianni ha smesso di amare Maria (= Gianni non ama più Maria)  
 G. has stopped loving M. (=G. no longer loves M.)  
 b Gianni ha smesso (cessato) di cantare (=Gianni non canta più)  
 G. stopped singing (=G. no longer sings)  
 c Gianni ha smesso di scrivere la tesi (=Gianni non scrive più la tesi)  
 G. stopped writing his dissertation (=G. no longer writes his dissertation)  
 d %Gianni ha smesso di raggiungere la vetta (%Gianni non raggiunge più la vetta)<sup>50</sup>

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<sup>48</sup>Even in the case of (54), this is nothing more than an implicature, which can be reversed, with no contradiction (*Gianni ha amato molto Maria, e l'ama ancora* 'G. has loved M. a lot, and he still loves her'); *Gianni ha mangiato, ma sta mangiando di nuovo* 'G. has eaten, but he is eating again'. With accomplishments, which involve a natural (rather than an arbitrary) end point, reversing the implicature seems to yield a contradiction: *Gianni ha mangiato il sandwich, \*ma lo finirà domani/e lo sta ancora mangiando* 'G. has eaten the sandwich, but he will finish it tomorrow/and he is still eating it'. With them, the perfect seems to acquire a 'perfective' (or 'completive') value, for which see the discussion in §4.24 below. This additional completive value is, however, not part of the meaning of the perfect, as we see from the fact that it can be cancelled by an adverb: *Gianni ha parzialmente mangiato il sandwich e lo finirà domani/e lo sta ancora mangiando* 'G. has partially eaten the sandwich, and he will finish it tomorrow/ and he is still eating it'. In this connection, it is noteworthy that two perfect forms exist (a 'non-completive' and a 'completive' one) in languages such as Japanese (Ikegami 1985), Tamil (Herring 1988), and Hindi (Singh 1991), among others. On the similar case of Chinese, see §4.24 below.

<sup>49</sup>Some Bantu languages, instead of the adverb, use a special form of the verb, sometimes called '*no longer tense*' (in addition to a '*still*' and a '*not yet tense*'). Cf. Comrie (1985,54f), and the next footnote.

<sup>50</sup>Both paraphrases in (55)d, which contains a verb of achievement, are acceptable only under a habitual or frequentative reading ("he stopped reaching the summit regularly, every time, etc."). Needless to say, the interaction of (*non..*) *più* with verbs belonging to the different aspectual classes would deserve a more careful scrutiny. In certain cases, the adverb gives rise to ambiguity. *Gianni non canta più* can either mean that he was singing and that he has stopped, or that he was going to sing, but then decided not to.

G. stopped reaching the summit (G. no longer reaches the summit)

I will, thus, tentatively locate (*non..*) *più* in the Spec of Asp<sub>terminative</sub>, returning below to Asp<sub>perfect</sub>.

**4.18 'Still' and continuative aspect.** In chapter 1, I provisionally assumed, following other work, that 'still' is the positive counterpart of 'no longer'.<sup>51</sup> This might induce the conclusion that 'still' occupies the same position as 'no longer'.

Since 'no longer' seems related to 'terminative' aspect, as just seen, and 'still' to 'continuative' aspect (Cf. Haspelmath (1993,145), cited in fn.2 of the appendix to chapter 3), we could take terminative and continuative to be two values (perhaps, marked and unmarked, respectively) of one and the same aspectual head.<sup>52</sup>

Some (slight) evidence exists, however, for taking (*non..*) *più* and *ancora* as members of two distinct (though contiguous) adverb classes (and parallelly for keeping terminative aspect separate from continuative aspect). This is provided by the fact that (*non..*) *più* and *ancora* can (marginally) cooccur, in this order, though not in the opposite one.<sup>53</sup>

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In most Veneto varieties, two different adverbs correspond to these two interpretations (*più* and *altro*, respectively).

<sup>51</sup>This is apparently supported by the fact that in Luganda (cf. (i) from Comrie 1985,54), and in Nkore-Kiga (cf. (ii), from Taylor 1985,160), negating the so-called '*still* tense' yields the '*no longer* tense':

- (i)a mu-kya-tudde  
you-still-sit 'You are still seated'  
b te-mu-kya-tudde  
not-you-still-sit 'you are no longer seated'
- (ii)a a-ki-rwaire  
he-still-ill 'he's still ill'  
b t-a-ki-rwaire  
neg-he-still-ill 'he's no longer ill'

"A suffix glossed as 'still'" is also found in the Sino-Tibetan language Garo (Bybee 1985,143). A 'still' (and 'yet') auxiliary is reported to exist in Karen (Jones 1961,17).

<sup>52</sup>Continuative aspect is found expressed by particles, as in the Atchin example (i)a (from Bybee et al. eds. 1994,161), or (apparently, more often) by reduplication of the verb stem, (cf. Bybee et al. eds. 1994,166, who give the Gugu-Yalanji example (i)b, among others):

- (i)a Ko m'ok wiel  
But CONT walk 'He kept walking'  
b yirrka-n-yiirka-y  
keep shouting

*Still* (and continuative aspect) appears to be compatible only with non-perfect forms (cf. Bertinetto 1994,117). For a semantic analysis of the core, and extended, usages of *still*, cf. Michaelis (1993).

<sup>53</sup>As *ancora* 'can have 'focussing' usages, in which it forms a constituent with the phrase following it, perhaps more revealing are cases such as (i)a-b:

- (i)a ?Arrabbiato con me, non lo sarai più ancora, spero!  
Angry with me, you will no longer still be, I hope  
b \*Arrabbiato con me, non lo sarai ancora più, spero!



- (56)a ?Spero che tu non sia *più ancora* arrabbiato con me!  
 I hope that you are no longer still angry with me  
 b \*Spero che tu non sia *ancora più* arrabbiato con me!  
 I hope that you are still no longer angry with me

**4.19 'Always' and perfect/imperfect aspect (?).** *Sempre* 'always', when cooccurring with *ancora* 'still', necessarily follows it:<sup>54</sup>

- (57)a Gianni vince ancora sempre tutte le partite  
 G. still always wins all the games  
 b \*Gianni vince sempre ancora tutte le partite  
 G. always still wins all the games

The projection hosting it must, then, follow  $\text{AspP}_{\text{continuative}}$  (and a fortiori  $\text{AspP}_{\text{terminative}}$ ,  $\text{TP}(\text{Anterior})$ ,  $\text{Asp}_{\text{celerative}(\text{T})}$ ,  $\text{AspP}_{\text{frequentative}(\text{T})}$ ,  $\text{AspP}_{\text{repetitive}(\text{T})}$ ,  $\text{AspP}_{\text{habitual}}$ ).<sup>55</sup>

In the hierarchy of functional heads (and projections) discussed in chapter 3 (cf. (90)), the two heads immediately following  $\text{T}(\text{Anterior})$  are  $\text{Asp}_{\text{perfect}}$  and  $\text{Asp}_{\text{durative}}$ .

*Sempre* does not seem to enter a semantically transparent relation with  $\text{Asp}_{\text{durative}}$ , which refers to limited duration ('for a while'; cf. §4.20).

Whether it should be related to  $\text{Asp}_{\text{perfect/imperfect}}$  remains unclear. For concreteness, I will tentatively assume it to relate to the imperfect value of this aspectual head, although the whole matter needs to be understood better.

Another possibility is that it relates to what is sometimes called 'continuous' aspect (or tense), to be kept separate from Continuative aspect ('keep on'/'still'). The New Guinea language Una, for example, has a suffix, which Louwse (1988,30f) refers to as 'continuous tense', translating it with 'always' ('never' when in cooccurrence with negation):

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The fact that in languages with terminative and continuative verbs (rather than suffixes or particles) one can have the terminative followed by the continuative (*Gianni smise di continuare a bere* 'G. stopped to continue drinking') is not particularly telling, as the opposite order is also possible (*Gianni continua a smettere di bere (senza successo)* 'G. continues to stop drinking (without success)'). In this case, the rigidity of syntax (assuming the order of functional projections to be rigidly  $\text{Asp}_{\text{terminative}} > \text{Asp}_{\text{continuative}}$ , as suggested by the fixed relative order of the specifiers) is not due to the rigidity of the relative scope of the semantic operators involved. On the relation between semantics and the hierarchy of functional projections, see the discussion in chapter 6 (§6.4).

<sup>54</sup>Recall from §1.2 that *sempre* also necessarily follows (*non..*) *più* 'no longer'. This is entirely consistent with the fact that *ancora* 'still' also follows (*non..*) *più*, as just noted.

It may be interesting to note that *sempre* in Italian has a usage in which it is synonymous with *ancora* 'still' (*Lavori sempre all'Olivetti?* 'Are you still (lit. 'always') working at the Olivetti'). This is perhaps not unrelated to the contiguity of the specifiers hosting the two adverbs.

<sup>55</sup>*Always*, like *often* and *usually*, seems to involve a quantification over times (the three approximately corresponding to 'all times', 'many/several times', 'most times', respectively). It is thus interesting that their relative scope should be the way it is: most > many > all.

- (58) er wa kum i-ru-t ate, er tuba tuba bu-ru-t (Louwse 1988,30)  
 he garden not work-CONT T-3sg cc, he time time sit-CONT T-3sg  
 'He never works in his garden, he always sits (on his rear end)'

Tepehua (a language of Eastern Mexico) is also reported to have a suffix *-(q)'aŕi-*, which "signifies 'always'" (Watters 1988,244): *miŕpa-'aŕi-y* 'X always sings it'.

**4.20 'Just', 'Soon' and Retrospective, Proximative aspects.** Various languages appear to have a form to express the fact that the event has taken place a short while before a reference time; a notion usually referred to in the literature as 'retrospective aspect'.<sup>56</sup>

Beyond the Haitian particle mentioned in chapter 3, fn.31 (cf. (i) of fn.56), a retrospective particle is found in other creoles and also in Mam (cf. England 1983,162).

In other languages, such as French or the Iberian Romance languages, the same aspectual notion is expressed through a verbal periphrasis (*venir de, acabar de* - Comrie 1985,94):

- (59)a Je viens d'arriver (French)  
 I come to arrive  
 'I've just arrived' (Portuguese)  
 b Acabo de chegar  
 (I) finish from to arrive  
 'I've just arrived'

In others, it is encoded as an affix on the verb. See the Yimas example in (60)a, from Foley (1991,251), who refers to it as 'immediate aspect', and the Una example (60)b, from Louwse (1988,63), who refers to it as 'momentaneous aspect':

- (60)a Ti-n-ti-**mpa**-t  
 [Obj]-3sg[Subj]-do-IMM-PERF  
 'She's just finished'  
 b e-n-we  
 say-mom**Asp**-1sg1PAST  
 'I was saying just a while ago'

In other languages still, such as English or Italian, this notion of 'recency' is rendered through the use of adverbs like *just/appena* (Dahl 1985,127), *recently/recentemente, lately/ultimamente*, etc., which

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<sup>56</sup>Cf. chapter 3, fn.31. Occasionally, this aspect is called 'immediate past'; a term which appears inappropriate on various counts. First, as Dahl (1985) notes, it makes one think of 'metrical', or 'remoteness' distinctions (such as 'hodiernal', 'hesternal', etc. pasts - cf. fn. 29 above and Comrie 1985,chapter 4), while it is found in languages "that do not otherwise mark remoteness distinctions systematically" (p.27). The same observation is made in Comrie (1985,94), even though in the context of remoteness systems.

Secondly, it is not strictly 'past', but, if anything, 'anterior', as it can refer to a time point just prior to a future time. Cf. the Haitian example (i):

- (i) Jan ap fèk lèvé  
 J. FUT RETRO get up  
 'J. will have just got up.'

in the present context it is natural to take as generated in the specifier position of this aspect projection.<sup>57</sup>

Just as there are (retrospective aspect) forms encoding the fact that an event took place a *short while before* some reference time, so certain languages have forms encoding the fact that an event is going to take place a *short while after* some reference time. This aspect is sometimes referred to as 'proximative', or 'soon-aspect'.

In Italian and English, adverbs semantically related to this aspect seem to be *presto/soon, subito/immediatamente/immediately*, etc. (*Disse che avrebbe presto/subito lasciato l'Italia* 'He said he would have soon/immediately left Italy').<sup>58</sup>

Like *appena* (cf. fn.57), they also appear to necessarily follow *sempre*:<sup>59</sup>

- (61)a *Disse che ci avrebbe sempre subito/immediatamente/?presto inviato sue notizie*  
He said that he would have always immediately/soon sent news about him

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<sup>57</sup>The corresponding French adverb *à peine* can, in fact (somewhat redundantly), cooccur with the *venir de* periphrasis (*Il vient à peine de terminer son discours* 'He has just finished his speech'). There are differences among the various adverbs. *Lately*, for example, can appear preverbally only under very restrictive conditions. See Stock (1973,fn.6). *Recentemente*, as opposed to *appena*, requires the reference time to be equal to 'now' (*Quando arriverai, sarò appena/\*recentemente partito* 'When you arrive, I will have just/recently left'). For discussion, also see Åqvist, Guenther and Rohrer (1977).

To retrospective aspect are possibly related such adverbial phrases as *a short while ago/poco fa, a short while earlier/poco prima*, etc., which, however, due to their phrasal nature, cannot occur (in Spec) in the functional portion of the clause, but only in the VP "space" of circumstantial adverbials (or as 'adverbs of setting'- §1.3). An apparent exception is the phrase *da poco* 'from little', in Italian, which has the same distribution of *appena*, etc., (which necessarily follows *sempre*):

- (i)a Gianni ha (di solito) sempre appena/da poco ricevuto qualche regalo  
G. has (usually) always just/from little received some present  
b \*Gianni ha (di solito) appena/da poco sempre ricevuto qualche regalo  
G. has (usually) just/from little always received some present

<sup>58</sup>Once again, I gloss over the differences existing among the different adverbs. In Italian, *presto* is multiply ambiguous, corresponding to 'soon', 'early' and 'quickly' (according to the position it occupies). Also see §4.26 below. *Tra poco/dopo poco* 'In a while/after a while' seem to belong to the same class, and can, like *da poco*, appear preverbally, despite their phrasal nature (*Gianni sarà tra poco arrivato a casa* 'G. will have arrived at home in a short while'; *Disse che sarebbe dopo poco arrivato a casa* 'He said he would have arrived at home shortly after'). An affix (-*dàk-*) meaning 'immediately' is found in the Chadic language Dghwede. Cf. Frick (1978,35).

<sup>59</sup>Possibly, the adverb *improvvisamente* 'suddenly' also belongs to this class. According to Potet (1992), the Classical Tagalog prefixes *ka-* and *sa-*, when prefixed to a measure adverbial, translate respectively as '...ago' and 'in...' (e.g. *kamakalawá* 'two days ago', *samakalawá* '(with)in two days'); when they are prefixed to a verb, they express, *ka-* the "immediate past" (rendered with *just*), and *sa-* the "immediate present" (rendered by him as 'suddenly').

*Improvvisamente*, like *subito/presto/etc.*, also seem to follow *sempre* (*Gianni si è sempre improvvisamente eclissato* 'G. has always suddenly disappeared' vs. \**Gianni si è improvvisamente sempre eclissato* 'G. has suddenly always disappeared').

A SUDDENLY-aspect suffix is reported to exist in Wapishana (Tracy 1974,124), Quileute (Bybee 1985,100) and Greenlandic Eskimo (Dahl 1985,95); an auxiliary meaning 'suddenly happened' is attested in Xhosa (Louw 1987,12). Also see §4.29, fn.77.

- b \*Disse che ci avrebbe subito/immediatamente/?presto sempre inviato sue notizie  
He said that he would have immediately/soon always sent news about him

The Eastern Malayo-Polynesian language Kwaio (Keesing 1985) also seems to point to the conclusion that retrospective and proximative aspects are two sides of the same coin, as the same particle appears to encode one or the other depending on the tense of the sentence. "The particle *bi'i* following the subject-referencing pronoun is used both singly and in combination with the future marking particle. By itself it indicates recent completion of the action of the verb, and can usually be translated as 'just' [...] In conjunction with the future particle *ta-*, *bi'i* indicates that the action of the verb will take place at some (unspecified) time a short while in the future ('after a while' or 'by-and-by') (p.119f). Among others, he gives the following examples:<sup>60</sup>

- (62)a *ngai e bi'i nigi*  
FPr(3s) SRP(1s) TAM arrive  
'He just got here'  
b *ta-goru bi'i aga-si-a*  
FUT-SRP(1t) TAM see-TrS-Pro(3s)  
'We'll see it soon'

It is, however, not entirely clear whether 'retrospective' and 'proximative' are two values of one and the same aspect head. As seen with 'terminative' and 'continuative', their appearing opposite, and complementary, dimensions might be a consequence of their semantics (and of their contiguity). In fact, just as terminative (*non..*) *più* and continuative *ancora* were seen to cooccur in a fixed order, so are (certain combinations of) retrospective and proximative adverbs. See (63)-(64):

- (63)a *Gianni ha poco fa immediatamente accettato*  
G. has a little ago immediately accepted  
b \**Gianni ha immediatamente poco fa accettato*  
G. has immediately a little ago accepted
- (64)a *Gianni ha recentemente subito interpellato il suo avvocato*  
G. has recently immediately called his lawyer  
b \**Gianni ha subito recentemente interpellato il suo avvocato*  
G. has immediately recently called his lawyer

Given the lack of decisive evidence one way or the other, I will leave the question open, though favoring the two aspect solution.

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<sup>60</sup>The same ambivalence is apparently found in the prefix *-pəh-* of the Oceanic language Big Nambas, which Fox (1979) labels 'proximity aspect': "the action is comparatively near in time, whether past or future"(p.64). Cf. (i)a-b (and (28)a of the appendix to chapter 3):

- (i)a *n-p'əh-ma*  
I/realis-PROX-come  
'I have just come'  
b *p'e-p'əh-vra-ma*  
I/irrealis-PROX-pl-come  
'We shall soon come'

**4.21 Durative adverbs and Durative aspect.** The term 'Durative aspect' is generally applied in the literature to aspect markers which characterize a situation as "last[ing] for a certain period of time (or at least, [...] conceived as lasting for a certain period of time)" (Comrie 1976,41) (Also see Gibson 1992,57). The plausible adverbial counterpart of this aspect is the class of durative (or measure - Moltmann 1991) adverbials like *for an hour/a day/a month/etc., for a while,etc.*<sup>61</sup>

As with other PPs, however, their phrasal nature prevents them from appearing in the specifier position of a projection of the functional portion of the clause (*\*John has for an hour walked in the park*). They rather occur in the positions of circumstantial adverbials, within the VP. Cf. §1.6. Whether they, or their features (Chomsky 1995), are able to move, and check the relevant features of the Spec of Asp<sub>durative</sub> at LF, I leave open.

The few durative *-mente/-ly* adverbs that exist can appear, as expected, in the functional portion of the clause. *Brevemente* 'briefly' and *lungamente/a lungo* 'long' are two such cases:

- (65) Gianni ha brevemente/lungamente parlato delle sue vacanze  
G. has briefly/long been talking about his holidays

Here *brevemente/lungamente* mean 'for a short/long time'. Relative to other adverb classes, significantly, they turn out to follow *appena* 'just' (and *sempre* 'always'). See (66)-(67):

- (66)a Gianni ha appena brevemente parlato con il suo capo  
'G. just briefly talked with his boss'  
b \*Gianni ha brevemente appena parlato con il suo capo (irrelevantly possible with 'non-temporal *appena* = 'hardly')

- (67)a Gianni ha sempre lungamente parlato dei suoi problemi  
G. has always lengthly talked about his problems  
b \*Gianni ha lungamente sempre parlato dei suoi problemi  
G. has lengthly always talked about his problems

**4.22 '?' and generic/progressive aspect.** Generic sentences are sometimes treated together with habitual sentences. But the two are plausibly to be kept separate. According to Dahl (1985,97), habitual sentences "differ from generic ones by their lack of lawlikeness". Generic sentences in fact seem to refer to some inherent characteristic (of an object) that may not even have had realization once. A sentence like *Questa macchina fa i 280 km all'ora* 'this car runs 280 km per hour' may be uttered appropriately even if the car has never been on the road.

As a matter of fact, most of the times habitual adverbs are incompatible with a generic statement:

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<sup>61</sup>A subclass of such adverbials are those "implicitly related to completion (*in 2 hours*)" (Smith 1991,69), and variously called ('Frist' - Binnick 1991,307; 'completive' - Smith 1991,69; etc.). They are in complementary distribution with *for* adverbials, being typically selected in the presence of telic predicates ('accomplishments' and 'achievements'), as opposed to *for* adverbials, which are selected with 'activities' (and certain 'states').

That *for* and *in* adverbials belong to the same semantic class is further suggested by the fact that in various languages (e.g., Chinese, Navajo - Smith 1991,69; Mokilese - Chung and Timberlake 1985,237) they have exactly the same form, acquiring their different interpretation as a function of the context in which they appear.

*%John usually knows five languages; \*Whales are usually mammals.*<sup>62</sup>

Here I will assume that generic sentences involve a generic operator in the Specifier position of an aspectual head which can also host (as its marked value) an 'episodic' (Chierchia 1992), or 'progressive', operator. A well-known feature of the English present, as opposed to the present of Italian, and other languages is its compatibility only with the default (or generic) value of this aspectual head. The 'episodic' value can only be realized via the progressive form. The incompatibility of individual level predicates with the progressive (*\*John is knowing five languages; \*Whales are being mammals*) can thus be attributed to their inherent genericity (Chierchia 1992). It is not clear what adverb class corresponds to this aspectual head (possible candidates are, in certain contexts, *characteristically, inherently, typically*, etc.).

**4.23 'Almost/imminently' and Prospective aspect.** As anticipated in fn.40 of chapter 3 above, the term 'prospective aspect' has come to be used for those grammatical forms (affixes, particles, auxiliaries or periphrastic constructions) which mark "a point *just prior* to the beginning of an event" (Frawley 1992,322).

This is for example the case with the English construction "to be going to"/"to be about to" (Comrie 1976,64f), or its equivalent in Kobon:<sup>63</sup>

As clearly seen in Gungbe (§3.4 above), this aspectual head (immediately) follows the progressive head. It is sometimes analysed as future tense.<sup>64</sup> But such an analysis is not really warranted. As

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<sup>62</sup>Cf. also Svantesson (1994,272), who notes that in Kammu "the habitual [particle *kù*] is not used for generic statements".

<sup>63</sup>"Prospective aspect is indicated by an Auxiliary Verb Phrase in which *g i* manifests the Auxiliary element and is affixed as a Simple Verb in the normal way and *-nig* is affixed to the Verb Stem which precedes the Auxiliary. This construction indicates that the commencement of the situation is imminent"(Davies 1981,31):

(i) *ar-nig q-ab-in*  
 go-purpose do-PRES-1sg  
 'I am about to go'

<sup>64</sup>Cf. Hollingsworth's (1991) analysis of the particle *da* following the progressive in Mofu-Gudur (Afroasiatic), discussed in fn.3 of the appendix to chapter 3. Similarly, Li (1991,48) analyses the particle *yuav*, which follows the progressive particle *taabtom* in Hmong (Sino-Tibetan) as future, but glosses it in the present as "getting ready to" (an aspectual more than a temporal characterization):

(i) *nwg taabtom yuav yog tug thawjcoj*  
 3sg PROG FUT[PROSP] be CL chief  
 'S/he is in the process of getting ready to be a chief'

Although it must be distinguished from ordinary future, both semantically and positionally, it may still share with it some property at a more abstract level. Steele (1975,46) renders the Thai particle, *cà?*, with 'future' when to the left of the progressive particle *kamlang* (cf. (ii)a), and with a prospective periphrasis when to the right of *kamlang* (cf.(ii)b). This was confirmed to me by Pornsiri Singhapreecha, who notes, however, that for her (ii)a is marginal without a time frame:

(ii)a *kháw cà? kamlang pay*  
 he FUT PROG go 'He will be going'  
 b *kháw kamlang cà? pay míawaannii*  
 he PROG PROSP go yesterday 'I was going to go yesterday'

Comrie (1976,64) points out, between "prospective meaning" (*Bill is going to/is about to throw himself off the cliff*) and "expressions of straight future time reference" (*Bill will throw himself off the cliff*) there is an appreciable difference. If Bill eventually does not throw himself off the cliff, the speaker can be said to have been wrong in the second case, but not in the first.

Adverbs which seem semantically related to this aspect are *almost*, *nearly* (in one of their meanings) and *imminently*, in English (and their analogues in other languages).<sup>65</sup>

- (68)a It was almost raining  
 b He nearly accepted  
 c We were imminently leaving for Spain

The prospective periphrasis and 'almost' show a comparable ambiguity with achievement predicates:

- (69)a Gianni stava per morire  
 G. was about to die  
 b Gianni è quasi morto  
 G. has almost died

Both (69)a and b can refer to a situation where a bullet just missed *Gianni*; or to a situation where he was hit by one, and this brought him near to death.

**4.24 Completely and tutto, and the two types of Completive aspect.** In the hierarchy seen in chapter 1, *completamente* and *tutto* had been observed to follow *sempre*. As *appena*, *subito*, *brevemente*, *quasi* also follow *sempre* (in that order), we may ask how these are ordered with respect to *completamente* and *tutto*. As (70)-(73) show, they precede *completamente* (and *tutto*):

- (70)a Gianni ha appena completamente rovinato l'arrosto  
 G. has just completely ruined the roast-beef  
 b \*Gianni ha completamente appena rovinato l'arrosto  
 G. has completely just ruined the roast-beef

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<sup>65</sup>In fact, as already noted in fn.40 of chapter 3, Heine (1992,339) labeled this aspect, manifested in various african languages, the ALMOST-aspect.

In the Papuan language Tauya "the auxiliary /-wa?ase-/ implies that the state or action specified by the verb nearly took place: *pomu-wa?ase-e-?a* 'I nearly fell'" (MacDonald 1990,205). In Northern Pomo (an Amerindian language) "there is a suffix, *-s'u*, which may occur immediately before the [perfective] suffix *-ye*. It indicates that the state of affairs denoted by the verb *almost* took place, but did not.": *mito xa:kanam-su-y* 'You almost drowned'. In Hunzib (Caucasian) the "suffix *-a.ɬe* denotes that an action is almost happening or is almost accomplished" (van den Berg 1995,111): *olu-l čakar r-ol.l-a.ɬe-r* '(s)he almost finished the sugar'.

In Vietnamese, the same morpheme (*gần*) is rendered in Thompson (1965,215) through a prospective periphrasis with activity verbs ((i)a), and as 'almost' with stative predicates ((i)b):

- (i)a Tôi gần đi Sài-gòn  
 'I 'm on the point of going to Saigon'  
 b Tôi gần muốn khỏe  
 'I am almost sick'

- (71)a Lo avrà tra poco/subito completamente rovinato  
'He will have immediately completely ruined it'  
b \*Lo avrà completamente tra poco/subito rovinato  
'He will have completely immediately ruined it'
- (72)a Lo ha brevemente completamente ridiscusso con Gianni  
He briefly completely discussed it over with G.  
b \*Lo ha completamente brevemente ridiscusso con Gianni  
He completely briefly discussed it over with G.
- (73)a Gianni ha quasi completamente rinunciato alle sue pretese<sup>66</sup>  
G. has almost completely renounced his pretenses  
b \*Gianni ha completamente quasi rinunciato alle sue pretese  
G. has completely almost renounced his pretenses

Concerning the location of *completamente* and *tutto*, I propose that they correspond to the two types of 'completive' aspect discussed in the literature.<sup>67</sup>

Many languages appear to have a specific marker to signal that a telic process has reached completion (namely, the *natural end point* of the process).

With a telic process like 'eating the sandwich', the natural end point is reached when the object has been totally affected (when there is no residue left of the sandwich). In English, this can be explicitly signalled with the 'particle' *up* (*He ate up his sandwich, Eat up your sandwich!*); in Hungarian with the (separable) prefix *meg-* (*Eda meg a szendvicsedet* 'Eat up your sandwich').

In other languages, it is signalled by a (completive aspect) suffix. See:

- (74)a Wara-kaaku-sha (Huallaga Quechua, Weber 1989,152)  
dawn-COMPL-3PERF  
'It has completely dawned (i.e. it is now day)'
- b Ta zuotian xie-wan-le yifeng xin (Chinese, Smith 1987,96)  
He yesterday write-COMPL-PERF a letter  
'He wrote a letter (to the end)'
- c Kuugal timm-id-i (Fula/Fulfulde, Fagerli 1994,19)  
work finish-COMPL-TENSE  
'The job is completely finished'

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<sup>66</sup>Not relevant here is the additional possibility for *quasi* to directly modify *completamente* (in its Spec). The two readings differ in their intonational contour.

<sup>67</sup>Just as *completamente* and *tutto* are quite low in the adverbs' hierarchy, so is completive aspect in the heads' hierarchy. In chapter 3, I noted that the evidence (available to me) was not sufficient to determine the relative order of Completive aspect and Retrospective, Progressive and Prospective aspects. The order of the corresponding adverb classes (specifiers) provides, then, the evidence missing from the heads' side. In this analysis, *tutto*, like *completamente* and the other AdvPs, is in an A-bar position. Given its QP status it binds from there a variable (the A-position where it was 'base generated'). Cf. Cinque (1992b), and references cited there. In fact, there is evidence (to be discussed in the next chapter - §5.4) that the position occupied by *tutto* is not the same position (plausibly, an A-position) occupied by floating quantifiers.



In other still, it is expressed by an auxiliary. Cf. the Choctaw case discussed in Schütze (1995,449), and the Ainu case in fn.69 below.

In the case of a *plural* (definite) object, 'completion' implies both of two things: 1) that the plural set has been *totally* affected (i.e. each member of the set has been affected), and 2) that each member of the set has been *totally* affected (cf. Bybee et al. 1994,57).<sup>68</sup>

In many languages, these two senses of 'completion' are not formally distinguished, nor can they be isolated one from the other. In English, for example, *I ate up the sandwiches* implies at the same time that all the sandwiches were affected, and that each was affected completely. It would be inappropriate to utter such a sentence if only one bite was taken from each sandwich, or if only two thirds of the sandwiches were eaten. But there are languages that keep these two senses separate, apparently. According to Siewierska's (1991,122) characterization, Polish has two completive prefixes (which she refers to as 'completive' and 'perfective'), one expressing completion of the set ("one after the other"), the other expressing completion of each item of the set ("right through"):<sup>69</sup>

- (75) **Po-prze-czyt-yw-o** am                      wszystkie jej książki  
**COMPL-COMPL-read-HAB-PAST** all her books  
 'I have read all her books occasionally one after the other and right through'

For ease of reference, I will call the first 'plural completion', and the second 'singular completion'. It is tempting to see *completamente* and *tutto* as the specifiers corresponding to 'singular' and 'plural' completion, respectively. For *tutto* implies a plurality of items. One could not appropriately utter (76) if he knew that just one item was been looked for:

- (76) Hai trovato tutto?  
 'Have you found everything?'

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<sup>68</sup>If no object is present (as in intransitives), or if the object is indefinite, it is the plural subject which falls under the scope of the completive operator. See (i)a-b, from Tepehua, a language spoken in Eastern Mexico (Watters 1988,229ff). In the same language, the null object of a transitive verb with a completive suffix is rendered as 'everything' (cf. (ii)):

- (i)a Ni s'at'an-n ta-'u-'o:-łni pu:laql̥i  
 Art child-Pl 3SubPl-eat-COMPL-PERF art tamale  
 'The children ate all of the tamale(s)'  
 b Ni s'at'an-n ta-'u-'o:-ł pu:laql̥i  
 Art child-Pl 3SubPl-eat-COMPL-PERF tamale  
 'All the children ate some tamale(s)'  
 (ii) Laqc'in-oho-y  
 see-COMPL-IMPERF  
 'X sees everything'

<sup>69</sup>The two 'completive auxiliaries' found in Ainu are possibly another case in point. Cf. (i)a-b, from Refsing (1994,316):

- (i)a Cep ci e wa **isam**  
 Fish we eat PERF **COMPL**  
 'We ate up (all) the fish'  
 b Toon korsi tu pon cep e wa **okere**  
 that child two small fish eat PERF **COMPL**  
 'that child finished (the process of) eating the two small fish'

The specifiers and the completive aspect suffixes and particles are characterized by a common restriction. They are all incompatible with situations lacking internal stages and a natural end point. See the ill-formedness of the examples in (77) (involving activities), from Hungarian, Chinese and Italian, respectively:

- (77)a \*Karoly tejet ivott meg (de Groot 1984,138)  
 K. milk drank up  
 'K. drank milk up'  
 b Ta xiao-(\*wan)-le (Smith 1987,119)  
 He smile-(COMPL)-PERF  
 'He smiled completely'  
 c \*Gianni ha riso completamente<sup>70</sup>  
 'G. smiled completely'

As noted in chapter 1 (fn.58) *completamente* can, in fact, occupy two distinct positions; a preverbal and a post-object one, associated with two distinct interpretations, which likely depend on their different scope. In §4.27 below, we will see some reasons to postulate an additional completive aspect projection.

**4.25 'Well' (manner adverbs) and Voice.** As seen in chapter 1, the adverb class next to *tutto* appears to be that of *bene* (and other light manner adverbs). Here I tentatively suggest that this class of adverbs occupies the specifier position of VoiceP, even though the relation between the two is not self-evident.

Clues in this direction are the close link existing between 'Middle Voice' and manner adverbs (cf. Keyser and Roeper 1984,384; Roberts 1986,194f) and the special morphological relation existing in certain languages between manner adverbs and *Passive Voice*. In Maori, for example, "the manner particles passivize in agreement with passive verbs" (Bauer 1993,92). Cf. (78):

- (78) I peehi a rawa tia ngaa waahine  
 T/A oppress PASS intens PASS the(pl) women  
 'The women were severely oppressed'

The existence of a special relation between Passive and manner adverbs is also suggested in Chomsky (1965): "The Verbs that do not take Manner Adverbials freely Lees has called 'middle Verbs' (Lees 1960[...], p.8), and he has also observed that these are, characteristically, the Verbs with following NPs that do not undergo the passive transformation"(p.103) [the verbs in question are *resemble, have, marry, fit, cost, weigh*, etc., in one of their senses]. "The generalization that relates Manner Adverbials to passivization"(p.218,fn.28) is formally represented in *Aspects* in the rewriting rule: Manner --> by passive.

There is also a word order peculiarity in Romance which can be interpreted as suggestive of a relation between Passive and manner adverbs.

As observed in chapter 2, an active past participle in Italian necessarily precedes *bene* (and *tutto*). See (79):

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<sup>70</sup>Intransitives that have internal stages and a natural end point are compatible with *completamente*: *Hai digerito completamente?* 'Have you digested completely?'

- (79)a Hanno accolto bene il suo spettacolo solo loro  
 Have received well his show only they  
 b \*Hanno bene accolto il suo spettacolo solo loro  
 Have well received his show only they

Passive past participles, however, seem to behave differently. At least under certain conditions, to which I return, they can also be found to the right of *bene* 'well'. Cf. (80):<sup>71</sup>

- (80) Questo genere di spettacoli è sempre stato bene accolto da tutti  
 This kind of shows has always been well received by everybody

A possible reason why (79b) above is ill-formed is the fact that, in Italian, active past participles raise in overt syntax to check the feature 'perfect' in the relevant head, which is higher than  $Asp_{\text{completive}}$  and Voice. If *bene* is in Spec,VoiceP, then the active past participle necessarily precedes *bene*. Things, however, are different with passive past participles. In this case, it is to be expected that overt raising can be limited to  $Voice^{\circ}$ , where the (marked value) 'passive' has to be checked. If *bene* is in Spec,VoiceP, then we expect it to be found to the left of the participle. This is correct, as noted, though only in part, as the other order is also possible. Cf. (81):

- (81) Questo genere di spettacoli è sempre stato accolto bene da tutti  
 This kind of shows has always been received well by everybody

This, however, is not a real problem. It is still possible that, in (81), the passive past participle, beyond checking the marked feature of  $Voice^{\circ}$  (its primary function), has the faculty of rising and checking some other (marked) feature in a higher head. This seems to be generally the case with active past participles in Italian, which in addition to checking the (marked) feature 'perfect' (perhaps their primary function) are apparently able to check the marked feature  $E\_R_2$  of T(Anterior) (whence their compatibility with such adverbs as *ieri* 'yesterday', etc.).

A clue to what this additional head might be, in the case of Italian passive past participles, comes from a special restriction holding of the order '*bene* + passive past participle'. This order is only acceptable in generic sentences such as (80) above. If a specific time reference is involved, the order becomes impossible. See (82):

- (82)a \*Ieri sera, il suo spettacolo era stato bene accolto da tutti  
 'Last night, his show had been well received by everybody'  
 b Ieri sera, il suo spettacolo era stato accolto bene da tutti  
 'Last night, his show had been received well by everybody'

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<sup>71</sup>The case of '*bene* + passive past participle' discussed in the text should be kept distinct from the (lexically restricted) truncated variant '*ben* + past participle', actually possible even with active past participles (cf. *La valigia è stata ben sistemata* 'the suit-case has been well placed'; *L'hai ben sistemata?* 'have you well placed it?'), which appears to be a case of incorporation (left adjunction) of the adverb to the verb (cf. Rivero 1992). Evidence to this effect, brought to my attention by Richard Kayne (p.c.), is provided by absolute participial clauses like (i), where the past participle is independently known to move to  $C^{\circ}$  (here with the adverb). Cf. Kayne (1989,97); Cinque (1990a,fn.25); Belletti (1990, chapter 2):

(i) Una volta ben sistemato anche te, tuo padre si rilasserà (vs. ??..bene sistemato..)  
 Once well placed you too, your father will relax

I interpret this as indicating that when a specific time reference is involved, the passive past participle has to rise and check the marked feature of the generic/progressive head (which is 'non-generic', or 'progressive'), in addition to the marked feature of Voice<sup>o</sup> ('passive').

Only when the higher head has the default feature ('generic') (so that no checking is required), can the passive past participle fail to rise, and remain in Voice<sup>o</sup>.<sup>72</sup>

**4.26 'Quickly/early' and Celerative aspect (II).** As noted in §4.15 above after Travis (1988), adverbs of the class of *quickly* can appear in two different positions, with partially different interpretations. The higher (the one quantifying over the event) occurs in between frequentative (I) adverbs and *già* 'already' (cf. (48)-(50) above). The lower (the one quantifying over the process) appears instead to occur in between *bene* 'well' and (the lower) *completamente* 'completely' (for which see the next section):

- (83)a I candidati lo tradussero *bene presto* tutti<sup>73</sup>  
 The candidates translated it well quickly/early all  
 b \*I candidati lo tradussero *presto bene* tutti  
 The candidates translated quickly/early well all

- (84)a Dimenticherai *tutto presto completamente* anche tu  
 You will forget everything quickly completely too

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<sup>72</sup>Maria Christina Figueiredo informs me that similar facts hold in Brazilian Portuguese.

The above discussion has tacitly assumed that raising of the verb to different heads is motivated by the requirement of checking the marked value of one (or more) functional head(s). This question, which opens the possibility of relating different interpretations of the verb to the different syntactic positions it comes to occupy, is very delicate and requires careful investigation. Since French past participles presumably display the same interpretations as Italian past participles even if they do not move (as much) in overt syntax, the weak/strong feature parameter of Chomsky (1995) must also hold, to explain V-movement orthogonally to the marked/default value assumed here.

The order '*bene*/etc. + passive past participle' is due to the past participle having stopped in a head to the right of the adverb, rather than to a (special) movement of the adverb across the past participle. This is indicated by the fact that the relative order of *tutto* and *bene* remains the same, and by the fact that, accordingly, the passive past participle can follow *tutto* as well. Cf. (i), and Cinque (1992b):

- (i)a Quando sarà stato tutto bene sistemato,..  
 When will have been everything well arranged,..  
 b \*Quando sarà stato bene tutto sistemato,..  
 When will have been well everything arranged,..

<sup>73</sup>A potential problem is provided by the apparent possibility of coordinating *bene* and *presto* (*Lo tradussero bene e presto/presto e bene* 'They translated it well and quickly/quickly and well'). Adverbs belonging to (positionally) distinct classes should not be able to be coordinated. The sentence final position of the second AdvP opens the possibility that this is not a coordination of AdvPs, but of larger constituents, with a reduced second conjunct: *Lo tradussero bene e [lo tradussero] presto*. This is confirmed by the impossibility of coordinating the two AdvPs when some other constituent follows (which rules out the coordination of two larger constituents): \**Lo tradussero bene e presto/presto e bene in turco* 'They translated it well and quickly/quickly and well into Turkish'.

- b \*Dimenticherai *tutto completamente presto* anche tu  
 You will forget everything completely quickly too

In English, while *quickly, rapidly, etc.* can occur in either position, the synonymous adverb *fast* can occur only in the lower of the two positions (being apparently unable to quantify over events):<sup>74</sup>

- (85)a He quickly ran away  
 b He ran away quickly

- (86)a \*He fast ran away  
 b He ran away fast

This lower position (of *quickly*, and *fast*) seems to correspond to the specifier of the celerative aspect head of Fula/Fulfulde (Arnott 1970,356; Fagerli 1994, 36ff), which is realized as a (derivational) suffix to the left of the Voice suffix (which belongs to an inflectional complex also expressing tense), and to the right of the Completive aspect (derivational) suffix (Fagerli 1994,53)<sup>75</sup>

This matches precisely (in a mirror fashion) the order of what I take to be the corresponding specifiers *bene*, *presto*, and *completamente*, in Italian. Cf. (83)-(84). Arnott (1970), in the passage quoted in fn.75, points out that the celerative aspect suffix can either mean 'quickly' or 'early'. Interestingly, the adverb *presto*, in Italian, is also ambiguous between these two meanings (cf. the translation of (83a) above).

Like *fast* (and, for that matter, *early*) in English, *presto* cannot occupy the Spec of the higher Asp<sub>celerative</sub>. See (87) vs. (83a), and (88)a-b:

- (87) Gianni ha rapidamente (\*presto) risolto i suoi problemi  
 G. has quickly/early solved his problems

- (88)a To day, I woke up early  
 b \*To day, I early woke up

**4.27 'Completely' and Completive aspect (II).** As noted in chapter 1, fn.58, *completely* can occur in two distinct positions, with partially different interpretations. The higher position was seen, in §4.24 above, to be located between *quasi* 'almost' and (the derived position of) *tutto* 'everything'. The lower position appears instead to come, as just noted, after *bene* 'well' and *presto*

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<sup>74</sup>I thank Richard Kayne for pointing out to me the contrast between (85) and (86). As he also noted, there are however certain examples in which *fast* can precede the finite verb (*He fast ran out of money*).

<sup>75</sup>"Celerative *-law-*, *-ilaw-* [...] indicates speed of action, or earliness, and is sometimes used in combination with the adverbial form *jaawd'um* 'quickly', e.g. '*o-mabbilawii-nde* 'he shut it quickly' (Arnott 1970,356). "CELERATIVE. The affix is *-(i)law-*, and it adds to the verbal concept an idea of rapidness.[...] Interestingly, *law* is also the phonological form of the adverb meaning 'fast, quickly'. The derived forms look like these: [...] *Mi nyaam-law-an* 'I (will) eat quickly'" (Fagerli 1994,36f). Verbal suffixes glossed as 'quickly' are also found in Dyrbal (Dixon 1972,248), Evenki (Nedyalkov 1994,13), and Boro (cf. fn.80 below). A verbal suffix glossed with 'early' is found in West Greenlandic (Fortescue 1984,279f). Aleut has different suffixes for 'fast', 'slowly' and 'quickly' (Bergsland 1994,366).

(*rapidamente/velocemente/etc.*) 'quickly'. In terms of order, it seems to correspond to the specifier position of the Completive aspect head of Fula/Fulfulde, realized with the (derivational) suffix *-(i)d*. Just as the order of suffixes in Fula/Fulfulde is (V)-COMPLETIVE-CELERATIVE-VOICE, the order of specifiers, in Italian, is reversed (consistently with the Mirror Principle): *bene* > *presto* > *completamente*.

**4.28 Repetitive/frequentative adverbs and Repetitive/Frequentative aspect (II).** In Fula/Fulfulde, in between the Completive aspect suffix and the verb it is possible to have a Repetitive aspect suffix, meaning 'again' (cf. Fagerli 1994,41 and 53).<sup>76</sup> (also see the case of Yavapai, where the repetitive suffix ('again,once more') occurs between the verb and the progressive suffix: *mi:-yi-km* 'X is crying again'- Kendall 1976,30).

This might suggest locating the lower Repetitive and Frequentative aspect projections, mentioned in §4.14, below the Completive aspect projection. Cf. the (mirror-image) order of the corresponding adverbs of Italian:

(89)a Ha dimenticato completamente di nuovo più volte i nostri compleanni  
He forgot completely again several times our birthdays

**4.29 Speculative remarks on other aspects and adverb classes.** In this section, I will briefly mention other potential (aspectual) functional heads and adverb classes, whose nature and location remains to be precisely determined.

Part of the reason for listing them here is to emphasize the incomplete nature of the analysis presented in this study. The assumption, of course, is that the number of such projections is finite and, plausibly, quite limited, and that it should eventually be possible to arrive at fully determining them on empirical grounds.

Various languages mark morphologically (e.g. through a verbal suffix) the beginning of a process (the so-called inceptive, or ingressive, aspect). Cf. the suffix *-kri* of Boro mentioned in fn.80 below, or the case of Aleut and Ika in the appendix to chapter 3 (exx. (14)a and (39)b).<sup>77</sup>

Other languages mark the fact that a certain action may require some effort (the so-called 'conative' aspect), or that "a distance is traversed before the action is done", as with the 'distantive' suffix of

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<sup>76</sup>I abstract away here from the further (derivational) suffixes (or "radical extensions" - Arnott 1970, sections 57-59), that can be interspersed between the REPETITIVE, COMPLETIVE, and CELERATIVE aspect suffixes. They appear related to grammatical functions (or argument positions): reflexive, associative, causative, instrumental, benefactive, reciprocal, etc.

<sup>77</sup>Judging from the Ika case just mentioned, this aspect is higher than Progressive aspect. Possibly, it is to be distinguished from Inchoative aspect, which marks "the coming about of a state" (Smith 1991,35). Less clear is what class of adverbs these aspects are related to. Possible candidates could be adverbs of the 'suddenly' class, unless they are related to Proximative aspect (as tentatively suggested in fn.59 above). Cf. Schlyter (1977): "Certains adverbess (la serie a: *brusquement*, etc.) indiquent qu'un événement commence, et on peut les appeller INCHOATIFS" (p.76).

Fula/Fulfulde (Fagerli 1994,35), also called 'andative', in the literature.<sup>78</sup>

- (90) Mi rem-oy-i ngesa  
 I cultivate-DIST-PAST field  
 'I went and cultivated the field'

A verbal morpheme indicating "that an accomplishment takes place or succeeds only through extra effort" (Carlson 1996,59) is documented in the Amerindian language Spokane. Carlson also refers to it as the 'SUCCESS' morpheme, translating it with *manage*, or the adverb *finally*.

Possibly related to this aspect are the 'frustative' morphemes found in Wayampi (Tupi-Guarani) (and other languages), which Jensen (1994,359f) renders as 'without success'. Cf. also the verbal suffix of Macushi in (41)d in the appendix to chapter 3, rendered as 'finally' by Abbott 1991.

Another aspect discussed in the literature is the so-called 'delimitative' (Comrie 1976,22fn.3), or 'pofective' (Piñon 1993) aspect, which "indicate[s] a temporally restricted, but non punctual situation". While it is clear to what adverbials it corresponds ('for a little time', etc.), it is not clear whether it is distinct from Durative aspect (cf. §4.21).

Tuyuca is reported in Barnes (1994,331) to have an aspect suffix which she glosses as 'constantly' (a relevant example is given in chapter 5 below, fn.47).

The existence in Pawnee of a 'usitative' aspect suffix, meaning 'occasionally', (distinct from the habitual aspect suffix) was mentioned above in fn.38. It is however unclear whether it is to be kept distinct from frequentative aspect.

Other languages have suffixes sometimes referred to as 'sequential', which mark a sentence as occurring before another sentence. In Tepehua, "[t]he suffix *-el* means roughly 'to do first (before something else)'" (Watters 1988,243):

- (91) pas-'ela-ŋ es 'a-ŋ la: 'is-čaga:  
 bathe-SEQ-PERF then go-PERF PREP 3Poss-house  
 'X bathed first, then went to his/her house'

As Watters further notes, "[t]his suffix is thus semantically redundant with the adverb *p'unah* 'first', with which it often occurs, or which often occurs in its stead" (p.243).<sup>79</sup>

#### 4.30 Towards a universal hierarchy of clausal functional projection (a second approximation).

The discussion above was meant to offer evidence that the hierarchies of adverbial specifiers and clausal functional heads match in a systematic one-to-one fashion.

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<sup>78</sup>The Conative aspect suffix is located in Tauya between the Habitual and the Perfect aspects. See (32)a-b of the appendix to chapter 3.

This aspect, together with the Terminative, Continuative, Success aspects seen above, and the Predispositional aspect (cf. 'tend to') found in American Sign Language (Klima and Bellugi 1979), seem to correspond to some of the 'aspectual verbs' of Romance which allow for Clitic Climbing (cf. Rizzi 1978, Kayne 1989c).

<sup>79</sup>Oksapmin is another language with a suffix (*-pti*) which "expresses a sequential relationship between the first and second unit" (Lawrence 1972,34).

A particle indicating that "an action is first of a series of related actions" is found in Tikar (Jackson 1980,35). Also see the suffix *-qqaar* of West Greenlandic.

Even if we abstract from the more tentative functional heads and adverb classes of the preceding section, whose integration with the rest requires further study, the functional structure of the clause that we arrive at (cf. (92) below) is very rich; at first sight, outrageously rich:

(92) *The universal hierarchy of clausal functional projections (a second approximation)*

[*frankly* Mood<sub>speech act</sub>] [*fortunately* Mood<sub>evaluative</sub>] [*allegedly* Mood<sub>evidential</sub>]  
 [*probably* Mod<sub>epistemic</sub>] [*once* T(Past)] [*then* T(Future)] [*perhaps* Mood<sub>irrealis</sub>]  
 [*necessarily* Mod<sub>necessity</sub>] [*possibly* Mod<sub>possibility</sub>] [*willingly* Mod<sub>volitional</sub>]  
 [*inevitably* Mod<sub>obligation</sub>] [*cleverly* Mod<sub>ability/permission</sub>] [*usually* Asp<sub>habitual</sub>] [*again* Asp<sub>repetitive(I)</sub>]  
 [*often* Asp<sub>frequentative(I)</sub>] [*quickly* Asp<sub>celerative(I)</sub>] [*already* T(Anterior)] [*no longer* Asp<sub>terminative</sub>]  
 [*still* Asp<sub>continuative</sub>] [*always* Asp<sub>perfect(?)</sub>] [*just* Asp<sub>retrospective</sub>] [*soon* Asp<sub>proximative</sub>]  
 [*briefly* Asp<sub>durative</sub>] [*characteristically(?)* Asp<sub>generic/progressive</sub>] [*almost* Asp<sub>prospective</sub>]  
 [*completely* Asp<sub>SgCompletive(I)</sub>] [*tutto* Asp<sub>PlCompletive</sub>] [*well* Voice] [*fast/early* Asp<sub>celerative(II)</sub>]  
 [*completely* Asp<sub>SgCompletive(II)</sub>] [*again* Asp<sub>repetitive(II)</sub>] [*often* Asp<sub>frequentative(II)</sub>] ..

Viewed from the specifiers' side, this richness should not appear so outrageous, though.

Languages are generally much richer in the realization of different classes of AdvPs than in the realization of the corresponding heads (through affixes, particles, auxiliaries, etc.), although there are exceptions.<sup>80</sup>

In this connection, if each adverb class indeed corresponds to a different functional head, then, we have evidence that the entire array of functional heads (and projections) is available even where there is no overt morphology corresponding to the heads, as the respective specifiers are available.

Suppose, however, that one were to reject this conclusion, granting the existence of a certain functional projection only in the presence of overt morphological material on a head. Since, in this case, (most) adverbs would not be systematically related to a functional head, UG would have to countenance two distinct conditions (one ruling over the hierarchy of heads, the other over the hierarchy of AdvPs), basically yielding (duplicating) the same information on the relative scope of

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<sup>80</sup>Bhat (1994,76) notes that "in Boro [...], there are very few independent adverbs [...]; the function of adverbs is usually performed by a number of verbal suffixes. Bhat (1968) records a total of about 260 suffixes of this nature that can be attached to verbs". Some illustrative examples of 'adverbial' suffixes attached to the verb *za* 'eat', given by Bhat (1994,77) are: *zagló* 'to eat quickly'; *zabáy* 'to eat again'; *zagəw* 'to eat possibly'; *zakma* 'to eat stealthily'; *zaká* 'to finish eating'; *zakrí* 'to begin to eat'; *zaké* 'to pretend to eat'. A similar situation is apparently found in Garo (Sino-Tibetan) and Chemehuevi (Uto-Aztecan) (Bhat 1994,76). Schachter (1985,23), in addition to the case of Yana (for which also see Sapir 1921,126), mentions Eskimo, which "has a large set of suffixes with adverbial meanings" (like *-nirluk* 'badly', *-luinnaq* 'thoroughly', *-karik* 'unfortunately', *-qquuq* 'probably', etc.). The same is true of the closely related West Greenlandic (Fortescue 1984,301) and Aleut (Bergsland 1994,§4).



what are essentially identical functional notions. An undesirable consequence, it seems.<sup>81</sup>

Also, no particular acquisitional issue arises from considering the structure of the clause provided by UG as rich and articulated as that in (92). The obvious consequence from assuming the universality of (92) is that less is left for the child to acquire. He/she will only need to recognize and locate in the appropriate structural places made available by UG the morphological and lexical material provided by his/her language.

It would hardly be possible for an Italian child to determine on empirical grounds what the relative position is of, say, (*non..*) *più* 'no longer' and *ancora* 'still' (marginal in one order, and impossible in the other - cf. §4.18). Their relative order should rather follow from UG once the meaning of each adverb/specifier is recognized.

The same should hold for the relative order of two suffixes, or particles, in the case of heads.

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<sup>81</sup>In chapter 6, I will consider whether a single, more abstract (semantic), principle could be at the basis of these two distinct syntactic conditions, arguing that this would still not do.

Note, incidentally, that in other areas of grammar absence of overt *morphological* realization of a certain grammatical notion is not automatically taken as evidence that the notion has no *syntactic* realization (or role). For example, though non-pronominal DPs show no morphological Case distinctions in English or Italian, we generally do not conclude from that that no Case is present in sentences with non-pronominal DPs. Similarly, as Holmberg and Platzack (1995,179,fn.35) note, one would not conclude from the fact that North Swedish verbs lack a present tense form distinct from the infinitive that "this dialect does not even have T/TP in sentences interpreted with present tense".

It seems to me that we have no reason to adopt a different attitude in the case of other functional heads and projections.

## CHAPTER 5

DP-related functional projections and Negative Phrases<sup>1</sup>

- 5.1 Introduction
- 5.2 The positions of subject DPs
- 5.3 The positions of object DPs
- 5.4 Floating quantifiers
- 5.5 The positions of Neg(ative) P(hrase)s

**5.1 Introduction.** So far, nothing has been said about the distribution of DPs and of negation. The enlarged functional structure of the clause suggested above, however, has direct implications regarding their positions. Consider first DPs.

If AdvPs occur in the specifier of distinct, rigidly ordered, functional projections, the fact that DPs (and floating quantifiers, as a special case) can be found interspersed among them implies the existence of several DP-related positions (many more than is usually assumed).

This, in turn, raises the question of whether such positions are themselves specifier positions, adjunction positions (or a combination of the two).

The evidence to be discussed below points to their being specifier positions of separate (DP-related) functional projections; a conclusion also forced on theoretical grounds in Kayne's (1994) system. To call them Agreement Phrases is perhaps not very illuminating. As Chomsky (1995, chapter 4) notes, if all there is to agreement is a morphological relation (with no LF relevance) between a DP in specifier position and the corresponding head, little justification remains for positing the existence of an independent (AgrP) projection (also see Mitchell 1993).

The morphological agreement between a DP and a head could however be the overt reflex of more fundamental abstract notions; a way to overtly mark the head of (certain) DP-related projections.

Recent work on the scope properties of different DP-types (Beghelli and Stowell 1995, Beghelli 1995), or on the different interpretations associated with different 'scrambling' positions (Moltmann 1990; Diesing 1992, 1996a,b; Diesing and Jelinek 1995, Haiden 1996, among others), makes it tempting to take (some) such DP-related projections to be positions 'specialized' for particular readings (e.g. 'existential', 'distributive', 'specific', etc.), or particular scopes.

This is in line with the current conception of grammatical relations, according to which, as McCloskey (1996,25) phrases it, "there is no 'subject position' - in the sense of a unitary position in which all

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<sup>1</sup>I wish to thank Paola Beninca, Anna Cardinaletti and Øystein Nilsen for discussing with me different parts of this chapter, and Richard Kayne for comments on an earlier draft. For the data discussed below, unless otherwise indicated, I am indebted to Carmel Coonan (British English), Øystein Nilsen (Norwegian), Verner Egerland (Swedish), Halldór Sigurðsson (Icelandic).

subject properties are expressed and licensed. Rather subject properties are distributed over a sequence of derivationally linked positions" (a theta-related one, a Case related one, etc.).

Conceivably, in addition to the distinct 'subject' (or 'object') positions related to purely grammatical functions, there could be others with interpretive functions. I will refer to them as 'DP-related projections', though ultimately a more perspicuous terminology should be adopted.

Here, I will be able to offer only rather speculative remarks. The facts and the generalizations involved have just begun to be systematically investigated.<sup>2</sup>

The evidence for assuming different *DP-related* functional projections interspersed among the *Adverb-related* functional projections comes from the distribution of subject (§5.2) and object (§5.3) DPs, from the distribution of floating quantifiers (FQs) under the stranding analysis of Sportiche (1988), (§5.4), and, *c r u c i a l l y*, from the distribution of the verb.

If a verb can always be found to the immediate right of a DP (or FQ), a direct argument exists for taking the latter to be in the specifier position of an independent, fulfilled, functional projection rather than adjoined to (or in a 'second' specifier of) the projection hosting the AdvP which follows. Concretely, the two approaches lead to quite different expectations in the case of sequences like AdvP<sub>1</sub> DP AdvP<sub>2</sub> (or AdvP<sub>1</sub> FQ AdvP<sub>2</sub>). In the approach in which DPs (and FQs) are adjoined to (or are a 'second' specifier of) the projection hosting AdvP<sub>2</sub>, there is no head position between the DP (or FQ) and AdvP<sub>2</sub>. Consequently, no verb should occur there.<sup>3</sup> In the approach in which DPs (and FQs) are necessarily specifiers of an independent functional projection found between those hosting AdvP<sub>1</sub> and AdvP<sub>2</sub>, we instead expect a verb to be able to occur, as there is a head position available there. That is apparently what we find (in Italian). Cf. §5.2 below.<sup>4</sup>

A related general issue is the following. Given the evidence that DPs, and verbs, move within the sentence, the question arises whether such alternations as (1)a-c can be exhaustively accounted for by DP- and V-movement, or whether one needs to assume movement, or multiple 'base generation', of AdvPs as well:

- (1)a Probably George will have read the book  
 b George probably will have read the book  
 c George will probably have read the book

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<sup>2</sup>In any case, it seems necessary to replace a purely Case-related approach to DP positioning with a more articulated one. If more positions are available to DPs outside the VP, presumably they will not reduce to Case requirements only.

<sup>3</sup>A possible way out of this conclusion would be to posit a movement of the verb in PF which could possibly do without the presence of a head position. But, if the different position of the verb relative to the various AdvPs is not semantically innocent (cf. chapter 6), then the presence of a verb between the DP, or FQ, and AdvP<sub>2</sub> cannot be a purely PF phenomenon.

<sup>4</sup>Under the assumption that adverbs are (left) adjoined to (functional) X°'s (cf. Travis 1988), one would naturally expect that between two contiguous adverbs (i.e. two contiguous X°'s) there could be a DP (an XP); which is what we find. One, however, would not immediately expect a verb (i.e., another X°) to intervene between the DP and the second adverb. But such cases are entirely natural (in Italian): *Forse gli uomini non sono necessariamente degli esseri sociali* 'Perhaps men aren't necessarily social beings'.

d \*George will have probably read the book<sup>5</sup>

The discussion in Chomsky (1995,48;390,fn.102), and in §1.5 above, suggests on various grounds that AdvPs do not move (except to specified operator positions, or in the special 'adverb climbing' construction of French seen in §1.5).

If, furthermore, each AdvP is necessarily generated in the unique specifier position of a related functional head, such alternations as (1)a and c cannot involve multiple 'base generations' (or adjunctions) of the AdvP either. They can only involve the movement of the subject DP and of the verb to different positions 'around the AdvP'. This is the course I take and explore in this study.<sup>6</sup>

A partly similar situation characterizes (sentence) negation, which is also found to occur in more than one position along the hierarchy of AdvPs, sometimes simultaneously. For a discussion on the positions of NegPs within the enlarged functional structure of the clause, see §5.5 below, and the references cited there.

**5.2 The positions of subject DPs.** One first piece of evidence for the presence of different DP-related functional projections is provided, as noted, by the variable positioning of the *subject* DP, and the verb, along the rigidly ordered sequence of AdvPs in the sentence.

In fact, the postulation of a universal hierarchy of adverb-related projections like the one proposed in §1.8 and refined in chapter 4 leads to certain expectations. So, for example, if a (finite) verb can appear to the left of a certain adverb class, then it should necessarily be able to appear to the left of all adverbs lower than that in the hierarchy (though not necessarily to the left of any higher one).

Also, if a verb cannot appear to the left of a certain adverb class, a fortiori, it should not be able to appear to the left of any higher one (cf. chapter 1).

Similar predictions can be formulated in relation to the positions of (subject and object) DPs with respect to various adverb classes. As we are going to see, just as they differ as to the positions in which the various verbal forms are found (cf. the appendix to chapter 2), some Romance and Germanic languages also differ as to the positions they make available to subject and object DPs along the fixed hierarchy of AdvPs.

To begin, consider the position of the subject in Italian.

This must precede *mica* 'not', and, consistently, all adverbs lower than *mica* (cf. (3)):<sup>7</sup>

(3)a Maria mica prende il treno

M. not takes the train

b \*Mica Maria prende il treno

Not M. takes the train

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

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<sup>5</sup>Baker (1971,fn.3) and Jackendoff (1972,76) regard (1)d as illformed, noting however that some people accept it (in fact, Richard Kayne informs me that for him it is acceptable). Perhaps, it becomes acceptable if *probably* is taken as a focussing adverb (cf. chapter 1, §1.7).

<sup>6</sup>Cf. chapter 2 (§2.3). In some sense, multiple generation/adjunction of adverbs is made *conceptually* redundant by the possibility of deriving their different positioning from the independently necessary DP- and V-movements. The theory developed here can be seen as offering a principled reason to eliminate the redundancy.

<sup>7</sup>Similar facts hold in Spanish, modulo the absence of an adverb corresponding to *mica* (cf. Lois 1989,23f).

- 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

The subject, on the other hand, can either precede or follow all adverbs higher than *mica* (with no gaps). Cf. (4):<sup>8</sup>

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<sup>8</sup>As observed in chapter 1, the position to the left of *mica* is also a 'scrambling' position for PPs, in Italian (*Gianni non ha a Maria mica più detto niente, poi* 'G. has not to M. not any longer said anything, then'). Cf. Kayne (1975, ) on similar facts in French.

The ungrammaticality of (3)b-o cannot be due to the fact that the finite verb is too low, lower than (some) "lower" adverbs. (i)a-l, in which the same adverbs precede the finite verb (but, crucially, follow the subject) are grammatical, at least in more careful styles of Italian (cf. section (iv) of the appendix to chapter 2). In no style, however, can the finite verb follow *bene* 'well' or *presto* 'early'; cf. the ungrammaticality of (i)m-n (all the adverbs here are intended without focus intonation. For differences between this option and focalization, available to a subset of the adverbs, see §2.3):

- (i)a Di solito Maria mica prende il treno 'Usually M. not takes the train'
- b Per le una, Maria già sarà di ritorno 'By one o'clock, already M. will be back'
- c Maria più non mi pensa 'M. no longer thinks of me'
- d Maria ancora gli parla 'M. still speaks to him'
- e Maria sempre ripete le stesse cose 'M. always repeats the same things'
- f ?Maria appena si era coricata, quando squillò il telefono 'M. just had gone to bed, when the phone rang'
- g Maria subito mi avvertiva, quando non veniva 'M. immediately would call me, when she wasn't coming'
- h Maria brevemente ci sta parlando della sua avventura 'M. briefly is telling us about her adventure'
- i Maria quasi cadde dall'emozione 'M. almost fell for the emotion'
- l ?Maria completamente distrusse tutto quello che aveva fatto fino ad allora 'M. completely destroyed all that she had done till then'
- m \*Maria bene fece tutti i compiti 'M. well did her homework'
- n \*Maria presto si alzava ogni mattina 'M. early would get up every morning'

For evidence that in (i) the adverbs occupy their usual position, and that it is the verb which occupies a lower

- (4)a' Rapidamente Gianni alzò di nuovo il braccio  
Quickly G. raised again his arm
- a" Gianni rapidamente alzò di nuovo il braccio  
G. quickly raised again his arm
- b' Raramente Gianni rifà tutto bene  
Rarely G. does everything well again
- b" Gianni raramente rifà tutto bene  
G. rarely does everything well again
- c' Di nuovo Gianni rifiutò l'invito  
Again G. refused the invitation
- c" Gianni di nuovo rifiutò l'invito  
G. again refused the invitation
- d' Solitamente Gianni pranza alle due  
Usually G. eats at two
- d" Gianni solitamente pranza alle due  
G. usually eats at two
- e' Stupidamente Gianni accettò di venire  
Stupidly G. accepted to come
- e" Gianni stupidamente accettò di venire  
G. stupidly accepted to come
- f' Obbligatoriamente le lezioni iniziavano il primo ottobre  
Obligatorily classes began the 1st of October
- f" Le lezioni obbligatoriamente cominciavano il primo ottobre  
Classes obligatorily began the 1st of October

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position, cf. the end of chapter 2 above.

Italian, then, is a little closer to English than usually assumed. In both languages, the finite verb rises obligatorily to a head to the left of WELL (and EARLY), with Italian, but not English, further allowing it to rise to higher positions in overt syntax (cf. *\*He recovered completely early* vs. *He completely recovered early* and *He [recovered early] completely t*). This is schematized in (ii) below (✓ and \* indicate possible, and impossible, positions of the verb):

(ii)a \* frankly \* luckily \* allegedly \* probably \* then \* perhaps \* necessarily \* willingly \* obligatorily \* wisely \* usually \* again \* often \* quickly \* already \* no longer \* still \* always \* just \* soon \* almost \* completely  
✓ well \* early \*

b ✓ francam ✓ fortunatam ✓ evidentem ✓ probabilm ✓ allora ✓ forse ✓ necessariam ✓ volentieri ✓ obbligatoriam ✓ saggiam ✓ di solito ✓ di nuovo ✓ spesso ✓ rapidam ✓ già ✓ (non) più ✓ ancora ✓ sempre ✓ appena ✓ subito ✓ quasi ✓ completam ✓ bene \* presto\*

Norwegian essentially patterns with English. The finite verb has to precede *godt* 'well' and (a fortiori) *tidlig* 'early' (cf. (iii)a and d-e), it can either precede or follow *helt* 'completely' (cf. (iii)b-c), and must follow all higher adverbs (Øystein Nilsen, p.c.):

- (iii)a \*..at han ikke lenger alltid helt godt sov  
'..that he not any longer always completely well slept'
- b ..at han ikke lenger alltid helt sov (så) godt
- c ..at han ikke lenger alltid sov helt godt
- d \*..at han tidlig vaakner opp  
that he early wakes up
- e ..at han vaakner opp tidlig

- g' Volentieri Gianni si offrì di aiutarci  
Willingly G. volunteered to help us
- g'' Gianni volentieri si offrì di aiutarci  
G. willingly volunteered to help us
- h' Non necessariamente i preti sono pacifisti  
Not necessarily priests are pacifists
- h'' I preti non necessariamente sono pacifisti  
Priests not necessarily are pacifists
- i' Forse Gianni verrà a chiamarci  
Perhaps G. will come and call us
- i'' Gianni forse verrà a chiamarci  
G. perhaps will come and call us
- j' Allora Gianni era monarchico  
Then G. was for the monarchy
- j'' Gianni allora era monarchico  
G. then was for the monarchy
- k' Probabilmente Gianni ha rinunciato  
Probably G. has renounced
- k'' Gianni probabilmente ha rinunciato  
G. probably has renounced
- l' Evidentemente Gianni è contento così  
Evidently G. is happy with that
- l'' Gianni evidentemente è contento così  
G. evidently is happy with that
- m' Purtroppo Gianni ha accettato  
Unfortunately G. has accepted
- m'' Gianni purtroppo ha accettato  
G. unfortunately has accepted
- n' Francamente Gianni ha esagerato  
Frankly G. has exaggerated
- n'' Gianni francamente ha esagerato  
G. frankly has exaggerated

Note that the subject can either precede or follow any adverb higher than *mica provided that the (finite) verb follows it* (as in (4)).

The only time the (finite) verb is allowed to *precede* the subject in Italian is when the subject is in the 'inverted', sentence final, position (cf. (5)a). Any other postverbal, non absolute final, position gives rise to ungrammaticality (cf.(5)b-c).

- (5)a Hanno comprato il giornale i Rossi (cf. Burzio 1981, chapter 2, fn.5)  
'Have bought the newspaper the Rossi's'
- b \*Hanno i Rossi comprato il giornale
- c \*Hanno comprato i Rossi il giornale<sup>9</sup>

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<sup>9</sup>(5)c is unacceptable with ordinary sentence stress on *il giornale*. It becomes (irrelevantly) acceptable with prominence on the subject (*i Rossi*), and with *il giornale* deaccented ('emarginato').

I tentatively interpret this situation as follows. The sentence final position coincides with the Spec of VP (Kayne 1994, Ordóñez 1994), all higher positions involving the Spec of a DP-related functional projection.

Suppose that an expletive *pro* can fill one of the DP-related functional projections only when the subject remains in VP (this can be enforced by assuming that expletive *pro* is necessarily generated in the Spec of the lowest DP-related functional projection, later raising to a higher one). As a consequence of that, whenever the subject fills the Spec of one of the DP-related functional projections outside VP (via the lowest one), we know that expletive *pro* could not possibly have been generated.

Suppose, furthermore, that the agreeing finite verb must be (at the Spell-out point) in a Spec/head relation with a DP subject (or its trace). This entails that the subject either remains in Spec VP ('doubled' by the expletive, which enters the required Spec/head relation with the verb), or, whenever it is outside the VP, it necessarily comes to precede the finite verb (as no expletive is available to satisfy the Spec/head requirement).

If it remains in Spec VP, one may wonder why the subject cannot precede the complements (cf. the ungrammaticality of (5)c)). As a matter of fact, it can, provided it is a non-specific indefinite (cf. Benincà 1988,124): *Se per allora avrà comprato qualcuno il giornale, lo sapremo anche noi* 'If by then will have bought someone the newspaper, we'll know it too'. Apparently, a definite subject can remain in Spec VP only if it bears narrow (contrastive) focus, which implies (in Italian) that everything following it must cross over it (cf. Cinque 1993).<sup>10</sup>

A similar situation holds in Icelandic. While a definite subject has to precede all adverbs, an *indefinite* or a *contrasted definite* subject (Vangnes, to appear, and references cited there) has to remain (preferably remains) lower than *alltaf* 'always', though higher than *reet* 'just' and adverbs lower than that (Sigurðsson, p.c.). Also see fn.10 below.

As in Italian, the subject in English has to precede *already* (English has no analogue of *mica*), and all adverbs lower than *already*. See (6):

- (6)a Frequently John takes his holidays abroad  
 b Quickly John raised his arm  
 c \*Already John knows that you are coming

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<sup>10</sup>The contrast between Icelandic (i) and Norwegian (ii) (from Jonas 1996,181) follows if *það* can be inserted in the Spec of a higher DP-related projection and *det* necessarily in the lowest, which could relate to the strong nature of AGRs (Vangnes 1995), or to the generalized nature of V-to-I(-to-C) of Icelandic (Vikner 1995), much in the spirit of Holmberg's (1993,§9) proposal:

- (i) *Það hafa nokkrar kökur verið bakaðar fyrir veisluna*  
 There have some cakes been baked for the-party  
 (ii)a \**Det har noen kaker blitt bakt for selskapet*  
 There have some cakes been baked for the-party  
 b *Det har blitt bakt noen kaker for selskapet*  
 There have been baked some cakes for the-party  
 c *Noen kaker har blitt bakt for selskapet*  
 Some cakes have been baked for the-party

The possibility for Norwegian (and Swedish) to have (definite and indefinite) subjects in between various classes of adverbs in the 'middle field' in non presentational sentences (cf. (7) below) could relate to the lack of overt subject agreement on the finite verb, which would dispense with the need of pre-Spell-out Spec/head agreement, hence with the insertion of a null expletive. For general discussion, and an interesting analysis, of these data, see Vangnes (1995, to appear).



- d \*No longer John likes Mary
- e \*Still John misses Mary
- f \*Always John takes his holidays abroad
- g \*Just John has left
- h ?Soon the train leaves. So hurry up!<sup>11</sup>
- i \*?Briefly I consider it in my book
- l \*Almost John fell through fright
- m \*Completely John destroyed all that he had constructed
- n \*Well John did his homework
- o \*Early John woke up every Sunday

Again as in Italian, the subject may either precede or follow any higher adverb, provided it precedes the verb (cf. the translations of the Italian sentences in (4)).

Italian provides direct evidence that a head position exists between the subject and the following adverb in all of the 'double prime' examples in (4) (hence that the subject comes to occupy the specifier position of a distinct functional projection). The evidence is that the finite verb can be found in each such position, with no exceptions (*Gianni ha rapidamente alzato di nuovo il braccio* 'G. has quickly raised again his arm'; *Gianni ha raramente rifatto tutto bene* 'G. has rarely done everything well again'; etc.).

Although the same cannot be shown for all languages (cf. the case of Norwegian, below), due to whatever forces the verb to remain in a low position (in non-V/2 contexts), I will assume, for generality, that the same head positions are available there, as they are in Italian. This conclusion is in fact forced in a system like that of Kayne (1994).

- (7)a Nå skjønner tydeligvis allerede ikke lenger alltid **Per** alt helt godt  
 Now understands evidently already no longer always P. everything completely well
- b Nå skjønner tydeligvis allerede ikke lenger **Per** alltid alt helt godt
  - c Nå skjønner tydeligvis allerede **Per** ikke lenger alltid alt helt godt
  - d Nå skjønner tydeligvis **Per** allerede ikke lenger alltid alt helt godt
  - e Nå skjønner **Per** tydeligvis allerede ikke lenger alltid alt helt godt
  - f ..at snart **Per** leser den boka i filler '..that soon P. reads that book to pieces'
  - g ..at nettopp **Per** forlot festen i raseri '..that just P. left the party in rage'
  - h \*..at kort **Per** forklarte problemet '..that briefly P. explained the problem'
  - i \*..at nesten **Per** leste den boka i filler '..that almost P. read that book to pieces'
  - l \*..at tidlig **Per** forlot den festen i vildt raseri  
 '..that early P. left that party in wild rage'

In Norwegian, the subject has to precede *kort* 'briefly', *nesten* 'almost', *helt* 'completely', *godt* 'well', *tidlig* 'early', but can (apparently optionally) be found to the right, or left, of any higher adverb (recall, from §1.8, the (partial) order of Norwegian adverbs: *ærlig talt* 'honestly' > *heldigvis* 'fortunately' > *tydeligvis* 'evidently' > *kanskje* 'perhaps' > *klokkelig* 'wisely' > *allerede* 'already' > *ikke lenger* 'no longer'

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<sup>11</sup>The partial acceptability of (6)h is likely related to the possibility for *soon* to occupy a very high position as well (possibly, that of 'adverbs of setting'), to the left of *probably* (cf. *Soon the train will probably stop*).

> *alltid* 'always' > *helt* 'completely' > *godt* 'well').<sup>12</sup> From the position to the left of *kort* leftward, there are no gaps in the possibility for the subject to occur between any two adverbs (and to the left of the highest).<sup>13</sup>

The synopses in (8)a-b-c summarize the main facts concerning the distribution of the subject in Italian, English and Norwegian (here Italian and English pattern together, contrasting with Norwegian):

- (8)a ✓ *onestam* ✓ *fortunatam* ✓ *evidentem* ✓ *probabilm* ✓ *ora* ✓ *forse* ✓  
 b ✓ *honestly* ✓ *luckily* ✓ *evidently* ✓ *probably* ✓ *now* ✓ *perhaps* ✓  
 c ✓ *ærlig talt* ✓ *heldigvis* ✓ *tydeligvis* ✓ *sannsynligvis* ✓ *nå* ✓ *kanskje* ✓
- a ✓ *necessariam* ✓ *volentieri* ✓ *obligatoriam* ✓ *saggiam* ✓ *di solito* ✓ *di nuovo* ✓  
 b ✓ *necessarily* ✓ *willingly* ✓ *obligatorily* ✓ *wisely* ✓ *usually* ✓ *again* ✓  
 c ✓ *nødvendigvis* ✓ *gjærne* ✓ ✓ *klokelig* ✓ *vanligvis* ✓ *igjen* ✓

<sup>12</sup>As Øystein Nilsen points out, 'subject-oriented' adverbs like *klokelig* 'wisely' do not seem to allow the subject to follow them (\*...*at klokelig Per gikk hjem* 'that wisely P. went home'). This may have to do with their 'subject orientation'. Perhaps they need to be predicated of the subject already in overt syntax. In subordinate clauses the (finite) verb has to precede *godt* (and all adverbs lower than that), and may precede *helt*, but no higher adverb, while the facts concerning the subject remain the same. English finite verbs (and auxiliaries, including modals) also have to precede *well*, and all adverbs lower than that (apart from cases like *As you well know...*), and may remain lower than *completely*. On the position of object DPs, cf. §5.3 below.

<sup>13</sup>Languages (even closely related ones, such as Norwegian and Danish) apparently differ as to the positions they make available to the subject. In Danish, for example, "adverbials never occur to the left of the subject" (Vikner 1995,128). Cf. also Holmberg and Platzack (1995,181), Åfarli (1995). Full DPs in Danish thus behave like pronominal subjects in Norwegian (and some other Germanic languages), which have to precede all adverbs. In this respect, Swedish goes with Norwegian (Platzack 1986,43ff; Holmberg 1986,98;1993,31f and fn.3), and Icelandic with Danish. ("In Icelandic, it is never possible to have an adverbial preceding the subject" (Vikner 1995,106). Cf. also Sigurðsson 1989,43; Holmberg and Platzack 1995,18). This, however, does not hold for indefinite (or definite but contrasted) subjects, which can occur, even in Icelandic, after various classes of adverbs (also in what are called Transitive Expletive Constructions). See (i) (Holmberg and Platzack 1995,181 cite an additional exception):

(i)a Í gær klaruðu sennilega **margar mýs** ostinn (Bobaljik and Jonas 1996,196)

Yesterday ate probably many mice the cheese

b Í fyrra borðuðu alltaf **margar mýs** ostinn (Halldór Sigurðsson, p.c.)

Last year always many mice the cheese

c Í þessum búðum gátu sennilega **sjómennirnir** keypt allt það sem þurftu

In these shops could probably the SAILORS buy all they need (Vangsnes, to appear, ex. (43b))

Bobaljik and Jonas take TEC subjects to occupy Spec,TP. The fact that they follow *alltaf* 'always' and all adverbs higher than that (Halldór Sigurðsson, p.c.) shows, however, that they occur quite low in the functional structure of the clause. As noted above, after Halldór Sigurðsson (p.c.), indefinite subjects cannot easily follow *reet* 'just', and adverbs lower than that ('briefly' or 'almost' - cf. (ii)a-b -, nor 'completely', 'well' or 'early'):

(ii)a \*Það hafa stuttlega **margir menn** lýst máli sínu

There have briefly many people described their case

b \*Það hodefðu naestum **margir menn** komið tímanlega

There had almost many people arrived timely

The 'extraposed' sentence-final subjects found in languages with TEC, and in those without, I take to be Spec,VP.

- a ✓ spesso ✓ rapidam ✓ già \* (non) più \* ancora \* sempre \* appena \* subito \*  
 b ✓ often ✓ quickly ✓ already \* no longer \* still \* always \* just \* soon \*  
 c ✓ ofte ✓ raskt ✓ allerede ✓ ikke lenger ✓ enda ✓ alltid ✓ nettopp ✓ snart ✓
- a \* brevemente \* quasi \* completam \* bene \* presto\*  
 b \* briefly \* almost \* completely \* well \* early \*  
 c ✓ kort \* nesten \* helt \* godt \* tidlig \*

More difficult questions are those pertaining to 1) the nature of these various subject positions, 2) the obligatory movement of the subject to a position to the left of a certain ("lower") adverb (*mica* in Italian, *already* in English, and *kort* in Norwegian)<sup>14</sup>, and 3) the apparently optional movement of the subject around the adverbs higher than the position of obligatory movement.

Concerning the first question, it appears that some such positions are interpretively specialized, as noted.

It is often remarked in the literature that the same DP-type admits one or the other of two different interpretations depending on its position with respect to certain adverbs.

Diesing (1992,36f;78f) observes, for example, that bare plural subjects in German receive an existential reading when appearing to the right of such adverbs as *ja doch*, and a generic one when appearing to their left (cf. (9)); subjects with numeral determiners receive in the two positions a presuppositional, and a cardinal, interpretation, respectively (cf. (10)):<sup>15</sup>

- (9)a ..weil ja doch Haifische sichtbar sind  
 ..since 'indeed' sharks visible are '..since there are sharks visible'  
 b ..weil Haifische ja doch sichtbar sind  
 .. since sharks 'indeed' visible are '..since (in general) sharks are visible'

- (10)a ..weil ja doch zwei Cellisten in diesem hotel abgestiegen sind  
 ..since 'indeed' two cellists in this hotel have taken rooms  
 b ..weil zwei Cellisten ja doch in diesem hotel abgestiegen sind  
 ..since two cellists 'indeed' in this hotel have taken rooms

Diesing (1992) takes the two positions demarcated by *ja doch* to be Spec,IP and Spec,VP, respectively; but finer-grained distinctions are required if more adverb classes, and DP positions,

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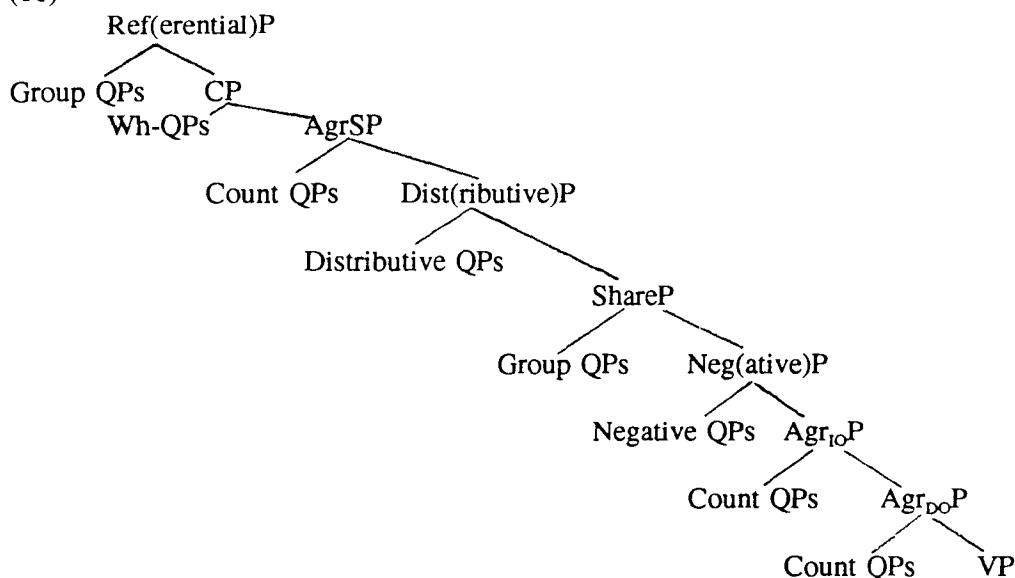
<sup>14</sup>Recall that *mica* is just above *già* 'already' in Italian, and that English apparently lacks an element corresponding to *mica*; this renders the two languages potentially identical with respect to the position to which the subject raises obligatorily.

<sup>15</sup>The dependence of such interpretive differences on the different position of the subject was originally noted for German by Angelika Kratzer (Diesing 1992,33; cf. also Kratzer 1989,12). Whether the two distinct positions of the subject are necessarily linked to the individual-level/stage-level nature of the predicate, as claimed by Diesing, is less clear (for discussion, see Moltmann 1990, and Kiss 1996, among others). For similar observations concerning Dutch indefinite DPs, cf. Reuland (1988), and references cited there.

exist.<sup>16</sup>

Beghelli and Stowell (1995,96) and Beghelli (1995) propose a hierarchy of distinct DP/QP-related functional projections, to the Spec of which different DP-types raise (at LF). Cf. (11), below. In this way, they are able, among other things, to reduce the number of scope ambiguities that would be expected under an undifferentiated QR derivation of quantificational DPs.

(11)



What remains to be seen is where these projections are located relative to the various adverb-related functional projections.

Concerning the second question (the position of obligatory movement of the subject), a possibility is that it simply is the position of (Nominative) Case assignment, although it remains to be understood

<sup>16</sup>The *ja doch* adverbs in (9) and (10) seem to be very high in the adverb hierarchy, as they precede evaluative adverbs (such as *leider* 'unfortunately'), and all adverbs lower than that. Gerhard Brugger, who provided the relevant judgements, notes that (*ja doch* can also follow *leider* (and a number of adverbs lower in the hierarchy), with a concomitant change in interpretation, changing from a speech act adverb qualifying the assertion to a presuppositional adverb which reverses a negative expectation (comparable to Italian *si* 'yes', which is located much lower - cf. chapter 1, fn.8).

Besides Diesing's, other recent works suggest the existence of more than one subject position, differently specialized.

For example, Kiss (1996) argues for two VP-external subject positions in English comparable to Diesing's distinction in German; Cardinaletti (1996) argues for two specialized subject positions in Italian, a Case-related one, and a higher one for subjects of predication (weak pronominals being able to fill only the higher of the two).

Similarly, Egerland (1996) proposes a PersonP (higher than Agr<sub>r</sub>P), to the Spec of which pronominals, but no full DP, can raise (cf. also Haegeman 1993,149).

Øystein Nilsen notes that the weak quantifier *noen* 'somebody' in Norwegian can be interpreted existentially after *uheldigvis* 'unfortunately', but must be interpreted as specific when to its left. This observation, and the one concerning *ja doch* above may help one to narrow down the location of the Spec relevant to 'specificity'.

why English and Italian vary in this respect from Norwegian.

As to the third question (the apparent optionality of the movement of the subject around the higher adverbs), I have no interesting suggestion to offer. Perhaps, the subject raises to check a (distinct) additional feature in a higher Spec, or else the movement is motivated by (LF) concerns of relative scope between the subject and different adverbs (mediated by the necessity for the subject to enter a (secondary) predication relation with a particular adverb).<sup>17</sup>

**5.3 The position of object DPs.** There is evidence that objects too can occupy several different positions. While in Danish and Norwegian 'object shifted' pronominals must raise to a position to the left of all adverbs, "most varieties of Swedish permit Object Shift to intermediate positions as shown in [12]" (Holmberg and Platzack 1995,153,fn.11). Cf. also (13), from Holmberg (1993,31fn.11), and (14), from Holmberg and Platzack (1995,161fn.19):

(12) De läser (**den**) troligen (**den**) gärna (**den**) alla (?**den**)  
They read (it) probably (it) with pleasure (it) all (it)

(13)a Numera gör **mej** alltså inte längre Helge lika irriterad som förr  
nowadays makes me thus no longer H. as irritated as before  
b Numera gör alltså **mej** inte längre Helge lika irriterad som förr  
c Numera gör alltså inte **mej** längre Helge lika irriterad som förr  
d Numera göralltså inte längre **mej** Helge lika irriterad som förr

(14) Dom läste inte **den** alla  
They read not it all

As Verner Egerland informs me, a pronoun can indeed be found interspersed among the adverbs in the hierarchy of (8) (cf.(15)), but can be no lower than *helt* 'completely' (cf. (16)):<sup>18</sup>

(15)a Jag gjorde *ärlig talat* **det** *lyckligtvis* inte  
I did frankly it luckily not  
b Han såg *lyckligtvis* **henne** *tydligen*  
He saw luckily her evidently  
c Jag träffar *sannolikt* **honom** *nu*  
I meet probably him now

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<sup>17</sup> Another question is whether the different DP-related projections are always structurally present, or whether they are 'created' only when needed (to host a DP in their Spec). Perhaps, there is no uniform answer, and scope-sensitive projections are present only when needed, while interpretively specialized ones (for 'existential', 'distributive', etc. readings) are always present. For further discussion, see chapter 6 below, on the marked/default value of functional heads.

<sup>18</sup> As he points out, it is not always easy to construct natural examples with any two contiguous adverbs (e.g. with *tydligen* 'obviously' and *sannolikt* 'probably', or with *ofta* 'often' and *redan* 'already', etc.). Also, concerning (15)a, the preferred option is with *ärlig talat* topicalized: *Ärlig talat gjorde jag lyckligtvis det inte* 'frankly did I luckily it not'.

- d Han gör *kanske det klokt* nog  
 He does perhaps it wisely  
 e Han bjöd *vanligvis henne återigen* på middag dagen efter  
 He invited usually her again to dinner the day after  
 f Jag träffar *inte längre honom alltid* (på fredagar)  
 I meet no longer him always (on friday)  
 g Han får *nästan det helt* som han vill ha det  
 He gets almost it completely as he likes it

- (16)a \*?Han såg helt den (cf. Han såg den helt)  
 He saw completely it  
 b \*?Han såg tidigt den (cf. Han såg den tidigt)  
 He saw early it

Apparently, the same distribution is found with Norwegian full object DPs. Pronominals, as noted, 'object shift' to a position preceding all adverbs, but full DPs can either precede or follow any adverb down to *helt* 'completely', though they precede (*helt*, preferably, and) *godt* 'well' and *tidlig* 'early'. Some examples, provided by Øystein Nilsen, are given in (17) and (18):<sup>19</sup>

- (17)a \*Nå liker Per heldigvis ikke lenger helt godt Jon  
 Now likes P. fortunately not any.longer completely well J.  
 b \*?Nå liker Per heldigvis ikke lenger helt Jon godt  
 c Nå liker Per heldigvis ikke lenger Jon helt godt  
 d Nå liker Per heldigvis ikke Jon lenger helt godt  
 e Nå liker Per heldigvis Jon ikke lenger helt godt  
 f Nå liker Per Jon heldigvis ikke lenger helt godt

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<sup>19</sup>In the literature, it is often claimed that Norwegian (Mainland Scandinavian), as opposed to Icelandic, allows 'object shift' of pronominals only, not of full DPs (cf., among others, Holmberg 1986; Vikner 1994,§7; Holmberg and Platzack 1995,141ff; Diesing 1996a,75). To judge from (17)-(18), that conclusion however is inaccurate. A possible reason, pointed out to me by Øystein Nilsen, for why 'object shift' of full DPs was not noticed in Norwegian is the fact that the testing cases have typically involved the negative adverb *ikke* (*inte*, in Swedish), which indeed does not allow full DPs, or VPs, to raise across (although it allows pronominals):

- (i)a Per liker den<sub>i</sub> ikke t<sub>i</sub> 'P. likes it not'  
 b \*Per liker Jon<sub>i</sub> ikke t<sub>i</sub>  
 c \*Per har [likt Jon]<sub>i</sub> ikke t<sub>i</sub>

As Øystein Nilsen notes, (i)b however becomes much better if *ikke* is stressed contrastively:

- (ii) Per liker Jon IKKE

Although the phenomenon underlying (i)b and (ii) remains to be understood, the adverbs in (17)-(18) show that 'object shift' of full DPs IS possible. That it is 'object shift' rather than VP shift is shown by the fact that at least some of the adverbs that allow the full DP object to precede the adverb do not allow VP shift (Øystein Nilsen, p.c.): \*Per har [ sovnet ] heldigvis/HELDIGVIS 'P. has fallen.asleep fortunately'. For general discussion, cf. Nilsen (1997).

These facts confirm the conclusion, based on Faroese (Vikner 1994,502) and Old English (Roberts 1995,281) that the trigger of 'object shift' is not the checking of morphological Case (but see Holmberg and Platzack 1995,§6.5.6). They also show that 'object shift' should not be related to generalized V-to-I movement (Vikner 1994,502ff).

- (18)a Deretter fortalte Per ærlig talt alltid **denne historien** helt til festdeltakerne  
 Thereafter told P. honestly spoken always completely this story to the party participants  
 b Deretter fortalte Per ærlig talt **denne historien** alltid helt til festdeltakerne  
 c Deretter fortalte Per **denne historien** ærlig talt alltid helt til festdeltakerne

Although Swedish and Norwegian allow DPs, but not verbs, among the various adverb classes of (8), I will take such cases as (17) and (18) to indicate the presence of full DP-related projections among the Adverb-related ones.<sup>20</sup>

**5.4 Floating quantifiers.** A comparable situation is found with floating quantifiers (FQ's), which I take, following Sportiche (1988), to be 'stranded' in positions where DPs can stop (or transit), i.e. the specifier of DP-related projections.<sup>21</sup> I will start with French, which allows for subject, direct object, and indirect object ones, in the order  $FQ_{S(\text{subject})} > FQ_{I(\text{indirect}) O(\text{object})} > FQ_{D(\text{direct}) O(\text{object})}$

That  $FQ_S$  must precede a  $FQ_{IO}$  is shown by (19):<sup>22</sup>

- (19)a Elles<sub>i</sub> leur<sub>k</sub> ont toutes<sub>i</sub> tous<sub>k</sub> parlé hier  
 They (FEM) to-them have all(FEM) all talked yesterday  
 b \*Elles<sub>i</sub> leur<sub>k</sub> ont tous<sub>k</sub> toutes<sub>i</sub> parlé hier

(20)a-b show that  $FQ_S$  must precede a  $FQ_{DO}$ :<sup>23</sup>

- (20)a Les filles<sub>i</sub> les<sub>k</sub> ont toutes<sub>i</sub> tous<sub>k</sub> lu  
 The girls(FEM) them have all(FEM) all read  
 b \*Les filles<sub>i</sub> les<sub>k</sub> ont tous<sub>k</sub> toutes<sub>i</sub> lu

As to the relative order between  $FQ_{DO}$  and  $FQ_{IO}$ , Kayne (1975, sect. 2.14) notes that in such examples as (21) below (corresponding to his (276)) there is a unique interpretation, with the first quantifier *tous* necessarily relating to the dative clitic *leur*, and the second (*toutes*) relating to the accusative clitic *les*

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<sup>20</sup>Full object DPs, as well as pronominals, also occur interspersed among 'higher' adverbs in German (cf. Brugger and Poletto 1993, Haftka 1995, and references cited there). The fact that topicalized and focalized full DPs only follow the complementizer (Haftka 1995), and that no more than one of them can precede the verb in V/2 contexts, may be taken as an indication that the complementizer is in Force° (in Rizzi's 1995 terminology), or higher, and that the verb rises to a head higher than Finite° (perhaps higher than TopP and FocP). Also see Poletto (1997).

<sup>21</sup>In particular, following Shlonsky (1991), Giusti (1991,1993,chapter 4), I take DP to be the complement of Q, raising in this construction, to Spec,QP and out.

<sup>22</sup>For this observation, cf. Sportiche (1988,435).

<sup>23</sup>I owe these judgements to Marie-Therèse Vinet.

(as indicated by the variant with indices added):<sup>24</sup>

(21) ?Je les<sub>i</sub> leur<sub>k</sub> ai tous<sub>j\*</sub> toutes<sub>v\*k</sub> montrées  
I them to-them have all all shown

The grammaticality of (19a)/(20a) with crossing indices and (21) with nesting indices appears to suggest that there is no requirement on the way each pair of clitic and FQ relates to the other pairs (Cf. Sportiche 1988,435).<sup>25</sup>

Comparable conclusions hold with respect to the order of FQ's in Italian, except that Italian does not allow for a prepositionless FQ<sub>IO</sub> (?*Vi ho scritto \*(a) tutti* 'I you have written all ').<sup>26</sup>

The position occupied in French by the prepositionless FQ<sub>IO</sub> appears to host in Italian the dative weak pronominal *loro* (Cf. Cardinaletti 1991).

As the contrast between (22)a and b shows, *loro* appears to precede a FQ<sub>DO</sub>, just as a FQ<sub>IO</sub> precedes FQ<sub>DO</sub> in French:<sup>27</sup>

(22)a (?)*Li ha dati loro tutti GIANNI, (non Mario)*  
They has given to-them all G. (not M.)  
b \**Li ha dati tutti loro GIANNI, (non Mario)*

If we consider the order between *loro* and a FQ<sub>S</sub>, at first sight we find that both relative orders are possible (with, in the b. case, a virtual pause before and after *loro*):

<sup>24</sup>Sportiche (1988,435) takes the interpretation of (21) to be with the FQ<sub>DO</sub> preceding the FQ<sub>IO</sub>, attributing the observation to Richard Kayne. This may be a typographical error as Kayne (1975,156) interpretes it with the FQ<sub>IO</sub> preceding the FQ<sub>DO</sub>. As Kayne notes, this at least holds for FQ<sub>IO</sub> not introduced by *à*.

<sup>25</sup>Sportiche (1992, sect.7.3) claims that the unmarked order is with the FQ<sub>IO</sub> preceding the FQ<sub>S</sub>, which in turn precedes the FQ<sub>DO</sub>. This claim appears incompatible with the two separate claims made in Sportiche (1988, 435) to the effect that the FQ<sub>S</sub> precedes the FQ<sub>DO</sub>, and the FQ<sub>DO</sub> precedes the FQ<sub>IO</sub> (cf. the previous footnote). For, on that basis, by transitivity one should expect the FQ<sub>S</sub> to precede the FQ<sub>IO</sub>.

We have already seen that the FQ<sub>IO</sub> must be taken to precede the FQ<sub>DO</sub> and that the FQ<sub>S</sub> must also be taken to precede the FQ<sub>DO</sub>, so the question reduces to whether the FQ<sub>S</sub> precedes the FQ<sub>IO</sub>, or vice versa. A possible way to reconcile the apparently contradictory judgements reported in the literature is to take the unmarked order in the FQ 'field' to be FQ<sub>S</sub> > FQ<sub>IO</sub> > FQ<sub>DO</sub>, as done in the text here, and to assume an extra ('scrambling') position to be available to the FQ<sub>IO</sub> (with *à*) to the left of the FQ 'field'. Cf. the beginning of fn.8 above, and below, for independent evidence to this effect concerning Italian *loro*.

<sup>26</sup>The distribution of the FQ<sub>IO</sub> *a tutti* in Italian appears to be that of an ordinary *a*+full DP, rather than that of a FQ. The same appears to be true in French as well. Cf. Kayne (1975, sect. 2.14).

<sup>27</sup>Cardinaletti (1991,150), who notes the same contrast between the orders *loro* > *tutti* and *tutti* > *loro*, still finds the order *loro* > *tutti* rather marginal, unless *tutti* is focalized (fn.21), which she interprets as implying that *tutti* has remained in the object base position. To my ears, (22)a, though heavy, is unexceptionable, even if *tutti* is not focalized (focalization of the 'inverted' subject excludes that *tutti* be focalized, given that no more than one focus is possible in Italian; cf. Calabrese 1984).



- (23)a Hanno tutte loro dato tutto (also: Hanno tutte dato loro tutto)  
 They (FEM) have all(FEM) to-them given everything  
 b Hanno loro tutte dato tutto (also: Hanno loro dato tutte tutto)  
 They (FEM) have to-them all (FEM) given everything

Is it the FQ or is it *loro* that can occur in different positions (or both)? Certain observations seem to indicate that *loro* can indeed occupy two distinct positions.

If we insert an adverb like *sempre*, which we saw above occupies a fixed position, we observe that *loro* may occur both to its left, and to its right:

- (24)a Han dato loro sempre tutto  
 They-have given to-them always everything  
 b Han dato sempre loro tutto  
 They-have given always to-them everything

Now, when *loro* is to the right of *sempre*, it has to follow the FQ<sub>s</sub>:<sup>28</sup>

- (25)a ?Han sempre tutte loro dato tutto  
 They-have always all to-them given everything  
 b \*Han sempre loro tutte dato tutto  
 They-have always to-them all given everything

In the light of this, we interpret (23)b as having *loro* in the higher of the two positions (that to the left of *sempre*). As a matter of fact, the higher position which *loro* can occupy appears to be a sort of Scrambling position which precedes the negative adverb *mica* (in fact, the whole sequence of adverbs in (31)a) and is typically open to PPs (but not DPs) containing a pronoun. Cf. (26) and (27):

- (26)a Da allora, non ho dato a lui mica più sempre tutto  
 b \*Da allora, non ho dato mica a lui più sempre tutto  
 c \*Da allora, non ho dato mica più a lui sempre tutto  
 d \*Da allora, non ho dato mica più sempre a lui tutto  
 Since then, I have not given to him no more always everything

- (27) \*Da allora, non ho invitato lui mica più sempre  
 Since then, I have not invited him no more always

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<sup>28</sup>(i) and (ii) differ from (25) only in the location of the past participle w.r.t. the FQ<sub>s</sub> and *loro*. It appears that the best location for the past participle is that between the FQ<sub>s</sub> and *loro*:

- (i)a Han sempre tutte dato loro tutto  
 They (FEM) have always all(FEM) given to-them everything  
 b \*Han sempre loro dato tutte tutto  
 They (FEM) have always to-them given all(FEM) everything  
 (ii)a ?Han sempre dato tutte loro tutto  
 They (FEM) have always given all(FEM) to-them everything  
 b \*Han sempre dato loro tutte tutto  
 They (FEM) have always given to-them all(FEM) everything

Given the different positioning of the  $FQ_S$  and the  $FQ_{DO}$  with respect to *loro*, we expect the  $FQ_S$  to precede the  $FQ_{DO}$  (as we saw it being the case in French). This seems essentially to be borne out by the facts. Cf. (28)-(30), which are identical modulo the position of the past participle:<sup>29</sup>

- (28)a I bambini le avranno tutti tutte sistemate  
The children(MASC) them(FEM) will have all(MASC) all(FEM) arranged  
b \*I bambini le avranno tutte tutti sistemate  
The children(MASC) them(FEM) will have all(FEM) all(MASC) arranged
- (29)a I bambini le avranno tutti sistemate tutte subito  
The children(MASC) them(FEM) will have all(MASC) arranged all(FEM) immediately  
b \*I bambini le avranno tutte sistemate tutti subito  
The children(MASC) them(FEM) will have all(FEM) all(MASC) arranged immediately
- (30)a I bambini le avranno sistemate tutti tutte subito  
The children(MASC) them(FEM) will have arranged all(MASC) all(FEM) immediately  
b \*I bambini le avranno sistemate tutte tutti subito  
The children(MASC) them(FEM) will have arranged all(FEM) all(MASC) immediately

Having concluded that the order is  $FQ_S > FQ_{IO}/loro > FQ_{DO}$ <sup>30</sup>, let us consider the location of such phrases within the adverbial sequence in (31):

- (31)a mica > già > più > sempre > completamente > tutto > bene  
b pas > déjà > plus > toujours > complètement > tout > bien

Beginning with French, we note that apparently no FQ can intervene between *bien* and the past participle (cf. (32)-(34), again disregarding the "concessive", non-manner, usage of *bien*):

- (32)a \*Ils ont bien tous compris  
They have well all understood  
b Ils ont tous bien compris
- (33)a \*Je les ai bien tous réparés  
I them have well all repaired

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<sup>29</sup>Napoli (1974,483) gives such cases as *I ragazzi le hanno tutti viste* 'The boys(MASC) them(FEM) have all(MASC) seen(FEM)', where a  $FQ_S$  precedes a past participle agreeing with a clitic object, as ungrammatical. But I find them quite acceptable (also see the analogous cases in French discussed earlier in the text). I also differ from Cardinaletti (1991,fn22) in finding (i) (comparable to Cardinaletti's (i)b) "heavy" but essentially acceptable (with a preference for the location of the past participle in between the two quantifiers - cf. (ii)):

- (i) Le paste, i ragazzi le hanno apprezzate tutti tutte poco  
The cakes, the children them have appreciated all all little  
(ii) Le paste, i ragazzi le hanno tutti apprezzate tutte poco  
The cakes, the children them have all appreciated all little

<sup>30</sup>Cf. the S > IO > DO order of 'scrambling' positions in West Flemish (Haegeman 1993).

b Je les ai tous bien réparés

- (34)a \*Je leur ai bien tous répondu  
 I to-them have well all replied  
 b Je leur ai tous bien répondu

As noted in Kayne (1975,156) a FQ<sub>IO</sub> cannot intervene between *tout* and the past participle, but must precede *tout*:

- (35)a \*Je leur ai tout tous montré  
 I showed them all everything  
 b ?Je leur ai tous tout montré

The same holds for a FQ<sub>S</sub>, which cannot intervene between *tout* and the past participle either. Cf. (36), noted in Sportiche (1988,435):<sup>31</sup>

- (36)a \*Les enfants ont tout tous lu  
 The children have everything all read  
 b Les enfants ont tous tout lu  
 The children have all everything read

For obvious reasons, 'object *tout*' and a FQ<sub>DO</sub> cannot cooccur; nonetheless there is evidence that they do not occupy the same position. Rather, the position of the FQ<sub>DO</sub> precedes the position of 'object *tout*'. The evidence comes from their relative order with respect to *complètement*, the next adverb to the left of *tout*.

While *tout*, as noted, has to follow it (cf. (37)), FQ<sub>DO</sub>'s have to precede it (as have FQ<sub>S</sub>'s and FQ<sub>IO</sub>'s):

- (37)a Il a complètement tout perdu  
 He lost completely everything  
 b \*?Il a tout complètement perdu
- (38)a Elles les ont tous complètement bien refaits<sup>32</sup>  
 They them have all completely well done again  
 b \*Elles les ont complètement tous bien refaits  
 They them have completely all well done again
- (39)a Elles l'ont toutes complètement refait  
 They it have all completely done again

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<sup>31</sup>We continue to ignore the post participial location of either *tous* or *tout* when they are focussed:

- (i)a Les enfants ont tout lu (presque) TOUS  
 The children have everything read (almost) ALL  
 b Les enfants ont tous lu (presque) TOUT  
 The children have all read (almost) everything

<sup>32</sup>These judgements are Marie-Therèse Vinet's.

- b \*Elles l'ont complètement toutes refait  
They it have all completely done again

- (40)a Je leur ai tous complètement tout refait  
I to-them have all completely everything done again  
b \*Je leur ai complètement tous tout refait  
I to-them have completely all everything done again

Apparently, then, the first FQ "space" (from the bottom) is to the left of *complètement* (cf. (41)) (for reasons that remain to be understood):

- (41) .... FQ<sub>s</sub> > FQ<sub>io</sub> > FQ<sub>do</sub> > complètement > tout > bien

Similar facts hold in Italian. Neither FQ's, nor FQ<sub>do</sub>'s, nor *loro*, can occur between *bene* and a complement of the verb:

- (42)a \*Han rifatto bene tutti questo  
They have done again well all this  
b \*Li ho spiegati bene tutti a Gianni  
I have explained well all to G.  
c \*Ha spiegato bene loro questo  
He explained well to-them this

Nor can they occur between *completamente* and *bene*:<sup>33</sup>

- (43)a \*Han rifatto completamente tutti bene il compito  
They have done again all well the homework  
b \*Li ho spiegati completamente tutti bene a Gianni  
I have explained them completely all well to G.  
c \*Ho spiegato completamente loro bene il compito  
I have explained completely to-them well the homework

Another FQ "space" is to the left of *toujours*, in between it and *plus*:<sup>34</sup>

- (44)a Ils n'ont plus tous toujours tout fait  
They not have no more all always everything done

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<sup>33</sup>The almost acceptable status of *Han capito tutto tutti bene* ('they have understood everything all well'), alongside the preferred *Han capito tutti tutto bene*, could be due to the fact that *tutti* forms a constituent with *bene* (Cf. *TUTTI BENE, li ho fatti* 'All well (focus), I made them'; *Sono riusciti? Sì, tutti bene* 'Have they come out alright? Yes, all well'). This option is apparently not available to *loro*. See:

(i) \*?Spiegò tutto loro bene Gianni 'G. explained everything to-them well'

<sup>34</sup>Apparently, in the presence of (*ne*) *plus*, the position of FQ's after *toujours* becomes unavailable. See:

(i)a \*Ils n'ont plus toujours tous tout fait  
b \*Je ne les ai plus toujours tous invité  
c \*Je ne leur ai plus toujours tous tout dit

- b Je ne les ai plus tous toujours invités  
 I not them have no more all always invited  
 c Je ne leur ai plus tous toujours tout dit  
 I not to-them have no more all always everything said

Apparently, no FQ can occur in between *déjà* and *plus*:

- (45) \*Ils n'ont déjà tous plus rien reçu  
 They not have already all no more nothing received

although they can occur between *pas* and *déjà*:

- (46) Ils n'ont pas tous déjà téléphoné  
 They not have not all already telephoned

The fact that FQ's cannot be found preceding *pas* either (cf. (47)) suggests that there may be some general requirement on *tous* being in the (c-command) scope of negative *pas* and *plus*:<sup>35</sup>

- (47) \*Ils n'ont tous pas toujours téléphoné  
 They not have all not always telephoned

As in French, FQ's (and *loro*) can appear between *sempre* and *completamente*, or before *sempre*:

- (48)a Han rifatto (tutti) sempre (tutti) completamente il loro compito  
 They have done again (all) always (all) completely their homework  
 b Li ha rifatti (tutti) sempre (tutti) completamente bene  
 He has done again (all) always (all) completely well  
 c Ha (loro) sempre (loro) spiegato tutto  
 He has (to-them) always (to-them) explained everything

Again, as in French, FQ's cannot precede *più* or *mica* ((49)a-b), but can precede, or follow, *già* ((50)):

- (49)a \*Non hanno tutti mica più accettato  
 They not have all not any longer accepted  
 b \*Non li ho tutti mica più invitati  
 Not I them have all not any longer invited
- (50)a Hanno (tutti) già (tutti) ricevuto tutto  
 They have (all) already (all) received everything  
 b Li ho (tutti) già (tutti) sistemati bene  
 I them have (all) already (all) accommodated well

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<sup>35</sup>The FQ may, however, come to precede (*ne*) *pas* in L-*tous* cases. Cf. (i)a-b, from Kayne (1975,23,fn.25):

- (i)a ?Elle aurait tous pu ne pas les prendre 'She would have all been able to not take them'  
 b ?Elle aurait pu tous ne pas les prendre 'She would have been able all to not take them'

Although it remains to be understood why not all positions among adverbs allow for the occurrence of FQs, these provide evidence for the existence of at least several DP-related projections among the Adverb-related projections.

**5.5 The position of Neg(ative) P(hrase)s.** In this section, I will review some evidence suggesting that negation too can occur in several distinct positions in the clause. These positions appear sometimes realized simultaneously (in certain cases contributing a single instance of negation, in others contributing multiple negations which cancel each other out).

In a detailed study of negation in Romance, Zanuttini (to appear) strongly argues for the existence of (at least) four distinct positions where NegPs can be generated within the clause: one below C°, hosting a negative head (Italian *non*, Paduan *no*, etc.), and three NegPs interspersed among "lower" AdvPs, hosting a negative XP in specifier position.

Of the latter three, one is immediately above the projection hosting 'already' (where we find Italian *mica*, Catalan *pas*, Piedmontese and Valdotain *pa*, Milanese *minga* and Pavese *mia*: all presuppositional negations - cf. chapter 1 above, and Zanuttini to appear, chapter 3); another is in between the projection hosting 'already' and that hosting 'no longer' (where we find Piedmontese *nen*, and Valdotain non-presuppositional *pa*); and the third below the projection hosting 'always' (where we find Milanese and Pavese *no*, both non-presuppositional).<sup>36</sup>

As shown in (51), adapted from (99) of Zanuttini (to appear), a number of Romance varieties appear to utilize more than one such position (sometimes simultaneously):<sup>37</sup>

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<sup>36</sup>The head status of the negative element in NegP1, which precedes the finite verb, and the phrasal status of the negative elements in NegP2, NegP3 and NegP4, which generally follow the finite verb, is motivated in Zanuttini's study by the fact that the former, but not the latter, appear to block verb movement. Cf. below for further discussion.

<sup>37</sup>This is, for example, the case with the Piedmontese variety spoken in Cairo Montenotte, which can simultaneously lexicalize NegP1, NegP2 and NegP4, with the effect of a single negation (*Dy'menika u ne pa* 'vnynu 'He didn't come on Sunday'). Cf. Parry (1997, 181) and Zanuttini (to appear, chapter 3). (Quebec) French provides evidence for an additional negation in the COMP "space": *J'ai caché les ciseaux pour pas que ma fille se blesse* 'I hid the scissors so that my daughter wouldn't hurt herself' (Daoust-Blais and Kemp 1979), a possibility apparently available only in varieties with postverbal negation, as noted by Richard Kayne and Raffaella Zanuttini in unpublished work. Other Romance varieties (e.g. those of Cembra, Lisignano, and Brazilian Portuguese) appear to have a very low negation, following all complements (cf. Zanuttini, to appear, §3.4, and references cited there). That, however, may be the effect of raising to its left what follows one of the higher NegPs, much as was proposed in §1.5 above for "lower" VP-final adverbs.

(51)

Italian	non ...	mica	già	0	più	sempre	0
Pavese	0 ...	mia	giamò	0	pü	sempar	no
Milan.	0 ...	minga	gemò	0	pü	semper	no
Piedm.	0 ...	pa	gia	nen	pi nen	sempre	0
Valdo.	0 ...	pa	dza	pa	pa mai	toujou	0
French	0 ...	pas	déjà	0	plus	tou- jours	<sup>38</sup> guère
	NegP1	NegP2	already	NegP3	no longer	always	NegP4

One of the questions that arise is whether a NegP should be assumed to be structurally present even when it contains no overt material. Provisionally, I will assume that it is not, and that the different positioning of NegP, including the higher positioning to be reviewed directly, is principally a function of the different scope of negation relative to other elements.<sup>39</sup> This is already suggested by Zanuttini (to appear) for NegP2, NegP3 and NegP4. For example, she notes that Piedmontese *nen* (in NegP3) cannot take scope over 'already', which it fails to c-command. *Pa* or *nen* in NegP2 (a possibility only marginally admitted for the latter), instead can, as the Spec of NegP2 c-commands 'already'.

The variable positioning of negation in the higher portion of the clause seems to depend (at least in part) on similar scope concerns. This requires, however, that we take a closer look at the nature of the higher instances of negation.

Zanuttini (to appear, chapter 2) argues that preverbal negation in Romance is essentially of two kinds (a head, in both cases). The one which cannot negate the sentence by itself (but cooccurs with a post-verbal negation) is cliticized to the (finite) verb, and can in certain cases surface after subject and complement clitics; the other, which can negate the sentence by itself (and is thus the real negation) heads a NegP (NegP1), immediately below C°.

Here, I will depart from the latter conclusion, and assume that even the 'real' negation can cliticize to the finite verb (or to the clitic which is cliticized to the finite verb).<sup>40</sup>

<sup>38</sup>That French *guère* is possibly in the same slot as Milanese and Pavese *no* is indicated by the fact that it follows *toujours* and precedes *complètement* (cf. Chapter 1, fn.17).

<sup>39</sup>If NegP2 (the presuppositional negation) can fail to count as the 'real' negation, one can make sense of its cooccurrence with the 'real' negations, in NegP1 in Italian, and in NegP3 in certain varieties of Piedmontese (cf. the *pa nen* of (46) of Zanuttini to appear, chapter 3). NegP1 can also fail to be the 'real' negation, in which case it cooccurs with NegP3 (and NegP2), as in the Piedmontese of Cairo Montenotte (cf. fn.32), or NegP2, as in French. Interestingly from this perspective, no Romance variety seems to lexicalize NegP3 and NegP4 simultaneously. Perhaps, neither of them can fail to be the 'real' negation.

<sup>40</sup>This implies a different treatment of the different positioning of the two negations with respect to the subject and complement clitics. Perhaps, the 'real' negation cannot be a two-segment category ( $[_{\nu} [_{\text{neg}} \text{cl neg} ] \text{V} ]$ ); hence it must be the last element to adjoin ( $[_{\nu} [_{\text{cl}} \text{neg cl} ] \text{V} ]$ ). I assume that direct cliticization to the verb is in fact compatible with antisymmetry requirements (for discussion, see Cinque 1996, §6).

The main grounds for this conclusion are: 1) the possibility, even for this negation, to be 'carried along' by the verb to a C° position; and 2) the evidence that this negation originates not in a single NegP (NegP1), but in several different NegP positions, interspersed among the higher adverb-related projections (being subsequently carried along by the verb to different positions in the IP "space"). Consider the two issues in turn.

Both in Italian and in Paduan, which utilize a preverbal negation which can negate the sentence by itself, the negation can apparently raise to C° together with the verb in the Aux-to-COMP constructions studied in Rizzi (1978, 1982). Cf. (52):<sup>41</sup>

(52)a Non essendo Gianni riuscito a ripararlo, dovemmo trovare un'altra soluzione

Not having G. managed to repair it, we had to find another solution

b (Va casa..) No fusse-lo gnancora 'riva', spete-lo fora<sup>42</sup>

(Go home..) Should he have not arrived yet, wait for him outside

Consider now the evidence for assuming that preverbal negation may originate in several different positions.

Above, I mentioned Zanuttini's observation that postverbal negation in Romance cannot take scope over AdvPs preceding it (i.e., outside its c-domain).

When we turn to preverbal negation a more complex picture emerges.

While it remains true that (unmoved) AdvPs preceding it cannot fall under the scope of preverbal negation ((53)), in the case of AdvPs following it, we find two distinct cases. Some can be interpreted as either falling or not falling under its scope ((54)), while others **never** fall under it ((55)):

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<sup>41</sup>Paola Beninca', who provided the relevant judgement, notes that subject clitic/verb inversion is not possible if the conditional is counterfactual (*\*No fusse-lo 'riva' in tenpo, gavarissimo vudo problemi* 'Had he not arrived in time, we'd had problems'). I have no explanation for that.

<sup>42</sup>In Paduan, a finite verb preceded by negation cannot apparently raise to C° in literal interrogative clauses ((i)), though it can in certain exclamative and non-literal interrogative clauses ((ii)) (cf. Beninca' and Vanelli 1982; Zanuttini to appear, chapter 2):

(i)a \*No ve-to via? (cf. No te ve via?)

Don't you go away?

b \*Cossa no ga-lo fato?

What hasn't he done?

(ii)a Cossa **no** ghe dise-lo?

What doesn't he tell him

b Vien-lo o no vien-lo?

Does he come or not?

c No vien-lo miga?

Doesn't he come?

Zanuttini (to appear) and Portner and Zanuttini (1996) propose that, when it contributes the ordinary meaning of negation to the clause, *no* is an independent head (of NegP1), which can be attracted to interrogative C° (instead of the verb), at least in yes/no questions. It is instead cliticized to the verb, making a unit with it, when it contributes an implicature (as in (ii)); whence the position of negation + V to the left of subject clitics. Although such an analysis is in principle compatible with that developed below (the facts in (52) only show that the 'real' negation *can* cliticize to the verb, not that it *must*), it is possible that the ungrammaticality of (i) may depend on some other factor. Perhaps, the 'real' negation cliticized to the V prevents the interrogative feature on the V from entering the required Spec/head agreement (Rizzi 1991) with the interrogative C°.



- (53)a Francamente non ho altro da aggiungere  
Frankly I haven't anything else to add
- b Gianni fortunatamente non è riuscito a corrompervi  
G. luckily hasn't managed to corrupt you
- c Gianni evidentemente non ha saputo del nostro arrivo  
G. evidently hasn't learnt of our arrival
- d Gianni probabilmente non è in grado di aiutarci  
G. probably isn't able to help us
- e Lei allora non poteva/potrà aiutarci  
She then couldn't/won't help us
- f Forse non ha fatto una gaffe  
Perhaps he/she hasn't made a blunder
- g Questa clausola necessariamente non avrà conseguenze<sup>43</sup>  
This condition necessarily will not have consequences
- h Gianni deliberatamente non ha lasciato cadere la sua candidatura  
G. deliberately has not dropped his candidature
- i In questo paese, i negozianti obbligatoriamente non rilasciano ricevute  
In this country, shopkeepers obligatorily do not issue receipts
- l Gianni astutamente non si è nascosto  
G. smartly did not hide
- m Gianni di solito non era disposto a compromessi  
G. usually was not disposed towards compromises
- n Gianni di nuovo non è arrivato puntuale  
G. again did not arrive punctually
- o Gianni spesso non ci lasciava il suo recapito  
G. often did not leave us his address
- p Gianni rapidamente non accettò la loro offerta  
G. rapidly didn't accept their offer
- q Gianni già non riceveva notizie da casa  
G. already did not receive news from home
- r ?Gianni sempre non accoglieva le loro offerte di tregua  
G. always wouldn't accept their offers for a truce
- s Gianni quasi non si era ricordato di mangiare  
G. almost didn't remember to eat
- t ?Gianni parzialmente non ricordò le istruzioni  
G. partially didn't remember the instructions

- (54)a Lei non poteva/potrà allora aiutarci  
She couldn't/won't then help us
- b Non ha forse fatto una gaffe<sup>44</sup>  
He/she hasn't perhaps made a blunder

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<sup>43</sup>The type of contrast between (53)c and (54)c is noted in Ladusaw (1978,1988).

<sup>44</sup>The reading with *forse* 'perhaps' under the scope of negation requires some contrast. For example, it is favored in the following context: ...l'ha fatta di sicuro! '...he/she made it for certain!'. Here, *forse* contrasts again with *probabilmente*, which cannot fall under the scope of negation even in such a context.

- c Questa clausola non avrà necessariamente conseguenze  
This condition will not necessarily have consequences
- d Gianni non ha deliberatamente lasciato cadere la sua candidatura  
G. has not deliberately dropped his candidature
- e In questo paese, i negozianti non rilasciano obbligatoriamente ricevute  
In this country, shopkeepers do not obligatorily issue receipts
- f Gianni non si è astutamente nascosto  
G. didn't smartly hide
- g Gianni non era di solito disposto a compromessi  
G. wasn't usually disposed towards compromises
- h Gianni non è di nuovo arrivato puntuale  
G. didn't again arrive punctually
- i Gianni non ci lasciava spesso il suo recapito  
G. didn't often leave us his address
- l Gianni non accettò rapidamente la loro offerta  
G. didn't rapidly accept their offer
- m Gianni non riceveva già notizie da casa  
G. did not already receive news from home
- n ?Gianni non accoglieva sempre le loro offerte di tregua  
G. wouldn't always accept their offers for a truce
- o Gianni non si era quasi ricordato di mangiare  
G. didn't almost remember to eat
- p Gianni non ricordò parzialmente le istruzioni  
G didn't partially remember the instructions

In (54), even if, depending on context, one or the other interpretation may be favored, both the interpretation in which the adverb is under the scope of negation, and the one in which it is not, are possible.<sup>45</sup>

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<sup>45</sup>The two interpretations correlate with a slightly different intonational contour. When it is outside the scope of negation, the adverb appears to be stressed more prominently. When under the scope of negation, the adverbs differ as to whether they admit being alone under the scope of negation (*In questo paese, i negozianti non rilasciano obbligatoriamente ricevute; solo se ne hanno voglia* 'In this country, shopkeepers do not obligatorily issue receipts; only if they fancy it'), or only as part of a larger constituent (*Gianni non era di solito disposto a compromessi; \*lo era sempre* 'G. wasn't usually disposed towards compromises; \*he always was'). The latter cases are only paraphrasable as "It is not true that...(G. was usually disposed..)". As Paola Beninca' notes (p.c.), this difference correlates with the possibility, or impossibility, for the adverb to be directly modified by negation (*Non necessariamente questa clausola avrà conseguenze* 'Not necessarily will this condition have consequences' vs. *\*Non di solito Gianni era disposto a compromessi* 'Not usually was G. disposed towards compromises'). *Deliberatamente, obbligatoriamente, spesso, rapidamente, sempre* pattern with *necessariamente*; *astutamente, di nuovo, già, quasi* pattern with *di solito*. When *mica*, or another negative element, is present below the adverb, only the reading with the adverb outside the scope of negation seems to be possible (*Non è di solito mica disposto a compromessi* 'He is usually not disposed towards compromises'). If *mica* is higher than the adverb (e.g. *Gianni non aveva mica accolto sempre le loro offerte* 'G. had not always accepted their offers'; *Gianni non riceveva mica già notizie da casa* 'G. did not already receive news from home'), the adverb is under the scope of negation, whether alone (*sempre*), or as part of a larger constituent (*già*).

In (55), on the other hand, the AdvP is necessarily outside the scope of negation:<sup>46</sup>

- ( 55)a Non ho francamente altro da aggiungere  
 I haven't frankly anything else to add  
 b Gianni non è fortunatamente riuscito a corrompervi  
 G. hasn't luckily managed to corrupt you  
 c Gianni non ha evidentemente saputo del nostro arrivo  
 G. hasn't evidently learnt of our arrival  
 d Gianni non è probabilmente in grado di aiutarci  
 G. isn't probably able to help us

The adverb classes in (55) interestingly correspond to a contiguous portion of the highest projections of the clause (from Mod<sub>epistemic</sub> to Mood<sub>speech act</sub>) in the analysis of the previous chapters). This pattern, combined with that in (53) and (54), suggests to me the following conclusions about preverbal negation (in Italian):

- 1) what is crucial for determining the scope of sentence negation is not its "surface" position (the one at 'Spell-out'), but its "base" position. If the former counted, we would expect negation to *necessarily* take scope over the AdvPs in (54) and (55), contrary to fact.<sup>47</sup>
- 2) Apparently, a NegP can be "base generated" on top of any of the Adverb-related projections below Mod<sub>epistemic</sub>, with *non*, in Italian, originating in the position of the specifier, from where it cliticizes on

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<sup>46</sup>Cf. Schlyter (1977,100 and 215) for an analogous observation concerning the corresponding French adverbs. Holmberg et al. (1993, §2.5) note a comparable contrast between epistemic adverbs and "lower" adverbs in Finnish. They take epistemic predicates to (obligatorily) raise at LF across negation (noting a problem for this idea in English). This is, however, dubious. Overt movement of adverbs across negation is generally blocked (*\*How often haven't you seen him? \*COMPLETAMENTE, non lo ha rovinato!* 'Completely (focus) he hasn't ruined it'); and where it is allowed, as in the special topicalization construction discussed in Cinque (1990, §2.4), the adverb obligatorily 'reconstructs' under the scope of negation (*Completamente, non lo ha rovinato* 'He hasn't ruined it completely'). Similarly, in German, "l'adverbe est aussi *sous* la negation s'il est en tête d'une phrase principale, en portant l'accent le plus fort de la phrase. Ex. *Höflich hat er nicht geredet* ['He hasn't spoken kindly']" (Schlyter 1977, 38, fn.1). Against LF movement of adverbs, also see Ernst (1991,754f;1992). If the "base generation" position (rather than a derived LF position) is crucial for this type of scope, then such cases as (i) (=61a) of Holmberg et al. 1993) in Finnish, in which "potential mood obligatorily has scope over negation", have a derivation more similar to that of Italian *non*, with *e* (neg) starting in some lower Spec and ultimately left-adjoining to the agreement head *i*:

- (i) Pekka ei liene unohtanut sinua  
 P. neg-agr be-POT forgotten you 'P. has probably not forgotten you'

<sup>47</sup>A case of the same general sort is provided by an example discussed in §4.8 (*John must probably give his money back*), which showed the scope epistemic modality > deontic modality in spite of the surface order in which the deontic modal *must* precedes the epistemic adverb *probably*. Once again, this can be made sense of if *must* is generated below the adverb, and is raised above it via head raising, and if it is the "base" position which determines the relative scope of the two elements. For similar conclusions, see Ernst (1991, 754f; 1992,§4).

As Richard Kayne reminds me, the "surface" position of negation is instead crucial for licensing polarity items (cf. Laka 1990,§3.2.2.1):

- (i)a Hasn't anyone called?  
 b \*Anyone hasn't called

to the verb raised to the head immediately above the NegP in question:<sup>48</sup>

(56) ... [<sub>XP</sub> [<sub>XP</sub> [<sub>Y</sub> V-Y] [<sub>NegP</sub> [[non]]] [<sub>NegP</sub> [<sub>YP</sub> ...

From these assumptions, the facts observed above concerning the interaction of adverbs and negation follow.

When *non* (cliticized to the verb) is to the right of a certain adverb, it can only have originated in a NegP lower than the adverb (whence its not taking the adverb in its scope (53)).<sup>49</sup>

When *non* (cliticized to the verb) is to the left of a certain adverb (of the "space" below Mod<sub>epistemic</sub>), we do not know whether it originated in a NegP to the left of the adverb, or in one to its right (then, ending up to its left, on the verb's shoulders, so to speak).

This means that a sentence such as (54)d, repeated in (57), may be derived either as shown in (58)a or in (58)b (whence the observed ambiguity of such cases):

(57) Gianni non ha deliberatamente lasciato cadere la sua candidatura

(58)a ... [<sub>XP</sub> [<sub>XP</sub> non ha [<sub>NegP</sub> [[ t ]] ] [<sub>NegP</sub> t [<sub>YP</sub> deliberatamente [<sub>YP</sub> .. [..

b ... [<sub>XP</sub> [<sub>XP</sub> non ha [<sub>YP</sub> deliberatamente [<sub>YP</sub> (non ha) ] [<sub>NegP</sub> [[ t ]] ] [<sub>NegP</sub> t [..

In the presence of two adverbs to the right of *non* + V it can be the case that only the rightmost is under the scope of negation, or both of them, or neither of them, *but not just the leftmost*. Cf. (59):

<sup>48</sup>This requires, as noted, that it be possible to cliticize (left-adjoin) something (here, the negation) to a verb (cf. Cinque 1996, §6).

English would minimally differ from Italian in having *n't* (*not*) generated in the head, rather than in the Spec of NegP, and picked up by the (auxiliary) verb, which left-adjoins to it on its way up (cf. Kayne 1989b). Alternatively, *n't* is already attached in the lexicon to the verb, which then rises to the relevant head to check the negative feature.

<sup>49</sup>A crucial element in the derivation of the facts in (54) and (57) is the fact that adverbs, in the normal case, do not move (from lower positions to their "surface" position). Cf. chapter 1. If they did, their scope interaction with negation would be more complex.

In this connection, it is interesting to note that (quantified) DPs, which - we know - move up within the sentence, have a different behavior. As noted in the literature, quantified subjects can be interpreted under the scope of negation even if they precede negation at Spell out. Cf.: *Tutti i giocatori non hanno segnato* 'Every player didn't score'; *Tous ne sont pas venus* 'All didn't come'.

The fact that they can also take scope over negation is in line with the scope properties of A-movement, which (in contrast to head-movement) allows either the head, or the foot, of the chain to count for scope (Cf. *A hippogriff is likely to be apprehended*, and the relevant discussion in May 1985,97-105 and McCloskey 1996b,14).

- (59) Gianni non era deliberatamente di solito polemico con i suoi superiori<sup>50</sup>  
 G. wasn't deliberately usually polemical with his bosses

This suggests that *non* can originate in a NegP in between the two adverbs, or to the right of both, or to the left of both (and similarly if more adverbs are added).

This entails that it must be possible to "base generate" a NegP on top of each adverb-related projection (within a certain "space"). The fact that the highest adverbs of (55) cannot be interpreted under the scope of negation even when *non*+V precedes them appears to indicate that no NegP is available above a certain projection (which I have identified above with ModP<sub>epistemic</sub>, in whose Spec *probabilmente* 'probably' is generated). This accords well with the observation that epistemic modals are never under the scope of negation.<sup>51</sup>

Languages where negation does not cliticize to (thus 'riding on') other elements moving up the clause (where, for example, it is a suffix, or a particle or a specifier) appear to differ as to the canonical position they reserve to it among the Adverb-related functional projections.<sup>52</sup> We have already seen the variation uncovered by Zanuttini (to appear) in the post-verbal negations of Romance. Many languages have negation higher than T(Past) (cf., for example, (60)a-c); others between T(Past) and T(Future) (cf. (61) and (62)); others below T(Past) and T(Future) (cf. (63)); and other possibilities exist.<sup>53</sup>

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<sup>50</sup>The reading in which both *deliberatamente* and *di solito* are outside the scope of negation is more clearly brought out if *mai* 'never' is inserted (between *di solito* and *polemico*).

<sup>51</sup>If the highest NegP position available is indeed between Mod<sub>epistemic</sub> and T(Past), the fact that "if a language is verb-initial [VSO or VOS] the negative will precede the verb" (Dryer 1988,97) suggests that the V does not raise to COMP. Dryer cites only one language (Cariri), out of 53, as contradicting his generalization, but this exception seems apparent only, as the negation in second position is a suffix on the verb (cf. (i)), so that it becomes possible to take the verb to left-adjoin to a negative head in first position in this case too:

(i) netso-kié di-dè i-ña

be.seen-NEG his-mother him-by 'His mother has not been seen by him'

Colloquial Welsh at first sight provides another counterexample to Dryer's generalization, with a sole post-subject negation in certain cases. But see Payne (1985,225) for evidence that a preverbal negation always exists, reinforced by a second post-subject negation.

<sup>52</sup>In some languages, the negative suffix can appear in different positions among other suffixes (acquiring different scopes). This is the case of the negative suffix *-ri-* of Tuyuca, which "negates only the information which occurs to its left" (Barnes 1994,331). See (i)a-b (=26) and (27) of Barnes 1994):

(i)a Bué-ruku-ri-wi

study-constantly-NEG-EVID

I did not study constantly (i.e. I studied but not constantly)

b Bué-ri-ruku-wi

Study-NEG-constantly-EVID

I constantly did not study (i.e. I was constant in not studying)

<sup>53</sup>Incidentally, this crosslinguistic variability can itself be construed as an argument to set negation apart from the other Adverb-related functional elements, which do not appear to show variability, as noted. To judge from the typological works of Dahl (1979), Payne (1985), Dryer (1988), and Kahrel and van den Berg (1994), sentence negation can appear as either [1] a suffix (cf. the Turkish case in (62) and the case of Tuyuca in the previous footnote), [2] a prefix (cf. the case of Berber in §6.5), [3] a clitic on the verb (Italian), [4] a

- (60)a pooy-ITTUND-aayir-unn-illa (Malayalam - cf. Appendix to chapter 3)  
 go-ANT-be.PAST-unn-NEG  
 '(He) had not gone  
 b À-ka-á-dzfe-ak-á ngámbá wè̀sù (Babole - Leitch 1994,197)  
 3sg-NEG-PAST-eat-ASP-Final Vowel elephant all  
 'He didn't eat the whole elephant'  
 c xan̄ ir-səŋ-gui (Mongolian - Svantesson 1991,192)  
 king come-PAST-NEG  
 'The king did not come'
- (61)a Pò ná' kè kwé mbè wó (Bangwa - Nguendjio 1992,95)  
 1pl PAST NEG eat-ANT meat NEG  
 'We had not eaten meat'  
 b Pò ká' í nkwe mbè wó  
 1pl NEG FUT eat-IMPERF meat NEG  
 'We will not eat meat'
- (62)a ai bin no de du mai wok dat taim (Nigerian Pidgin - Ofuani 1982,236)  
 I PAST NEG PROG do my work at that time  
 b ai no go foget (Nigerian Pidgin - Ofuani 1981,315)  
 I NEG FUT forget
- (63)a Çalış-ma-yacak-ti (Turkish - van Schaak 1994,39)  
 work-NEG-FUT-PAST  
 '(S)he wouldn't come'  
 b (Pe ne-sitom re save) yoko naga ve vimi re poli (Lewo - Early 1994,74)  
 (Neg1 1sg-think Neg2 that) FUT he Neg1 come Neg2 Neg3  
 '(I didn't think that) he will not come'

It remains to be seen whether there can indeed be a NegP over every single adverb-related functional projection below Mod<sub>epistemic</sub>. Some gaps exist. For example, neither 'retrospective' adverbs (*appena* 'just'), nor 'durative' adverbs (*brevemente* 'briefly') can apparently be outside the scope of negation even though the lower 'proximative' (*quasi* 'almost') and 'completive' (*parzialmente* 'partially') adverbs can. Cf. (64) with (65):

- (64)a Non si è appena presentato (cf. \*Appena non si è presentato)  
 He hasn't just shown up

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negative auxiliary (cf. the Finnish case of fn.41), [5] a particle (e.g. the Standard Arabic invariant morpheme *maa* - cf. Fassi Fehri 1993,162ff; Ouhalla 1993), [6] an AdvP in Spec (e.g. Norwegian and Piedmontese). [1], [4] and [5] involve a morpheme in X°, either bound ([1]), or free ([4] and [5]); [6] involves a phrase in Spec; [2] and [3], the head of a phrase in a subjacent Spec incorporating to a V, possibly in the morphology (in the case of prefixes), or in the syntax (in the case of clitics).

b Non ha brevemente parlato (cf. \*Brevemente non ha parlato)<sup>54</sup>  
He hasn't briefly spoken

- (65)a Non si è quasi ricordato di venire (Quasi non si è ricordato di venire)  
He hasn't almost remembered to come  
b Non si ricordò parzialmente di quello che aveva fatto  
He didn't partially remember what he had done  
(cf. Parzialmente non si ricordò di quello che aveva fatto)

(64)a-b could, however, be 'accidental gaps' due to the oddness of modifying a negative proposition with such adverbs.<sup>55</sup>

The possibility of "base generating" a NegP in several positions interspersed among the higher (adverb-related) functional projections is also supported by the simultaneous realization of several negations which cancel each other out. See (66), (67) and (68), where arguably the *n't* and *nae* of (67) and (68) are heads and the *not* and *no* of (67) and (68) are specifiers (cf. Kayne 1989b, section V):

(66) **Non è non** andato distrutto  
It hasn't not gone destroyed

(67) He couldn't (possibly) **not** have accepted (Richard Kayne, p.c.)

(68) He could**nae** have **no** been **no** working (Hawick Scots - Brown 1992,84)  
'It is impossible that he has not been out of work'

The fact that sentences containing more than three negations (cancelling each other out) are in general unacceptable may be due to processing difficulties rather than to the impossibility of generating more than three NegPs.

In conclusion, the evidence points to the possibility of generating a NegP on top of every Adverb-related functional projection, even simultaneously, up to a certain height (which is likely determined by semantic reasons).<sup>56</sup>

On the nature of the Negative Phrase, it is occasionally proposed that negation and (emphatic) affirmation are the two values of one and the same phrase: a Polarity Phrase. This, however, is dubious, quite apart from the fact that both appear to be marked values. The reason is that they can (marginally) cooccur in a fixed relative order (in Italian), with emphatic affirmation (*si*) preceding negation (*mica*). Cf. (69)a-b:

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<sup>54</sup>This sentence is (irrelevantly) acceptable as a topicalized version of *non ha parlato brevemente* '(he) has not spoken briefly' (with the adverb in the scope of negation).

<sup>55</sup>That the ungrammaticality of the sentences in parentheses, under (64)a and b, is due to the presence of negation, not to the verb having stopped to the right of the adverbs, is shown by the grammaticality of (1)f and h of fn.8 above.

<sup>56</sup>The conditions that allow more than one (generally "lower") NegP to count as a single negation are another matter, which remains to be understood (cf. fn.39 above).

- (69)a (?) Gianni non ci ha sì **mica** detto tutto (ma ce lo ha lasciato capire)  
G. not us has yes not told everything (but he has let us understand it)  
b \*Gianni non ci ha **mica** sì detto tutto (ma ce lo ha lasciato capire)

If anything, this suggests the existence of two separate projections. Emphatic affirmation also seems to occur in various positions (cf. Poletto, forthcoming).



## CHAPTER 6

### Some Implications and Residual Questions<sup>1</sup>

- 6.1 Introduction
- 6.2 Default and marked values: simple and complex sentences
- 6.3. The hierarchy of functional projections and minimalist ideas
- 6.4 Semantics and the hierarchy of functional projections
- 6.5 Alleged parametric variations in the relative order of functional heads
- 6.6 Hierarchies of non-clausal functional projections

**6.1 Introduction.** In this final chapter, I briefly discuss some implications that derive from the preceding discussion, and point to certain areas in need of further investigation.

The conjecture that AdvPs are specifiers of distinct functional heads, entering with them a transparent semantic relation, raises a number of issues.

One is the question of parameterization. How much variation should UG allow in the number and type of functional projections available to different languages? The strongest position would be that UG allows no variation at all. The evidence discussed above seems to suggest that this position may actually be tenable. Languages do not seem to differ as to whether they have aspectual projections higher or lower than mood projections, epistemic modality higher or lower than root modality, etc. The order appears cross-linguistically invariant. The limited cases of apparent variation (§6.5 below) all seem to involve agreement and negation in relation to other functional heads. But we have seen that precisely AgrPs (rather, DP-related projections) and NegPs are generable in many different positions among the adverb-related functional projections. It is, thus, tempting to interpret such variation as stemming from a pure 'spell-out' option: whether a language lexicalizes a higher or lower Agr or Neg.

A related question is whether we should take the entire array of functional projections to be present in every sentence. I will suggest that this is the least costly assumption, once we recognize that each head comes with a marked and a default value (cf. §6.2). This conclusion, if correct, opens up a new view of clausal structure; one which is further removed from what we see, but no less interesting, for that.

If a universal hierarchy of functional projections exists, one may ask whether it is primitive, or itself determined by more abstract principles, plausibly semantic principles. Although the question perhaps cannot be meaningfully answered at this point, some slight evidence exists that the hierarchy may be a primitive property of the computational component, only indirectly related to semantic considerations

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<sup>1</sup>For comments on some of the issues raised in this chapter, I am indebted to Paola Beninca', Alessandra Giorgi, Giulio Lepschy, Richard Kayne and Fabio Pianesi.

(cf. §6.4).

If these conclusions are correct, many more questions arise which will need further investigation. Among these, the nature and parameterization of DP- and V-movements along the hierarchy of Adverb-related functional projections.

**6.2 Default and marked values: simple and complex sentences.** Let us consider in more detail the possibility that each adverb-related functional projection comes with two values: an 'unmarked' (or 'default') value, and a 'marked' one.

The notion of markedness, used prominently in the structuralist and early generative traditions to mark the members of an opposition, is usually characterized by a number of different criteria (which ideally should converge - Moravcsik and Wirth 1986).<sup>2</sup> 'Marked' is the member with the more restricted application (*bitch* - only female - vs. *dog*), less frequent, conceptually more complex, expressed by overt morphology; 'unmarked' the member with wider application (*dog* - male, or unspecified for male/female), more frequent, conceptually basic, often expressed with zero morphology (cf. Greenberg 1966,25ff for discussion, and additional criteria).

Here, I will not attempt a more precise definition, but simply follow the tradition in its characterization of various functional notions on the basis of these criteria. Two observations of Jakobson's will be particularly valuable in deciding which of two values is marked when the tradition is silent on the question. The first is his characterization of 'unmarked' as ambiguous (or wider) in application: "The general meaning of a marked category states the presence of a certain (whether positive or negative) property A; the general meaning of the corresponding unmarked category states nothing about the presence of A, and is used chiefly, but not exclusively, to indicate the absence of A" (Jakobson 1971b [1957],136).

The second is his observation that zero morphology typically occurs with the unmarked members of categories (Jakobson 1971a [1939]; also see Comrie 1976,114; Bybee 1985,52f).

In the area of illocutionary force (or speech act) distinctions, for example, it is traditionally assumed that 'declarative' (or 'indicative') is the unmarked form, all other choices (interrogative, imperative, hortative, etc.) being marked (Bybee 1985,147; Lyons 168,307).

Descending the hierarchy, I take the 'negative' value of the evaluative mood head (*unfortunately*) to be the marked value and the unspecified, or the 'positive', value to be the default value.<sup>3</sup>

Concerning the evidential mood head, I take *direct (visual) evidence* to be the default value, and all other kinds of evidence to be marked. This decision appears supported by the fact that many languages making evidential distinctions have no overt morphological marker corresponding to direct (visual) evidence (as opposed to other kinds of evidence). This is true of the Germanic and Romance languages mentioned in §4.7, as well as for Makah (Jacobsen 1986,9), Wintu, Maidu, Ute and other languages (Willet 1988,64ff).

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<sup>2</sup>The original notion of markedness is due to Nikolaj Trubetzkoy (Waugh 1982,300), and was later elaborated by him and Jakobson. For recent discussion and references, see Battistella (1990,1996).

<sup>3</sup>As Paola Beninca suggested to me, the apparent 'ambiguity' of the default value in Jakobson's formulation (either unspecified or the opposite of the marked value) might be elegantly resolved if conceived of as an 'elsewhere' case. Assuming the marked value to be [+unfortunate], the default value, '-[+unfortunate]', indeed covers both 'fortunate' and 'unspecified for the opposition fortunate/unfortunate'. This suggestion suits the other cases as well, and is particularly illuminating for the volitional modal case mentioned in the next footnote.

For the epistemic modal head, I take the case in which the speaker is committed to the truth of the proposition to be the 'default' value. This value is implicit in every statement, and must be otherwise explicitly denied (with *probably*, *presumably*, etc.), when the speaker does not want to commit himself or herself.

Concerning the various tense heads (T(Past), T(Future) and T(Anterior)), following Vikner (1985,94), I take the case where the time points coincide ( $R_1, S; R_2, R_1; E, R_2$ ) to represent the default value, and that where they do not ( $R_1, S; R_2, R_1; E, R_2$ ) to represent the marked value. Most of the times it is the non-coincidence, not the coincidence, of the time points that is morphologically marked (e.g., *-ed* and *will* vs. 0, in English).

Again, following the tradition, I take 'realis' to be the default value of the 'realis/irrealis' mood head, which is located below T(Future).

Consider now alethic and root modals. Here, I take the marked values to be [-necessary], [-possible], [-volition], [-obligation], [-ability/permission], and the default values to be -[-necessary], etc.<sup>4</sup>

Concerning the aspectual heads, I take the *presence* of the relevant feature (which is typically associated with overt morphology) to represent the marked value of the head, and its *absence* to represent the default value. The marked vs. default values of the various aspectual heads seen above are thus: [+habitual] vs. {+habitual}, [+repetitive] vs. {+repetitive}, [+frequentative] vs. {+frequentative}, [+celerative] vs. {+celerative}, [+terminated] vs. {+terminated}, [+continuative] vs. {+continuative}, [+perfect] vs. {+perfect} (or imperfect), [+retrospective] vs. {+retrospective}, [+proximative] vs. {+proximative}, [+durative] vs. {+durative}, [+progressive (or temporally specific)] vs. {+progressive} (or temporally generic), [+prospective] vs. {+prospective}, [+completive] vs. {+completive}. Those concerning Voice are [active] vs. {active} (=active).

This oversimplifies things in certain ways. Yet I will keep to it for convenience here.

As is noted in the literature (Comrie 1976, §6.5; Bybee 1985,147), the relevant notion of markedness is not absolute but relative (or "local"). So, for example, while in the presence of Past the unmarked value is {+terminated}, in the presence of +Past the unmarked value appears to be [+terminated]. Also, while {+completive} is apparently the unmarked value with activities and states, it seems that [+completive] is the unmarked value for telic predicates (so that, as noted in chapter 4, a completive interpretation is invited in such cases as *John has eaten the sandwich*, unless explicitly denied: *John has partially eaten the sandwich*).<sup>5</sup>

Such interrelations with 'lexical aspect', or in the different values of the functional heads among themselves, remain outside the scope of this work. In any event, they do not call into question the distinction between marked and default values of a head. They only show that in the presence of one or another lexical class of predicates, or of a particular value in another functional head, what counts as the default or marked value may shift (for reasons that remain to be elucidated).

Certainly, the whole issue of markedness would deserve a more careful examination, but this

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<sup>4</sup>This choice of marked and default values appears to be supported by the volitional/ non-volitional morphology found in a number of languages (cf. chapter 4, fn.35). In such languages, the morpheme marking volitionality is used both for events that involve volition and for those that do not (or cannot) involve volition (such as 'rain falling'). This suggests then that [-volition]) is the marked value, and that its opposite (-[-volition]), covering both cases (cf., again, the previous footnote) is the default value. This observation appears to generalize to the other modal heads.

<sup>5</sup>In many Creoles (and in some African languages) the unmarked tense is apparently present in generic and stative sentences, but past with eventive (non-stative) sentences. Cf. Déchaine (1991) and the references cited in DeGraff 1996,125).

discussion, summarized in (1) below, will suffice for present purposes, namely for the 'logic' of the question.

(1) Default (a.) and marked (b.) values of the different functional heads

	<i>Mood<sub>speech act</sub></i>	<i>Mood<sub>evaluative</sub></i>	<i>Mood<sub>evidential</sub></i>	<i>Mod<sub>epistemic</sub></i>
a.	declarative	-[-fortunate]	direct evid	committ
b.	-declarative	-fortunate	-direct evid	-committ

	<i>T(Past)</i>	<i>T(Future)</i>	<i>Mood<sub>irrealis</sub></i>	<i>Mod<sub>aleth necess</sub></i>
a.	R <sub>1</sub> ,S	R <sub>1</sub> ,R <sub>2</sub>	realis	-[-necessary]
b.	R <sub>1</sub> _S	R <sub>1</sub> ,R <sub>2</sub>	irrealis	-necessary

	<i>Mod<sub>aleth possib</sub></i>	<i>Mod<sub>volition</sub></i>	<i>Mod<sub>obligation</sub></i>	<i>Mod<sub>ability/permis</sub></i>
a.	-[-possible]	-[-volition]	-[-obligation]	-[-abil/perm]
b.	-possible	-volition	-obligation	-abil/perm

	<i>Asp<sub>habitual</sub></i>	<i>Asp<sub>repetitive(I)</sub></i>	<i>Asp<sub>frequentative(I)</sub></i>	<i>Asp<sub>celerative(I)</sub></i>
a.	-[+habitual]	-[+repetitive]	-[+frequent]	-[+celerativ]
b.	+habitual	+repetitive	+frequent	+celerative

	<i>T(Anterior)</i>	<i>Asp<sub>terminative</sub></i>	<i>Asp<sub>continuative</sub></i>	<i>Asp<sub>perfect</sub></i>
a.	E,R <sub>2</sub>	-[+terminat]	-[+continuat]	imperfect
b.	E_R <sub>2</sub>	+terminative	+continuat	perfect

	<i>Asp<sub>retrospective</sub></i>	<i>Asp<sub>proximative</sub></i>	<i>Asp<sub>durative</sub></i>	<i>Asp<sub>progressive</sub></i>
a.	-[+retrospect]	-[+proximat]	-[+durative]	generic
b.	+retrospect	+proximative	+durative	progressive

	$Asp_{prospective}$	$Asp_{completiveSg}$	$Asp_{completivePl}$	<i>Voice</i>
a.	-[+prospect]	-[+complet]	-[+complet]	Active
b.	+prospective	+completive	+completive	pass/middle

	$Asp_{celerative(II)}$	$Asp_{completive(II)}$	$Asp_{repetitive(II)}$	$Asp_{frequentative(II)}$
a.	-[+celerative]	-[+complet]	-[+repetitive]	-[+frequent]
b.	+celerative	+completive	+repetitive	+frequentat

The fact that functional heads come with two values (granting now the plausibility of this idea) has consequences for a number of more general questions.

One such question, which I address in the rest of this section, is the relation between simple and compound tense sentences (Other implications will be discussed in the following sections).

A fairly widespread assumption is that compound tense sentences are substantially richer in functional structure than simple tense sentences, to make room for the extra grammatical elements (auxiliaries, particles, etc.) present in one but not the other.

If functional heads necessarily come with a default and a marked value, this is an illusion. A simple sentence such as (2)a would have exactly the same functional structure as the apparently much richer (2)b:

(2)a Prices rise

b Prices must not have been being raised

From this perspective, the only difference between (2)a and b lies in the presence of more morphology in the latter, due to the association (in English) of particular morphemes with the marked values of some of the functional heads ((2)b has marked values for *Voice*,  $Asp_{progressive}$ ,  $Asp_{perfect}$ , *Neg*,  $Mod_{epistemic}$ , while (2)a has the corresponding default values).

The conclusion that (2)a may not be fundamentally different in functional structure from (2)b is rendered plausible by the observation that concerning it we know that it is active rather than passive, generic rather than progressive, positive rather than negative, declarative rather than interrogative, etc.: implicit, not in-existent, information.

Another possibility would be to say that the functional make up of (2)a is 'read off' from an impoverished structure as a series of default values (cf. Giorgi and Pianesi to appear, chapter 1). I return to this alternative in the next section, concluding that it compares unfavorably with the idea that (2)a has a full functional structure, like that of (2)b.

Similar remarks will hold for the relation between (2)a and (3) below, which, in this perspective, does not involve more (adjunction, or specifier) structure:<sup>6</sup>

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<sup>6</sup>The fact that "small clauses" allow for the full range of AdvPs, including the highest (*Con Gianni francamente inadatto a questo compito...* 'With G. frankly not suitable to the task...'), suggests that structurally they may be full clauses (with a lexical projection distinct from VP). Independent considerations for the full clausal nature of "small clauses" are found in Cinque (1995b), Sportiche (1995), Starke (1995) and references

(3) Fortunately prices probably already no longer rise so rapidly

This should not be taken as saying that the *lexical* structure of (2)b is necessarily the same as that in (2)a.

At first sight it might be tempting to assume that the various aspectual and temporal morphemes (say perfect *-en*, and future *will*, in English) are directly generated under the corresponding functional heads (with auxiliaries generated in higher heads still, when required to bear morphology that would otherwise remain stranded, or to check higher features).<sup>7</sup> But no such simple matching appears possible.

The reason is that such morphology can, under certain circumstances, be observed to occur in positions lower than the position occupied by the corresponding functional heads.

As already noted in Baker (1971,167f and fn.1), under normal conditions, auxiliaries and modals are unstressed, and appear to the left of all adverbs. They can, however, follow (most) adverbs when they bear nonlow stress (which happens in two cases: "The first is that in which the finite auxiliary is emphasized, the second that in which the constituent following the auxiliary has been deleted" (Baker 1971,171) [or removed]). Cf. (4)a-b (=Baker's 1971 (8)b and c), and (5)a-b (=Baker's 1989, chapter 11, (57)):

(4)a John admires Susan now, and he always HAS admired her<sup>8</sup>  
 b \*John admires Susan now, and he HAS always admired her

(5)a Bill never will \_\_\_\_  
 b \*Bill will never \_\_\_\_

(5)a, with the future modal *will* following a relatively low adverb, clearly suggests that the modal does not occupy the (much higher) T(future) head.

Many other cases could be added. In general, it appears that along the hierarchy of adverbs seen above modals and auxiliaries can remain as low as the position to the immediate right of *completely* ((6)) (or higher), but not any lower (cf. (7)-(9)). So, either they are generated there or, perhaps more plausibly, they are generated in VP shells above the lexical VP, from where they obligatorily move to a position in between *completely* and *well*.<sup>9</sup>

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cited there.

<sup>7</sup>Cf. Ouhalla (1988,74; 1990,207f) and Poletto (1993,295), who, however, take the temporal and aspectual auxiliaries, not the tense and aspect bound morphemes, to be generated under the corresponding functional heads.

<sup>8</sup>As Richard Kayne notes, *He HAS always admired her* is however possible as a contradiction.

<sup>9</sup>Recall from chapter 5 (fn.6) that this is also the position of obligatory movement of finite (and non-finite) verbs in non-V/2 clauses in Norwegian, except that, apparently, they can also move to the left of *helt* 'completely'.

As Richard Kayne pointed out to me (p.c.), auxiliaries appear in some cases (in certain languages) to take complements larger than VPs (can be followed by what looks like a complementizer). Here, as in the previous chapters, I have abstracted from the evidence pointing to the existence of a P/CP projection dominating the projection(s) occupied by participles in Romance (cf. Kayne 1993a).

(6) (He said he would completely destroy it) (?)...and he completely will/has

(7) (He said he would do his homework somehow by tonight)

a \*...and he well will/has

b \*...and he will/has well

(8) (He said he would wake up by himself)

a \*...and he early will/has

b \*...and he will/has early

(9) (He said he would finish his homework by tonight)<sup>10</sup>

a \*...and he fast has/will

b \*...and he has/will fast

**6.3 The hierarchy of functional projections and minimalist ideas.** The idea that all languages have the entire array of functional projections available (say on the order of 40), and that, perhaps, even simple sentences necessarily instantiate it, may seem to be in stark contrast with the minimalist spirit of Chomsky (1995).

The contrast, however, is more apparent than real.

As Chomsky says, "[p]ostulation of a functional category has to be justified, either by output conditions (phonetic and semantic interpretation) or by theory-internal arguments" (p.240).

My argument all along has been that each projection has a specific semantic interpretation. The crucial point, then, is whether *all languages* have the same full array of interpretations. Although we cannot be certain, as usual, the available evidence indicates that they do. Language after language, the same (restricted) functional notions appear to be expressible either via head morphology or via adverbs, while other, conceivable, functional notions are not.<sup>11</sup>

Granting the fact that all languages have at their disposal of the same full array of functional notions,<sup>12</sup> the next question is whether they utilize it all the time. Here the answer must be more tentative. Above, I have suggested that if heads necessarily come with a marked and a default value, then, it is conceivable that all sentences utilize the entire functional structure, with the required combination

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<sup>10</sup>The equivalent with *quickly* is possible (...and he *quickly* has/will), but recall that *quickly* (as opposed to *fast*) can also occur in a higher position (where it quantifies over the event).

<sup>11</sup>For example, no 'dangerous'-aspect seems to be attested, in spite of its potential significance for us (the adverb exists as a member of the much wider class of circumstantial (manner) adverbials, whose general meaning is "in an X way"). Likewise, no language appears to have a mood expressing the fact that there is 'bad weather' (or 'good weather'), though we can easily imagine a world where that would be possible. Examples of this sort could be multiplied.

<sup>12</sup>This is bound, of course, to be controversial. Sabine Iatridou once asked if we really want to generalize to all languages a 'politeness' functional projection (presumably, a DP-related one - cf. §3.2), for which we have morphological evidence (based on verbal suffixes) only in few languages. Although I do not remember what I answered at the time, now I think I would answer 'yes'. Politeness, and deference, distinctions (both with respect to the arguments of the predication, and to the addressees) are apparently found universally (even if only few languages mark them via affixes on the verb). Cf. Comrie (1976a), Brown and Levinson (1987).

of marked and default choices. But other possibilities exist. For instance, Giorgi and Pianesi (1996; to appear, chapter 1, §1.4) propose in a 'minimalist' spirit, that even though a language may have access to the maximal number of functional projections made available by UG, it will each time utilize only those projections which are needed to host specific lexical or morphological material present in the numeration (in Chomsky's 1995 sense).<sup>13</sup>

So, for example, where there is no head morphology, nor adverbs, corresponding to a particular functional projection, that projection will not be projected, and its features (required for interpretation at the LF interface) will be syncretically projected with other features which are structurally represented for morphological or lexical reasons. What is required in such a system is a general convention that interprets the absence of a certain projection as corresponding to the default value of the relevant head.

Though attractive, I think that such idea is more costly than the idea that functional notions are always *all structurally* represented.

Consider the case in which a projection must be projected (in their system) because there is an adverb in the numeration corresponding to a certain functional feature. The appropriate structure is required even if the adverb corresponds to the default value of the head (e.g. *John has completely eaten the sandwich*).<sup>14</sup>

This, however, means that the default value is once 'read off' the actual structure (when the adverb is present), and once provided, via a general convention, when no adverb (hence no structure) is present.

If the entire functional structure is always present, one can 'read off' the default value (or the marked value, for that matter) once and for all from the structure (whether an adverb is present or not). In particular, no additional convention is needed for the default case.

Consider now a more radical 'minimalist' alternative; one that doesn't necessarily project adverbs in the specifier position of a corresponding functional projection, but adjoins them to other projections. Although such system cannot order the adverbs by exploiting the principle (whatever that is) which determines the relative scope of functional projections, it can have an independent scope principle for adverbs (comparable in cost to that for functional projections). From this perspective, the two alternatives would seem to be equivalent (the second being more parsimonious).

Certain observations made in chapter 2, however, point to the advantage of deriving the effects of the scope principle for adverbs from the different specifier positions the adverbs occupy in a structure representing the full array of functional projections.

We saw that the same verbal form (say, an active past participle) is ordered differently w.r.t. the same adverbs *in different Romance varieties*, and that distinct verbal forms (say, an active past participle and an infinitive) are ordered differently w.r.t. adverbs *within the same variety*. For example, we saw that in French an active past participle is to the right of 'well'; in Sardinian to the left of 'well' and to

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<sup>13</sup>Of course, the relevant features of such projections will also need to be part of the numeration. Giorgi and Pianesi (to appear) assume that UG makes available a universal stock of functional features, much like the universal inventory of phonetic features, from which individual languages pick different subsets.

This, however, may be seen as projecting the accidental gaps of the lexicon and the morphology into gaps of the underlying system; a move, as noted, which is not followed in other areas (for example, with Case or phi-features). For this reason, I would take the analogy with phonology to involve, not particular choices of phonetic features, but the CV skeleton, syllable structure, etc., which are necessary components of all languages.

<sup>14</sup>Recall that with accomplishments the default value of the completive aspect head is [+completive], so that even without the adverb (*John has eaten the sandwich*) the interpretation is that he ate it completely.



the right of 'everything'; in Italian to the left of 'everything' (and 'well') and to the right of 'completely'; in Bellunese to the left of 'completely' and to the right of 'always', etc.<sup>15</sup>

Similarly, we saw, in the case of French, that while an active past participle cannot be to the left of 'well', an infinitive can (cf. Pollock 1989). Similar facts are found throughout Romance (cf. chapter 2 above and Zanuttini to appear, chapter 3).

In a system where adverbs are (left-)adjoined to the (single) projection hosting an active past participle or to an XP to its right, one must add a specific instruction for each adverb (whether it can be to the left or to the right of the past participle).

The particular implications that were observed in chapter 2 (if an active past participle - more generally, any verbal form - can be to the left of adverb<sub>i</sub>, it can be to the left of adverb<sub>j</sub>, adverb<sub>k</sub>, etc.) cannot be stated simply. The scope principle governing the relative scope of two, or more, adverbs has nothing to say in this connection, because here it is the relative position of the past participle with a *single* adverb that matters.

Even if we were to say that when a certain adverb can be (left-)adjoined to the right of the projection hosting the past participle, then all adverbs with narrower scope must do likewise, we would still not have a principled reason why that is the case. And we wouldn't have a reason why an adverb with narrowest scope cannot (left-)adjoin to the left of the projection hosting the past participle. After all, only the position of *one* adverb is at stake.

The representation of the relative scope of adverbs in structural terms, in a configuration also representing the position of the active past participle, can express the aforementioned implications in a very simple and restrictive manner.

If we assume that adverbs are "base generated" in different specifier positions according to a certain principle of relative scope (which is the same for the corresponding heads), and we assume that the active past participle moves (obligatorily) to different head positions depending on the specific Romance variety, nothing else needs to be said. It follows that when the past participle precedes a certain adverb it will necessarily precede all adverbs lower in the (scope) hierarchy, which are also lower in the structure.

The same argument can be replicated for each verbal form.

Unless we opt for a structural representation of scope, where the adverbs are specifiers of projections to whose heads the verbal form can or cannot raise, we will be unable to express the simple generalizations linking together the different adverb classes and the different verbal forms. Why should an adverb that cannot (left-) adjoin to the right of a past participle (left-) adjoin to the right of a finite verb, or an infinitival?

In the fully structural hypothesis, if we grant that infinitivals (usually) raise higher than active past participles, that finite verbs raise higher than infinitivals (and that auxiliaries raise higher than lexical verbs of the same form) nothing else needs to be said.<sup>16</sup>

**6.4 Semantics and the hierarchy of functional projections.** If clausal functional notions such as Mood, Tense, Aspect, etc. indeed prove to be arranged in a rigidly fixed hierarchy universally, a legitimate question is whether such a hierarchy is primitive or rather determined by higher order

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<sup>15</sup>I abstract away here from the additional 'optional' possibilities seen in chapter 2 above.

<sup>16</sup>Of course, one must establish precisely at which particular functional heads each specific verbal form must, and can, raise in each variety. Although relevant observations are to be found in chapters 2 and 5 above, in Pollock (1989), and in Zanuttini (to appear, chapter 3), a systematic investigation remains to be done.

(plausibly semantic) conditions.

If such functional elements were conceived of as logical operators on the predicate-argument structure of the clause, their entering a certain relative scope among each other would be entirely natural. In this view, their order would simply reflect the intrinsic logical ordering of the operators.

Certain considerations suggest that while the relative order of some such notions may indeed reflect intrinsic logical relations among them, the hierarchy is only indirectly related to such semantic, or logical, properties. For example, certain possibilities which in terms of logical relative scope would be expected are not found, or are downright impossible, thus suggesting that the hierarchy is a construct of the computational system of language, not completely reducible to other components.

Although such conclusion may be due to my lack of knowledge or imagination, I will keep to it up to disconfirmation.

The fact seen in chapters 3 and 4 that epistemic modality is higher than (takes scope over) Past, or Future, Tense (cf. also Bybee 1985, 119f) appears to reflect the intrinsic relative scope of the two types of operators. Epistemic modality, as noted, expresses the degree of the speaker's commitment to the truth of the proposition expressed by the sentence. But the truth of the proposition can only be evaluated if the proposition is located in a precise moment of time. Consequently, epistemic modality presupposes an operand which is already tensed (whence its scope external to Tense).

Similarly, as remarked in Foley and Van Valin (1984, 209f), aspect is more closely related to the predicate (it expresses different ways of viewing the event expressed by the predicate) than tense (which locates the time of the event - whatever its aspectual make up - with respect to the speech time). As a consequence of that, it is natural that tense operates on something on which aspect has already operated; in other words, that it is external to (higher than) aspect.

Other such cases of 'intrinsic' ordering exist. But, not all cases of relative order among functional elements seem so explicable. Consider the relation between Evidentiality and Epistemic Modality. In the previous chapters, it was noted that evidential heads (affixes or free morphemes) and specifiers (AdvPs) are higher than epistemic ones. Their relative order cannot be subverted. Cf., for example, (10)a-b, (11)a-b:

- (10)a Allegedly John will probably give up  
 b \*Probably John will allegedly give up

- (11)a (?) Evidentemente Gianni ha probabilmente lasciato l'albergo  
 Evidently G. has probably left the hotel  
 b \*Probabilmente Gianni ha evidentemente lasciato l'albergo  
 Probably G. has evidently left the hotel

This fact, however, does not seem to derive from any intrinsic logical ban on epistemic modality taking evidentiality in its scope. That is shown by (12)a-b below, where an evidential predicate is embedded under an epistemic one, with no ensuing logical incongruity:<sup>17</sup>

- (12)a It is probable that it is evident that he is the guilty one  
 b E' probabile che sia del tutto evidente che lui e' il colpevole  
 It is probable that it is utterly evident that he is the guilty one

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<sup>17</sup>It is however conceivable that evidentiality and epistemic modality have a rigid relative logical scope, which is lifted just in case the two operate on two distinct propositions, located in two distinct spaces and/or times. I leave the question open.

Consider a couple of additional cases.

It was noted in chapter 4 that Prospective Aspect AdvPs (*almost/ imminently*) are lower than Retrospective/Proximate Aspect AdvPs (*just, soon, etc.*). Cf. the contrast in (13):

- (13)a He will soon almost be there  
 b \*He will almost soon be there

There is, however, no logical ban on having a Proximate adverb embedded under a Prospective predicate such as 'to be about to':

- (14) He is about to soon be admitted to hospital

Thus the rigid relative order of the two classes of elements, within the same clause (Proximate > Prospective) cannot be reduced to the logical incongruity of the reverse scope.

In the same chapter, we saw that Habitual Aspect precedes Terminative Aspect. This can be seen from the well-formedness of (15)a vs. the ill-formedness of (15)b, which involve Habitual and Terminative Aspect adverbs:

- (15)a Dopo le 10, Gianni non beve di solito più niente  
 After 10 o'clock, G. drinks usually no longer anything  
 b \*Dopo le 10, Gianni non beve più di solito niente

This order too does not seem to be reducible to a semantic scope restriction, as nothing apparently prevents a Terminative predicate from embedding a Habitual Aspect adverb. Cf. (16):

- (16) Gianni ha smesso di andare di solito a trovare suo padre la sera  
 G. stopped usually going to visit his father in the evening

All in all, it seems reasonable to conclude that the syntactic order of functional projections cannot be entirely reduced to the semantic scope relations holding among them.<sup>18</sup>

**6.5 Alleged parametric variation in the relative order of functional heads.** In the recent literature it is sometimes claimed that the relative order of functional heads is subject to parametric variation across languages. Interestingly, the cases which are brought up to support this conclusion all involve, in one way or another, the position of negation or of agreement w.r.t. other functional heads, especially Tense (cf. Laka 1990; Ouhalla 1988, 1990, 1991; Mitchell 1993, among others). I am aware of no claims in the literature to the effect that the relative position of Voice and Tense morphemes, or of Aspect and Tense morphemes, or of Tense and speech act Mood morphemes, is parameterized across languages. The evidence reviewed in chapter 3 above also pointed to the conclusion that even within each category (Mood, Tense, Modals, and Aspect) there is a rigid universal order of heads, apparently not open to parametric variation.

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<sup>18</sup>Of course, the cooccurrence of functional elements may well be affected by their semantics. That is, certain combinations may be "filtered out" on purely semantic grounds. For example, it is plausible to think that the incompatibility between Retrospective Aspect and non anterior Tenses (*\*He will recently laugh*) arises from purely semantic incompatibilities. This, as well as other such cases, deserve a separate study.

Given the evidence reviewed in chapter 5 for the variable (and multiple) positioning of NegPs and DP-related projections, the attested variation concerning negation and agreement should be expected, and, more importantly, should not lead one to the conclusion that parametric variation generalizes to all functional heads.

As noted, it is possible to interpret the different (or multiple) positioning of negation and agreement as stemming from a 'spell-out' difference: whether a language expresses overtly a lower or higher Agr or Neg (or more than one).<sup>19</sup> This might be the case of Turkish and Berber, as discussed in Ouhalla (1990,189,192f; 1991,136ff):

- (17)a ur-ad-y-xdel Mohand dudsha (Berber = (9)b of Ouhalla 1990,189)  
 neg-will-3ms-arrive M. tomorrow  
 'M. will not arrive tomorrow'  
 b Kimesenin geç gelmesini iste-me-di-ler (Turkish =(9)a of Ouhalla 1991,57; from Kornfilt 1985)  
 nobody late come want-NEG-PAST-3Pl  
 'They did not want anyone to come late'

According to Ouhalla, the difference between the two languages (whereby negation is inside Tense and Agreement in Turkish, and outside Tense and Agreement in Berber) suggests the parametric difference in underlying structure between the two languages shown in (18):

- (18)a [<sub>AgrP</sub> Agr [<sub>TP</sub> Tense [<sub>NegP</sub> Neg [<sub>VP</sub> V ]]]] (Turkish)  
 b [<sub>NegP</sub> Neg [<sub>TP</sub> Tense [<sub>AgrP</sub> Agr [<sub>VP</sub> V ]]]] (Berber)

This is not particularly surprising, as noted, as the difference involves the position of negation and of agreement which can vary even within the same language.<sup>20</sup>

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<sup>19</sup>This does not exclude the possibility that there may be prevalent tendencies in the positioning of negation or agreement. For example, from Bybee's (1985,35) study, it appears that (person) Agreement suffixes are more frequently outside Tense and Mood suffixes than viceversa (in other words, that agreement is marked more frequently on a DP-related projection higher than the Mood and the Tense projections than in a lower one).

<sup>20</sup>It is, however, not entirely clear that the difference between the two languages should be so interpreted. Note that a further difference must be assumed: that heads *left*-adjoin in Turkish, but *right*-adjoin in Berber, to the next higher head (the latter possibility being, in fact, unavailable in the more restrictive antisymmetric framework). Much depends, in any event, on the proper analysis of prefixation, which is not yet fully understood. If prefixation in Berber were of the Navajo type (cf. §3.6), with successive raising of a null auxiliary to the various functional heads, followed by cliticization of the result to the main verb ([Aux]-neg-tense-agr#Verb), the two languages would have exactly the same underlying structure (note that the linear order of the affixes indeed is the same in the two languages: neg-tense-agr). This, however, appears dubious, given the possibility for clitics to intervene between Neg and Tense. Compare (17)a in the text with (i) below:

(i) ur-tn ad-y-agh (= (27)a of Ouhalla 1988,40)  
 NEG-them will-agr-buy  
 'he will not buy them'

Perhaps the negative element left-adjoins to the clitic, and the other heads cliticize (phonologically) to the main verb. I leave the question open.

**6.6 Hierarchies of non-clausal functional projections.** A systematic examination of the functional projections embedding other phrases (PPs, NPs, APs,...) is out of the question here. The brief survey below, based on the partial results achieved in some of these areas, has the limited goal of rendering it plausible that similarly rigid hierarchies exist in non-clausal phrases as well.

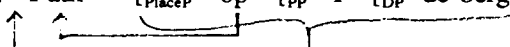
Take PPs. Building on Riemsdijk (1978, 1990), Koopman (1993) proposes a quite articulate internal structure for Dutch (Germanic) PPs; one which contains both lexical and functional projections. Simplified in part, her proposal amounts to assuming an extended projection made up of a PP, dominated by a first functional layer (PlaceP), containing prepositions of static location, dominated by another functional layer (PathP), containing prepositions marking direction or path (cf. also Jackendoff 1990):<sup>21</sup>

(19) [<sub>PathP</sub> Path° [<sub>PlaceP</sub> Place° [<sub>PP</sub> P° DP ]]]

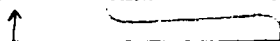
From this concatenation of head-initial phrases various possibilities found in Dutch are shown to be derivable by head-to-head raising and/or complement-to-spec raising. Cf. (20):<sup>22</sup>

(20)a (P DP) [<sub>PathP</sub> Path° [<sub>PlaceP</sub> op [<sub>PP</sub> P° [<sub>DP</sub> de tafel ]]]] (op de tafel)

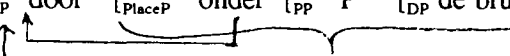
b (DP P) [<sub>PathP</sub> Path° [<sub>PlaceP</sub> op [<sub>PP</sub> P° [<sub>DP</sub> de berg ]]]] (de berg op)



c (P DP P) [<sub>PathP</sub> door [<sub>PlaceP</sub> onder [<sub>PP</sub> P° [<sub>DP</sub> de brug ]]]] (onder de brug door)



d (DP P P) [<sub>PathP</sub> door [<sub>PlaceP</sub> onder [<sub>PP</sub> P° [<sub>DP</sub> de brug ]]]] (de brug onderdoor)



Apparently, the same relative scope of Path and Place is found in English, and Romance (where, as a norm, neither heads nor complements raise overtly):<sup>23</sup>

(21) [<sub>PathP</sub> From [<sub>PlaceP</sub> out [<sub>PP</sub> of [<sub>DP</sub> the darkness ]]]]

(22) [<sub>PathP</sub> Da [<sub>PlaceP</sub> dietro [<sub>PP</sub> di [<sub>DP</sub> noi ]]]]  
(lit.) From behind of us

<sup>21</sup>She in fact provides evidence for the existence of other functional projections, from which I abstract here. These host either degree elements (*vlak*, *pal* 'right', etc.) or *er* proforms. The presence of the former elements, in particular, interacts in complex ways with PP internal movements.

<sup>22</sup>For ease of exposition I put the lexical elements directly in Place° and Path°. See Koopman's article for more careful discussion.

<sup>23</sup>Limited cases of head-to-head incorporation are however found in English, where such (Place+Path) compound prepositions as *into*, *onto* are plausibly derived by left-adjointing the lower (Place) head *in/on* to the higher (Path) *to*.

More interestingly, the same relative scope of  $\text{Path}^\circ$ ,  $\text{Place}^\circ$  and  $\text{P}^\circ$  is found to hold in "head-final" Lezgian if its different "locative Case" suffixes are analysed as bound  $\text{Path}^\circ$ ,  $\text{Place}^\circ$  and  $\text{P}^\circ$  morphemes, forcing successive incorporations of the head N (of the DP complement) to yield the mirror image sequence of (23):<sup>24</sup>

(23)  $\text{N-suff}_p\text{-suff}_{\text{Place}}\text{-suff}_{\text{Path}}$

As shown in (24) below, taken from Riemsdijk (1996, ex. (35)), after Haspelmath (1993), three locative Case suffixes are clearly identifiable: the outermost, when present, indicates *direction* (either TO or FROM), the middle *location* (AT, BEHIND, UNDER, ON or IN), and the innermost is an "oblique stem marker", which van Riemsdijk suggests should be considered as the "bound equivalent of [the] dummy preposition[s]" *of* (of English) and *de* (of French):

(24)	Adessive:	<i>sew-re-w</i>	at the bear
	Adelative	<i>sew-re-w-aj</i>	from the bear
	Addirective	<i>sew-re-w-di</i>	toward the bear
	Postessive	<i>sew-re-q<sup>h</sup></i>	behind the bear
	Postelative	<i>sew-re-q<sup>h</sup>-aj</i>	from behind the bear
	Postdirective	<i>sew-re-q<sup>h</sup>-di</i>	to behind the bear
	Subessive	<i>sew-re-k</i>	under the bear
	Subelative	<i>sew-re-k-aj</i>	from under the bear
	Subdirective	<i>sew-re-k-di</i>	to under the bear
	Superessive	<i>sew-re-l</i>	on the bear
	Superelative	<i>sew-re-l-aj</i>	off the bear
	Superdirective	<i>sew-re-l-di</i>	onto the bear
	Inessive	<i>sew-re</i>	in the bear
	Inelative	<i>sew-re-aj (sewrđj)</i>	out of the bear
	Indirective	(does not exist)	into the bear

(19), which is at the basis of (23) as well, is likely to be a fragment of the full internal structure of PPs.<sup>25</sup> The brief comparison of Germanic, Romance and Caucasian above is however sufficient to render the existence of a universal hierarchy of projections within PPs at least plausible.

In the case of noun phrases, typological evidence exists that demonstratives are in the Spec of a projection higher than that hosting numerals, which is higher than that hosting descriptive adjectives (cf. Cinque 1996, §4, and references cited there): ... $[_{XP} \text{Dem } X^\circ [_{YP} \text{Num } Y^\circ [_{ZP} \text{Adj } Z^\circ \dots \text{NP} ]]]$ .

<sup>24</sup>In this, I simply follow a suggestion of Riemsdijk's (1996), who however takes the suffixes to be the heads of head-final projections.

<sup>25</sup>In addition to the further functional structure discussed in Koopman (1993), it remains to be seen how best to represent more complex cases like *From out of the cold (through the tunnel) into the smoky room (he went)* (cf. Jackendoff 1973,351). Perhaps, PathP should be further split into distinct projections (of Origin, Path and Goal).

In turn, various classes of descriptive adjectives are found to cooccur in a certain order, which remains to be investigated more carefully (for some discussion and references, see Cinque 1994). Universal quantifiers head a projection higher than that hosting Demonstratives (Shlonsky 1991, Giusti 1991, 1993), with genitive arguments appearing in a number of specific places along the hierarchy. Noun phrases too thus appear to have a rich universal functional structure.

The internal structure of Adjective Phrases (and Adverb Phrases) is perhaps the least studied. Although recent work by Zamparelli (1995) and Corver (1997) suggests the presence of an internal relatively rich functional structure, not much comparative work is available.

In spite of that, even the quick survey above encourages the conclusion that universal hierarchies of functional projections are likely to be found not only in sentences but throughout all major phrases.<sup>26</sup>

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<sup>26</sup>Recent work suggests that the same may be true of the CP "space", which appears to be composed of different projections functionally specialized (Brody 1990, Vikner (1991), Hoekstra (1992, 1993), Müller and Sternefeld (1993), Watanabe (199 ), Alber (1994), Platzack (1994); Rizzi (1995), among others). On the basis of Romance and Germanic, Rizzi (1995) proposes the hierarchy of projections in (i):

(i) [<sub>ForceP</sub> Force [<sub>TopicP</sub> Topic [<sub>FocusP</sub> Focus [<sub>FiniteP</sub> Finite [<sub>IP</sub>...

This order appears to have wider crosslinguistic validity, with topic phrases systematically preceding focalized phrases.

ForceP may be embedded in another CP layer, of pure subordination (cf. Bhatt and Yoon 1991, Rizzi 1995), and some evidence suggests the existence of an InterrogativeP, distinct from FocusP (between this and FiniteP). Cf. the Hungarian evidence discussed in Puskas 1996, and such cases as (ii) in Italian, where a focalized object cooccurs with, and precedes, an interrogative phrase:

(ii)a Mi chiedo GIANNI chi possa aver osato invitare!

I wonder G. (focalized object) who (subj) can have dared invite

b \*?Mi chiedo chi GIANNI possa aver osato invitare!

The COMP "space" may turn out to be richer still. Cf. Beninca' (1996) for evidence of a wh-exclamative CP apparently higher than TopicP, Puskas 1996 and Poletto (1997).

## CHAPTER 7

### Conclusions

The central concern of this study has been the functional structure of the clause. The evidence reviewed here bearing on this question has pointed to the existence of a particularly rich functional make-up of the sentence; one which does not vary across languages.

The starting points for this conclusion have been two *prima facie* unrelated observations.

The first was that the various classes of adverbs (AdvPs) enter a rigidly ordered sequence; the same across languages.

The possibility (manifested overtly in some languages) of having a head to the immediate right and left of each such AdvP was interpreted as evidence that they occupy the specifier position of distinct phrases: an empirical conclusion which converges with the purely theoretical conclusion of Kayne (1994, chapter 3, fn.31).

The second, crucial, observation was that, if one sets aside agreement and negation, the order of the head morphemes encoding the different types of functional notions in the clause (mood, modality, tense, aspect, and voice) is also rigidly fixed, and apparently invariant across languages. This was seen to hold whether the head morpheme was a suffix, an auxiliary, or a particle, the order of suffixes being the mirror-image of the order of the auxiliaries and particles (of "head-initial" languages).

More important still was the subsequent observation that the two hierarchies (that of AdvPs, and that of functional heads) match systematically, from left to right.

The transparent semantic relation holding between each adverb class and the contiguous head morpheme to its right (when the two hierarchies are matched) has been taken to suggest that each AdvP is the specifier of the phrase projected by the corresponding functional head morpheme.

Even if AdvPs, in certain languages, correspond to particular functional heads which receive no morphological realization, the functional projection was nonetheless taken to be structurally present. This is in line with the restrictive view that language variation reduces to differences in the morphological and lexical realization of the same abstract underlying notions.

The indisputable variation which agreement and negation show in their collocation with other functional elements was taken not to weaken the conclusion that UG imposes a rigid hierarchy of functional projections. Agreement and negation stand out as rather special among the other functional elements since they can occur in several distinct positions even within the same language, sometimes simultaneously.

It is thus possible to regard their different positioning as a pure morphological effect: whether they are lexically realized in one or the other of the various potential positions they can occupy.

More tentatively, I have also suggested that the same, rich, hierarchy of functional projections (possibly, on the order of 40) is present in all languages, and in every sentence of each language, even when no morphological material overtly realizes the corresponding head or specifier.

The basic motivation for that assumption resides in the intrinsic make-up of functional projections. If each comes with two values, a default and a marked one (the latter typically being realized



morphologically more often than the former), then even the simplest sentence of any one language can be taken to contain the entire array of functional projections (with default values).

Although many (perhaps, most) of the relative orders among functional elements may ultimately reduce to scope relations among what we can take to be different semantic operators (over the predicate-argument nucleus of the sentence), not all orders are so explicable, it seems. In this case, the hierarchy of functional projections may turn out to be a property of the computational component of UG.

There is no need to emphasize the incomplete and provisional character of most of the conclusions reached in this study. Many specific claims will have to be modified; others rejected. Yet, should the hierarchies of AdvPs and of functional heads indeed prove to match systematically, we will have gained a new insight into the structure of UG.

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