

ISSUES IN ADVERBIAL SYNTAX

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

In work of the early '90's, later merged into Cinque (1999), I suggested that adverbs should not be seen as accessory appendices to clause structure (as the traditional notion of "adjunct" would suggest), but rather as an integral part of it, despite their general optionality. Much as inflectional morphology, functional particles, and auxiliaries were at the time considered to be the overt manifestation, in head format, of the functional portion of the clause, AdvPs, I argued, could be seen as the overt manifestation of the same functional distinctions in specifier format. The main evidence for their belonging to the functional make-up of the clause was the observation that cross-linguistically the number and type of the different classes of AdvPs and their relative order appears to exactly match the number, type and relative order of functional heads morphemes (cf. Cinque 1999, chapters 2,3 and 4).²

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

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

Work on first language acquisition of functional elements and of adverbs suggests a similar conclusion. Just as the acquisition (or maturation) of aspectual distinctions precedes that of temporal ones (Antinucci and Miller 1976; Weist 1986; Schlyter 1990), so are lower aspectual adverbs apparently acquired earlier than temporal (and still higher) ones. In a longitudinal study of a group of bilingual Swedish/French children, Schlyter (2001) found that in the earliest stages there

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

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

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

isn't "any evidence other than [for] the most low-level [adverbs]. In [...] later stages, adverbs specifying aspect of different kinds appear, and at still later stages, adverbs specifying still higher F[unctional] C[ategorie]s, such as Tense, appear. The adverbs seem to appear simultaneously with the corresponding evidence from verb morphology for the same categories" (section 7). Whether or not such findings can be construed as evidence for a genetically determined order of maturation of functional categories (Ouhalla 1991, cited in Clahsen, Eisenbeiss and Vainikka 1994,87), they do show that the emergence of adverbs in first language acquisition is closely tied to that of the functional heads they correspond to; another indication of the intrinsic functional character of adverbs.⁴

2. Semantic scope and the "adjunct" approach. As already mentioned, a number of works have recently appeared which purport to show the superiority of the traditional adjunct analysis of adverbs (and adverbials) over the "functional specifier" analysis. Their basic claim is that, if the relative order among adverbs is attributed to independent semantic scope principles (belonging to the conceptual-intentional interface), their syntax can be drastically simplified, by essentially allowing, as in the traditional approach, free adjunction to any category (cf., e.g., Ernst 2002,13). Appealing though it is in its simplicity (actually tempered in analyses like Ernst's by the necessary addition of lexical specifications for individual adjuncts and of principles of Directionality and Weight -cf. Ernst 2002, 97 and 441), this approach falls short, I think, of accounting for certain crucial properties of adverbial syntax.⁵

As hinted at in Cinque (1999,224fn10 and related text), a purely semantic scope principle of the conceptual-intentional interface provides by itself no understanding of why we find in the languages of the world the specific classes of adverbs (and corresponding functional heads) that we find, rather than some different assortment. Surely there are many more semantic notions in our conceptual-intentional world than those that receive grammatical expression (are grammaticalized) in the languages of the world. So, for example, one finds evidential adverbs and evidential mood morphology (expressing the speaker's source of information for his/her assertion), but as far as I know no language grammaticalizes, through verbal morphology, particles, or adverbs, the degree of importance the speaker attributes to his/her assertion (whether what he/she says is important, or not so important: e.g. *You should importantly leave* = What I am saying (that you should leave) is important), nor the speaker's sentimental attitude toward his/her assertion (whether what he/she says is said with love or with hate: e.g. *John is lovingly a coward* = I am saying it with love that John is a coward), nor many other imaginable notions. Clearly, it is an 'accident' of evolution if UG has come to look the way it looks, with certain functional distinctions (and related adverb classes) rather than others. This must be encoded in the functional portion of the UG lexicon, and it seems

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

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

reasonable to require that there be a formal means to relate the functional head distinctions to the corresponding AdvP distinctions, irrespective of the possibility that the relative scope relations among such UG entities are ultimately rooted in a more general cognitive order of scope among them.

able to adjoin to TP if T contains a finite V (and the dialectal variation in this regard is quite formidable).⁹

In Cinque (1999, chapter 2) I proposed that the above mentioned implications could be captured by assuming V to raise to (progressively higher) head positions interspersed among the adverbs.¹⁰ Comparable remarks hold for the ordering restrictions between adverbs and arguments (and their interpretation). Once again the putative semantic principle governing the scope relation between two adverbs would have nothing to say about the order of the subject, or the direct object, with respect to each single adverb in a language, or the different orders among them found in different languages. For discussion, see Cinque (1999, chapter 5)

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

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

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

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

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

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

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

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

(i)a Hans sollte *wann wo* darüber vortragen (Frey 2000,113)

H. should sometimes somewhere about that talk ‘He should talk about it somewhere sometimes’

b *Hans sollte *wo wann* darüber vortragen

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

arguments and additional participant adjuncts (Cinque 1999,2002).¹³ Even if such organization of the clause may ultimately prove to reflect the semantic necessity for certain notions to be in the scope of other notions, it does not follow that Narrow Syntax should be amorphous. The fact that identical ordering conditions hold among adverbs in the clause (.probably quickly..), and the corresponding adjectives in the DP (.probable quick..) is no argument to impose the poorest structure possible (adjunction).¹⁴

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

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

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

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

b Unfortunately John obviously finished all his money

The FEO model also differs in corresponding to syntactic structure in a looser, and variable, way. So, for example, Ernst (2002,38) takes the sentences in (ii)

(ii)a She cleverly has hired a bodyguard

b She has probably hired a bodyguard

where an event-related adverb like *cleverly* precedes the auxiliary while the proposition-related adverb *probably* follows the auxiliary to indicate that the event zone (which is lower and inside the proposition zone) can stretch in the syntactic structure (“the top position of the middle zone in some sentences (*cleverly* in [(ii)a]) is above the lowest position of the highest zone in other sentences (*probably* in [(ii)b])”). Other recent works recognizing different zones in the functional structure of the clause (with semantic ordering restrictions imposed within each zone), are Frey and Pittner (1998), Frey (2000), Pittner (2000), and Tenny (2000).

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

(i) die [vielleicht tatsächlich jetzt hier noch nicht wirklich ganz reife] Banane
the maybe indeed now here yet not really fully ripe banana

Shaer (1998) claims that the same ordering restrictions hold for the corresponding nominalizations (*the probability of the quickness..* vs. **the quickness of the probability..*); but this is much less clear. In fact, despite the strict ordering between *probably* and *frequently* (cf. **He frequently has probably travelled*), both *the probability of the frequency of their collision* and *the frequency of the probability of their collision* appear to be possible, suggesting that in nominalizations different factors are involved.

Williams (2000,137) claims that the same ordering restrictions between two adverbs (say, *probably* > *nearly*) hold “even when the adverbs are not part of the same functional structure” but one is inside a PP (*probably*) and the other inside the main clause (*nearly*), and that this “radically undermines the notion that adverbs can be explicated in terms of clausal functional architecture”. Quite apart from the possibility of analysing *probably* inside a PP as a focussing adverb (hence merged as part of the clausal functional architecture, if Kayne 1998 is right), I find such cases as (i) possible (in which a lower adverb has been moved across *probabilmente* within a larger phrase):

(i) Gianni ha quasi investito i bambini accanto probabilmente/verosimilmente alla fermata dell’autobus

G. has nearly run over the kids next to probably the bus stop

3. Some apparent problems of the “functional specifier” approach.

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

(4) O Paulo l□ frequentemente e simpaticamente o livro à av□

P. often and nicely reads the book to the grandmother

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

(5)a *?Gianni legge non frequentemente ma simpaticamente il libro alla nonna

G. reads not frequently but nicely the book to the grandmother

b *?Gianni legge sia frequentemente che simpaticamente il libro alla nonna

G. reads both frequently and (lit. “that”) nicely the book to the grandmother

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

(6) *?Frequentemente e simpaticamente, non glielo legge

Frequently and nicely he does not read it to her

It thus seems that cases like (4) are not incompatible with the “functional specifier” approach.¹⁵

3.2 Adverbs as “complements”. In Cinque (1999, sections 1.3-4, and chapter 2) I discussed some evidence for taking the postverbal position of adverbs in cases such as (7)a-b below to be a consequence of the leftward movement of VP (or of a phrase larger than VP) across the adverb itself merged in a specifier position above VP, modifying Larson’s (1988, section 2.3; 1990, section 3.2) original “Light Predicate Raising” analysis.¹⁶ If this is correct, the adverbs in (7), which were taken by McConnell-Ginet (1982), Larson (1988,fn.11), Stroik (1990), and others, to be sisters of V, can actually be in specifier position, like all others, and thus present no problem for the “functional specifier” approach.

(7)a John saw Mary *recently*

b He hasn’t completely ruined it *yet*

¹⁵ Costa’s (2000) other arguments against the “functional specifier” approach bear even less force.

The contrast between (the Italian equivalent of) (4) and (5) is also unexpected under the alternative explanation suggested in Ernst (2002, section 3.9).

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

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

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

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

Note however that, even under a Larsonian analysis of the VP, complements can be merged in specifier positions. For example, this is true of a direct object in the presence of a PP: [*I treated [John [v with respect]]*]. So, nothing prevents an adverb in specifier position from being obligatorily selected by the verb, depending on the verb’s semantics. Indirect evidence that this is correct for the manner adverb cooccurring with the verb *treat* comes from the following facts:¹⁸

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

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

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

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

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

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

No such conclusion is, however, warranted, as independent evidence exists that *frequently/often/rarely/etc.* occur in two distinct positions, one above and one below *wisely*, *suddenly*, *already*,

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

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

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

(i)a Il maltempo è durato (in montagna) *(un mese intero) ‘the bad weather lasted in the mountains a whole month’
b E’ vissuto *(in montagna) (un mese intero) ‘he lived in the mountains a whole month’
c Ha trascorso *(in montagna) *(un mese intero) ‘he passed in the mountains a whole month’

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

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

willingly (and other adverbs). See Cinque (1999,26ff), who cites the simultaneous occurrence of two such adverbs in the same sentence as one of the arguments for this conclusion:

- (11) She rarely was suddenly (being) frequently rejected by the publishers
frequently

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

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

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

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

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

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

(i)a Habituellement ils regardent fréquemment la télé ‘they usually watch TV frequently’

b Fréquemment ils ont regardé habituellement la télé ‘Frequently they usually watched TV’

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

(ii) D’habitude ils regardent habituellement la télé

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

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

²² Nilsen (this issue) notes that in Norwegian *alltid* ‘always’ may both follow and precede *muligens* ‘possibly’, and suggests that adverb ordering may after all be non linear (i.e., not transitive, antisymmetric, and connected). Whether this is the correct conclusion, or is an effect of two distinct usages of *muligens*, or perhaps of the focalization of *alltid* across *muligens* remains to be seen.

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

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

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

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

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

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

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

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

²³ Rather than “stacking”, some refer to this second kind of cases as cases of iterability of adverbials (possible only with a subset of them). Ernst (2002) suggests that iteration is possible with “adjuncts that can be conceived of as ‘nested’” (p.135), and takes it to be a problem for the “functional specifier” approach. But in the absence of a deeper understanding of the phenomenon, I think that such cases can hardly be considered anyone’s exclusive problem.

I take the fact that the remnant in (13) contains at Spell-Out a trace of the V not c-commanded by the V in second position not to be problematic.

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

- (17)a He has more carefully (*than anyone else) analysed it
 b Er hat es sorgfältiger (als jeder andere) analysiert

- (18) How many more people (than you thought) came to the party?
 (19) Many more people (than I thought) came to the party

The argument does not carry much force as little is understood of this effect. I will nonetheless venture an analysis which is compatible with the generation in Spec of adverbs; one that capitalizes on the correlation with head-initiality and head-finality pointed out by Haider.

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

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

The impossibility of a pre-verbal positioning of *than anyone else* in English would then follow, in a kaynean derivation, from the fact that *than* in (20b) attracts its complement (→ ... *than anyone else... [more carefully t] analysed it*), and from the further movement of the remnant to the Spec of *than*: *[[more carefully t] analysed it] than anyone else t*.²⁵

The different order in German follows if we analyse head-final (German) clauses as eventually derived by extraction of the V and then movement of the entire remnant past the V:

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

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

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

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

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

²⁵ *He has analysed it more carefully than anyone else* is instead derived if the VP [*analysed it*] moves past *more carefully...* before the other movements.

(22)

	IP	
DP		I'
	I	VP
		VP
	V	PP ₁
		PP ₂

(23)

	IP		(Larson 1988, ^{fn49} ; Kayne 1994,69ff; Chomsky 1995,333)
DP	I'		
	I	VP	
		V'	
		V	VP
		PP ₁	V'
			V PP ₂

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

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

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

²⁷ The relevant facts suggesting c-command of the PP on the right by the PP to its left are given below:

(i)a John spoke to Mary about *these people* in *each other's* houses on Tuesday (Pesetsky 1995,172)
b *John spoke to Mary about *each other* in *these people's* houses on Tuesday

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

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

(iv) PP

P'

PP

P'

about these people in each other's houses

The paradox can be seen to dissolve if, as I argued in Cinque (2002a), (22) is not a merge, but a derived structure; derived (in head-initial languages) from a structure essentially like ... PP₂ ... PP₁ ... VP ... by rolling up the VP around the lowest PP; then taking the resulting structure [VP PP t] and rolling it up around the next higher PP ([[VP PP₁ t] PP₂ t]), and so on; in ways reminiscent of Barbiers' (1995) intraposition analysis of Dutch postverbal PPs. In fact, as Barbiers notes, this derivation can also account for the mirror image effect of the order of PPs in head-initial and head-final structures (and languages).²⁸

The c-command puzzle which lead Pesetsky to propose "cascade structures" can instead be solved if the ... PP₂ ... PP₁ ... VP structure to which the roll up derivation applies in head-initial structures and languages is itself derived from a structure in which the DP complements of P₂ P₁... are merged above VP without their respective prepositions, themselves merged higher up, above the respective Case Phrases to which each DP moves, as proposed by Kayne (2002a):

(24) P₂

P₁

DP₂

DP₁

VP

The attraction of DP₁ to the CaseP related to P₁ before the attraction of DP₂ to the CaseP related to P₂ allows binding of a DP merged higher (say, a locative DP₂) by a DP merged lower (say, a goal DP₁). For more detailed discussion I refer to the forthcoming written version of Cinque (2002a).²⁹

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

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

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

²⁸ Like the postverbal position of high adverbs in VO languages (*John left, probably*), postverbal PPs in Dutch are typically deaccented (Zwart 1997,96; Koster 1999). This may suggest that the roll-up is across an IP-initial positioning of the PPs, rather than across their lower positioning above VP, as is the case in ordinary VO languages.

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

²⁹ In that paper, I also provide evidence that, contrary to what is claimed in Cinque (1999,section 1.5) and Ernst (2002, section 6.4), "circumstantial" (or "participant") PPs are also rigidly ordered, as already suggested in Nilsen (1998). This is visible only when scrambling of the PPs is blocked (e.g., when they are part of an idiom chunk; when they are proforms, which resist scrambling, like *wann*, *wo* in German, *der*, *da* in Norwegian, etc.).

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

- (25)a He has <ever since> stopped smoking <ever since>
 b He has <*ever since he was thirteen> stopped smoking <ever since he was thirteen>

- (26)a Maria a <très lentement> mangé sa soupe <très lentement>
 b Maria a <*d'une manière lente> mangé sa soupe <d'une manière lente>

- (27)a Gianni si è <brevemente> trattenuto <brevemente>
 b Gianni si è <*per breve tempo> trattenuto <per breve tempo>

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

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

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

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

6. Clause initial adverbs and adverbials.

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

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

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

³² The ungrammaticality of (28) cannot due to the fact that it contains redundant information. A sentence like *In futuro, Gianni avrà più fortuna* 'In the future, G. will be luckier', where both the verbal form and the adverbial PP refer to a period of time in the future, though redundant, is perfectly grammatical. The same is true of cases of clitic doubling. Another indication that the AdvP and the corresponding PP are merged in the same position may be given by scope considerations. The adverbial PP, though invariably in sentence-final position, appears to have the same scope properties with respect to other AdvPs as the corresponding AdvP. Just as *ever since* in (i) takes scope over *no longer*, so does *ever since he was thirteen*, even from a sentence-final position ((ii)):

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

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

(i) Gianni ha rapidamente alzato il braccio con (grande) rapidità 'G. has rapidly raised his hand with (great) rapidity'
 But here there is evidence for two independent positions of merge of the adverb (on such cases as: *John has quickly raised his hand quickly*, see Travis 1988,292; Cinque 1999,93).

³⁴ These considerations may carry over to DP adverbials, which also cannot appear sentence-internally (in head-initial languages) (though some can in more careful styles – cf. Haegeman 2001, and fn.31 above). If the *-ly* (and *-mente*) which attaches to adjectives (possibly to APs) is nominal in nature (Kayne 2002b,fn.2), it does not need a P to satisfy its Case requirements. The same would have to be true for invariable adverbs like *spesso* 'often' if, as Kayne (2002a,fn.46) suggests, they are also hidden DPs. Also see Manninen (1999) for a uniform analysis of manner DPs, APs, CPs and AdvPs as KasePs.

³⁵ Though some cannot. See below for discussion.

So, for example, if an AdvP in its position of merge can show up clause-initially due to the fact that no other constituent (say, the subject DP and the V) crosses over it (cf. Cinque 1999, chapter 5), then the initial position can be one of a number of structurally different positions of merge, depending on the class of the AdvP.

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

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

(29) Mario i dize che *('I) ze partio

M. they say that he (clitic) has left ('M. they say has left')

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

(30) Mario geri ze partio presto

M. yesterday is left early ('Yesterday M. left early')

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

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

(31) Geri Mario ze partio presto

Yesterday M. is left early ('Yesterday, M. left early')

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

We know that in addition to Topic and Focus positions, AdvPs access a third position in the CP field; one which is lower than the positions targeted by topicalized, focussed and wh- phrases. Rizzi (2002) discusses various pieces of evidence for distinguishing such a position (which he labels "Modifier Phrase") from the more familiar positions occupied by topicalized, focalized and wh- phrases.

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

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

(32) Rapidamente, qualcuno farà sparire i documenti

Quickly, someone will have the documents vanish

(33) Rapidamente, nessuno farà sparire i documenti

Quickly, nobody will have the documents vanish

(34) RAPIDAMENTE, qualcuno farà sparire i documenti

Quickly (focus), someone will have the documents vanish

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

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

(35)a Rapidamente, qualcuno farà sparire i documenti (= (32))

Quickly, someone will have the documents vanish

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

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

b) it is sensitive to Relativized Minimality:³⁷

(36) *Rapidamente, qualcuno *probabilmente* farà sparire i documenti

Quickly, someone will probably have the documents vanish

(37) Rapidamente, nessuno *probabilmente* farà sparire i documenti

Quickly, nobody will probably have the documents vanish

(38) RAPIDAMENTE, qualcuno *probabilmente* farà sparire i documenti

Quickly (focus), someone will probably have the documents vanish

c) it is clause-bound.³⁸

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

(Si pensava che qualcuno potesse far sparire i documenti rapidamente, ma...)

One would think that someone could have the documents vanish quickly, but..

(i) Rapidamente, nessuno farà sparire i documenti

Quickly, nobody will have the documents vanish

(Qualcuno farà sparire i documenti troppo piano...)

Someone will have the documents vanish too slowly..

(ii) Forse, TROPPO RAPIDAMENTE, qualcuno farà sparire i documenti (non troppo piano)

Perhaps, too quickly (focus), someone will have the documents vanish (not too slowly)

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

[il contesto delineato fa pensare che non sia l'area di topic ma l'area di focus non contrastivo \(antepos. anaforica?\) Cfr si pensava che portassero un libro, e un libro \(*l'\) hanno portato](#)

[Solo che con l'oggetto non è possibile avere frase negativa \(in particolare con sogg. nessuno\)](#)

[competono per la stessa posizione in CP? \(pensando che ci siano posizioni diverse per diverse categorie\).](#)

[Mi pare che Rapidamente qualcuno ecc. abbia una lettura quasi indistinguibile che significa 'rapidamente \(succederà che\)....' Se la frase è negativa è possibile se inserisci 'più' \(=smetteranno di far sparire ...\).](#)

[Quindi si può dire che si tratta dello stesso field di Focus \(2 posizioni diverse\). Mi pare che si possa fare a meno della Modifier position di Rizzi](#)

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

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

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

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

Likewise, in Italian (iii) does not have the same interpretation as (iv), suggesting that *domani* 'tomorrow' cannot have moved from the position occupied by *domani* in (iv), but interestingly it can have the same interpretation as (v), suggesting that movement is possible from a clause-initial position (cf. Cinque 1990, 89-94):

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

- (39) *Rapidamente, credo che qualcuno farà sparire i documenti
Quickly, I think that someone will have the documents vanish
- (40) Rapidamente, credo che nessuno farà sparire i documenti
Quickly, I think that nobody will have the documents vanish
- (41) RAPIDAMENTE, credo che qualcuno farà sparire i documenti
Quickly (focus), I think that someone will have the documents vanish

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

- (42)a Maria mica prende il treno
M. not takes the train
- b *Mica Maria prende il treno
Not M. takes the train
- c *Già Maria è di ritorno, per le una
Already M. is back, at one o'clock
- d *Più Maria non mi pensa
No longer M. thinks of me
- e *Ancora Maria gli parla
Still M. speaks to him
- f *Sempre Maria ripete le stesse cose
Always M. repeats the same things
- g *Appena Maria si era coricata, quando squillò il telefono
Just M. had gone to bed, when the phone rang
- h *Subito Maria mi avvertiva (no focus intonation on *subito*)
Immediately M. would call me
- i *?Brevemente Maria ci sta parlando della sua avventura
Briefly M. is telling us about her adventure
- l *Quasi Maria cadde dall'emozione
Almost M. fell for the emotion
- m *Completamente Maria distrusse tutto quello che aveva fatto fino ad allora
Completely M. destroyed all that she had done till then
- n *Bene Maria fece tutti i compiti
Well M. did her homework
- o *Presto Maria si alzava ogni mattina
Early M. would get up every morning

This can be made sense of if such AdvPs (as opposed to all higher ones) cannot be moved to ModiferP in the CP field. The fact that they can (with some exceptions) appear in front of the

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

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

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

subject if topicalized or focalized is then further evidence that Topicalization and Focalization should be kept distinct, as Rizzi proposes, from Preposing to ModifierP.⁴⁰

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

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

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

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

Cinque (1999, section 5.1) suggested that, assuming (as we must, for independent reasons) that Vs and DPs move upwards to different landing sites, the apparent multiplicity of adverb positions seen in (43)-(44) reduces drastically.⁴³ Of course, given the possibility of fronting an IP-internal AdvP to Rizzi’s ModifierP, some of the cases in (43)-(44) are open to two analyses. Consider (43) first. (43)a-c could, for example, be analysed as involving the IP-internal instance of the AdvP not crossed over by anything (the a. case), crossed over by just the subject (the b. case), or by both the subject and the first auxiliary (the c. case). Quite correctly the d. case is expected to be impossible as the raising of the second auxiliary across *probably* would also cross the trace left by the first auxiliary, in violation of (whatever derives) the Head Movement Constraint.⁴⁴

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

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

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

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

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

⁴⁴ Jackendoff (1972,81), Ernst (2002,380), among others, note that *probably* can marginally follow two auxiliaries when the second is *have*:

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

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

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

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

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

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

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

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

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

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

b They could have probably worked a bit harder

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

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