

Markus Grimsgaard Forsmo

## The Order of Adverbs: Comparing Cinque and Ernst

A comparative review of literature on the rigid order of adverbs.

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Supervisor: Andrew Weir

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## Abstract

In basic English clauses, the adverb *always* must usually come before the adverb *completely*, unless the sentence structure has been altered through some kind of movement operation. The question of how to account for this kind of adverb ordering has led to two camps within the linguistics community: one favouring the traditional adjunction approach; the other preferring a more ‘restrictive’ way of representing the syntax of adverbs. Around the turn of the millennium, two influential approaches emerged: Cinque 1999’s universal hierarchy of functional projections, arguing for an approach in which adverbs are located in specifier positions of functional projections, and Ernst 2002’s Scope theory, giving its support to the traditional free adjunction hypothesis by arguing for a more semantic-oriented approach to adverb ordering. The two books in which these were established – *Adverbs and Functional Heads* (1999) and *The Syntax of Adjuncts* (2002) – are the main focus of this thesis. Cinque 1999’s approach is found to be able to predict and satisfactorily account for the order of adverbs through a proposed rigid order of adverbs on the basis of a rich functional sequence, but is held back by a number of factors, most notably unsubstantiated phrasal movement. Conversely, Ernst 2002’ approach manages to predict and account for adverb ordering through several semantic principles and some syntactic ones, only held back by the difficulty in explicating its cognitive nature for empirical evidence. The comparison thus favours Ernst’s free adjunction approach over Cinque’s adverbs-in-specifier approach but also considers both plausible.

## Keywords

Linguistics, Syntax, Semantics, Lexicosemantics, Adverbs, Adverbials, Adjuncts, Order, Hierarchy, Guglielmo Cinque, Thomas Boyden Ernst, Functional projections, Functional sequence, Functional hierarchy, Adverb hierarchy, Adverbs-in-Specifier, Default vs. Marked, Cartographic approach, Feature theory, Scope theory, Scope, Free adjunction, Compositional rules, FEOs, FEO calculus, Manner Rule.

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## Abbreviations

AdvP	Adverb Phrase
Af	Affix
Asp	Aspect
Aux	Auxiliary
Comp	Complementizer
DP	Determiner Phrase
DP <sub>subj</sub>	Determiner Phrase of Subject
DP <sub>obj</sub>	Determiner Phrase of Object
E	Event time
F	Functional head
FP	Functional projection
FQ	Floating Quantifier
FREQ	Frequentative aspect
Fseq	Functional sequence
INFL	Inflection
IP	Inflectional Phrase
LF	Logical Form
MOD	Modal
NegP	Negation Phrase
OBJ	Object
PAST	Past tense
PF	Phonetic Form
PP	Prepositional Phrase
PredP	Predicate Phrase
SR	Semantic Representation
Spec	Specifier
Spec-	Specified events
Events	
SUBJ	Subject
T(/A)	Tense(/aspect)
V	Verb
VP	Verb Phrase
V <sub>stem</sub>	Verb stem

# 1 Introduction

‘Nobody seems to know exactly what to do with adverbs’ writes Thomas Boyden Ernst (2002, p. 1) in his book *The Syntax of Adjuncts*, a response to the various published theories on adverb(ial) distribution, particularly singling out the approach of Guglielmo Cinque in his book *Adverbs and Functional Heads* (1999). Both of these two works present widely different solutions to the problem of how to account for the rigid syntactic positionings of adverb(ial)s (e.g. *always* must come before *completely* in ‘He *always completely* finishes his paintings’), since there is a clear rigid order and free adjunction does not (immediately) explain it. This problem has been a topic of debate within the syntax community since the end of the eighties, partly due to a growing consensus on the fundamentals of functional elements and morphosyntactic features (Alexiadou, 2004; Shlonsky & Bocci, 2019). However, what exactly determines the syntactic order of adverb(ial)s in English and across all languages? Cinque 1999 posits a morphologically rich universal hierarchy of functional projections with adverbs in their respective specifiers, whereas Ernst 2002 writes in support of the traditional free-adjunction hypothesis, positing a theory in which lexico semantics take precedence over syntactic principles. In this thesis, being a comparative review, we will examine both of these publications and evaluate the strengths and weaknesses of the claims within. With this, some light will hopefully be shed on the debate about adverb(ial) ordering, which could potentially help develop the field.

This paper will review the essential content of each book, respectively, and end with a comparison of the two. Each book review will consist of an analysis followed by an evaluation, beginning with Cinque 1999 in chapter 2 and succeeded by Ernst 2002 in chapter 3. The comparison in chapter 4 will be based around the question of which approach is the most solid but will also tackle the question of accuracy. Relevant topics for the comparison are: empirical predictability and contradictory evidence; restrictiveness and simplicity; exclusivity, modularity, and credibility; and universality.

## **2 *Adverbs and Functional Heads: A Cross-Linguistic Perspective***

As an amalgamation of the central aspects and ideas from his articles since 1992, *Adverbs and Functional Heads: A Cross-Linguistic Perspective* (1999) was Guglielmo Cinque's first published book in which the so-called 'Cinque Hierarchy' was established. It has since been a cornerstone of the debate surrounding the distribution of adverb(ial)s, with Cinque advocating for the adverbs-in-specifier approach to syntax (rather than adjunct approach). Cinque has since published other similar works (see: Cinque, 2002, 2006) in which he further expands the 'Cinque Hierarchy' and his hypothesis on clausal functional projections. However, this paper will solely concern itself with *Adverbs and Functional Heads* (Cinque, 1999), as well as Ernst 2002. To delimit the scope of this analysis, only Cinque's own remarks will be evaluated; arguments and evidence referenced yet not discussed in Cinque 1999 (i.e. 'further readings') will be left out.

### **2.1 Cinque's intent and key premise**

In *Adverbs and Functional Heads*' preface, Cinque introduces the two (main) intentions of his book. The first is for the book to spur further research on adverb phrases (AdvPs) as 'the unique specifiers of distinct maximal projections, rather than as adjuncts' (Cinque, 1999, p. v). The second is to argue for a 'fixed universal hierarchy of clausal functional projections' (Cinque, 1999, p. v) in line with the Universal Grammar hypothesis. As hinted at by the subordinate clause of the former objective – 'rather than as adjuncts' – Cinque proposes an alternative to adjunction (of AdvPs), and he attempts to argue for its plausibility through establishing a relation between functional projections and the rigid order of adverb phrases (Cinque, 1999, ch. 4). The book's intentions are thereby interconnected, as their goals both support and heavily rely on each other. The following paragraph will explore his arguments in general terms before subsequent paragraphs discuss the specifics of his arguments.

That there is a rigid clausal order for both AdvPs and functional heads is the key premise of Cinque's argumentation, derived from empirical evidence found within a vast array of languages, though mostly focusing on the Romance languages Italian and French, and English (Cinque, 1999). The supposed hierarchal order of clausal functional projections is thus, for the sake of his argument, presented as twofold: on one hand is the rigid order of AdvPs; on the other hand is the order of functional heads. Cinque's use of the phrasal term 'functional heads' implies usage in the traditional sense, i.e. as syntactic heads that serve a functional purpose (unlike the conceptual semantics of lexical heads), and 'functional projections' as



projections headed by these functional heads. Also, important to note is that Cinque concerns himself with the **clausal** distribution of AdvPs and functional heads – in the sense that it involves the syntactic distribution within a single basic clause – as opposed to a ‘holistic’ distribution, where embedded clauses adhere to the same order, or a semantic distribution. This is due to his proposed hierarchy being rooted within the ‘functional sequence’ (fseq) of the clause – the rigid order of functional projections (e.g. CP-IP-VP) – which means that the hierarchy can repeat within itself in the case of a sentence containing subordinate clauses. Cinque’s argument is that the order of adverbs and that of functional heads overlap as overt manifestations of a morphologically rich functional sequence – that the link between the two reveals the non-overt projections of the functional sequence predominantly concealed by zero-morphology (Cinque, 1999, ch.6, p. 128). In other words, on the basis of functional properties and the AdvPs-in-Spec hypothesis, Cinque (1999, pp. 44-45) introduces AdvPs in the specifier positions of functional heads, which in turn explains the clausal distribution of AdvPs and reveals possible non-overt functional heads. He therefore establishes the two orders separately (AdvPs in chapter 1 and functional heads in chapter 3) in order to draw comparisons between the two and show that they indeed mirror each other (chapter 4). Before evaluating Cinque’s hypothesis as a whole, we will first take a look at its finer details, starting with the AdvP hierarchy.

## 2.2 Adverb ordering

### 2.2.1 Establishing the order of adverbs

In order to present his proposed order of adverb phrases (and by extension the order of functional heads), Cinque (1999, ch. 1) highlights the distribution of adverbs across a handful of languages, beginning with Italian and French. To determine the relative position of an AdvP within the hierarchy, Cinque tests adverbs against each other two-by-two by placing them in basic sample sentences, switching their positions around, and checking the resulting sentences for ungrammaticality (or degradation). See the following example:

- (1) a. Alle due, Gianni non ha *solitamente mica* mangiato, ancora. (1.1)<sup>1</sup>  
‘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’

---

<sup>1</sup> This number refers to the numeration the example has within the book it has been gathered from (here Cinque 1999).

This allows him to establish the hierarchy on empirical grounds. Important to note is that the rigid order actually concerns adverb *classes*, not the relative position of each and every possible adverb phrase. As an example, in line with Cinque 1999's methodology, imagine two adverbs A and B. If A comes before/higher in the sentence structure than B, (i.e.  $A > B$ ) the order  $*B > A$  should be ungrammatical. Through testing both, we can determine the relative order of the two (here:  $A > B$ ). However, if none of the orders are grammatical, then the two adverbs are most likely of the same class. Adverbs of the same class occupy the same specifier position, according to Cinque 1999. The Italian adverbs *solitamente* and *abituamente* are two such adverbs that Cinque 1999 suspects belong to the same class. Furthermore, since Cinque 1999's approach is based on the foundation laid by Kayne (1994), only one specifier is allowed per projection/head. Therefore, if two adverbs are adjacent, they must be in the specifiers of separate functional projections, unless one modifies the other (e.g. *very well*) (Cinque, 1999, pp. 3, 45). Here it is important to stress that Cinque advocates a *rigid* order: The AdvPs are (usually) locked in place. We will return to such exceptions as the previous example equation later.

- (2) a. Gianni non ha *mica sempre* vinto. (1.13)  
       'G. hasn't always won.'  
       b. \*Gianni non ha *sempre mica* vinto.  
       'G. has always not won.'
- (3) a. Ha *solitamente sempre* ragione lui. (1.14)  
       'He is usually always right.'  
       b. \*Ha *sempre solitamente* ragione lui.  
       'He is always usually right.'

Now imagine that we introduce a third adverb C, retaining the order  $A > B$ . If the order  $*C > B$  is proven ungrammatical and the opposite grammatical,  $A > C$  and  $*C > A$  should follow as 'true'. In the example (2b) above, the order *sempre > mica* is proven ungrammatical and *mica > sempre* grammatical. Considering the result of (1), i.e. *solitamente > mica*, the order *solidamente > sempre* should follow, as we see in (3). The order of the three is thus: *solidamente > mica > sempre*. This is the methodology which Cinque uses to determine the relative order of AdvPs (as well as functional heads).

## 2.2.2 Organization of the adverb order

Let us now look at how the AdvP order is arranged. Cinque divides it into two: a ‘higher’ and a ‘lower’ section. However, the definitions for these will be omitted, as they are rooted in Italian and are not required to understand the core of his argumentation.<sup>2</sup> To exemplify, here are the orders which Cinque provides for ‘lower’ (pre-VP) non-VP-complement AdvP classes in Italian and French (represented by AdvPs from the various classes):

- (4) Italian: (1.44a)
- 
- solitamente > mica > già > più > sempre > completamente > tutto > bene  
 di solito > neanche > poi > ancora > mai > parzialmente > niente > male  
 abitualmente > neppure > non > ancora

- (5) French: (1.44b)
- 
- généralement > pas > déjà > plus > toujours > complètement > tout > bien  
 habituellement > (pas) > encore > encore > jamais > partiellement > rien > mal

The functional properties/projections behind these adverbs will be presented after the hierarchy of functional heads has been discussed. A comparable order for English, compatible with those of the Romance languages above, is later in the book given as shown in (6) and (7) (Cinque, 1999, p. 34). See (8) for an example of how the order manifests in English.

- (6) ‘Higher’ Eng. order: (1.142)
- 
- frankly > fortunately > allegedly > probably > once/then

- (7) ‘Lower’ Eng. order: (1.142)
- 
- perhaps > wisely > usually > already > no longer > always > completely > well

- (8) a. *Allegedly*, John *completely* finished his painting.  
 b.(?) John *allegedly completely* finished his painting.<sup>3</sup>  
 c.\**Completely*, John *allegedly* finished his painting.  
 d.\*John *completely allegedly* finished his painting.

<sup>2</sup> A further specified representation of the divisions, including adverbials and some other material, is later in the book given as follows (for Italian): (Cinque, 1999, p. 16)

(i) ‘Higher’ (sentence) AdvPs > ‘Lower’ AdvPs > (DP<sub>subj</sub>) > (V) complements > Place, time, manner, etc. adverbials > (focused) ‘Lower’ AdvPs > de-accented material

For more information on this, see Cinque (1999, pp. 13-32).

<sup>3</sup> Most ‘higher’ AdvP can be found on both sides of SUBJ, explained in (2.5.3). The marginality of sentences like (8b) is accounted for by Cinque 1999 through scope. See Cinque (1999, pp. 25-28) for more on this topic.

### 2.2.3 Exceptions to the adverb order

Cinque 1999 (pp. 3-4) acknowledges six (generalized) exceptions to the AdvP order. He considers all of these to be innocuous to his hypothesis and posits solutions for all six (Cinque, 1999, pp. 4-11, 14-28, 30-33, 110-115). These can be summarized as follows:

- I. Modification: An AdvP modifying another AdvP can look deceptively out of order. However, they are then not a part of the outer clausal functional sequence.
- II. Focus-presupposition: When an AdvP in the lower portion of the clause is raised to a higher position along with other elements, it can raise past a canonically higher AdvP, thus misleadingly defying the order. However, the order is still retained through the trace left behind.
- III. Wh-movement: An AdvP wh-moved across another AdvP can seemingly defy the order in a similar fashion to II.
- IV. Deceptive co-occurrence: As previously discussed, when a word is ‘base-generated’ in two separate locations, but with different semantics and scope properties. They are therefore of different adverb classes (belonging to separate functional projections).
- V. Noninherently ‘focusing’ AdvPs: Some AdvPs (e.g. *properly*) allow for an alternative use as a ‘focusing’ AdvP, i.e. an AdvP that can directly modify a constituent. For example, *only* and *simply* are ordinarily used as ‘focusing’ AdvPs.
- VI. Parenthetical use: When an AdvP has undergone some kind of parenthetical process. Cinque does not offer any solution as to how ‘parenthetical use’ and ‘comma intonation’ work, but he claims that such cases are easily distinguishable.

I will not discuss them any more thoroughly, so I recommend reading the first chapter of Cinque 1999 (pp. 1-33) for a clearer picture.

### 2.3 The adverbs-in-specifier hypothesis

As implied by Cinque’s first intention (as stated in subheading 2.1), much of his hypothesis depends on the ‘adverbs-in-specifier hypothesis’ – an approach he proclaims has both conceptual and empirical backing (Cinque, 1999, p. 44-51). His supposition is that adverb (or ‘adjunct’) XPs inhabit the specifier position of functional projections, and he argues that evidence for this justifies doing away with adjunction entirely. Cinque’s first conceptual argument is that retaining adjunction whilst locating adverbs in the specifier position of functional projections is less restrictive than doing away with one or the other (Cinque, 1999, p. 44). His second is that locating AdvPs in necessarily left-branching specifier positions

allows for better understanding of the ungrammaticality of certain AdvP orders (in general) (Cinque, 1999, pp. 44-45).

For his empirical argument, Cinque looks to the ‘lower’ (pre-VP) AdvPs in Italian, which seem to suggest head positions between each AdvP, in accordance with Kayne 1994’s X-bar theory’s one-specifier-per-projection restriction (Cinque, 1999, pp. 45-46). The claim that adverb phrases are assumed to occupy fixed positions is vital to Kayne’s approach, thus also vital to Cinque’s order and his solutions to the six exceptions mentioned above. It furthermore implies that two co-occurring adverbs with the same surface form inhabit different specifier nodes and adhere to separate adverb classes.<sup>4</sup> Through testing an ‘lower’-AdvP-rich sentence with the past participle head *rimesso* in different locations for ungrammaticality (see (9)), he arrives at an AdvP-head rotation sequence (see (10)) which seems to provide evidence for a Spec-head relation (or at least an AdvP-head relation). This is because *rimesso* is a head; its landing positions (marked X in (10)) must therefore be head positions.<sup>56</sup>

(9) Cinque’s head test of an AdvP-rich sentence: (2.1)

- 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.’

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<sup>4</sup> Note that Cinque (1999, 2004) refrains from calling them homonyms, as he considers them the same ‘word’.

<sup>5</sup> The lack of an apparent head between *bene* and *tutto*, is countered with evidence from the Romance variant Logudorese Sardinian, where the (active) past participle can be found between the two words (or rather: their variants) (Cinque, 1999, pp. 45-46). Cinque also argues that the lowest landing position of the (active) past participle varies from Romance variant to Romance variant. He thus explains the exceptional behaviour of *bene* and *tutto* in standard Italian as a case of the past participle having to move past the two due to some yet unknown movement principle.

<sup>6</sup> *Di solito* of (9) is substituted by *solitamente* in (10). This is also present in Cinque 1999.



(rather than inflectional derivation) (Cinque, 1999, p. 53). Important to this analysis is (a generalized version of) Baker's Mirror Principle: This principle dictates that affixation reflects the functional projections within the functional sequence, with the order of affixes ordered away from the verb stem (e.g.  $Af_3 > Af_2 > Af_1 > V_{\text{stem}}$  or  $V_{\text{stem}} < Af_1 < Af_2 < Af_3$ ) (Cinque, 1999, p. 53-54). Affixes attached to the right side of the verb stem will follow a sequence that is the mirror image of a sequence assigned to the left. By looking at the order in which the suffixes in the previously mentioned languages come, and by aligning the different orders through the Mirror Principle, Cinque is able to gather evidence for the hierarchy. He is also able to discern distinctive functional properties which are uniquely realized in a few languages, otherwise seldom expressed with overt material (Cinque, 1999, pp. 52-56). This process, furthermore, incentivizes Cinque to split apart certain functional projections which have traditionally been seen as cross-linguistic equivalents. One such example is his proposed split of the epistemic and root modal projections, which have commonly been located in the same position. The evidence for this comes from the contrasting placement of the modal suffix(es) in Turkish (12) and Korean (13), along with 'double modality' in Scots English (14) and tense affixes in Una (of New Guinea) (15), thus incentivizing an order which differentiates epistemic from root modals (16) (Cinque, 1999, pp. 53-55).

- (12) Ku pwun-i caphi-si-ess-**ess-keyss**-sup-ti-kka? (3.1)  
the person-NOM catch-PASS-AGR-ANT-**PAST-EPISTEM**-AGR-EVID-Q  
'Did you feel that he had been caught?'
- (13) *Oku-y-**abil-ecek-ti-m***. (3.5b)  
*read-y-**MOD-FUT-PAST**-1sg*  
'I was going to be able to read'
- (14) a. He **should can** do it (= he likely can do it). (3.8)  
b. He **must can** do it (= he surely can do it).  
(*should/must* =  $Mod_{\text{epistemic}}$ , *can* =  $Mod_{\text{root}}$ )
- (15) a. Er bin-**kwan-de-darib**. (3.9a)  
she go-**FUT-3sg-PROBAB**  
'She might go.'
- b. Ni buk-**ti-nyi**. (3.9b)  
I sit-**ABIL-PRES**  
'I can sit.'
- (16)  $Mod_{\text{epistemic}} > T(\text{absolute}) > Mod_{\text{root}}$  (3.10)

### 2.4.3 Evidence from ‘closing’ inflectional languages

For ‘closing’ inflectional languages – ‘closing’ in that suffixes usually ‘close off’ words from further affixation, requiring more verbs to assign new suffixes – the order in which verbs are incorporated into a sentence is determined by whether the language is ‘head-initial’ or ‘head-final’ (Cinque, 1999, p. 57). ‘Head-initial’ languages like English and Spanish, where ‘leftward movements of nonheads [do not] apply successively’ (Cinque, 1999, p. 57), the order of suffixes (along with auxiliaries) can be taken as direct evidence for the order of adverbs. This is unlike ‘head-final’ languages like Hindi and standard German, where such leftward movement of nonheads will cause the suffix order to be the mirror image of the order in ‘head-initial’ languages (Cinque, 1999, pp. 57-58). With this in mind, Cinque can also infer parts of the order from ‘head-final’ languages.

### 2.4.4 Evidence from suffixes and auxiliaries, and mixed cases

Since free functional morphemes bar adjunction of the immediately lower head and prevents it from raising past to a higher position, Cinque argues that such morphemes in ‘head-initial’ languages directly reflect the functional hierarchy. On the basis of this, he continues to establish the order by examining various lesser known languages and creoles. Although interesting, we will skip the relatively straight forward examination of particles, as well as the examination of mixed cases (see: Cinque, 1999, pp. 58-70). Most importantly, Cinque arrives at (11), here repeated as (17):

- (17) Hierarchy of functional properties/projections: (3.96)
- Mood<sub>speech act</sub> > Mood<sub>evaluative</sub> > Mood<sub>evidential</sub> > Mod<sub>epistemic</sub> > T(Past) > T(Future) >  
Mood<sub>irrealis</sub> > Asp<sub>habitual</sub> > T(Anterior) > Asp<sub>perfect</sub> > Asp<sub>retrospective</sub> > Asp<sub>durative</sub> >  
Asp<sub>progressive</sub> > Asp<sub>prospective</sub> / Mod<sub>root</sub> > Voice > Asp<sub>celerative</sub> > Asp<sub>completive</sub> >  
Asp<sub>(semel)repetitive</sub> > Asp<sub>iterative</sub>

## 2.5 The universal hierarchy of clausal functional projections

### 2.5.1 Establishing the combined order of adverbs and functional heads

With a first approximation of the functional hierarchy established, chapter 4 marks the beginning of Cinque’s comparison of the rigid order of AdvPs and that of functional heads. By the end, excluding those heads that he admits still require more research, he arrives at this order for clausal functional projections (including both functional head and corresponding adverb): (Cinque, 1999, p. 106)



- (18) The hierarchy of clausal functional projections (a second approximation): (4.92)
- [ *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> [ *usually* Asp<sub>habitual</sub> [ *again* Asp<sub>repetitive(I)</sub>  
 [ *often* Asp<sub>frequentative(I)</sub> [ *intentionally* Mod<sub>volitional</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>PICompletive</sub> [ *well* Voice [ *fast/early* Asp<sub>celerative(II)</sub>  
 [ *again* Asp<sub>repetitive(II)</sub> [ *often* Asp<sub>frequentative(II)</sub> [ *completely* Asp<sub>SgCompletive(II)</sub>

To arrive at (18), Cinque cross-linguistically examines and compares the two previously established orders – the hierarchy of AdvPs and that of functional heads – with a somewhat similar procedure to the one he used to establish those orders (Cinque, 1999, pp. 77-106). The finer details of how Cinque matched the two orders are not important to this analysis (for details, see: Cinque, 1999, ch.4). Most important to note is that Cinque considers this an ‘approximation’: He is fully aware that the order shown above probably contains errors that need to be ruled out through further study.

### 2.5.2 Default vs. Marked hypothesis

In addition, the implications of this hierarchy of projections pose (at least) three questions: First, do different languages ‘contain’ different functional projections? Second, how can an adverb be present if the functional head is not? Third, how many types of functional heads should Universal Grammar allow? All of Cinque’s answers to these questions are rooted in his default-versus-marked hypothesis. What he proposes is a view in which every functional projection comes with two states: a ‘default’ (or ‘unmarked’) state and a ‘marked’ state (Cinque, 1999, pp. 128-134). The ‘default’ state has wider application, usually expressed through (non-overt) zero-morphology; the ‘marked’ state is a less frequent, more restricted, and more complex departure from the default state, usually expressed through overt morphology (see (19) and (20)) (Cinque, 1999, p. 128).<sup>7</sup> The ‘default’ state is normally taken as given unless the ‘marked’ state is expressed through overt morphology. However, the ‘default’ state can also be expressed through overt morphology, either via an overt head (less frequent) or an (overt) adverb reflecting the state of the functional projection.

<sup>7</sup> A state change also causes a semantic change within the sentence, yet Cinque does not discuss this in detail.

(19) An excerpt from Cinque's Default vs. Marked table: (table 6.1)

Functional head	Default	Marked
Voice	Active	Passive
Asp <sub>progressive</sub>	Generic	Progressive
Asp <sub>perfect</sub>	Imperfect	Perfect
Neg	'Positive' <sup>8</sup>	Negative
Mod <sub>epistemic</sub>	commitment	-commitment

(20) a. Prices rise. (6.2a)

Default: Voice (= active), Asp<sub>progressive</sub> (= generic), Asp<sub>perfect</sub> (= imperfect),

Neg (= 'positive'), Mod<sub>epistemic</sub> (= commitment)

b. Prices *must not have been being* raised. (6.2b)

Marked: Voice (= passive), Asp<sub>progressive</sub> (= progressive), Asp<sub>perfect</sub> (= perfect),

Neg (= negative), Mod<sub>epistemic</sub> (= -commitment)

Cinque answers the first and second questions (from the previous paragraph) through arguing for what he considers the 'stronger' stance on the topic: That the whole range of functional projections is an intrinsic property of Universal Grammar and that their heads are present in all sentences in all languages (Cinque, 1999, pp. 76, 106-107, 127-128, 132-133). However, he argues, not all languages realize the functional heads (or any adverbs of the associated adverb classes) as overt morphology, i.e. they might have zero-morphology in both states (Cinque, 1999, pp. 107, 133). What he presents as evidence for this claim is the existence of the adverb classes, their adherence to the 'Cinque Hierarchy', and their compatible and comparable relationship with clausal functional projections. In accordance with the adverbs-in-specifier hypothesis, if only a certain adverb (class) belonging to certain functional projection can appear as overt morphology and not the functional head, Cinque (1999, pp. 107, 132-134) notes, there is most likely no overt morphology available for the head in that language. Since the specifier cannot appear outside of its own predetermined projection, the adverb is in that sense evidence for a non-overt head.

Moreover, Cinque argues that in an imagined syntax where the existence of a functional projection is granted solely by the manifestation of overt morphology, the two sides of his proposed clausal functional hierarchy would have to be split apart, which would yield two distinct yet almost identical rule sets for each - 'An undesirable consequence [for UG]' (Cinque, 1999, pp. 106-107). His argument for keeping UG's syntax rich in functional

<sup>8</sup> Despite being referenced as functional operator with a marked state of 'negative', Cinque (1999, p. 130-131) does not actually include 'Neg' in his table. 'Positive' may therefore not be his preferred wording of the state.

projections is thus one of simplicity; although the many functional projections may seem to complicate syntax with an enormous amount of non-overt heads, if the adverb-in-specifier hypothesis is correct, the existence of non-overt functional projections may actually reduce the complexity of UG (Cinque, 1999, p. 107). Thus, he answers the third question by arguing that UG should allow for the least amount of functional projections able to explain every cross-linguistic contradiction, so long as the link between the hierarchies stands.

Cinque 1999 (pp. 127-128) additionally proposes that the hierarchy is primitive property of computational component, not directly related to semantic principles nor a sociocultural construct. Furthermore, he continues to argue that a wholly syntactic representation would be more restrictive and fitting than a semantic representation, a point which we will return to in chapter 4 of this thesis.

### 2.5.3 DP-related projections and negation

In chapter 5 of the book, Cinque 1999 attempts to answer how his functional hierarchy can coexist with and account for the movement and multiple positions of subject DPs, object DPs, floating quantifiers (FQs), and negation. At first glance, the special behaviour of these phrases seems to cause a problem for Cinque 1999's hierarchy of projections. However, Cinque endeavours to show that it is possible to establish an applicable hypothesis for each of these 'problems'. His solution is to posit the existence of DP-related functional projections dispersed within the clausal functional sequence, allowing for the 'higher' AdvP *allegedly* to move past the DP<sub>subj</sub> *John* in (21b) below (Cinque, 1999, pp. 108-126):<sup>9</sup>

- (21) a. *Allegedly, John* finished his painting  
b. *John allegedly* finished his painting  
c. (DP<sub>subj</sub>) > AdvP > DP<sub>subj</sub> > V > DP<sub>obj</sub>

The specifier positions of these DP-related projections function as landing spots for specific DPs and FQs, and some allow for 'base-generation' of NegPs. Although able to construct working hypotheses, Cinque 1999 (pp.115, 119, 120, 125-126) admits that his solutions are very speculative and require some 'patching'. For this reason, this thesis will not delve any further into this topic and will instead refer to following pages in Cinque 1999 for further reading: subject DPs, pp.110-115; object DPs, pp.115-116; FQs, pp.116-120; and NegPs, pp.120-126.

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<sup>9</sup> All 'higher' AdvPs (and some 'lower') are 'base-generated' above SUBJ in English (Cinque 1999, pp. 33-34, 110-115).

## 2.6 Analysis and evaluation

### 2.6.1 Overview

This division (2.6) will focus on evaluation of Cinque 1999's arguments, which will later be compared to Ernst 2002's arguments in section 4. The next six subheadings of evaluation (2.6.2 to 2.6.7) will present a couple of caveats to the approach, and they will be divided into the following subheadings: methodology; grammaticality and acceptability; cross-linguistic evidence; exceptions to the order of adverbs; speculative argumentation; and lingering questions. Conclusively, I will briefly sum up what I believe to be Cinque 1999's strengths and conclude this chapter.

### 2.6.2 Cinque's methodology

A slight drawback of the methodology presented in (2.2.1) – or rather Cinque's commentary surrounding it – is that more often than not Cinque 1999 only provides sufficient testing to support a certain order and not enough to ensure the reader that there are no other grammatical orders available (within an example sentence). If his example sentences had included more adverbs than two or three, as they rarely do, Cinque's evidence would have been stronger. Although this two-by-two testing is to be expected given that Cinque attempts to convey an idea without too much digression, the reader is left to wonder whether the barred orders that Cinque 1999 presents persist even if more adverbs are introduced and moved around. Nonetheless, Cinque manages to present his logic in a reasonable and straight-forward way. His methodology is communicated well in a step-by step manner, which leaves little room for technical misconceptions

### 2.6.3 Grammaticality and acceptability

Furthermore, Cinque offers little to no justification for labelling the examples within as grammatical, ungrammatical, or marginal, despite grammaticality being Cinque's criterion for evaluating his tests. As the grammaticality and acceptability of some of his examples can be debated (see (22), (23), and (24))<sup>10</sup>, the reader may wonder whether his tests are valid.

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<sup>10</sup> These Cinque's examples, as they were given, which he contributes to Jackedoff and Edmons. Nevertheless, both me and my English-speaking consultant (Andrew Weir) agree that (22) is completely acceptable.

Furthermore, many of Cinque 1999's Norwegian examples are questionable (p. 35). See the following:

(ii) Klokken to har Per klokkelig vanligvis allerede spist. (1.149a)

'At two o'clock has P. wisely usually already eaten'

(iii) Per elsker allerede ikke lenger sin kone. (1.151a)

'P. loves already no longer his wife'

(iv) \*Jon aksepterer ikke alltid lenger vår invitasjon. (1.152c)

'J. accepts no always longer our invitation.'

My assessment of (ii) and (iii) is that they are both unacceptable, while (iv) is passably acceptable.

- (22) \*John has carefully worded the letter. (1.86b)  
 (23) John knocked on the door twice intentionally twice. (1.115b)  
 (24) John knocked on the door twice twice intentionally. (1.118b)

#### 2.6.4 Cross-linguistic evidence

The comparison of the hierarchy of AdvPs and functional heads in Cinque 1999's chapter 4 presumes that the two orders are universal. However, is there sufficient evidence to support that? In Satu Manninen's review of *Adverbs and Functional Heads* in Oxford's *Journal of Linguistics*, she considers Cinque 1999's weighty focus on the Romance languages and English to be a weakness to the approach (Manninen, 2005, p. 454). Even though Cinque has incorporated many segments (and a long appendix) testing the hierarchy against other languages than those he is most preoccupied with, the fraction of languages that the book tests is not enough to fully establish the hypothesis' universality. Moreover, Cinque 1999 fails to comment on the language tree branches of which the languages he examines are part of. This poses the question: to what extent is the evidence presented cross-linguistic?

Nonetheless, Cinque (1999, pp. 33, 90, 141, 153) seems to be aware of this shortcoming, and he admits that more studies need to be carried out to substantiate his claim. He therefore heavily advises any and all who read his book to test the theory on their own spoken languages. In this way, he intelligently delegates much of the work to others and in turn gets his approach tested at a more efficient speed. However, although he acknowledges that more studies need to be done, he also considers his pool of supporting data considerable enough for the theory to warrant credibility.

#### 2.6.5 Exceptions to the order of adverbs

Most of the solutions Cinque posits for the discovered exceptions to his adverb hierarchy are well backed. Nevertheless, I would like to discuss Cinque's fourth solution (labelled (IV) in subdivision (2.2.3)) about deceptive co-occurrence.

As Cinque (1999, pp. 16-28) argues, there seems to be a slight difference in interpretation between two adverbs with the same spelling when occurring in different positions, and that some can co-occur bodes well for his separate-adverb-classes solution. However, the semantic differences are usually so minute that one can wonder whether the adverb actually warrants its



- I. Default vs. Marked: in what specific ways does non-overt morphology reduce complexity?
- II. Cinque Hierarchy: is there some other way to account for the relationship between adverbs (or adverb classes) and functional heads, other than the adverb-head-adverb cycle and abstract functional semantics?
- III. Ban on adjunction: could a more restricted adjunction hypothesis combine with Cinque's approach, and would such a combination be able to explain the behaviour of DPs, FQs, and NegPs?
- IV. Expletive inflexion: how would Cinque 1999 account for expletive infixation, e.g. *abso-fucking-lutely*? Is it movement or a compound adverb? If it is a compound, does/can this phenomenon change the adverb class?
- V. Compound adverbs: are (separated) compound adverbs (e.g. *very well*, *far-off*) located in the same or a different functional projection than the head of the compound?
- VI. Computational component: if the hierarchy of functional projections is a primitive property of the computational component (of language), how can one account for its development through biological (cognitive) evolution?

## 2.7 Interim conclusion

All things considered, *Adverbs and Functional Heads* (Cinque, 1999) introduces some novel ideas to the field of syntax which have undoubtedly contributed to the research on adverb ordering (Ernst 2002 being a testament to that). Cinque 1999 manages to present a strong case for a relation between the presented order of adverb phrases and that of functional heads, despite a lot of speculation, some of which has little supportive evidence. However, it is important to recall that Cinque considers his 'finalized' hierarchy an 'approximation'; it is an unfinished estimation expected to be revised. However, it stands as a good starting point for new research and discussion on the topic and syntax as a whole, no matter the truth behind the spec-vs-adjunct debate.

### 3 *The Syntax of Adjuncts*

Three years after Cinque published *Adverbs and Functional heads* (1999), Thomas Boyden Ernst published his partial response *The Syntax of Adjuncts* (2002), within which he establishes his so-called ‘Scope theory’.<sup>12</sup> Being a partial response to Cinque 1999, Ernst writes that he is indebted to Cinque for establishing a framework allowing him to finally profess his approach. However, he is also highly sceptical of Cinque’s conclusions. In many ways, as we will see, *The Syntax of Adjuncts* (Ernst, 2002) utilizes Cinque 1999 as a comparison tool for arguing **against** a purely syntactic approach to adverb(ial) ordering. Therefore, in that the proposal additionally serves as a critique (unlike Cinque’s one-sided proposition), it provides a solid range of arguments against Cinque 1999 which lend themselves to this comparative analysis.

Due to the length of the book – being almost six-hundred pages long – as well as the complexity of its numerous arguments, this analysis will necessarily simplify most of Ernst’s arguments to a higher degree than was done to Cinque’s. Nevertheless, the complexity of Ernst’s argumentation does not stem from a higher degree of conjecture; rather, it is an entailment of Ernst 2002 connecting various previously established linguistic theories together to account for adverb(ial) distribution. As Ernst (2002, p. 1) considers other theories on the topic, incl. Cinque 1999, ‘baseless’ and unreasonably stipulative, *The Syntax of Adjuncts* avoids this baselessness in that it primarily ties in other theories (which Ernst considers well-established) to eliminate any far-fetched speculation and short-sighted stipulation. This makes the work much more diverse in its argumentation than Cinque 1999. Therefore, this analysis will solely focus on the broad and clear arguments – the essential components required to understand the theory.

#### 3.1 **Semantic-oriented approach**

##### 3.1.1 **Syntax vs. Semantics**

In essence, Ernst (2002, pp. i, 6-7) favours a more semantic-oriented approach in which few syntactic principles specifically apply to adverbs. Whereas Cinque 1999’s hierarchy is established on the basis of a link between functional heads and adverbs (in the functional projection’s specifier position) – a purely syntactic relation – Ernst 2002 rejects this and

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<sup>12</sup> Supposedly, Ernst had long wanted to publish his thoughts on adverb(ial) distribution, which he had already begun to formulate in 1983 (Ernst, 2002, p. xi). However, due to a lack of sufficient data and research within the field, Ernst put the work on hold – until Cinque and other linguists had enriched the state of the field, that is.



proposes that the adverb ordering is (mostly) determined by semantic principles, namely semantic selectional requirements (incl. scope) and general compositional rules, with a few syntactic caveats. Instead of situating adverbs in unique specifier positions, Ernst 2002 argues for a continuation of the traditional free adjunction approach, allowing for multiple base positions (adjunction points) and right-adjunction. It is thus important to stress that Ernst 2002 regards adverbs as adverbial adjuncts, only labelling them as adverbs for convenience of discussion. The phrase ‘adverb ordering’ is, according to Ernst (2002, pp. 5-6, 8-9), somewhat deceiving in that it gives special emphasis to the adverb label when the majority of the principles governing adverbs concern most adverbial adjuncts (amongst other clausal elements).

### 3.1.2 Lexicosemantics and Fact-Event Objects

According to Ernst’s theory, lexical meaning is fundamental to understanding the differing positions of adverb(ial)s. In order to discuss and explain the distribution of adverb(ial)s, Ernst (2002, p. 10) first has to piece together the many existing overlapping divisions for adverb(ial) positionings within the research field. The result of this is the following four-way division:

(29)		(1.12)	
a.	[SPEECH-ACT [PROPOSITION	[EVENT	[EVENT-INTERNAL V]]]]
	CP	IP	VP?
	VP		VP
b. Jackendoff 1972	-----speaker-oriented-----	subject-oriented	manner
c. Quirk et al. 1972	conjunct	-----disjunct-----	process adjunct
d. McConnell-Ginet 1982	-----Ad-S-----	Ad-VP	----- Ad-V
e. Frey and Pittner 1999	frame	proposition	event
f. Various works	framing	clausal negative	time -----aspectual-----

The top labels of (29) are what Ernst (2002, p. 10) calls ‘Fact-Event Object labels’. These enter into a hierarchal order from left to right (as show in (30)), stemming from the (semantic) compositional rules of the FEO Calculus (explained further down). However, Ernst 2002 divides the ‘proposition’ division seen above into two – Facts and Propositions – giving rise to the following hierarchy:

(30) Speech-Act > Fact > Proposition > Event > SpecEvent (specified event) (2.33)

Here is a breakdown of what each of the objects represent according to Ernst 2002 (pp. 10-11, 44, 47, 50-59, 70-73): the ‘speech-act’ label refers to the intended effect of (the utterance of)

the sentence's proposition/fact, therefore composed of all lower FEOs; a 'fact' is a proposition with a truth-value that is always 'true' (or: fulfilled), thus a proposition with a truth label 'wrapped around it'; a 'proposition' is the lexicosemantic idea denoted by the whole sentence (excluding non-lexical 'labels', e.g. speech-act and fact) capable of being 'true' or 'false'; an 'event' is an idea consisting of the predicate and its arguments, compared to other events of the type denoted by the verb (e.g. the event in 'she left (rudely)' is the act of leaving, which is compared to the other things she could have done); and a 'SpecEvent' is the specific event denoted by the verb, located within the predicate phrase (PredP) and compared to other possible variants of that exact event (e.g. the SpecEvent in 'she left rudely' is the act of leaving rudely, which is compared to other ways she could have left). The higher (leftmost in (30)) FEOs consist of lower ones. All of these labels are used by Ernst (2002) to map scope, important in his discussion and rejection of Cinque 1999's proposed homonym-behaving adverbs and movement conjectures. In Ernst 2002, this behaviour is explained through semantic selection and the proposed framework that Ernst has dubbed the 'FEO Calculus'.

### 3.1.3 The FEO Calculus and lexicosemantic selection

This framework (assuming a Neo-Davidsonian system of event-variables) is as Ernst (2002, p. 48-50) puts it: 'A subset of construction rules responsible for the composition of events and propositions', neatly incorporated into a layer-based (lexico-)semantic representation of scope relations – a modified version of Discourse Representation Theory – generated from LF. The (compositional) rules of the FEO Calculus (as formulated by Ernst) are presented in (31), whereas the layer-based representation system is illustrated through the example in (32):

- (31) The FEO Calculus: (3.7)
- a. Any FEO type may be freely converted to any higher FEO type but not to a lower one, except
  - b. Any FEO (sub)type may be converted to another FEO (sub)type as required by lexical items or coercion operators.
  - c. Events may be interpreted as Specified Events (SpecEvents) within PredP.
- (32) Example of a layer-based representation:
- a. Mark ate the pudding (2.20)
  - b.  $\exists e [E(e) \ \& \ \text{Agt}(e,m) \ \& \ \text{Th}(e,p)]$
  - c.  $[_{Q\text{-EVENT}} E(e) \ \& \ \text{Agt}(e,m) \ \& \ \text{Th}(e,p)]$  (2.23)

As mentioned earlier, the order of FEOs stems from the compositional rules of the FEO Calculus. This mostly has to do with (31a), stating that a higher FEO (e.g. a proposition) cannot convert into a lower FEO (e.g. an event), but the opposite is possible. Another way to formulate this is that because FEOs are introduced and necessitated by overt material – and because all the lower FEOs in a sentence constitute the higher ones – in the absence of higher FEO material, lower FEOs are free to define themselves as higher ones (Ernst, 2002, pp. 53-54). In example (32b) we see a typical Neo-Davidsonian event-variable formula denoting that the event of eating takes two arguments - Mark and (the) pudding – and assigns them the theta-roles of Agent and Theme respectively. Example (32c) shows a ‘simple’ DRT representation in style of Ernst 2002, wherein Q-EVENT stands for ‘quantificational event’<sup>13</sup>.

### 3.1.4 Clausal vs. Manner reading

Ernst (2002, ch. 2) uses the FEO Calculus rules and the abovementioned way of representing lexicosemantic relations to explain how predicational adverbs can appear inside and outside the predicate, with a slight semantic change depending on its location. Predicational adverbs constitute one of Ernst’s three major adverb classes and are defined by Ernst as non-quantificational adverbs ‘that represent gradable predicates taking (at least) events or propositions as their arguments’ (Ernst, 2002, p. 41, not my parentheses). Here is Ernst’s list of (subdivisions for) predicational adverbs (Ernst, 2002, p. 96):

- (33) Predicational adverbs: (3.2)
- a. Speaker-oriented:  
 Speech-act: *frankly, briefly, simply*  
 Evaluative: *oddly, amazingly, predictably*  
 Epistemic: modal: *probably, necessarily, maybe*  
                   evidential: *clearly, obviously*
  - b. Subject-oriented:  
 Agent-oriented: *rudely, tactfully, wisely*  
 Mental-attitude: *calmly, willingly, intentionally*
  - c. Exocomparative: *similarly, accordingly, independently*
  - d. Aspect-manner: *slowly, quickly, abruptly*
  - e. Pure manner: *tightly, loudly, woodenly*

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<sup>13</sup> The term/label Q-EVENT (quantificational event) is not directly relevant to this discussion.

Now, take a look at example (34) below, which includes the predicational adverb *rudely*:

- (34) Phonetic Form: (2.44a-b)
- a. Rudely, she left.
  - b. She left rudely.

Between the two sentences (34a) and (34b) above, both containing a ‘subject-oriented’ adverb, there is a slight semantic difference (Ernst, 2002, pp. 58-60). (34a) can be interpreted as the act of the agent *she* leaving being judged as a rude gesture in comparison to other similar/possible events involving the agent; (34b) is interpreted as the act of leaving being judged as done in a rude manner compared to other possible ways the agent could have left. The former is what Ernst has dubbed the ‘Clausal reading’ of predicational adverbs, and the latter he has dubbed the ‘Manner reading’. Whereas Cinque 1999 would have either argued for two homonym-behaving adverbs of separate classes or explained it through speculative phrasal movement, Ernst 2002 argues that there is only one lexical entry for the adverb and attributes this semantic difference to his so-called ‘Manner Rule’.

### 3.1.5 The Manner Rule

In order to account for cases such as (34), Ernst formulates the Manner Rule. Here is Ernst’s (2002, p. 58) quite intricate definition:

- (35) Manner Rule: (2.49)
- A predicational adverb within PredP, selecting an Event  $[F(x, \dots) \dots]$  denoted by its sister, may yield  $[E' [E F(e) \ \& \ \theta(e,x), \dots] \ \& \ P_{ADJ}([E F(e) \ \& \ \theta(e, x), \dots], x)]$ , where the designated relation in  $P_{ADJ}$  is  $[_{REL} \text{ manifests}]$ , and (if  $P_{ADJ}$  maps FEOs to a scale) the comparison class for  $P_{ADJ}$  is all events of  $x$  F-ing.

Let me try to simplify and expand it with Ernst 2002’s follow-up comments: most predicational adverbs have ‘underspecified’ lexical entries – i.e. adverbs with ‘gap(s)’ in their lexical entries that let them combine with different types of FEOs – which allow them to adjoin to a projection within PredP and select a SpecEvent as its sister. This causes a derivation along the lines of the Manner Rule, changing designated relation of its lexical entry (from norm) into  $[_{REL} \text{ manifests}]$  and comparison class (i.e. what the adverb is comparing) into all (context specific or general) occurrences of the SpecEvent. For (34), here re-enumerated as (36), the lexical entry changes from (37a) to (37b) when deriving (36b):

(36) Phonetic Form: (2.44a-b)

a. Rudely, she left. (= Clausal reading)

b. She left rudely. (= Manner reading)

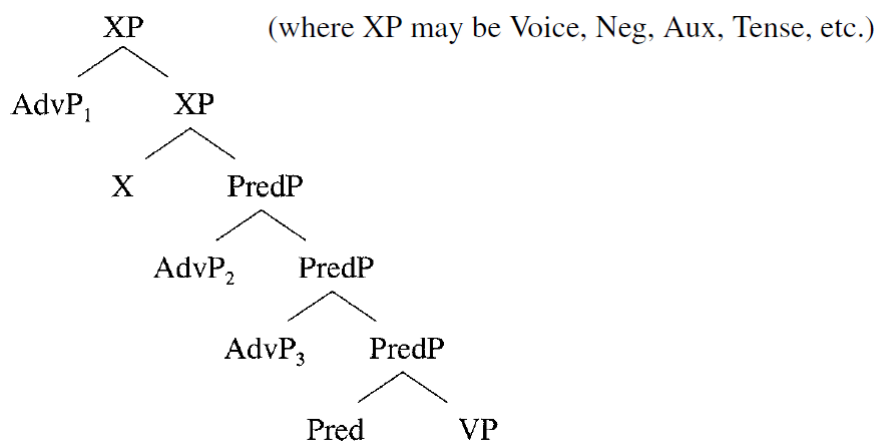
(37) Lexical entry of the adverb: (2.47a-b)

a. e [REL warrants positing] more rudeness in Agent than the norm for Events.

b. e [REL manifests] more rudeness in Agent than the norm for Specified Events.

According to the Manner Rule, (36a) above is the common PF for the adverb, the so-called ‘clausal reading’, while (36b) is a the ‘manner reading’ derivation of the LF behind (36a). If the adverb was situated after *she* in (36a-b), the interpretation would have been ambiguous; both clausal and manner interpretation would have been available since it is ambiguous whether the adverb is within PredP or not (Ernst, 2002, pp. 109-110). In (38) below, AdvP<sub>1</sub> represents a clausal adjunction, and AdvP<sub>2</sub> and AdvP<sub>3</sub> represent predicate adjunctions (for manner interpretations):

(38) (3.62)



If no overt morpheme (except the AdvP) is present between the subject and the matrix V, the adverb(ial) can be adjoined to either one of the AdvP positions above.<sup>14</sup> Furthermore: the tree structure above indicates is that there can be more than one manner adverb present within a sentence. Ernst 2002 (pp. 96-98, 109-110) claims that there can be both clausal and manner adverbs present, or multiple of both, at the same time. In such cases where there are more adverbs, the scope relations within Ernst’s layer system become more obvious. In (40a-c), corresponding to the sentences in (39), the bar-levels illustrate (semantic) scope layering:

<sup>14</sup> However, note that Ernst 2002 allows for right adjunction and that adverb(ial)s can be adjoined on the right side of the VP, as in (36b). This is not reflected in (38).

(39) Phonetic Form: (2.53)

- a. Intelligently, Kim had not frequently bought tickets.
- b. Frequently, Kim had intelligently not bought tickets.
- c. Frequently, Kim had not bought tickets intelligently.

(40) Syntactic Representation from LF: (2.54)

- d.  $[_{E''} \sim [_{E'} \text{FREQ } [_{E} \text{B}(e) \ \& \ \text{Agt}(e,k) \ \& \ \text{Th}(e,t)]]] \ \& \ \text{INTELL} (e')$
- e.  $\text{FREQ } [_{E''} [_{E'} \sim [_{E} \text{B}(e) \ \& \ \text{Agt}(e,k) \ \& \ \text{Th}(e,t)]] \ \& \ \text{INTELL} (e')$
- f.  $\text{FREQ } [_{E''} \sim [_{E'} [_{E} \text{B}(e) \ \& \ \text{Agt}(e,k) \ \& \ \text{Th}(e,t)] \ \& \ \text{INTELL} (e^*)]]^{15}$

In the examples above, we see how the adverbs take different (semantic) scope depending on their positions. However, the three SRs (40a-c) show how two types broad classes of adverbs, i.e. functional adverbs (e.g. *frequently*) and predicational adverbs (e.g. *intelligently*), are layered differently. This analysis will not go into detail on why they are layered as they are, but an important part of Ernst 2002's hypothesis is that predicational adverbs are mostly rigidly ordered (due to previously discussed lexicosemantic principles), whereas nonpredicational adverbs are usually NOT. A chart of the various possible locations for predicational adverbs is found below:<sup>16</sup>

(41) (3.68)

a. manner:		DP	Infl	Aux	✓	V	✓	XP	✓	
b. subject-oriented/ exocomparative:	✓	DP	✓	Infl	✓	Aux	✓	V	XP	
c. epistemic/ evaluative:	✓	DP	✓	Infl	✓	Aux	?	V	XP	
d. speech-act:	✓	Comp	✓	DP	✓	Infl	✓	Aux	V	XP
	[ <sub>CP</sub>	[ <sub>IP</sub>		[ <sub>AuxP</sub>		[ <sub>PredP</sub>		[ <sub>VP</sub>	]]]]	

### 3.2 Syntactic principles

The nonpredicational classes of adverbs lack the strict selectional requirements of the predicational classes and can thus appear in many different orders. Nonetheless, even when such semantic requirements are less strict, the few syntactic restrictions that Ernst 2002 subscribes to still apply. These mostly have to do with 'directionality' and 'weight'.

<sup>15</sup> The asterisk in (40f) is the sign which Ernst uses to signal the manner reading (Ernst, 2002, p. 59).

<sup>16</sup> Note that most but not all predicational adverbs take the manner interpretation: some have strict selectional requirements that disallow the manner derivation, while other adverbs are so-called 'pure manner adverbs', only taking SpecEvents as sister (Ernst, 2002, pp. 87-89).

### 3.2.1 Directionality and weight

Directionality is one of Ernst 2002's arguments for right-adjunction. This analysis will not discuss his defence of a syntax which allows for right-adjunction, but I refer you to Ernst (2002, ch. 4) for further discussion on the topic – an important but extensive discussion to the foundation of Ernst's argument. Directionality Principles, as Ernst (2002, pp. 31-33) has dubbed them, refer to the principles governing the view that languages are either 'head-initial' or 'head-final'. Weight theory is a 'filter' (Ernst, 2002, p. 32), subcategorized under the Directionality Principles, and has to do with how morphological weight affects the acceptability of a sentence, preferring lighter phrases closer to V and heavier phrases further away.<sup>17</sup> Ernst considers this a filter which affects all adjuncts equally and takes it to play a role in the distribution of all kinds of adverbial phrases. His claim is that more weight closer to the V causes the sentence to near marginalization/unacceptability and/or ungrammaticality. Here is a given example which Ernst 2002 (p. 20) uses to show how weight theory accounts for the general ungrammaticality of heavy elements between S and V (in VO languages):<sup>18</sup>

(42) a. \*Sally with shells decorated her bathroom. (1.31)

b. Sally decorated her bathroom with shells.

(43) a. Sally just decorated her bathroom. (1.32)

b. (\*Just) Sally decorated her bathroom (\*just). (temporal reading, not 'only' reading)

### 3.3 Scope theory vs. Feature theory

Although Ernst 2002 has a lot more to say about what we have discussed so far, most of the central points of the approach have now been covered in some detail. We will therefore move on to chapter 3 of *The Syntax of Adjuncts* (Ernst, 2002), specifically. Within chapter 3, Ernst compares the 'Feature theory', namely Cinque 1999, to his 'Scope theory'.

#### 3.3.1 Criterion for a simplistic and restrictive theory of adverb ordering

Ernst (2002, pp. 93-95) begins by explicating a couple of his criterion for a simplistic and restrictive theory of adverb ordering whilst specifying the theoretical benefits of the Scope

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<sup>17</sup> Although 'weight' is commonly used for phonological weight in general linguistics, Ernst's 'Weight theory' mostly has to do with morphological weight. See Ernst (2002, pp. 31-33).

<sup>18</sup> However, I find it more convincing that the unacceptability/ungrammaticality of (24a) and (25b) stems from semantic principles, e.g. due to semantic selection or that they are less acceptable/grammatical because their intuitive readings (caused by structural ambiguity) are nonsensical/inaccurate. Nonetheless, this does not retract from the validity of Ernst's theory; rather, it simply reaffirms that the syntactic principles he advocates are less important to the distribution of adverb(ial)s than the semantic ones.

theory, being: free adjunction is without the unwarranted complications of the illusory parallelism in Feature theory; derived effects of underlying previously established principles trump short-sighted stipulations; syntax is simpler if derived from information needed independently, e.g. lexicosemantic requirements; Scope theory's modularity (i.e. strict categorization of syntactic and semantic principles) is more useful than the overlap of syntactic and semantic principles in a wholly syntactic theory; free adjunction provides stricter UG restrictions than the adverbs-in-specifier approach; and unnecessary movement must be kept at a minimum to prevent complications, which Scope theory does, unlike Feature theory and Cinque 1999's generous amount of movement.

### 3.3.2 Empirical arguments in support of Scope theory

Ernst 2002 (pp. 95-110) thereafter proceeds to present seven empirical arguments wherein the Scope theory (supposedly) better accounts for adverb distribution than Feature theory (specifically Cinque 1999). (44) presents Ernst 2002's (p. 95) given summaries of these arguments, which we will respectively examine in the following paragraphs.

- (44) Ernst's seven empirical arguments in favour of Scope theory: (3.1)
- a. multiple positions for predicational adverbs
  - b. multiple positions for functional/participant adjuncts
  - c. ordering restrictions among adverbs<sup>19</sup>
  - d. different degrees of permutability among different adjunct classes
  - e. differences in iterability among different adjunct classes<sup>20</sup>
  - f. licensing of coordinate adjuncts
  - g. unified explanation for (i)-(vi)

However, we will cut (44c) and (44e) so as to not delve too deep into Ernst's finer arguments.

### 3.3.3 Multiple positions for predicational adverbs

Ernst's first argument is to account for the multiple positions of predicational adverbs and show how the Scope theory better accounts for the positions than Feature theory (Ernst, 2002, pp. 114-119). For the sake of convenience, here is a repeat of Ernst' list of predicational adverbs (enumerated above as (33)):

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<sup>19</sup> For more information on argument (44c), see Ernst (2002, pp. 128-130).

<sup>20</sup> For more information on argument (44e), see Ernst (2002, pp. 134-135, 319-320).



- (45) Predicational adverbs: (3.2)
- f. Speaker-oriented:  
 Speech-act: *frankly, briefly, simply*  
 Evaluative: *oddly, amazingly, predictably*  
 Epistemic: modal: *probably, necessarily, maybe*  
                   evidential: *clearly, obviously*
  - g. Subject-oriented:  
 Agent-oriented: *rudely, tactfully, wisely*  
 Mental-attitude: *calmly, willingly, intentionally*
  - h. Exocomparative: *similarly, accordingly, independently*
  - i. Aspect-manner: *slowly, quickly, abruptly*
  - j. Pure manner: *tightly, loudly, woodenly*

As previously mentioned, these adverbs are usually rigidly ordered among themselves (see (41) for their relative positionings) and can be accounted for through (lexico-)semantic selection, scope, and compositional rules. For further clarification, I refer you to Ernst 2002 (pp. 114-115). On the other hand, Ernst 2002 (pp. 115-118) argues, Cinque 1999 and other Feature theory approaches, without the inclusion of FEO labels, fail to capture the natural groupings in (41) and (45), which result naturally within Scope theory. In other words, feature theory, with its functional divisions, fails to account for the lexicosemantic divisions above. Instead, Cinque 1999 posits speculative head movement, which he has not completely established, and relies on a great amount of homonym-like adverb classes.

### 3.3.4 Multiple positions of functional adverbs

Ernst 2002's second argument is somewhat similar to his first and concerns the multiple positions of functional adverbs (pp. 119-127). Some examples are:

- (46) Functional adverbs: (3.89)
- a. Negative: *not*
  - b. Focusing: *even, also, mainly*
  - c. Measure/degree: *completely, a lot, (very) much*
  - d. Iterative: *again, repeatedly, over and over*
  - e. Frequency: *occasionally, twice, many times*
  - f. Duration: *all day, for an hour*
  - g. Aspectual: *still, already*

- h. ‘B-class’: *barely, scarcely, hardly*
- i. Degree-of-precision: *precisely, roughly, approximately*

For these, Ernst 2002 (pp. 122-125) show how Scope theory’s ‘flexible’ lexical entries can account for their varied semantic usage, i.e. their multiple interpretations (in some contexts). An example given is (47):

(47) Michael almost loves music. (3.107)

The example above has at least three interpretations, according to Ernst 2002 (p. 125):

‘Michael likes music a lot, but doesn’t quite love it; Michael loves some music, but not enough to constitute loving music; Michael can’t quite bring himself to love music, but with a slight push he might; and so on’

Ernst 2002 (p. 125) points out how Cinque 1999 – which (conceivably) implies this semantic ambiguity to result from different adverbs from different functional projections – overcomplicates UG. Ernst (2002, p. 124) asks: ‘why [would] UG (...) supply yet another set of heads, each tailored to one reading of a [functional] adverb, and miss the relevant generalization[?]’. In other words, Ernst 2002 (pp. 126-127) points to the redundancy of having multiple heads for multiple interpretations of a single adverb, focusing on how unnatural and unnecessary it would be for UG to provide such a structure. Furthermore, as a final note, Ernst contends that functional and participant adverbs do not enter into a rigid order, thus providing further evidence against Cinque 1999. However, it is uncertain whether this argument in itself holds, since Ernst 2002 does not provide much crosslinguistic evidence to support this. After all, Cinque 1999 is based on crosslinguistic evidence. Nonetheless, this warrants the question of why the adverb classes are seemingly not ordered in some languages.

### 3.3.5 Permutability of different adjunct classes

The fourth argument against a feature-based theory is concerned with the permutability of different **adjunct** classes. The core of this argument is that Cinque 1999 is unable to account for the free ordering of participant adjuncts – examples are shown below in (48) – whereas the Scope theory extends to all adverbial adjuncts (Ernst 2002, pp. 132-134). In Scope theory, they are accounted for as free because their scope restrictions do not cause any semantic ‘clashes’ with one another. (49) illustrates how a participant adjunct would be represented in line with Ernst 2002’s approach, and (50) shows their free ordering, with some orders slightly more acceptable due to the syntactic principles of weight and directionality.

- (48) Participant adjuncts: (3.128)
- a. Instrumental: *with a shoe*
  - b. Benefactive: *for anyone listening*
  - c. Locative: *on the ledge*
  - d. Goal: *to the shore*
  - e. Source: *from my informants*
- (49) Phonetic Form (a) and Syntactic Representation (b): (3.129-130)
- a. George opened the bottle with his teeth.
  - b. [E Open (e) & Agent (e,George) & Theme (e,bottle) & Inst (e,his teeth)]
- (50) Free ordering of participant adjuncts: (3.131)
- a. Carol built a treehouse for her brother in the backyard with her new tools.
  - b. Carol built a treehouse in the backyard for her brother with her new tools.
  - c. Carol built a treehouse with her new tools for her brother in the backyard.
  - d. Carol built a treehouse in the backyard with her new tools for her brother.

### 3.3.6 Licensing of coordinate adjuncts

Ernst 2002's sixth argument examines coordinate adjuncts. According to Cinque 1999 (pp. 211-212, fn. 72), coordinate adverbs do not conflict with each other (if their ordering is the opposite of the rigid hierarchy) because they might involve two larger constituents with a reduced second conjunct (see (51) and (52) from Italian). However, Ernst 2002 (pp. 136-137) claims that some conjunctions require more than just a 'reduced second conjunct' (see (53), (54), and (55)).

- (51) a. Lo tradussero bene e presto. (in-text)  
(They translated it well and quickly)
- b. Lo tradussero presto e bene.  
(They translated it quickly and well)
- (52) a. Lo tradussero bene e ~~lo tradussero~~ presto. (in-text)  
(They translated it well and ~~they translated it~~ quickly)
- b. Lo tradussero presto e ~~lo tradussero~~ bene.  
(They translated it quickly and ~~they translated it~~ well)
- (53) They had frequently but (only) briefly stopped off to see her. (3.137c)
- (54) They had frequently ~~stopped off to see her~~ and ~~they had~~ (only) briefly stopped off to see her. (3.139)
- (55) \*We had seldom stopped off to see her, but they had frequently. (3.140)

Vis-à-vis (54), Ernst (2002, pp. 136-137) sees this as evidence for that Cinque 1999's approach is lacking and that the Scope theory is less complicated. However, (53) does not necessarily have to do with the phenomenon in (51) and (52): *briefly* comes after *frequently* in Cinque's hierarchy (compare (56a) and (56b)).

- (56) a. ?He has frequently briefly read the news.<sup>21</sup>  
 b. \*He has briefly frequently read the news.

### 3.3.7 Required mechanisms

Ernst 2002's final argument against the Feature theory is that the previous six arguments illuminate how Feature theory relies on numerous unconnected mechanisms whereas Scope theory's approach is rather 'holistic'. To prove this point, Ernst 2002 (p. 141) summarizes the various mechanisms for each approach as follows:

- (57) Mechanisms of the Feature Theory: (3.150)
- a. stipulated order of heads for licensing (at least predicational) adjuncts
  - b. additional syntactic conditions on topicalization
  - c. extra triggers for auxiliary movement
  - d. extra device to distinguish sentential and constituent negation nonstructurally
  - e. encoding of scope for each occurrence of a Functional adjunct in its licensing head
  - f. something to condition the syntactic difference between unique heads for adverb licensing versus iterable *v*'s for participant PPs
  - g. constraints on morphological realization of functional heads in DPs with respect to clauses
  - h. (scope-based mechanisms or) arbitrary generalizations about which types of adjuncts may have alternate positions
  - i. some extra principle for coordinated adjuncts of different classes (or stipulations to account for exceptions to deletion processes)
  - j. scope-based mechanisms
- (58) Mechanisms for the Scope theory: (3.151)
- a. the FEO calculus
  - b. limited triggers on auxiliary movement
  - c. lexicosemantic selectional (scope) requirements
  - d. scope-based mechanisms

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<sup>21</sup> The marginalization presumably stems from the adverbs neighbouring each other. 'He has frequently read the news (#) briefly' with comma intonation before *briefly* is completely acceptable, hinting at movement.

## **3.4 Analysis and evaluation**

### **3.4.1 Overview**

The following subdivisions will introduce what I believe to be the (few) weaknesses to Ernst 2002. We will examine: crosslinguistic evidence; the manner rule; Ernst's conceptual arguments in support of Scope theory; and Ernst's empirical arguments in support of Scope theory.

### **3.4.2 Cross-linguistic evidence**

Although Ernst 2002 is establishing a cross-linguistic approach, very few pages of the book are dedicated to testing the approach on other languages than English. With Ernst's Scope theory being based around lexicosemantics, one would expect more discourse on the universality of lexical entries. However, this is not exactly a major flaw, as Ernst's approach is rather preoccupied with the cognitive aspects of syntax and semantics.

### **3.4.3 The Manner Rule**

On the empirical side of things, the Manner Rule manages to account for the facts of adverb ordering. However, one may ask WHY the Manner Rule exists in the way it does. For what reason(s) can predicational – and only predicational – adverbs switch from a clausal reading to a manner reading? It is also questionable why Ernst 2002 considers the clausal reading default. Even so, the Manner Rule manages to account for the slight semantic shift when an adverb moves to its manner position, and this is therefore not a huge problem.

### **3.4.4 Ernst's conceptual arguments in support of Scope theory**

When discussing his conceptual arguments against Feature theories, Ernst 2002 (pp. 94-95) argues that movement is too 'powerful' a tool. However, syntax (and semantics) are already full of well-established theories of movement, so how is it unwarranted to assume that there can be more obscured cases of movement? Considering how both movement and free adjunction are ways to account for the various positions of phrases in syntactic surface structure (roughly speaking), are they not equally 'powerful'? Besides, if analyses requiring a lot of syntactic movement are to be dispreferred, how is FREE adjunction any less 'powerful' than a syntax of RIGID non-overt functional heads?

### **3.4.5 Ernst's empirical arguments in support of Scope theory**

Whereas Ernst 2002 is surprisingly reflective (i.e. introspective and self-critical) overall, when listing the empirical arguments against Feature theories, however, Ernst shows a more biased side. This is most explicit in his final argument (see (3.3.7)) about the required mechanisms of each side of the debate (Scope theory vs. Feature theory). Whilst the two lists he presents do summarize the two approaches, one has to be critical of the illusory nature of balance sheets and the specificity of each bullet point. Balance sheets implicitly delegate each point the same (negative or positive) weight – e.g. is the FEO calculus equal in complexity to the stipulated order of heads? On the other hand, the bullet point divisions are not always clear and can be manipulated to make one side more compact – e.g. Ernst could possibly have combined and shortened some of his Feature theory points but might have chosen to keep them separate and long to benefit his cause. Nonetheless, his theory does present itself in manner which makes it seem more restrictive (once one comprehends his arguments).

### **3.5 Interim conclusion**

All in all, *The Syntax of Adjuncts* (Ernst, 2002) is not a 'beginner's guide to syntax', with its fair amount of intricate arguments and extensive length. However, the book does a good job establishing a strong and compelling theory without any obvious contradictions, whilst it also serves as a counter piece to Cinque 1999 and other so-called 'Feature theories'. Conversely, it does have one glaring flaw: Ernst 2002 rarely discusses other languages than English.

Although, the book is not without crosslinguistic examples, most of it focuses on English, leaving the reader to wonder whether the theory holds for other language families.

Nonetheless, Ernst 2002's Scope theory seemingly accounts for the distribution of adverbs very well. With its main focus delegated away from Syntactic Representation and over to Logical Form and Semantic Representation, Ernst manages to tie syntax into a linguistic whole. To Cinque 1999, this might seem like a loss of restrictiveness. However, Ernst 2002's approach implicitly illustrates how interconnected the linguistic research fields are. By allowing for multiple adjunction points, and by developing a theory based around (cognitive) lexico semantics, the approach feels intuitively accurate to the reality of sentence formation. Still, intuitive assessments do not always represent reality, so further research and critique is warranted.

## **4 Comparison**

### **4.1 Overview**

In this final chapter, we will compare Cinque 1999's approach against Ernst 2002's approach. Using the analysis and evaluation from the previous chapter, this comparison will be divided into an empirical and a conceptual assessment.

### **4.2 Empirical assessment**

#### **4.2.1 Predictability**

Most important to this comparison is how well the two approaches manage to predict the order of adverbs. Whereas both are able to account for the ordering of adverbs, Ernst 2002's more semantic approach – accounting for the order with semantic selection, scope, compositional rules, and some syntactic principles like directionality and weight – has less caveats than Cinque 1999's approach – i.e. an ordering based entirely around syntactic principles of which some are very speculative. None of Ernst 2002's mechanisms have any apparent flaws, whereas a lot of Cinque 1999's argumentation is speculation and needs further conjecture (e.g. his DP-related projections). However, that is not to say that Cinque's argumentation is not strong. His claim of there being a rigid hierarchy of functional projections matches the empirical evidence very well, and even more so with the addition of his Default-vs-Marked hypothesis. Cinque is also aware that his approach requires some patching; he is more concerned with proving that his hierarchy is a possibility. Furthermore, Cinque 1999's hierarchy, which is very explicit in surface structure/PF, is easier to test than Ernst 2002's 'hierarchy', which is more analytical than purely linguistic/empirical. Nonetheless, Ernst 2002 is a more complete approach with less gaps of conjecture to be filled.

#### **4.2.2 Grammaticality and acceptability**

A problem with both theories is that they too often skip the discussion of determining grammaticality and unacceptability. Without any discussion of/or reference to their sources of examples, the legitimacy of their examples can be questioned. When grammaticality and unacceptability are criterion for predictability, it is hypothetically possible to produce or hand-pick examples which support an approach (e.g. see subdivision (2.6.3)). With this in mind, both approaches come off as somewhat unreliable (in general). However, Ernst 2002 comes better out of this situation as his theory allows for variance in acceptability (due to

directionality and weight), whereas Cinque 1999's hierarchy is more clear-cut (in that an order is either permitted or barred).

### **4.2.3 Contradictory evidence**

Although none of the approaches are unable to (in some way or another) account for contradictory evidence, Cinque 1999's approach is faced with the most challenging evidence. This includes cross-linguistic variance, the homonym-esque adverbs, DPs, FQs, and NegPs, amongst other finer exceptions. These challenges CAN be considered implications of an inaccurate approach, but they do NOT necessarily have to be that. It could simply be that linguistics is a complex and 'entropic' field which does not yield 'flawless' results. Since UG can be regarded as a result of evolution theory, and evolution is (often taken to be) partly random, it is not unlikely that UG has some 'imperfections' which can only be represented through a seemingly caveat-ridden theory.

### **4.2.4 Cross-linguistic evidence**

As previously mentioned, both Cinque 1999 and Ernst 2002 could have included more cross-linguistic evidence. However, Ernst 2002 is the one that benefit the most from this, as he only discusses a handful of languages. Both works would also have been more comprehensive if they commented on the language families of their examined languages and included examples from language branches across the whole spectrum of the language family tree.

## **4.3 Conceptual assessment**

### **4.3.1 Restrictiveness and simplicity**

As both approaches subscribe to Chomsky's Minimalism, it comes as no surprise that they value restrictiveness and simplicity. Although it can be argued that the principles of reality do not always follow the Minimalist logic – e.g. 'Hickam's Dictum' vs. 'Occam's Razor'<sup>22</sup> – this thesis agrees with Ernst 2002 that the Scope theory requires less mechanisms and is therefore more restrictive. However, as noted in (3.4.5), balance sheets are usually illusory, and Ernst 2002's list of essential mechanisms is not necessarily as short as it seems compared to that of Feature theory. Recall (57) and (58), here enumerated as (59) and (60), and how Ernst's list for Feature theory (specifically Cinque) is presented in great detail, while Scope theory's

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<sup>22</sup> Occam's Razor is a philosophical principle which states that the explanation with the least amount of assumptions is usually correct; Hickam's Dictum is a counterargument to Occam's Razor, usually cited as: 'A man can have as many diseases as he damn well pleases.' (Miller, 1998). In other words, Hickam's Dictum states that it would be incorrect to assume that there is only one cause to a phenomenon.



points are rather summed up. Why is not the Manner Rule, which is specific for predicational adverbs, included in the FEO calculus when Cinque 1999's movements are listed separately for each structural element dealt with? Nevertheless, even if one separates parts of Scope theory's bullet points and combines a couple of Cinque's mechanisms, Ernst 2002 and its free adjunction still require less.

- (59) Mechanisms of the Feature Theory: (3.150)
- a. stipulated order of heads for licensing (at least predicational) adjuncts
  - b. additional syntactic conditions on topicalization
  - c. extra triggers for auxiliary movement
  - d. extra device to distinguish sentential and constituent negation nonstructurally
  - e. encoding of scope for each occurrence of a Functional adjunct in its licensing head
  - f. something to condition the syntactic difference between unique heads for adverb licensing versus iterable *v*'s for participant PPs
  - g. constraints on morphological realization of functional heads in DPs with respect to clauses
  - h. (scope-based mechanisms or) arbitrary generalizations about which types of adjuncts may have alternate positions
  - i. some extra principle for coordinated adjuncts of different classes (or stipulations to account for exceptions to deletion processes)
  - j. scope-based mechanisms
- (60) Mechanisms for the Scope theory: (3.151)
- a. the FEO calculus
  - b. limited triggers on auxiliary movement
  - c. lexicosemantic selectional (scope) requirements
  - d. scope-based mechanisms

#### 4.3.2 Exclusivity, modularity, and credibility

In chapter 3 of Ernst 2002 (pp. 82-148), he posits arguments about exclusivity, modularity, and credibility. In establishing his theory based around well-established principles, Ernst considers his theory more credible. He also considers it more modular in that he succeeds in separating syntactic principles from semantic principles, but he also celebrates his achievement in connecting adverbs to adverbial adjunct ordering, eliminating most adverb-exclusive principles from syntax. All of these are valid claims – especially the first one – but

they can also be turned around. Because the Scope theory is more implicit than explicit, Ernst 2002 has more to prove than Cinque 1999, which is anchored in explicit empirical evidence; if one of the well-established principles that Ernst 2002 has based his theory on is proven incorrect, the theory will lose a lot of empirical value, despite its modularity. The same argument goes for his link between adverbs and adverbial adjuncts. As Cinque 1999 is more speculative, it has more room for revision and will not lose as much credibility if one hypothesis is proved false. Despite Cinque 1999 being somewhat related to semantics in its discussion of functional properties, the approach is still rather modular; an overlap between semantics and syntax does not necessarily entail a direct connection. Cinque 1999 is nonetheless solely about syntax.

#### **4.4 Conclusion of comparison**

All things considered, Cinque 1999 and Ernst 2002 are both able to account for adverb distribution. However, Ernst's Scope theory is a more solid approach than Cinque's Universal Clausal Hierarchy, which makes sense given that Ernst was able to polish it further in light of Cinque 1999. Cinque 1999's hierarchy relies on too much speculation, whereas Ernst 2002's approach is seemingly solid and more restrictive. The Scope theory can thus be 'crowned' the most satisfactory approach to adverb(ial) distribution, which gives more credibility to free adjunction (over the specifier hypothesis). Even so, what matters is not how well the theory presents itself but rather its accuracy.

## 5 Conclusion

To sum up, a growing consensus on syntactic principles led to the question of how account for adverb(ial) ordering. Two camps emerged: one in support of a fully syntactic explanation; another favouring the traditional adjunction approach. Of the former camp came Cinque 1999 with his universal hierarchy of functional projections; of the latter camp came Ernst 2002 with his Scope theory. Whereas Cinque 1999 argues for a syntax in which all adverbs, located in the specifier positions of functional projections, are rigidly ordered in correspondence with a rich (mostly non-overt) functional sequence, Ernst 2002 argues that the rigid hierarchy stems from mostly (lexico-)semantic principles – i.e. semantic selection, scope, and compositional rules – and to some degree syntactic principles – i.e. directionality and weight. To explain the exceptions to his approach, Cinque 1999 introduces novel phrasal movement and functional projections; Ernst 2002’s approach is relatively exceptionless and able to explain most adverb(ial) phenomena through his so-called ‘FEO Calculus’. Although both approaches are able to account for the order of adverbs, Ernst 2002 is seemingly more solid and restrictive than Cinque 1999, which relies on a lot of speculation. Ernst 2002 also expands his theory to account for adverbial adjuncts in general. On the other hand, Cinque 1999 is able to establish a link between functional projections and adverbs. However, no matter how much the theories are able to account for, what matters is their accuracy.

In order to conclude which one of these, if any, is more accurate, we need to locate each approach’s core weaknesses. For Cinque 1999, this is naturally his hierarchy of functional projections; if one can disprove the existence of a rich clausal functional sequence where most heads are usually represented by zero-morphology, Cinque’s hierarchy would fall apart. The same would happen if the adverbs-in-specifier hypothesis was proven false. A possible lead here could be Cinque’s examination of the head *rimesso* (see subdivision (2.3) and (2.6.6)). One could also target Cinque 1999’s many speculative movement operations, but one disproved would not be enough to break his approach. On the other hand, Ernst 2002’s biggest weakness is most likely adjunction, although it is difficult to see how one could disprove the hypothesis. The FEO calculus is probably his second biggest weakness; if the compositional rules that constitute FEOs were to be changed, Ernst would have to revise a great portion of his theory. However, it would not completely rule out his theory. One could also target the Manner Rule, but it still would not do much damage. All in all, Ernst 2002’s

Scope theory is too solid to easily rule out. However, both approaches would naturally fall apart if GB-theory or binary branching were to be fundamentally changed (or disproven). Nonetheless, the path to an accurate evaluation is most likely to stem from a collected assessment of further arguments against the two. Since both Cinque 1999 and Ernst 2002 have been out for a while now, a good number of counterarguments have been published. Since this thesis is mainly meant to cover Cinque 1999 and Ernst 2002, as well as due to word count constraints, I refer you to *Lingua 114* (6) – in which both Cinque (2004) and Ernst (2004) have written follow-up articles to their books – as well as Cinque’s subsequent books (Cinque, 2006; Cinque, 2010). Hopefully, by following this debate and its chain of arguments, someone may finally one day prove Ernst initial statement wrong and be the one who ‘know[s] exactly what to do with adverbs’ (2002, p.1).

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