RIGID RELATIVE ORDER OF ADVERBIALS: COMPARING APPROACHES

(Diplomová práce)

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V Olomouci dne 8. 12. 2022   **Petr Koudelka**

Motto   *It's the thesis that's never started as*
          takes the longest to finish.

Abstract

This master's thesis introduces, describes, compares, and evaluates theories accounting for the rigid relative order of adverbs. Three major theories by three authors representing both syntactic and semantic approaches are included. The first section of the thesis describes the argumentation of each author supported by their respective empirical evidence. The second section compares these approaches and evaluates their strong and week points as well as their contribution to the research on the topic. Lastly, the practical section validates the grammaticality claims made by these orders via consulting with the Corpus of Contemporary American English (COCA).

Key words

Adverbials, FEO Calculus, Feature theory, Manner rule, Scope theory, Superset principle, adverbial order, clausal reading, corpus, corpus-based research, functional hierarchy, manner reading, rigid relative order, semantic approach, syntactic approach

Anotace

Tato magisterská práce představuje, popisuje, srovnává a vyhodnocuje teorie vysvětlující příčinu rigidního relativního pořadí adverbií. Práce zahrnuje tři důležité teorie ustavené třemi autory reprezentujícími jak syntaktický, tak sémantický přístup. První část práce popisuje argumentaci každého autora podpořenou jeho empirickými důkazy. Druhá sekce tyto teorie porovnává, vyhodnocuje jejich silné a slabé stránky a hodnotí míru, jakou přispěly k výzkumu této problematiky. V neposlední řadě, praktická část ověřuje tvrzení o gramatičnosti stanovená těmito autory. K tomuto účelu je využit Korpus současné americké angličtiny (COCA).

Klíčová slova

Adverbiale, FEO Kalkulus, Funční teorie, Teorie skoposu, funkční hierarchie, klauzální čtení, korpus, korpusová lingvistika, pořadí adverbií, rigidní relativní pořadí, syntaktický přístup, sémantický přístup, způsobové čtení

Content

Abbreviations

AdvP   Adverbial Phrase
Asp   Aspect
ATB   Across-the-board
Aux   Auxiliary
COCA Corpus of Contemporary American English
CNC   Czech National Corpus
CSC   Coordinate Structure Constraint
DP   Determiner Phrase
FEO   Fact-Event Object
FH   Functional Head
Infl   Inflection
IP   Inflectional Phrase
MOD Modal
NP   Noun Phrase
PP   Prepositional Phrase
PredP Predicate Phrase
T   Tense
TP   Tense Phrase
UG   Universal Grammar
V   Verb
VP   Verbal Phrase
XP   X Phrase

1 Introduction

When it comes to the **order of adverbs** in an English clause, there is a general consensus among linguists that it is **not random**. The instinct tells us to structure adverbs in a specific order, however, there is **no definite explanation** as to why one specific sequence of adverbs is more acceptable than another one. There are **two major approaches** attempting to account for this phenomenon best summarized by words *syntactic* and *semantic*.

This master's thesis is going to introduce, describe and compare specific theories representing both approaches including both the argumentation and empirical evidence presented in each piece of literature. Three works will be reviewed in total.

First, the thesis will introduce and describe the **Feature theory** introduced in *Adverbs and Functional Heads: A Cross-Linguistic Perspective* by Guglielmo Cinque (1999). Cinque established a **universal hierarchy of functional projections among languages**. He believes that this hierarchy determines the relative order of adverbs since adverbs are located in the specifier position of functional heads. Hence, he posits that the rules are **purely syntactic**.

Secondly, **Scope theory** will be introduced and described. This section of the thesis will be based on *Thy Syntax of Adjuncts* by Thomas Boyden Ernst (2002). Ernst believes that a **simple set of semantic rules is preferable** to account for the relative order of adverbs. He presents several arguments condemning the Feature theory as inconvenient. He is a representative of the **semantic approaches**.

Lastly, the thesis will introduce and describe the **Superset Principle** introduced in *The Phase Model and Adverbials* by Petr Biskup (2009). Unlike Cinque and Ernst whose main focus was on English, Biskup focuses on Czech adverbial ordering and uses Czech examples. Based on empirical data and solid argumentation, he **disqualifies the Feature theory and favors the Scope theory**. He introduces what he calls the Superset principle to account for the relative order of same-class adverbs. This principle is based on semantic principles as well. All these approaches will be compared and evaluated based on their strong and weak points and their contribution to the research on the ordering of adverbials.

In the practical section, I will consult the Corpus of Contemporary American English and **validate the grammaticality claims** based on which Cinque and Ernst based their argumentation. The following chapters are going to introduce the existing hypotheses in chronological order.

2 The Feature Theory (Cinque 1999)

The Cambridge Grammar of the English Language (Huddleston & Pullum. 2002) **classifies** adverbs based on the **category they modify** – verb, adjective, adverb, but it doesn't really examine the fact that there can be multiple adverbs of each type and that in each case **they must follow a certain hierarchy**. Another major grammar manual – *A Comprehensive Grammar of the English Language* (Quirk et al. 1975) mentions the **ability of adverbs to co-occur** in a structure due to variety of adverbial classes with **distinct semantic roles**. However, it doesn't delve deeper into the principles governing the order of these classes nor does it describe any hierarchy. For that, we can refer to Cinque (1999) whose Feature theory will be in the following section.

2.1 Hierarchy of adverbs

Cinque (1999) argues that the common assumption that the **Universal Grammar** allows for **variation of functional projections** among languages is **incorrect**. According to his theory, **the same hierarchy of functional projections applies to majority of languages** and clause types despite there being apparent counterevidence. He proposes the order of different classes of adverbial phrases in a clause to be the third important source of evidence for this hierarchy in addition to the fixed order of auxiliaries and affixes. Specifically, he believes that adverbial phrases constitute an **overt material manifesting the specifiers of different functional projections**.

2.1.1 *"Lower" Pre-VP adverbial phrases*

On the empirical evidence from romance languages, specifically French and Italian, Cinque demonstrates a **rigid relative order of preverbal adverbs**. He first begins with those adverbials that occur in Italian in the "**lower position**" – a space between the leftmost position that a past participle can appear and the right side of a complement or subject of the past participle. He does this by **relating pairs of adverbs and assessing the grammaticality of the clauses**.[1]

(1) a) *Alle due, Gianni non ha **solitamente mica** mangiato, ancora.*
      'At two, G. has **usually not** eaten yet.'[2]
   b) **Alle due, Gianni non ha **mica solitamente** mangiato, ancora.*
      'At two, G. has **not usually** eaten yet.'

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[1] Unless stated otherwise, all the English examples in this chapter are taken from Cinque (1999) and the commentaries attempt to reproduce Cinque's argumentation.

[2] Unfortunately, Cinque (1999) doesn't provide literal glosses.

c) *Non hanno **mica gia** chiamato, che io sappia.*
   'They have **not already** telephoned, that I know.'
d) **Non hanno **gia mica** chiamato, che io sappia.*
   'They have **already not** telephoned, that I know.'

e) *All'epoca non possedeva **gia più** nulla.*
   'At the time (s)he did not possess **already any longer** anything.'
f) **All'epoca non possedeva **più gia** nulla.*
   'At the time (s)he did not possess **any longer already** anything.'

Based on the examples above where *mica* precedes *gia* and *gia* precedes *più*, Cinque correctly anticipates that *mica* will also precede *più*.

g) *Non hanno chiamato **mica più**, da allora.*
   'They haven't telephoned **not any longer**, since then.'
h) **Non hanno chiamato **più mica**, da allora.*
   'They haven't telephoned **any longer not**, since then.'

The same principle is supported by empirical evidence from French although other sources such as the rules governing the syntax of infinitives are sometimes needed to prove that two specific adverbs are not hierarchically on the same position. The reason is that the ungrammaticality of the clause doesn't entail that the deducted hierarchical relation between the two adverbs is incorrect. We can see this on example (2).

(2)   a) **Ils n'ont **pas plus** telephone.*
          "They haven't **not any longer** telephoned.'
       b) **Ils n'out **plus pas** telephone.*
           'They haven't **any longer not** telephoned.'

One could assume that they cannot co-occur because they are of the same level in the hierarchy, but Cinque demonstrates that the verb can be raised to the left of *plus* but not to the left of *pas* which can only be explained if *pas* is indeed higher than *plus*.

In this manner, Cinque is able to establish a hierarchical relative order of classes of pre-VP adverbial phrases in a clause.

2.1.2 Higher (sentence) adverbial phrases

Using the same methodology, Cinque **establishes a hierarchy among higher adverbial phrases** as well. According to this hierarchy, **speaker oriented**

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higher adverbs **precede subject oriented** higher adverbs. Furthermore, it grades the subclasses of the former group as well.

(3)   SPEAKER ORIENTED > SUBJECT ORIENTED

(4)   SPEAKER ORIENTED:
       Pragmatic (illocutionary) > Evaluative > modal > perhaps
       Temporal – They have to precede subject oriented adverbs, and preferably even *perhaps*. They can either follow or precede evaluative, modal, pragmatic adverbs.

2.1.3 Lower (pre-VP) adverbial phrases in VP-final position

Cinque also mentions that some adverbial phrases in pre-VP can be found in VP-final position following the complements of the verb. Cinque includes this special, rarely researched topic to show that it constitutes a **source of exceptions** to the hierarchy of adverbial phrases he proposes. While the only grammatical realtive order of *mica, più, sempre* is *mica > più > sempre* in pre-VP position, if the object becomes cliticized and *mica più* becomes more stressed and prosodically separated from *sempre*, the otherwise unimaginable adverbial order becomes grammatical as you can see in example (5).

(5)   *Da allora, non li accetta sempre (#) mica **più**.*
       'Since then, he doesn't accept them always not **any longer**.'

Cinque says this is because *sempre* belongs to a pre-VP adverbial space while *mica più* belongs to a VP-final space.

2.1.4 Apparent exceptions

When it comes to **apparent counter-examples** to the argument that adverbial phrases have a fixed order, Cinque lists six situations that may go against the theory:

1. When an adverbial phrase directly modifies (is the specifier of) another AdvP.
2. When a lower portion of the clause (containing an adverbial phrase) is raised across a higher adverbial phrase (for focus-presupposition requirements).
3. When one adverbial phrase is wh-moved across another.
4. When one and the same adverbial phrase can be "base generated" in two different positions in the clause (with one of the two positions to the left, and the other to the right of another adverbial phrase).

5. When a non-inherently "focusing" adverbial phrase (e.g., *probably*) is used as a "focusing" adverb (like *only* or *simply*).
6. When an adverbial phrase is used "parenthetically".

Cinque explicitly says these sources of counter-examples are **only apparent** ones and he offers solution for each of them throughout his book.[3]

2.2   Cinque's hypothesis

With the hierarchy of adverbials being established, Cinque follows to form a hypothesis trying to uncover the mechanisms behind it. It has already been said that Cinque believes that adverbials are situated **in the specifier position of functional projections** and that this **syntax-based approach is sufficient** to account for the rigid order, making the **adjunction approach irrelevant**.

Cinque argues that combining the principles of adjunction and locating the adverbials in the specifier position of functional projections is less restrictive than one or the other on its own. And if there is evidence that an adjunct phrase is in the specifier position, then there is **no need for retaining the competing adjunction principle** at all.

His second argument is that the adjunction hypothesis would need to involve a stipulation accounting for the fact that adverbial phrases are on left branches which is expected under his hypothesis as specifiers are normally situated on left branches.

2.3   Functional head hierarchy

Cinque's argument is compatible with the derivation of **X-bar theory** introduced by Richard S. Kanye (1994) who asserts that **only one specifier is allowed per projection**. His empirical data involving preverbal adverbial phrases in Italian are in accord with Kayne's theory. The view that adverbial phrases occupy fixed position is also the basis for Cinque's solution to the exceptions mentioned earlier. The approach suggests that **co-occurring adverbials with the same surface form are situated in a different specifier position** and constitute a different adverbial class.

Cinque's empirical argument involves a sentence with multiple lower adverbial phrases where the position of the past participle head *rimesso* is changed relatively to other adverbials and grammaticality is tested. This is demonstrated in example (6). Since *rimesso* is a head, **all its possible locations**

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[3] For the sake of brevity, the solutions will not be discussed here, but I would recommend Cinque (1999:3-44) for detailed analysis including data from multiple languages.

must be head positions. By doing this he demonstrates the evidence for AP-head relation and eventually Spec-head relation.

(6)   'Since then, they haven't usually not any longer always put everything well in order.'

  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.*

The empirical argument involving *rimesso* implies following head positions:

(7)   [X [solitamente X [mica X [già X [più X [sempre X [completamente X [tutto bene [$_{VP}$]]]]]]]]]

Cinque replicates the same process with higher adverbial phrases where auxiliaries are used as the moving head instead. However, the head positions implied by the empirical data are **only an approximation**. Cinque draws evidence from additional sources to establish the order of functional heads.

2.3.1 Establishing the functional head order

Cinque mentions four sources on the basis of which his hierarchy of functional projections is based.

(8)   1. The order of suffixes in agglutinating languages
       2. The order of suffixes and auxiliaries in inflectional languages
       3. The order of functional particles
       4. Situations involving combinations of the three previous sources

According to Cinque, these sources successfully provide enough evidence to construct a **sequence of functional projections across languages** without contradictions. His assumption is that there is a **universal sequence of functional heads** and that all of these sources represent subsequences of this universal sequence.

2.3.2 Evidence

In this section I describe the empirical evidence Cinque (1999) used as his source to formulate his hierarchy of functions. He used data from multiple languages of various types to establish a complete universal hierarchy of functional heads.

2.3.2.1 The order of suffixes in "non-closing" (agglutinating) languages

The first source of Cinque's evidence is the order of **suffixes in agglutinating languages** such as Korean, Turkish, Chinese, or Tauya and Una – languages spoken in New Guinea. To establish a sequence of functional projections he uses Mark Baker's (1985) **Mirror Principle** whose empirical data suggest that the order of morphemes – in this case affixes – **mirrors the syntactic structure** – in this case functional projections. Analysing these languages, not only was Cinque able to **establish a sequence of functional projections**, he also managed to identify functional projections which can be found and overtly expressed only in specific languages.

Furthermore, his findings (e.g. the contrast between Turkish and Korean) made him realize that some functional projections only **seem to be equivalent across languages** but are in fact two **different functional projections**. You can see this in example (9). In Turkish (9b), there is evidence for Modality being lower than Tense while in Korean (9a) there is evidence for Modality being higher then Tense. On the first glance, these pieces of evidence seem to be in contradiction, but Cinque notes that these are different types of Modals – epistemic and root. The difference between these Modals is **traditionally semantic** and syntactically the two are usually considered to be in the same position, but Cinque points out that there is evidence even from double modal varieties of English that they are in fact in **different positions.** Cinque draws his confirming evidence from Una where both of these functional projections can be overtly expressed by the mirrored suffix sequence.

(9) a) *Ku pwun-i caphi-si-ess-ess-keyss-sup-ti-kka?*
        the person-NOM catch-PASS-AGR-ANT-PAST-EPISTEM-AGR-EVID-Q
        'Did you feel that he had been caught?'

     b) Oku-y-abil-ecek-ti-m. (Jaklin Kornfilt, personal communication)

read-y-MOD-FUT-PAST-1sg

'I was going to be able to read / I would be able to read.'

The analysis of the **order of affixes** in these agglutinating languages led Cinque to establish the first concept of functional head hierarchy:

(10) $Mood_{speech\ act}$ > $Mood_{evaluative}$ > $Mood_{evidential}$ > $Mod_{epistemic}$ > T(Past) > T(Future) > Mod_{root} / T(Anterior) > $Aspect_{perfect}$ > $Aspect_{progressive}$ / $Aspect_{completive}$ > Voice (> V)

To support his conclusion, Cinque cites Bybee's (1985) typological observation that the **order of suffixes** seems to be **consistent cross-linguistically** and her observation regarding the distance of different types of suffixes from the stem corresponds to Cinque's hierarchy of functional projections after applying the Mirror Principle.

After incorporating Bybee's (1985) and also Foley and Van Valin's (1984) observations, which both proved to be compatible with his data, Cinque reshapes his hierarchy to look like this:

(11) $Mood_{speech\ act}$ > $Mood_{evaluative}$ > $Mood_{evidential}$ > $Mod_{epistemic}$ > T(Past) > T(Future) > $Mood_{(ir)realis}$ Mod_{root} / $Aspect_{habitual}$ / T(Anterior) > $Aspect_{perfect}$ > $Aspect_{progressive}$ / $Aspect_{completive}$ > Voice > V

2.3.2.2 The order of suffixes and auxiliaries in "closing" (inflectional) languages

Since **functional suffixes** in inflectional languages typically prevent further affixation, more verbs are needed to include them. The order in which suffixes and auxiliaries are added is dependent on whether a language is **head-initial** or **head-final**. The one-directional nature of this incorporation is beneficial to establishing a hierarchy of functional heads as the order of the added morphemes provides direct evidence for the order of functional heads.

You can see in example (13) that head-initial languages like Spanish and English offer evidence for the order of the following functional heads:

(12) Tense > $Aspect_{perfect}$ > $Aspect_{progressive}$ > Voice (> V)

(13) a) *These books **have been being read** all year.*
     b) *Esos libros **han estado siendo leidos** todo el año.*

In terms of head-final languages, Cinque provides evidence from Hindi. In head-final languages, there is a leftward movement of nonheads – in this case sequences of verbs + functional suffix combinations mirrored those found in

English. Cinque's data from head-final languages corresponds with and in some cases complements his data from head-initial languages.

2.3.2.3 The order of functional particles

The third source of Cinque's evidence concerns **free functional morphemes** (particles). Unlike **bound functional morphemes**, Cinque explains that particles bar adjunction of the immediately lower head and prevent it from raising past them. The implication of this is that **particles** provide direct evidence for the order of functional heads. Cinque's (1999:59) evidence on this includes creole languages which "characteristically display all their functional particles before the verb" and some lesser-used head-final languages.

2.3.2.4 Evidence from mixed cases

The last source involves cases where **particles or auxiliaries co-occur** with **bound functional morphemes**. The assumption that there is a fixed order of functional heads should entail that the combination of free and bound morphemes will be limited given the Mirror Principle, the universal Spec-head-complement order and the leftward movement of heads (and nonheads in case of head-final languages). These combinations are typical for Celtic languages. The sporadicity of these cases only emphasize their value as evidence for the existence of a functional head hierarchy.

2.3.2.5 The Complete Hierarchy

This is what Cinque's hierarchy of functional heads looks like after incorporating evidence from all sources:

(14) $\text{Mood}_{\text{speech act}} > \text{Mood}_{\text{evaluative}} > \text{Mood}_{\text{evidential}} > \text{Mod}_{\text{epistemic}} > \text{T(Past)} > \text{T(Future)} > \text{Mood}_{\text{irrealis}} > \text{Asp}_{\text{habitual}} > \text{T(Anterior)} > \text{Asp}_{\text{perfect}} > \text{Asp}_{\text{retrospective}} > \text{Asp}_{\text{durative}} > \text{Asp}_{\text{progressive}} > \text{Asp}_{\text{prospective}} / \text{Mod}_{\text{root}} > \text{Voice} > \text{Asp}_{\text{celerative}} > \text{Asp}_{\text{completive}} > \text{Asp}_{\text{(semel)repetitive}} > \text{Asp}_{\text{iterative}}$

2.4 Matching and Refining the Hierarchies of AdvP and FHs

Having established both the **hierarchy of adverbials** and the **hierarchy of functional heads**, Cinque follows to compare them. He notes that despite them being **established independently**, immediately after matching them left to right, we can **observe similarities**. Cinque (1999:77) observes that "in many cases a transparent specifier/head relation between a certain adverb class and the right-adjacent functional head is immediately recognizable."

This leads Cinque to believe that the **relation between the two hierarchies is** indeed **plausible** regardless the cases where there is no apparent correspondence between a functional head and an adverbial. He suggests that if

there is no corresponding adverbial class to the left of a functional head, or vice versa – if there is no appropriate functional head to the right of an adverbial class, it is **not evidence for the invalidity** of the relation. It could just mean that we simply **have not recognized the apparently lacking equivalent**. Cinque believes that this is indeed what happens in many cases. Thus, he establishes an approximate hierarchy where he situates each adverbial class to the specifier position of the corresponding functional head.

(15) [*frankly* Mood$_{\text{speech act}}$ [*surprisingly* Mood$_{\text{evaluative}}$ [*allegedly* Mood$_{\text{evidential}}$ [*probably* Mod$_{\text{epistemic}}$ [*once* T(Past) [*then* T(Future) [*perhaps* Mood$_{\text{irrealis}}$ [*cleverly* ? [*usually* Asp$_{\text{habitual}}$ [*already* T(Anterior) [*no longer* Asp$_{\text{perfect}}$? [*always* ? [? Asp$_{\text{retrospective}}$ [- Asp$_{\text{durative}}$ [? Asp$_{\text{progressive}}$ [? Asp$_{\text{prospective}}$ [*completely* Asp$_{\text{completive}}$ *tutto* ? [*well* ? [? Voice [? Asp$_{\text{celerative}}$ [? Asp$_{\text{semelrepetitive}}$ [? Asp$_{\text{iterative}}$

In a lengthy section of his research, Cinque offers systematic **one-to-one evidence** that the hierarchies of adverbial specifiers and clausal functional heads correspond. He admits there are several functional heads and adverbial classes which **require further study**, but overall, he is satisfied with the apparent richness of the functional structure of the clause that he arrives at:

(16) [*frankly* Mood$_{\text{speech act}}$ [*fortunately* Mood$_{\text{evaulative}}$ [*allegedly* Mood$_{\text{evidential}}$ [*probably* Mod$_{\text{epistemic}}$ [*once* T(Past) [*then* T(Future) [*perhaps* Mood$_{\text{irrealis}}$ [*necessarily* Mod$_{\text{necessity}}$ [*possibly* Mod$_{\text{possibility}}$ [*usually* Asp$_{\text{habitual}}$ [*again* Asp$_{\text{repetitive(I)}}$ [*often* Asp$_{\text{frequentative(I)}}$ [*intentionally* Mod$_{\text{volitional}}$ [*quickly* Asp$_{\text{celerative(1)}}$ [*already* T(Anterior) [*no longer* Asp$_{\text{terminative}}$ [*still* Asp$_{\text{continuative}}$ [*always* Asp$_{\text{perfect(?)}}$ [*just* Asp$_{\text{retrospective}}$ [*soon* Asp$_{\text{proximative}}$ [*briefly* Asp$_{\text{durative}}$ [*characteristically(?)* Asp$_{\text{generic/progressive}}$ [*almost* Asp$_{\text{prospective}}$ [*completely* Asp$_{\text{SgCompletive(I)}}$ [*tutto* Asp$_{\text{PlCompletive}}$ [*well* Voice [*fast/early* Asp$_{\text{celerative(II)}}$ [*again* Asp$_{\text{repetitive(II)}}$ [*often* Asp$_{\text{frequentative(II)}}$ [*completely* Asp$_{\text{SgCompletive(II)}}$

According to Cinque (1999:106), this richness should not be surprising because "languages are generally much richer in the realization of different classes of AdvPs than in the realization of the corresponding heads." For Cinque, if each adverbial class matches with a different functional head, it is evidence that the whole **hierarchy of functional heads and their projections is available** even when there is **not an overt corresponding morphological equivalent**. However, it is important to emphasize that for Cinque, this hierarchy is still only an **approximation**.

2.5 Implications and questions

Cinque's hierarchy of projections incites several questions.

A. Do different languages have different functional projections?
B. How can there be an adverb present if the functional head is not present?
C. How much variation in terms of number and type of functional projections should Universal Grammar allow among different languages?

To answer all these questions, Cinque introduces his hypothesis of '**default'** and '**marked'** values. The default state is more frequent, is used more widely and is usually represented by **zero-morphology**, whereas the marked state is less frequent, more restricted, more complex and diverging from the default state and it is usually expressed through **overt morphology**. An illustration of Cinque's default and marked states of selected functional heads can be seen in example (17) while example (18) demonstrates that while the default states are not represented by overt morphology, the **functional structure is as rich** as the functional structure of the marked states where the sentence is apparently much richer.

(17)

Functional head	Default	Marked
Voice	active	passive
$Asp_{progressive}$	generic	progressive
$Asp_{perfect}$	imperfect	perfect
$Mod_{epistemic}$	commitment	-commitment

The point of the following example (18) is to show that the same functional heads are available even in those cases where there is no overt morphological evidence.

(18) a. *Prices rise.*
    Default states: Voice = active
                $Asp_{progressive}$ = generic
                $Asp_{perfect}$ = imperfect
                Neg = [-Neg]
                $Mod_{epistemic}$ = commitment

    b. *Prices must not have been being raised.*
    Marked states: Voice = passive
                $Asp_{progressive}$ = progressive
                $Asp_{perfect}$ = perfect

$$Neg = [+Neg]$$
$$Mod_{epistemic} = -commitment$$

Cinque believes that **the whole hierarchy of functional projections is available to all languages** in the world and that the **hierarchy is a part of the Universal Gramma**r. He believes that some languages do not realize specific functional heads through overt morphology in any state – marked or default, but **the functional head is still present** – only that it is **realized through zero-morphology**. This is the reason why in some languages an adverb may appear despite its corresponding functional head not being overtly morphologically represented.

Hence, we can return to the questions asked earlier in the text and answer each of them based on Cinque's '**default'** and '**marked'** value hypothesis.

A. Do different languages have different functional projections?

Answer: According to Cinque, all languages share the same set of functional projections.

B. How can there be an adverb present if the functional head is not present?

Answer: According to Cinque, the functional head is present even though it is not realized through overt morphology. The presence of a corresponding adverbial class is evidence for a non-overt functional head.

C. How much variation in terms of number and type of functional projections should Universal Grammar allow among different languages?

Answer: According to Cinque, Universal Grammar doesn't allow much variation. All languages share the same hierarchy of functional projections.

For Cinque, the idea that there is the **whole functional hierarchy available** for all languages instead of just those functions which are substantiated by the overt morphology **is desirable in terms of simplicity**. If a functional projection was available only thanks to an overt morphological manifestation, Cinque's proposed **hierarchy would need to split** and there would be two distinct hierarchies governed by the same set of rules. According to Cinque, this is an **unnecessary and undesirable consequence** for the Universal Grammar.

Having a single albeit complex hierarchy is therefore a simpler alternative which would reduce the complexity of Universal Grammar; even though in practice it might appear to make the syntax more complicated with a plethora of

non-overt functional projections. The **simplification of Universal Grammar** is one of Cinque's main arguments for the syntactic approach.

2.6 DP-Related Functional Projections and Negative Phrases

If adverbials are in the specifier position of functional projections in a rigid hierarchy, then how is it possible that DPs, floating quantifiers, and negation can occupy **multiple positions** among them and that **they can move** in the structure? Cinque's way to reconcile these two seemingly conflicting notions is the idea that there must be **multiple DP-related positions** – a lot more than was previously assumed – which have interpretive functions. According to Cinque, these DP-related functional projections are interspersed among adverb-related functional projections. This view allows for multiple relative position of DPs to AdvPs without violating the rigidity of the functional hierarchy.

2.7 Semantics and the hierarchy of functional projections

If we suppose that there indeed is a universal fixed hierarchy of clausal functions, the question that Cinque asks is if this hierarchy is **primitive** or if it is governed by **higher order constraints** – possibly semantic.

Cinque's answer to his own question is that the relation of the hierarchy to **semantic**, or **logical properties** is only **indirect**. His argument for this conclusion is that there are some possibilities which one would expect based on the logical relative scope, but which are either not available, or are downright impossible.

Cinque demonstrates this on several examples including (19) and (20). Previously, he has established that **Prospective Aspect** adverbials (*almost/imminently)* are lower than **Retrospective/Proximative Aspect** adverbials (*just, soon*). We can see in example (19) that the relative order of these two classes of adverbials needs to be preserved for the sentence to be grammatical. However, example (20) proves that the reason for the ungrammaticality of sentence (19b) is **not of semantic or logical nature**. In sentence (20) we witness a Proximative adverb *soon* being embedded under a Prospective predicate *is about to* and there is no problem with the sentence.[4] Hence, according to Cinque (1999:136), this serves as evidence that „the rigid relative order of the two classes of elements, within the same clause (Proximative > Prospective) **cannot be reduced to the logical incongruity** of the reverse scope.“

(19) a. *He will soon almost be there.*

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[4] The corpus research described in Chapter 6 of this thesis doesn't support this claim.

b. *He will almost soon be there.*

(20) *He is about to soon be admitted to hospital.*

Based on the analysis of data illustrated by the examples above, Cinque (1999:134) comes to the conclusion that "the syntactic order of functional projections **cannot be** entirely **reduced to the semantic scope relations** holding among them." Rather, he suggests that the hierarchy is a result of the computational system of language.

3   The Scope Theory (Ernst 2002)

It wasn't long after Cinque publishing his *Adverbs and Functional heads* (1999) that another theory emerged trying to account for the rigid relative order of adverbials. Three years after Cinque's syntactic approach, Thomas Boyden Ernst published *The Syntax of Adjuncts* (2002) where he introduces his own theory called the **Scope theory**. Unlike Cinque, Ernst prefers an approach which is based on semantics with syntax being only a minimal influence on the matter. Ernst rejects Cinque's wholly syntactic solution based on the relation between the functional heads and adverbial phrases in favor of an ordering which is dominantly dictated by **semantic principles**.

Ernst is an advocate of **free adjunction** which allows for the adverbial to be placed in multiple base positions and to branch both in the left and in the right direction. Hence, for Ernst, adverbs are **equal to adverbial adjuncts** and as such they can be placed anywhere where they do not **interfere** with other elements on a **semantic level**. The core of Ernst's theory is based on what he calls **Fact-Event Objects**.

3.1   Fact-Event Objects

According to Ernst, to understand the syntax and semantics of adverbials we must look at the **lexical meaning**. In this view, adverbials select for specific semantic arguments – events and propositions which Ernst calls **Fact-Event Objects** (FEOs) and which are constructed from basic to more complex under a set of compositional rules which Ernst calls **FEO Calculus**. Based on the FEO Calculus, Ernst forms the following hierarchy of FEOs:

(21)   Speech-Act > Fact > Proposition > Event > Specified Event

If we return to the hierarchy of adverbs mentioned in relation to Cinque and compare it with this one, we can say that the first three FEO labels (speech-act, fact, proposition) used by Ernst correspond with the **speaker-oriented** category and the last two (event, specified event) correspond with the **subject oriented category**. Ernst's categorization is more detailed. Each of his FEO categories is described in the following paragraph:

i.   **Speech-act:** Speech-Act contains all FEOs lower in the hierarchy. The term describes an intended effect of the proposition and fact of the sentence.
ii. **Fact:** The term *fact* describes a specific kind of proposition – a statement with a truth value which is always true.
iii. **Proposition:** A meaning denoted by the whole sentence which can have a true or false truth-value. Speech-Act and Fact are beyond the proposition.

iv. Event: Event denotes an idea or a situation – something that happens. It consists of the predicate with all its arguments. In the sentence *I spoke loudly.* the event is 'speaking'. To use Ernst (2002:8) words, an event is "a state, process, accomplishment, or achievement."

v. Specified event: Specific event is – as the term itself suggest – a specified variant of the event. In the sentence *I spoke loudly*, the specified event is 'speaking loudly'.

Ernst (2002:53) notes that this hierarchy itself is **not a source of impositions** on the order of adverbials, it is rather a **reflection** of "general compositional rules and the lexicosemantic requirements of various adverb classes on the ordering of predicationals."

The important principle of this hierarchy is that the **higher FEOs are constituted by the lower FEOs**.

3.2   Fact-Event Object Calculus

According to Ernst, the hierarchy of possible adverbial positions is largely determined by **semantical mechanisms** of the FEO Calculus and **lexicosemantic requirements** of individual adverbs. Using Ernst's (2002:50) own words, the FEO Calculus is a "subset of construction rules responsible for the composition of events and propositions." This set of rules allows for the creation of gradually "more complex FEOs by **adding layers** of adverbials, quantificational operators, aspectual operators, modality, and so on, each one either shifting the type or subtype of FEO."

Ernst's FEO Calculus consist of the following rules:

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.

According to these rules, any **FEO can be converted to an FEO higher** in the hierarchy, but a **higher FEO cannot be converted to a lower FEO**. For example, an event may be converted into a proposition, but a proposition cannot be converted into an event.

The implication of this rule, the fact that the higher FEOs are constituted by the lower FEOs and the fact that the presence of an FEO is conditioned by the presence of an overt morphological material is that the **lower FEOs may define themselves as higher FEOs** if there is **no overt material** for the higher

FEOs. To demonstrate this effect, Ernst (2002:41) provides example (22). In the example we have a basic event of Joe lying. If there is no further modification, the **event may be converted to the proposition** that Joe lied.

(22) *Joe lied.*

3.3   Clausal and Manner reading

In the second chapter of his book, Ernst focuses on the semantics of **predicational adverbs**. Ernst (2022:41) claims that "predicational adverbs are those that are not quantificational (as are *frequently* and *daily*, for example), that represent gradable predicates taking (at least) events or propositions as their argumen*t*." These predicational adverbs can be **positioned both inside and outside the predicational phrase** with the meaning shifting a little as a result. Using the FEO Calculus and lexicosemantic requirements of adverbs, Ernst explains this phenomenon.

In his study, Ernst (2022:14) divides predicational adverbs into five categories:

a.   **Speaker-oriented**
   - Speech-act: *frankly, briefly, simply*
   - Evaluative: *oddly, amazingly, predictably*
   - Epistemic:
        o   Modal: *probably, necessarily, maybe*
        o   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*

The sentences in example (23) both contain a subject-oriented adverb *wisely*, but in the first sentence the adverb occurs outside the predicate while in the second sentence it is positioned inside the predicate.

(23)   a. *Wisely, she spoke.*

b. *She spoke wisely.*

The meanings of the two sentences are not identical.

In sentence (23a), the agent *she* performed the **act of speaking** and her act is judged as a wise action. Using *wisely*, the author of the sentence judges her act of speaking **in contrast to all other actions** she could have done instead of speaking.

In sentence (23b), it is the **manner** of her act of speaking that is being judged, not the **act of speaking** itself. Using *wisely*, the author of the sentence judges the manner of her speaking in **contrast to all other manners** of speaking she could have used.

The interpretation of the first sentence involves what Ernst calls the **clausal reading** whereas the interpretation of the second sentence involves **manner reading**.

The notion of one adverb being placed in multiple base positions would be unacceptable using Cinque's (1999) functional projection approach. For Cinque, the different position and meaning of *wisely* in the sentences above can be explained by the adverb having **the same surface** in both sentences but belonging to a **different class** and being located in a **different specifier position** in the structure. In other words, **homonymy** would explain the different positions. Ernst on the other hand explains this by what he calls the **Manner Rule**.

3.4   The Manner Rule

Ernst (2002:58) defines his Manner Rule as follows:

(24)   A predicational adverb within PredP, selecting an Event [F(x, ...) ...]
       denoted by its sister, may yield
       [E[EF(e) & (e, x),...]&PADJ([EF(e) & (e, x),...], x)],
       where the designated relation in PADJ is [REL manifests], and (if PADJ
       maps FEOs to a scale) the comparison class for PADJ is all events of
       x F-ing

This rather elaborate and technical definition is based on the **third principle** of the **FEO Calculus** as defined by Ernst (2002:97): "Events may be interpreted as Specified Events (SpecEvents) within PredP." The Manner Rule just specifies the conditions under which this situation may arise.

According to Ernst, majority of **predicational adverbials** have a **clausal** and a **manner reading** (where the adverbs are positions higher and lower in the structure) due to the adverbs having **underspecified lexical representations**"

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which allows them to combine with various FEOs. More specifically, for Ernst, the manner reading is a derivation of the clausal reading by the **Manner Rule**.

Let's return to the two sentences in example (23) and analyze them more. In sentence (23a), the adverb *wisely* takes the **agent as an argument**, while in sentence (23b), the same adverb (not a homonym) takes the **event as its argument**.

According to Ernst, the designated relation in sentence (23a) is [$_{REL}$ warrants positing] and the **reading is clausal**. In sentence (23b), the Manner Rule allows *wisely* to appear within the PredP, the designated relation changes into [$_{REL}$ manifests] (the relations are illustrated in example (23)) and the comparison class changes to **SpecEvent** (meaning that *wisely* is used in **comparison to all other manners** of the SpecEvent instead of the higher and more general **Event**.

(25) a. *Wisely, she spoke.*   e [$_{REL}$ warrants positing] wisdom in Agent.
      b. *She spoke wisely.*   e [$_{REL}$ manifests] wisdom in Agent.

In both cases, *wisely* denotes wisdom **compared to the respective norm**. In (25a), it is the norm on the **scale of Event**, while in (25b), it is the norm on the **scale of SpecEvent**.

3.5   Clausal and Manner Ambiguity

In our examples (23) and (25), for the **clausal reading**, the adverb *wisely* is **disjuncted** from the clause. However, Ernst (2002:109) notes that *"clausal readings may occur as low as the position* **just below an aspectual auxiliary**, like *have* and *be"*. Consequently, when the adverb is immediately preceding the verb, the sentence becomes **ambiguous** and both clausal and manner readings are possible. Ernst demonstrates this on his examples (26).

(26)   a. *They will clearly understand this play.*
         b. *The company may have similarly expanded its line of gift products.*
         c. *Jane has intelligently answered all the questions.*

According to the FEO Calculus, an adverb which takes events as its argument can only be interpreted as **taking a Specified Event as its argument** when it is **positioned in PredP**. However, it is not clear from the surface of the sentence whether the adverb is actually inside PredP or not. As a consequence, even if the adverb is indeed situated inside PredP, "nothing in the compositional system prevents the same adverb from being interpreted clausally as well." All the

sentences in example (26) may therefore be **interpreted** using **both clausal and manner reading**.

In example (27) we see the tree diagram given by Ernst (2002:109) to illustrate his further claims.

(27)
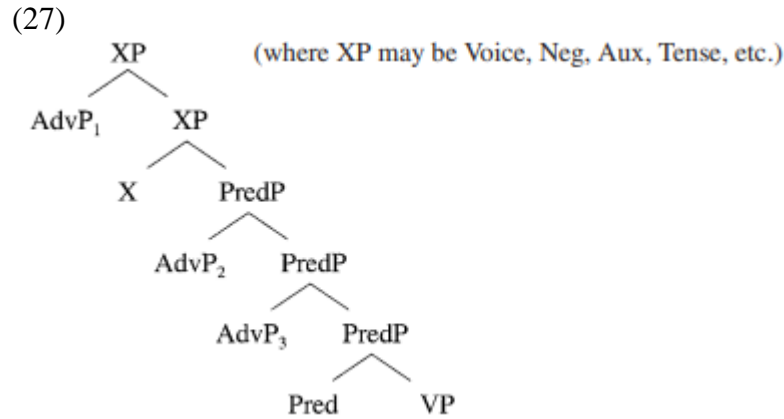
Ernst says that if there are two types of adverbs within the PredP, **only the first** of the two adverbs may be **interpreted clausally**, because the first principle of the FEO Calculus states that **after we move away from the rules of one kind of modification** (e.g. event-internal, event, proposition) to a lower kind, **we cannot return to it again** and hence the clausal reading must be higher. Ernst demonstrates this on example (28).

(28)   a. *She has clearly wisely advised her daughter.*
       b. *She has wisely clearly advised her daughter.*

Ernst admits that the sentences are not ideal and that the **manner-reading adverbs** would ideally be positioned **postverbally**, but his point is to demonstrate that only the first of the two adverbs in each sentence may be interpreted using clausal reading. It also illustrates a certain scope behavior of these predicational adverbs which differs from the behavior of nonpredicational adverbs.

3.6   Layering of events

The presence of multiple adverbs in a sentence and their possible combinations provide us with insight into how adverbs take **different scope** based on their respective **positions**. Ernst presents us with three sentences in example (29).

(29)   a. *Intelligently, Kim had not frequently bought tickets.*
       b. *Frequently, Kim had intelligently not bought tickets.*

c. *Frequently, Kim had not bought tickets intelligently.*

Ernst also follows these sentences with a **logical form** representation for each sentence in example (30).

(30) a. [E ~ [E FREQ [E B(e) & Agt(e,k) & Th(e,t)]]] & INTELL (e)
      b. FREQ [E [E ~ [E B(e) & Agt(e,k) & Th(e,t)]] & INTELL (e)]
      c. FREQ [E ~ [E [E B(e) & Agt(e,k) & Th(e,t)] & INTELL (e*)]]

The logical structure in example (30) can be explained followingly:

In (30a), Kim does an intelligent thing – not buy tickets frequently
In (30b), It frequently happens that Kim does an intelligent thing – not buy tickets.
In (30c), It frequently happens that Kim does not buy tickets in an intelligent manner.

Using these examples, Ernst uses the **agent-oriented** adverbs *intelligently* and *frequently* to reveal that **events can be layered**. Basically, by **combining** an adverbial with a phrase denoting an event, a **new event-denoting phrase** is created. In this way, **layers can be added freely**. The syntactic representations also show that the predicational adverb *intelligently* and the nonpredicational adverb *frequently* are layered differently. This is in concord with Ernst's hypothesis that the **order of adverbs is determined by their lexicosemantic properties** and that in general **predicational adverbs** are **rigidly** ordered while **nonpredicational** adverbials **usually are not**.

3.7 Principles of directionality and weight

A large part of Ernst's theory is that the **linear order** of adverbial adjuncts is determined by two syntactic principles which generally apply not only to adjuncts but to all syntactic elements. These syntactic principles are **directionality** and **weight**.

Ernst's **directionality principles** are based on the traditional view of languages being either head-initial or head-final.

  Weight theory is what Ernst (2002:32) calls a "filter that determines the relative acceptability of sentences according to the arrangement of light and heavy phrases, barring some in particular positions, and preferring **lighter phrases closer** to V and **heavier ones further** from V."

  According to Ernst, weight theory applies to all freely ordered postverbal elements and accounts for their relative order. It also accounts for the fact that

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generally in VO languages, heavy elements between subject and verb and light adjuncts in sentence-initial or sentence-final positions cause ungrammaticality.

Ernst gives example (31) to demonstrate the **varying degrees of acceptability** resulting from changing the order of adjuncts based on the weight theory. He then gives example (32) to demonstrate the cases where the sentence becomes **ungrammatical** due to the presence of **heavy elements between subject and verb** in English and example (33) where the **ungrammaticality** is caused by the presence of **light adjuncts in sentence-initial and sentence-final position**. In the last example, the meaning of *just* is temporal, it is not synonymous to *only*.

(31) a. *George brought all the painting equipment we'd ordered yesterday in his pickup.*
      b. *George brought in his pickup yesterday all the painting equipment we'd ordered.*
      c. *George brought yesterday in his pickup all the painting equipment we'd ordered.*

(32) a. **Sally with shells decorated her bathroom.*
      b. *Sally decorated her bathroom with shells.*

(33) a. *Sally just decorated her bathroom.*
      b. *(*Just) Sally decorated her bathroom (*just).*

3.8   Comparing the Scope theory to the Feature theory

So far, the main points of Ernst's Scope theory have been described. The following section will focus on his comparison to the Feature theory represented by Cinque and his *Adverbs and Functional Heads: A Cross-Linguistic Perspective* (1999). Ernst's goal is to prove that the **Scope theory is preferable** due to being **much simpler** while still being **not less restrictive**.

3.8.1 Empirical evidence

Ernst (2002:95) gives **seven arguments** based on empirical evidence to support his belief that "scope-based theories do a superior job of accounting for the facts about adverb distribution and do so in a **more elegant** way than feature-based theories." The arguments are presented bellow and they will be analysed further down in the text:

> **Ernst's seven arguments** that scope-based theories are superior to feature-based theories:

1. multiple positions for predicational adverbs
2. multiple positions for functional/participant adjuncts
3. ordering restrictions among adverbs
4. different degrees of permutability among different adjunct classes
5. differences in iterability among different adjunct classes
6. licensing of coordinate adjuncts
7. unified explanation for (1-6)

3.8.1.1 Multiple positions for predicational adverbs

The first argument which Ernst presents is that the Scope theory is better in explaining the multiplicity of possible positions for predicational adverbs than the Feature theory. According to Ernst, the **Scope theory predicts** all the **possible positions** for each adverbial subtype using independently needed semantic properties, while the **Feature theory** resorts to a multitude of verbal movements which **unnecessarily complicates** the syntax.

It's been already discussed that Ernst divides predicational adverbs into five categories:

(34) **a. Speaker-oriented**
- Speech-act: *frankly, briefly, simply*
- Evaluative: *oddly, amazingly, predictably*
- Epistemic:
  o Modal: *probably, necessarily, maybe*
  o 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*

These are **usually rigidly ordered**. In the image (35) below, Ernst (2002:114) provides us with a diagram illustrating the basic pattern of the distribution of predicational adverbs which should apply not only to English, but to other languages as well:

(35)

	Comp		DP		Infl		Aux		V		XP	
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	
	[CP		[IP				[AuxP		[PredP	[VP		]]]]]

Scope theory: The Scope theory accounts for these patterns by saying that predicational adverbs must be **adjoined** to a constituent which corresponds to an **FEO** whose **type is required** by the adverb.

For example, manner adverbs require a SpecEvent, which can only be situated in VP or PreP but not higher. This corresponds to the positions of manner adverbs as seen in the diagram.

Feature theory: According to the Feature theory, as we already know, adverbials are in the **Spec position of a functional head**. In this view, the patterns illustrated in the diagram (35) can be explained by **different heads licensing the same adverbial class**.

However, according to Cinque (1999), one adverbial class is restricted for **one position only** and so the multiple positions are explained by various movements of auxiliary heads, which is a rather **complicated approach** when compared to the straightforward rule posited by the Scope theory.

Furthermore, while the Scope theory accounts for the distribution in (35) with natural groupings seen in (34), the Feature theory **doesn't offer any natural connection** between the various heads which may license the adverbial.

3.8.1.2 *Multiple positions for functional/participant adverbs*

Ernst's second argument in favor of the Scope theory accounts for the multiple possible positions for one functional adverb – a similar phenomenon to the one described in the previous argument. Ernst (2002:120) gives following examples of functional adverbs:

(36) 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*

Ernst's example (37) demonstrates the flexibility of functional adverbs such as *frequently* which can occur on either side of *wisely*.

(37) a. *She frequently has wisely gone there on Sundays.*
      b. *She wisely has frequently gone there on Sundays.*

This is what Ernst (2002:120) calls a "prima facie" problem for the feature-based approaches such as the one of Cinque (1999), according to which adverbs are licensed to a one-to-one relationship with their heads.

To further demonstrate The Scope theory's advantage, Ernst gives example (38) where he points out how the **underspecification of lexical entrie**s of these adverbs may account for many different interpretations.

(38) *Michael almost loves music.*

Ernst lists many of the possible interpretations such as:

1. Michael likes music a lot, but doesn't quite love it.
2. Michael loves some music, but not enough to constitute loving music.
3. Michael can't quite bring himself to love music, but with a slight push he might.

The source of this variation is the adverb *almost*. The implication of Cinque's view that **different interpretations** of the same adverb are caused by **different positions** in the hierarchy is that there should be at minimum three different structures for sentence (38) to account for the interpretations listed. Furthermore, these interpretations constitute only a selection of possible interpretations and as Ernst points out, there are most likely **far more interpretations**, limited only by the human imagination, which consequently do not correspond as neatly in Cinque's (1999) universal hierarchy.

Feature theory: We have seen that a certain amount of **flexibility** is allowed for functional adverbs when it comes to their relative order. To account for this flexibility, the functional approach relies on many different functional heads it is Ernst's (2002:126) opinion that „in doing so it makes the wrong prediction

that they should all differ in meaning." According to Ernst, this **overcomplicates** the UG by **encoding the simple scope information** on multiple functional heads and with such a large number of possible interpretations as in (38), the interpretations do not even correspond neatly to Cinque's strict universal hierarchy.

Scope theory: The Scope theory on the other hand is able to account for the multiplicity of positions in a simple and predictable way. According to Ernst's theory, the positions can be predicted based on the **scope properties** of each adjunct in question. The information is encoded in the element itself. It is its **underspecified lexical entry** that allows it. The selection of adjuncts for its semantic objects is rather general which allows it to correspond to multiple constituents.

On rigidity: Ernst also questions Cinque's proposition that there is a rigid order of adjuncts. He has provided empirical evidence that while **predicationals** generally indeed do **have a rigid order**, **participant adjuncts** and most of **functional adjuncts** exhibit a certain amount of **flexibility**.

3.8.1.3 Ordering restrictions among predicational adverbs

Ernst's third argument in favor of the Scope theory involves predicational adverbs again. The key premise of this argument is based on the r**igid relative order** of two **predicational adverbs** such as *probably* and *tactfully* in Ernst's example (39). We can see that only the sentence where *tactfully* precedes *probably* is grammatical of the two. So how does the Scope theory best the Feature theory in explaining this restriction?

(39)   a. *Gina probably has tactfully suggested that we leave.*
       b. **Gina tactfully has probably suggested that we leave.*

Scope theory: According to the Scope theory, sentences like (39b) are ungrammatical because the first adverb **requires a specific FEO** at a specific position in the structure preventing the following adverb from fulfilling its own **scope requirement**.

Sentence (39b)'s ungrammaticality is predicted by the Scope theory because *probably* **requires Proposition** to create a Fact (which is a type of Proposition) and so the argument of *tactfully* must take only a Proposition. However, *tactfully* **cannot take a Proposition** (it requires Event) so its requirements for an argument are not met and the ungrammaticality is expected.

Feature theory: To demonstrate the inferiority of Feature theory regarding the restricted relative order of two predicational adverbs, Ernst gives the following

examples (40) and (41) to show that the **Feature theory fails to generalize** as simply as the Scope theory when it comes to relative order of adverbs and modals.

(40) a. *Jim must have wisely refused the offer.*
        b. **Jim wisely must have refused the offer.*

(41) a. *Gina may have tactfully suggested that we leave.*
        b. **Gina tactfully may have suggested that we leave.*

The Scope theory is able to predict the ungrammaticality of (40b) and (41b) easily. Ernst (2002:128) paraphrases Jackendoff (1972) when he states that „epistemic modals like *may* and *must* have the same sort of scope requirements as do modal adverbs like *possibly* and *necessarily*" which in turn (as we already know) must appear above *tactfully* and *wisely*. Hence, the same situation occurs as in example (39).

The Feature theory, on the other hand, would have to account for the differences between the grammatical and the ungrammatical sentences in (40) and (41) in terms of **raising up the modals from their base position** (which is bellow all adverbs) at least to a point where it is above *wisely* and *tactfully*.

If we take a look at Cinque's functional hierarchy (where Ernst omitted some intermediate nodes for the sake of clarity) in (42), we can suppose that the modals in (40) and (41) would be licensed somewhere around the [Mod$_{possibility}$] node since *must/may* may be preceded by *possibly*. As Ernst (2022:129) says, such movement „might (in fact, ought to) be motivated by the need for modals to land in the semantically appropriate head, for example, [Mod$_{Obligation}$] for *must*." However, in such a case, **all the base positions of all the lower functional adverbs** such as *usually, again, often, already* etc. **would have to be positioned above** the [Mod$_{Obligation}$] node. All T And Asp nodes would have to be **duplicated** resulting in further inconveniences for the Feature theory. In other words, while the mechanisms of the Scope theory can be extended to such cases as in (39), the Feature theory doesn't account for them.

(42)

Mood$_{Sp-Act}$ - Mood$_{Eval}$ - Mood$_{Evid}$ - Mood$_{Epist}$ -
frankly   fortunately   allegedly   probably

T(Past) - Mod$_{Possibility}$ - Mod$_{Volitional}$ - Mod$_{Obligation}$ -
once   possibly   willingly   inevitably

Mod$_{Abil/Perm}$ - Asp$_{Hab}$ - Asp$_{Rep}$ - Asp$_{Freq}$ - Asp$_{Celerative}$ -
cleverly   usually   again   often   quickly

T(Ant) - Asp$_{Continuative}$
already   still

3.8.1.4 Permutability of different adjunct classes

Ernst's fourth argument for the Scope theory over the Feature theory concerns contrasting classes of adjuncts. First Ernst provides us with a quick distinction of the three major adjunct classes with respect to their **permutability**:

1. **Predicational adjuncts** – generally do not permute freely
2. **Functional adjuncts** – do permute freely but there are differences in meaning
3. **Participant adjuncts** – do permute freely without differences in meaning

Ernst's examples demonstrate these phenomena. Example (43) shows the restrictions on co-occurring **predicational** adverbs.

(43)   a. *Jim has luckily wisely refused the offer.*
       b. **Jim has wisely luckily refused the offer.*

Example (44) demonstrates that if at least one of the two co-occurring adverbs is a **functional** adverb, both orders are generally grammatical while the **meanings differ**.

(44)   a. *The speaker never intentionally strays from the topic.*
       b. *The speaker intentionally never strays from the topic.*

And example (45) demonstrates that **participant** adjuncts may be **permuted freely** without rendering the sentence ungrammatical or changing the meaning.

(45)   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.*

How do different theories account for this freedom of permutability of participant adjuncts?

Scope theory: The Scope theory accounts for the free permutability of participant adjuncts in a simple way. They can be freely ordered because their **scope doesn't clash semantically** with any other element.

Feature theory: The feature theory doesn't account for two things. The meaning of each sentence in example (45) **should be different, but it isn't so**. Therefore, these sentences **violate the one-to-one licensing principle**. More importantly, the feature theory doesn't give a satisfying explanation why some classes of adverbials may be freely permutated while others may not.

3.8.1.5 *Differences in iterability between adjunct subclasses*

While the previous argument focused on the different permutability behaviour of different adjunct subclasses, the fifth argument involves the differences in their **iterability** – when can there be two or more occurrences of the given subtype of adjunct in a single clause? Ernst gives the following examples to demonstrate this phenomenon:

(46)   a. **The fireworks brightly lit up the sky loudly.*
        b. **James did it for Marie for her mother.*
        c. ??*The children walked with their pets with their teacher.*

(47)   a. *George had already run two races on a Saturday in March this year.*
        b. ?*They played concerts twice (in one day) frequently (so many of) those years.*
        c. *We sat in our rocking chairs on the porch in Vermont.*

In example (46) there are three unacceptable sentences with two or more occurrences of the same adjunct type. In example (47), there are two or more occurrence of the same adjunct type as well, but this time the sentences are grammatical. How do the two theories account for this phenomenon?

Feature theory: The feature theory would again have to account for the sentences with multiple occurrences of one adjunct subtype with **multiple identical functional heads** placed at separate positions in the functional hierarchy. Furthermore, it would have to account for the contrasting levels of acceptability of (46) and (47) sentences.

Scope theory: According to Ernst, the Scope theory provides a simpler explanation without the need for a multitude of empty functional heads. Although he admits to not knowing of any developed analysis of the contrasts, he believes they on the scope-based account they can be explained very simply.

Ernst (2002:135) believes that "adjuncts that can be conceived of as '**nested**'[5] may be iterated."[6]

3.8.1.6   Licensing of coordinate adjuncts

In his sixth argument, Ernst focuses on **coordinate adjuncts**. In example (48) we can see a selection of his sentences with coordinated adjuncts.

(48)   a. *She answered him instantly and without rancor.*
     b. *Surprisingly and rather ungraciously, Carol had told them to get lost.*
     c. *They had frequently but (only) briefly stopped off to see her.*

Ernst immediately points out the **incompatibility** of these **coordinated adjuncts** with the **Feature theory**. If we assume that the coordinates are generated as one constituent and not derived from separate phrases, then the on-to-one licensing principle should deem them ungrammatical because each adjunct may only be licensed by a **different functional head** located in a **different position** in the **functional hierarchy**. For example in (48a), *instantly* requires a relatively high temporal head while *without rancor* requires a low circumstantial head.

Feature theory: While Cinque (1999) realizes the impossibility of these coordinate phrases, he suggests that they are **not generated as one constituent**, but rather **derived from coordination** of larger phrases. As Ernst points out, sentence (48c) would for example be derived from the sentence in the following example (49).

(49)   *They had frequently [stopped off to see her] and [they had (only)] briefly stopped off to see her.*

However, the deletions marked by brackets, Ernst claims, would require **stranding adverbs before a deletion site**, which is generally not possible as we can see on Ernst's example (50).

(50)   **We had seldom stopped off to see her, but they had frequently.*

Furthermore, this would require two simultaneous deletions – one for each direction – where the second one **doesn't correspond to any other deletion**

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[5] A nested prepositional phrase modifies the other prepositional phrase.
[6] The order of same-class adverbials was further investigated by Biskup. His research will be introduced in the next chapter of this thesis.

such as VP-ellipsis where the deletion extends only to the material under identity and the right-adjoined material may be retained. Ernst demonstrates this in example (51).

(51) *We stopped off to see her (yesterday), and then they did _____ today.*

However, if we assume Cinque's position and suppose that coordinated adjuncts are derived from coordination of larger phrases, the **deletion of the whole string** would be necessary. Ernst demonstrates the flaws of Cinque's theory in example (52).

(52) a. *He often and deliberately went to dangerous bars on weekends.*
      b. *He often went to dangerous bars, and he deliberately went to dangerous bar on weekends.*
      c. *He often went to dangerous bars on weekends, and he deliberately went to dangerous bars on weekends.*

In (52a), both *often* and *deliberately* take scope over *on weekends*. Ernst points out that if the sentence was derived from (52b), only *deliberately* would take scope over *on weekends*. A conjunction reduction analysis would therefore require (52c) to be the base sentence in order to prevent this. Consequently, the whole string *went to dangerous bars on weekends* following *often* would have to be deleted.

To sum up, the feature-based approach may only account for the coordinate adjuncts through **unnecessarily complex deletion process** which in addition makes the wrong prediction when it comes to adverb stranding.

Scope theory: According to Ernst, there is no problem in licensing coordinate adjuncts if we assume that each of the two **adjuncts takes separately** as its **argument** a possible denotation of the **sister of the coordinate phrase**. This explanation may seem difficult to grasp, so let's explain it on an example (53), which is a simplified proposition of Ernst's example (48b).

(53) *Surprisingly and ungraciously, they got lost.*

In the example, the sister of the coordinate phrase *surprisingly and ungraciously* is *they got lost*. Since *surprisingly* and *ungraciously* **take their arguments separately** and since the **FEO Calculus** allows an **Event to be converted into a higher Fact**, *ungraciously* may take the **Event** of [them getting lost] as its argument while in a separate instance this same **Event** may be converted into a **Fact** which will then be taken as an **argument** by *separately*. Hence, Scope theory once again offers a more elegant solution.

3.8.1.7 Unification of previous arguments

In his seventh and final argument, Ernst **summarizes** his previous arguments
and all the mechanisms of the Feature theory and the Scope theory described in
the process to deduce a general argument **in favor of the Scope theory**. He lists
all the discussed mechanisms for both approaches in (54) and (55) respectively.

(54) **Mechanisms of the Feature Theory:**
     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 non-structurally
     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 inerrable 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

(55) **Mechanisms of the Scope Theory:**
     a. the FEO Calculus
     b. limited triggers on auxiliary movement
     c. lexicosemantic selectional (scope) requirements
     d. scope-based mechanisms

The point of the seventh argument is to show that the **Scope theory** account for
all the previous six phenomena through a **set of related, scope-based
principles**, while the **Feature theory** has to resort to a multitude of **unrelated
mechanisms** (if it wants to avoid redundancy by not adopting scope-based
mechanisms for several of these phenomena).

     The conclusion is simple. Based on all the arguments above Ernst
(2002:144) concludes that "the **Scope theory** of adverb licensing is to be
preferred, since it captures the facts **more generally** and **simply** than the
Feature theory."

4   The Superset Principle: Biskup (2009)

Czech linguist Petr Biskup investigated the topic of adverbial hierarchy as well. Like Ernst (2002), Biskup believes that when it comes to the relative order of adverbials, the **adjunct-based approach is preferable** to the **feature-based approach**. According to Biskup, the latter approach is too **narrow** and **rough**, and he argues that the adverbial hierarchy is a result of many different factors which are often **uncorrelated with narrow syntax**. In this chapter, I will introduce and summarize Biskup's main ideas about adverbial ordering based on his dissertation *The Phase Model and Adverbials* (2009).

4.1   Adverbial ordering

In the similar manner as Cinque (1999), Biskup (2009) investigates the relative order of adverbials by looking at several pairs of adverbials. He investigates the validity of the result clauses following both possible ordering combinations. Instead of immediately evaluating the result structures as either grammatical, ungrammatical, felicitous, or infelicitous, he **consults the Czech National Corpus** and takes note of the frequency for each possible combination.

4.1.1 Pre-VP adverbials

Biskup follows Rizzi's (2004) analysis of **preverbal** adverbials. This Italian linguist investigated the ordering of pre-VP adverbials in various languages and came to the conclusion that the **categories of adverbials** have a following **hierarchy**:

(56)   evaluative > epistemic > frequentative > celerative/manner[7]

Rizzi (2004) agrees with Cinque (1999) that this order reflects the fact that the **adverbials correspond** to the appropriate **functional projection** in the **universal hierarchy**.

Biskup uses the following words to represent each adverbial category described by Rizzi (2004):

(57)   i.   Evaluative: *naštěstí*   'fortunately'
       ii. Epistemic: *pravděpodobně; asi* 'probably'; 'perhaps'
       iii. Frequentative: *často*   'often'
       iv. Celerative/manner: *rychle*   'quickly'

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[7] If we compare it to Cinque (1999)'s hierarchy in (16) we can see that Rizzi's (2004) hierarchy is compatible with it.

Following are the results Biskup got from the Czech National Corpus. Each example contains data for both of the two possible combinations. The **first number** marks the **total number** of occurrences while the **second one** only represents occurrences that are **relevant**[8]:

(58) **Evaluative** *naštěstí* 'fortunately' and **epistemic** *asi* 'perhaps'

	Czech	translation	total	relevant
a)	*naštěstí asi*	fortunately perhaps	22	5
b)	*asi naštěstí*	perhaps fortunately	11	0

(59) **Evaluative** *naštěstí* 'fortunately' and **frequentative** *často* 'often'

	Czech	translation	total	relevant
a)	*naštěstí často*	fortunately often	20	13
b)	*často naštěstí*	often fortunately	3	0

(60) **Epistemic** *pravděpodobně* 'probably' and **celerative/manner** *rychle* 'quickly'

	Czech	translation	total	relevant
a)	*pravděpodobně rychle*	probably quickly	12	7
b)	*rychle pravděpodobně*	quickly probably	5	0

(61) **Frequentative** *často* 'often' and **celerative/manner** *rychle* 'quickly'

	Czech	translation	total	relevant
a)	*často rychle*	often quickly	49	13
b)	*rychle často*	quickly often	44	0

These data from the Czech language correspond to Rizzis's proposal on the order of pre-verbal adverbials. They also correspond to the data from other languages and researchers from other linguists including both Cinque (1999) and Ernst (2002).

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[8] The search included cases where the adverbials where coordinated or belonged to a distinct hierarchy. These occurences were not relevant to the research.

4.1.2 Circumstantial adverbials

Next, Biskup investigated the order of **circumstantial** adverbials. His data proved that there is a preferred ordering of circumstantial adverbials and adverbials of the **same class** as well. The expected hierarchy of circumstantial adverbials is described in (62) and it corresponds to normative accounts of the Czech word order, for example Uhlířová and Kučerová (2017).

(62) temporal > locative > manner

The order of adverbials of the same class should follow the following hierarchy:

(63) **superset** (adverbial of the larger domain) > **subset** (adverbial of the smaller domain)

Here are the circumstantial adverbials Biskup investigated using the Czech National Corpus:

(64) **Temporal**   *včera* – 'yesterday', *dnes* – 'today',
        večer – 'in the evening'

    Locative   *ve městě* – 'in the town', *doma* – 'at home',
        v pokoji – 'in the room'

    Manner   *pečlivě* – 'carefully'

Following are the results from the Czech National Corpus. Again, Biskup noted the **total** number of occurrences for both possible order combinations and a number of **relevant** occurrences. The only exception is the example (68) where the number of relevant occurrences has not been calculated due to the high amount of total occurrences.

(65) **Temporal** *včera* 'yesterday' and **locative** *ve městě* 'in the town'

	Czech	translation	total	relevant
a)	*včera ve městě*	yesterday in the town	74	53
b)	*ve městě včera*	in the town yesterday	18	9

(66) **Temporal** *dnes* 'today' and **manner** *hlasitě* 'loudly'

	Czech	translation	total	relevant
a)	*dnes hlasitě*	today loudly	10	7
b)	*hlasitě dnes*	loudly today	2	0

(67) **Locative** *doma* 'at home' and **manner** *pečlivě* 'carefully'

	Czech	translation	total	relevant
a)	*doma pečlivě*	at home carefully	8	4
b)	*pečlivě doma*	carefully at home	6	2

Circumstantial adverbals of the same class:

(68) **Temporals** *včera* 'yesterday' and *večer* 'in the evening'

	Czech	translation	total
a)	*včera večer*	yesterday evening	1238
b)	*večer včera*	evening yesterday	43

(69) **Locatives** *doma* 'at home' and *v pokoji* 'in the room'

	Czech	translation	total	relevant
a)	*doma v pokoji*	at home in the room	12	7
b)	*v pokoji doma*	in the room at home	0	0

Biskup's data from the Czech National Corpus supports the proposition that there is a **preferred** order of adverbials in the Czech language. Furthermore, the data is **compatible** with the **adverbial hierarchy** based on several languages proposed by various linguists including Cinque (1999), Ernst (2002) and Rizzi (2004).

His data from the Czech National Corpus has demonstrated that sequences of adverbials can appear in **different clausal positions**. You can see his data showing the various positions of adverbial sequences in examples (70) to (72).[9]

(70) **Clause-initial position**

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[9] All examples used below come from Biskup (2009) along with their glosses and translations for grammatical sentences. Translations for ungrammatical sentences were added by me.

Pravděpodobně   rychle   změní   názor.
probably   quickly change   mind_{ACC}

'They will probably quickly change their mind.'

(71) **Middle field position**

Podrobnosti a   praktický dopad   projektu   vyjdou
details   and positive   effect_{NOM}   of project   come out

pravděpodobně velmi rychle   ve známost   a...
probably   very   quickly in knowledge   and

'Details and the positive effect of the project will probably become known very quickly.'

(72) **Clause-final position**

Podle   vyjádření   dálniční policie   z Bernatic
according to   report   of highway police   from Bernatice

jel   řidič   kamiónu   pravděpodobně   příliš
drove   driver_{NOM}   of truck   probably   too

rychle   a...
fast   and..

'According to Bernatice highway police report, the truck driver probably drove too fast and…'

The data has also shown that adverbial sequences may also appear in a complex participial AP as you can see in the following example (73).

(73) **Complex participial AP**

,říkal   Borek   tichým,   doma   před holicím zrcátkem
Said   Borek_{NOM}   by soft   at home   in front of handglass

pečlivě   nastudovaným   hlasem,...
carefully   practised   voice

'Borek said (it) by a soft voice carefully practised at home in front of the handglass.'

Biskup recalls Cinque (2004) who analyses data such as in (70) by assuming the appropriate elements **move across the adverbials** and data such as that in example (73) by the assumption that such **complex AdvPs** are created through

derivation from multiple clauses. So far, the feature-based approach is solid in Biskup's view who argues that in theory it is always possible to **embed** a new **functional hierarchy** in the sentence.

4.1.3 Problem with the feature-based approach

It is Abels (2003) who Biskup cites as the one who has shown the real problem with the feature-based approach. He has shown that **adverbials from different clausal hierarchies interact** as well, which the feature-based approach cannot predict according to Biskup. Abels (2003) has demonstrated that the **relative order** between two adverbials **needs to be preserved** even if one of them is in the **matrix clause** and the second one in the **embedded clause**. Example (74) show Abels's data supporting his claims.

(74)   a. *It is already the case that he no longer goes to school.*
      b. * *It is no longer the case that he already goes to school.*

As Biskup says, this contrast **cannot be mirrored in Czech** because Czech doesn't include such a negative adverbial as *no longer*. Biskup is, however, able to demonstrate the **rigidity** of adverbials **across clausal functional hierarchies** in one sentence using other adverbials. Specifically, his example (75) shows that adverbial *už* must precede *dvakrát* even across clauses which is something the feature-based approach doesn't account for.

(75) a. *Už   to tak bylo, že   Pavel   měl dvakrát holku.*
     already   it so was   that Pavel$_{NOM}$ had twice   girl$_{ACC}$
     'It was already the case that Pavel had sex with two girls.'
     'It was already the case that Pavel has sex with a girl twice.'

    b. **dvakrát to tak bylo,   že Pavel   měl už   holku.*
      twice   it so was   that Pavel$_{NOM}$ had already girl$_{ACC}$
      'Twice it was the case that Pavel had sex with a girl already.'

This is what Biskup described as the **biggest flaw** as well as **attraction** of the feature-based approach – that the order of the adverbials is the result of **selectional relations** between **functional projections of a single clause**.

4.2   The Relative Scope Factor

Adjunct approach on the other hand is **not invalidated** by this data because the bad order is excluded at the **semantic interface**. In other words, the relative scopes of the adverbials and their mutual interpretation excludes the ungrammatical structure and forces *už* – 'yet' to be before *dvakrát* – 'twice'.

Specifically, when the meaning of *už* – 'yet' is concerned in example (75a), it is presupposed that for the time before Pavel's second encounter with a girl Pavel had not been with two girls or one girl twice yet. And it is asserted that following Pavel's second sexual encounter with a girl it is true that Pavel has had sex with a girl twice or that he has had sex with two girls. As far as the **semantic interface** is concerned, the sentence is **not problematical**.

Example (75) on the other hand involves a structure where *dvakrát* – 'twice' scopes over *už* – 'yet', meaning that it should be twice the case that Pavel has already had sex with a girl. This interpretation, however, is **not possible** because *dvakrát* – 'twice' **pluralizes a status that holds forever** in the first place, hence it **cannot be pluralized**. For Biskup, this is the evidence that in such cases, the preferences for adverbial ordering are based on the **relative scope** of the adverbials in question, their interaction and overall interpretation.

4.3 The factor of lexicosemantic properties of other sentence elements

The behavior is similar even with other adverbials. As a next example, Biskup gives a similar pair of sentences where adverbials *dvakrát* 'twice' and *často* 'often' interact with each other. Look at example (76).

(76)

a. *Často to tak bylo, že Pavel měl dvakrát holku.*
   often it so was that Pavel$_{NOM}$ had twice girl$_{ACC}$
   'It was often the case that Pavel had sex with two girls.'
   'It was often the case that Pavel had sex with a girl twice.'

b. **Dvakrát to tak bylo, že Pavel měl často holku*
   twice it so was that Pavel$_{NOM}$ had often girl$_{ACC}$
   'It was twice the case that Pavel had sex with a girl often.'

In sentence (76a), *často* takes scope over *dvakrát*. The sentence is **grammatical** because *často* can **quantify** over situations where Pavel had sex with a girl twice or sitations where he had sex with two girls.

On the other hand, sentence (76b) is **ungrammatical** because *dvakrát* takes scope over *často* and in this case *dvakrát* **cannot pluralize** situations which are **large enough to be quantified** by *často* and Pavel's having sex.

An important point Biskup makes is that **interpretability** and **grammaticality** of examples such as (75) and (76) **does not rely** solely on the **relative scope** of the **adverbials** involved but also the **lexicosemantic properties of other**

elements in the sentence. Hence, when we explicitly enlarge the situation pluralized by *dvakrát* in sentence (76b), the sentence (77) becomes grammatical because semesters are domains large enough for *často* to be quantifying over Pavel's having sex.

(77) *Dvakrát   to   tak   na univerzitě bylo,   že   Pavel*
       twice   it   so   at university was   that   Pavel_{NOM}

      měl   často holku,   v prvním   a   třetím semestru.
      had   often girl_{ACC}   in first   and   third semester
      'It was twice the case at the university that Pavel often had sex with a girl, in the first and third semester.'

4.4   The factor of event structure of particular clauses

An additional factor influencing the order of adverbials is the **event structure** of particular clauses, according to Biskup. Sentences in (75) and (76) consist of clauses which **related to the same event** which is why the adverbials included **may interact**. In example (78) which is a modified example (75), Biskup shows that adverbials which are not related to the same event do not interact with one another.

(78) a. *Už   to bylo řečeno, že   Pavel   měl dvakrát   holku.*
       already it   was   said   that Pavel_{NOM} had   twice   girl_{ACC}
       'It was already said that Pavel had sex with two girls.'
       'It was already said that Pavel had sex with a girl twice.'

    b. *Dvakrát   to bylo řečeno, že   Pavel   měl   už   holku.*
       twice   it   was   said   that Pavel_{NOM} had   already girl_{ACC}
       'It was said twice that Pavel had sex with a girl.'

The participal *řečeno* – 'said' introduces a new event and *už* – 'yet' in (78a) and *dvakrát* – 'twice' in (78b) relate to it. Since each of the adverbials within the sentence (78b) relates to a **different event**, the sentence is **grammatical** in contrast to sentence (75b) even though the adverbials *dvakrát* – 'twice' and *už* – 'yet' are still in a **bad scope relation**. The same happens to sentence (76b). When we add the *řečeno* – 'said' participle, *často* – 'often' and *dvakrát* – 'twice' will **relate to different events** and the sentence becomes **grammatical** (79b).

(79) a. *Často to bylo   řečeno, že   Pavel   měl dvakrát holku.*
       often it   was   said   that Pavel_{NOM} had   twice   girl_{ACC}
       'It was often said that Pavel had sex with two girls.'

'It was often said that Pavel had sex with a girl twice.'

b. *Dvakrát to bylo řečeno, že Pavel měl často holku.*
twice   it   was   said   that Pavel$_{NOM}$ had often girl$_{ACC}$
'It was said twice that Pavel often had sex with a girl.'

So far, these data have shown that **preverbal adverbials** from **different clauses interact** with each other and that they **retain the same relative order** as if they were included within a **single clause**. This is a problem for approaches which relate the adverbial order to the phrasal structure of one clause only. The data have also demonstrated that the adverbial order and consequently the **grammaticality** of a sentence depends on **factors of semantic nature** which seems to be contradicting the approaches which relate the relative order of adverbials to syntactic criteria and functional hierarchy only.

Next issue Biskup has with Cinque (2009) is that according to him, **temporal PPs** and **bare NP** temporals may occur either in the **left periphery** in the position of **frame adverbials** where they **take scope** over **iterative adverbials**, or within VP where they are **lower** than iterative adverbials. It would then be expected that both variations of *dvakrát* – "twice" and *včera* – "yesterday" orderings will be **grammatical**. The example in (80), however, shows that this is not always the case.

(80) a. *Včera   to tak bylo,   že   Pavel   měl dvakrát holku.*
yesterday it so was   that Pavel$_{NOM}$ had twice   girl$_{ACC}$
'Yesterday, it was the case that Pavel had sex with two girls.'
'Yesterday, it was the case that Pavel had sex with a girl twice.'

b. **Dvakrát to tak bylo, že Pavel měl včera holku.*
twice   it   so was   that Pavel$_{NOM}$ had yesterday girl$_{ACC}$
'Twice, it was the case that Pavel had sex with a girl yesterday.'

Upon closer inspection we can see that the reason behind the **ungrammaticality** of sentence (80b) is a **specific interpretational effect** of the **specific adverbials** used. Compare the pair of sentences with those in example (81) where both of the sentences are grammatical if we replace *včera* 'yesterday' with *ve čtvrtek* 'on Thursday'.

(81) a. *Ve čtvrtek   to tak bylo, že Pavel   měl dvakrát holku.*
on Thursday it so   was that Pavel$_{NOM}$ had   twice   girl$_{ACC}$
'On Thursday, it was the case that Pavel had sex with two girls.'
'On Thursday, it was the case that Pavel had sex with a girl twice.'

b. *Dvakrát to tak bylo, že Pavel mĕl ve čtvrtek holku.*
twice   it   so   was   that Pavel$_{NOM}$ had on Thursday girl$_{ACC}$
'Twice, it was the case that Pavel had sex with a girl on Thursday.'

The difference between sentence (80b) and sentence (81b) both of which should be **grammatical** according to Cinque (1999) is that the **deictic adverbial** *včera* – 'yesterday' **cannot be pluralized** as there is only one yesterday. On the other hand, this doesn't apply to Thursdays, hence why there is no interpretational problem with (81b).

Similarly to the relative order of preverbal adverbials, the **event structure** of the **complex sentence** is important in this situation as well. When sentence (80b) is modified to include a new event by adding the *řečeno* – 'said' participle, the sentence (82) becomes **grammatical** because each of the adverbs *dvakrát* – 'twice' and *včera* – 'yesterday' relates to a **different event**.

(82) *Dvakrát to bylo řečeno, že Pavel mĕl včera holku.*
twice   it   was   said   that Pavel$_{NOM}$ had yesterday girl$_{ACC}$
'It was said twice that Pavel had sex with a girl yesterday.'

This shows that a **preverbal** adverbial and a **circumstantial** adverbial both occurring in a **different** clause **may interact** and that **lexicosemantic properties** of particular adverbials and the **event-structural properties** influence the grammaticality of a sentence by restricting the order of adverbials.

In the next section, Biskup recalls the ordering preferences of **circumstantial adverbials** which I have covered earlier. This time he demonstrates how these adverbials behave in **complex sentences**. Specifically, he shows the behavior of temporal *včera* – 'yesterday' and locative *na nádraží* – 'at the station'. You can see the outcome in example (83).

(83) a. *Včera to tak bylo, že Pavel mĕl na nádraží holku.*
yesterday it   so   was   that Pavel$_{NOM}$ had at station   girl$_{ACC}$
'Yesterday, it was the case that Pavel had sex with a girl at the station.'

b. **Na nádraží to tak bylo, že Pavel mĕl včera holku.*
at station   it   so   was   that Pavel$_{NOM}$ had   yesterday girl$_{ACC}$
'At the station, it was the case that Pavel had sex with a girl yesterday.'

c. *Na nádraží to bylo řečeno, že Pavel mĕl včera holku.*
at station   it   was   said   that Pavel$_{NOM}$ had   yesterday girl$_{ACC}$
'At the station, it was said that Pavel had sex with a girl yesterday.'

When *včera* – 'yesterday' precedes *na nádraží* – 'at the station' in the first sentence, it sets the **reference-time** for the event of Pavel's having sex and the structure is grammatical. However, when *na nádraží* – 'at the station' takes scope over *včera* – 'yesterday' in the second sentence, the sentence becomes **ungrammatical** which suggests that *na nádraží* – 'at the station' **cannot frame** the event of Pavel having sex that is modified by *včera* – 'yesterday'.

If we assume that the **spatiotemporal domain of frame adverbials** should **include the domain of the given event** with all its modifiers we can understand why sentence (83b) is ungrammatical. As Biskup (2009:126) says, „The **spatiotemporal domain** of the adverbial *na nádraží* [– 'at the station'] is **not large enough** to include the domain of *včera* [– 'yesterday'] with the event of Pavel's having sex with a girl."

In this view, if each of the adverbials relate to a **different event structure**, the **inclusion does not apply** and we can expect the sentence to be **grammatical**. Biskup provides evidence for this prediction in form of sentence (83c).

Biskup also predicts that if the **spatiotemporal** domain of *na nádraží* – 'at the station' is **enlarged** to be able to include the domain of *včera* – 'yesterday' with the appropriate event, the sentence becomes **grammatical** as well. He again provides evidence confirming this prediction in example (84) where he enlarges the domain of *na nádraží* – 'at the station' by adding a predicate *bývalo* – 'used to be' expressing **genericity**. However, he adds that this new environment only allows for adverbials which can be **quantified**. That's why he replaced the deictic *včera* 'yesterday' with a quantifiable temporal adverbial with a domain the same size as *včera* 'yesterday', specifically *ve čtvrtek* 'on Thursday'. This way the domain of *na nádraží* 'at the station' is **enlarged enough** so that it can include Pavel's having sex on Thursdays.

(84) *Na nádraží to tak bývalo, že   Pavel   měl ve čtvrtek   holku.*
      at station   it so was   that Pavel$_{NOM}$ had on Thursday girl$_{ACC}$
      'At the station, it was generally the case that Pavel had sex with a girl
       on Thursday.'

Biskup (2009:127) uses these data to conclude that similarly to preverbal adverbials or preverbal and circumstantial adverbials, "the **relative order of circumstantial adverbials cannot be determined only by the phrasal structure**." He supports his claims with empirical evidence demonstrating that circumstantial adverbials may interact **across clauses** and that the preference of their order is, to a certain degree, dependent on **semantic criteria.**

In general, his point is that the data involving complex sentences has shown that **relative orders** of adverbials and hence the hierarchy of adverbials

cannot be explained solely on the basis of **syntactic structure** and in terms of a **single clause**. The additional factors that Biskup has listed are following:

A. Scope relations of particular adverbials and the interplay of their lexicosemantic properties.
B. Semantic properties of other elements in the sentence
C. The inclusion requirement of frame-interpreted adverbials
D. Event structure of particular clauses.

4.5 The Superset principle

So far, Biskup's goal was to show that the **feature-based approach** was too **narrow** to account for the fact that **adverbials across clauses may interact** with each other. In the following section, Biskup focuses on **stacked adverbials** of the **same class** to show that the **feature-based approach** is in fact too **rough** to account for their ordering preferences.

Biskup cites Cinque (2004) who admits that **stacked adverbials** of the same class can be merged as a constituent. This is supported by Biskup's examples based on a corpus sentence (85). In (86a) the stacked adverbials form a constituent due to **Czech clitics being second-position clitic**s. Sentence (86b) confirms this because only one constituent may be affected by **long topicalization**.

(85) *Zítra   předpokládáme,   že tlaková výše   postoupí*
    tomorrow   we suppose   that pressure-height$_{NOM}$ moves

    k jihu.
    southwards
    'Tomorrow, we suppose that the high pressure front will move southwards.'

(86) a. *Zítra   večer   se   tlaková výše   posune*
      tomorrow   evening self   pressure-height$_{NOM}$ moves

      k jihu.
      southwards
      'The high pressure front will move southwards tomorrow evening.'

     b. *Zítra   večer   předpokládáme, že   tlaková výš*
       tomorrow evening   we suppose   that   pressure-height$_{NOM}$

       postoupí   k jihu.

moves   southwards
    'Tomorrow evening, we suppose that the high pressure front will move
     southwards.'

The effect of **adverbials merging to form a constituent** is visible on the contrast between (86b) and (87a). In (87a), the temporal adverbial *zítra –* 'tomorrow' and the directional adverbial *k jihu –* 'southwards' are **not merged as a constituent** and consequently the sentence becomes **ungrammatical**. Example (87b) proves that *k jihu –* 'southwards' can in fact be **long moved** and that this is not the reason for example (87a)'s ungrammaticality.

(87) a. **Zítra   k jihu   předpokládáme,   že   tlaková výše*
        tomorrow southwards we suppose   that   pressure-height$_{NOM}$

        postoupí.
        moves

    b. *K jihu   předpokládáme, že   tlaková výše   postoupí*
        southwards   we suppose   that   pressure-height$_{NOM}$ moves

       zítra.
        tomorrow
        'Southwards, we suppose that the high pressure front will move tomorrow.'

Example (88) proves that when the order of the stacked adverbials is **reversed**, the sentence becomes ungrammatical.

(88) * *Večer   zítra   se   tlaková výše   posune   k jihu.*
   evening   tomorrow self   pressure-height$_{NOM}$ moves   southwards

Since in situations of stacked adverbials of the same class the **larger domain adverbials precede** those of **smaller domain** and since this seems to be true for adverbials of different classes, Biskup argues for some **general semantic principle** to account for the order of such adverbials. A semantic principle working at the semantic interface which determines the relative order of same class adverbials. Biskup calls it the **Superset Principle**.

    This is when Biskup's argument for feature-based approach being too rough comes in. According to Biskup (2009:129), a theory that aims to **account for the ordering of stacked adverbials** based on **phrase structure** would „have to somehow **get the piece of information** about hierarchies of particular adverbial classes **into the constituent** merged from the appropriate **adverbial**

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phrases." Specifically, the information that, for example, **deictic adverbials** like *zítra* 'tomorrow' or *včera* 'yesterday' need to be **structurally higher** than adverbials referring to parts of the day like *večer* 'evening' or *ráno* 'morning' would have to be **encoded** somewhere in the **stacked constituent**. Furthermore, information for all possible **superset-subset** adverbial relations that have a preferred ordering would have to be **coded in the phrase structure**.

For this reason, Biskup prefers the view that there is a **single principle** at the **semantic interface** – what he has called the **Superset Principle** – which could determine the adverbial order regardless of their class. This principle restricts adverbials so that their **semantic relations parallel** their **syntactic relations**, in other words that the adverbial of the **larger domain modifies** the adverbial of the **smaller domain** and is **left adjoined** to it. This relation is visualized in (89).
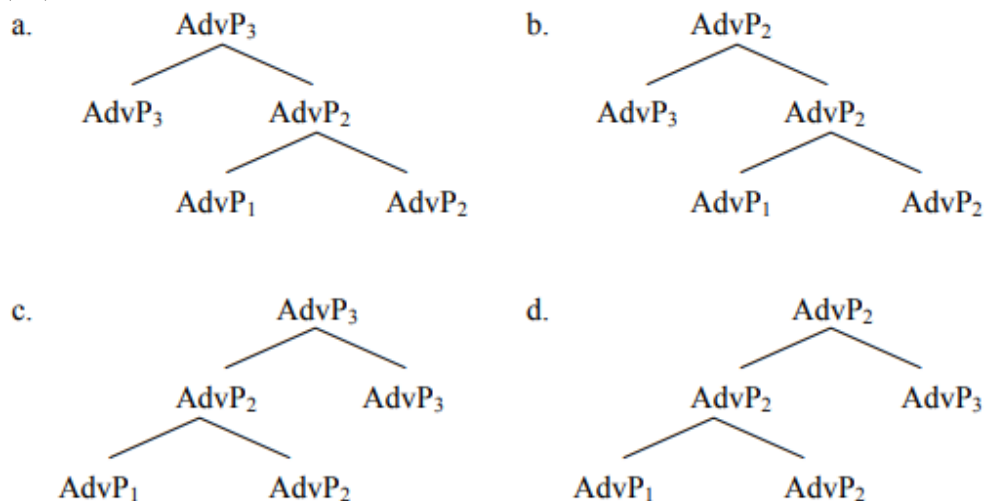
(89)
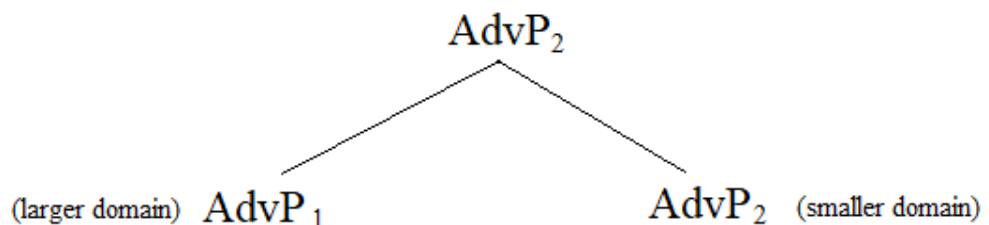
Biskup formulates his first version of the Superset Principle as follows:

(90) **1ˢᵗ version of Biskup's Superset Principle (Biskup 2009:130):** The highest segment of the adverbial of the larger domain must c-command at least one segment of the adverbial of the smaller domain.

When this principle is applied to the adverbial structure in (89), we can see that the Superset Principle is satisfied as the adverbial of the **larger domain** $AdvP_1$ **c-commands** the adverbial of the **smaller domain** $AdvP_2$. This principle would account for the fact that a structure featuring stacked adverbials in the order of *zítra večer* – 'tomorrow evening' is **grammatical** while the order of *večer zítra* –'evening tomorrow' is **ungrammatical**.

Biskup proceeds to demonstrate that his Superset Principle may be applied to cases when there are **more than two adverbials stacked** as well. If we imagine a situation where there are three stacked adverbials of the same class and incorporate the grammatical structure from (89), four possible structures arise.

(91)

a.
$$\text{AdvP}_3$$
AdvP$_3$ AdvP$_2$
AdvP$_1$ AdvP$_2$

b.
$$\text{AdvP}_2$$
AdvP$_3$ AdvP$_2$
AdvP$_1$ AdvP$_2$

c.
$$\text{AdvP}_3$$
AdvP$_2$ AdvP$_3$
AdvP$_1$ AdvP$_2$

d.
$$\text{AdvP}_2$$
AdvP$_2$ AdvP$_3$
AdvP$_1$ AdvP$_2$

The structure in (91a) shouldn't be grammatical because in **Czech adverbials are left adjoined**. Given that the AdvP$_3$ is projected, according to the Superset Principle, it should be an adverbial of the smallest domain. The structure being linearised, AdvP$_3$ would precede adverbials of larger domains. The ungrammaticality of such order is shown on the example (92).

(92)   * *Odpoledne   minulý   měsíc   v neděli   se   Pavel   vyboural*
     afternoon   last   month   on Sunday   self   Pavel$_{NOM}$ crashed
     'Afternoon last month on Sunday Pavel crashed.'

Structure (91b) is possible according to the rules of Czech adverbial adjunction. For the Superset Principle to be satisfied as well, AdvP$_3$ must be of **larger domain** than AdvP$_2$ and AdvP$_1$ must be **larger** than AdvP$_2$ too. According to the Superset Principle, AdvP$_3$ must also be of **larger domain** than AdvP$_1$ because the former **c-commands** the latter. If all these conditions are satisfied, we get a grammatical sentence such as the one in example (93).

(93)   *Minulý   měsíc   v neděli   odpoledne   se   Pavel   vyboural.*
     last   month   on Sunday   afternoon   self   Pavel$_{NOM}$ crashed
     'Last month on Sunday afternoon Pavel crashed.'

The remaining two structures are **right-ascending**. Structure (91d) should again not be possible because of the right adjunction. If we apply the **Superset Principle** here, then AdvP$_3$ must be of the **largest domain**. After linearization it would be preceded by an adverbial of the **smallest domain** AdvP$_2$ and **c-commanding** adverbial AdvP$_1$ respectively. The sentence in (94) proves that this structure is ungrammatical.

(94) * *V neděli   odpoledne minulý měsíc   se   Pavel   vyboural.*
    on Sunday afternoon last   month self   Pavel$_{NOM}$ crashed
    'On Sunday afternoon last month Pavel crashed.'

On the other hand, the **right-ascending** structure in (91c) is possible. The Superset Principle conditions the projecting AdvP$_3$ to be of **smaller domain** than **c-commanding** AdvP$_2$ and the **projecting** AdvP$_2$ to be of **smaller domain** than the **c-commanding** AdvP$_1$. When linearized this structure produces a sentence visibly identical to example (93), albeit with a difference in structure demonstrated in example (95).

(95) a. *[[minulý   měsíc]   [[v neděli]   [odpoledne]]]*
     b. *[[[minulý   měsíc]   [v neděli]]   [odpoledne]]*
          last   month   on Sunday   afternoon

The analysis of these four structures demonstrates that structures of **stacked adverbials** are **grammatical** only if the **c-command relations** between adverbials imposed by the Superset Principle keep the **left-to-right direction** as is the case in structures (91b) and (91c).

With the following examples, Biskup supports the claim that the **Superset Principle** also governs the order of **same class adverbials** which are **not stacked**. In example (96), the adverbial *zítra* – 'tomorrow' functions as a frame adverbial and as such it is not stacked with the adverbial *večer* – 'in the evening'. We can see that the sentence is grammatical when the **larger domain** adverbial precedes a same class smaller domain adverbial even if they are **not stacked**.

(96) *Zítra   se   večer   tlaková výše   posune   k jihu.*
    tomorrow self evening pressure-height$_{NOM}$ moves   southwards
    'As for tomorrow, the high pressure front will move southwards in the
     evening.'

Biskup proves in example (97) that the smaller domain adverbial *večer* – 'in the evening' can appear in all possible positions without making the sentence ungrammatical.

(97) *Zítra   se   tlaková výše   (večer)   posune   (večer)*
    tomorrow self pressure-height$_{NOM}$ evening move   evening

    k jihu   (večer).
    southwards evening
    'As for tomorrow, the high pressure front will move southwards in the

evening.'

However, when the relative order of the two adverbials is switched, the sentence is ungrammatical no matter the position of the **larger-domain** adverbial and how many elements separate it from the preceding **lower-domain** adverbial, as shown by example (98).

(98) * *Večer   se   (zítra)   tlaková výše   (zítra)   posune*
      evening   self   tomorrow   pressure-height$_{NOM}$ tomorrow   move

      (zítra)   k jihu   (zítra).
      tomorrow   southwards   tomorrow
      'As for the evening, the high pressure front will move southwards tomorrow.'

This phenomenon is not limited to **temporal adverbials** but applies to other cases of **same-class adverbials** as well. Biskup proves this in example (99) where there are two **locative adverbials** *v kuchyni* – 'in the kitchen' and *doma* – 'at home'. When the locative adverbial of **smaller domain precedes** the one of **larger domain**, the sentence becomes ungrammatical as opposed to the case where the Superset Principle is satisfied.

(99) *Doma   Pavel   (v kuchyni)   zabil   (v kuchyni)*
      at home   Pavel$_{NOM}$ in kitchen   killed   in kitchen

      souseda   (v kuchyni).
      neighbor$_{ACC}$ in kitchen
      'Pavel killed his neighbor home in the kitchen.'

      * *V kuchyni Pavel   (doma) zabil   (doma)   souseda   (doma).*
      in kitchen Pavel$_{NOM}$ at home killed   at home   neighbor$_{ACC}$ at home
      'Pavel killed his neighbor in the kitchen home.'

4.6   Biskup's reservations about Cinque's position

Biskup mentions Cinque's (2004) supposition that the reason **only adverbials of the larger domain can be fronted** in structures with same class adverbials may be the result of them being **merged together** as a constituent. According to Biskup (2009:133), not only is this claim **baseless**, but "it is, in fact, theoretically possible that they are **merged** in the structure **independently**" and that

arguments may be found showing that in some cases they actually are merged independently.

4.6.1 Coordinate Structure Constraint

The first argument mentioned by Biskup is built on the **Coordinate Structure Constraint** (CSC) and **across-the-board movement** (ATB).

The CSC as formulated by Ross (1967:89) is worded followingly: "**In a coordinate structure**, **no conjunct can be moved**, **nor may any element contained in a conjunct be moved out of that conjunct**."

This constraint may be avoided if the extraction affects all conjuncts in a coordinated structure at the same time, in other words, when the given element is **ATB-moved**.

Lastly, it has been argued that the ATB-moved element must be extracted from **parallel positions** across the conjuncts.

With these conditions in mind Biskup disqualifies Cinque's (2004) supposition with example (100). Supposing that the temporal adverbials *zítra* – 'tomorrow' and *večer* – 'in the evening' **started as a constituent**, the adverbial *zítra* – 'tomorrow' would have to undergo the **ATB movement**. But if *zítra* – 'tomorrow' was ATB-moved, it would have to be extracted out of a **parallel position** in both conjunctions – specifically out of a constituent of stacked adverbials. However, there are **no traces of such constituent** in the second conjunct.

Biskup uses example (100) as an argument against Cinque's supposition. If the structures are not parallel, then *zítra* – 'tomorrow' is **not ATB-moved** and if *zítra* – 'tomorrow' is not ATB-moved, then it is not extracted out of a constituent of stacked adverbials in the first conjunct.

(100) *Zítra$_1$ se   tlaková výše   bude [zřejmě posouvat [$_{AdvP}$ t$_1$*
      tomorrow self pressure-height$_{NOM}$ will probably move

      večer]   k jihu]   a   [ohrožovat místní úrodu].
      evening southwards   and   endanger local harvest
     'Tomorrow, the high pressure front will probably move southwards in the evening and endanger the local harvest.'

4.6.2 PP Island

Biskup's second argument can be demonstrated on his examples (101) and (102). Sentence (101) is slightly marked while sentence (102) is ungrammatical. The fact that the first sentence is grammatical while the second is not shows that even in this case the order of the adverbials must be preserved.

Importantly, if the adverbials **started as a constituent** as Cinque (2004) suggests, it would mean that *zítra* – 'yesterday' was extracted of the constituent of stacked adverbials inside the prepositional phrase as indicated in example (101). However, as Biskup (2009:135) points out, PPs are **islands for extraction of modifiers** of the **prepositional complement** which he demonstrates in example (103) and controls in example (104).

(101) ? *Zítra₁   se   tlaková výše   posune k jihu   [PP   v té době*
       tomorrow self pressure-height move   southwards   in the time

       [AdvP t₁ večer,]   kdy   všichni   spí].
             evening when   all   sleep
       'Tomorrow, the high pressure front will move southwards at the evening
        time when all are sleeping.'

(102) * *Večer   se   tlaková výše   posune k jihu   v té době*
       evening   self   pressure-height$_{NOM}$ move   southwards   in the time

       zítra,   kdy   všichni   spí.
       tomorrow   when   all   sleep
       'Evening, the high pressure front will move southwards at the tomorrow
       time when all are sleeping.'

(103) **Jaké se   zítra   tlaková výše   posune k jihu   [v době]?*
       what self tomorrow pressure-height$_{NOM}$ move   southwards in time
       'What will the high pressure front move southwards at time tomorrow?'

(104) *Zítra   se   tlaková výše   posune k jihu   [v jaké době]?*
       tomorrow   self pressure-height$_{NOM}$ move   southwards in what time
       'At what time will the high pressure front move southwards tomorrow?'

Biskup uses this evidence to suggest that **same-class adverbials** can be **merged** in the structure **independently** and that they are subject to the Superset Principle even then.

4.7   Event structure relevance

In order to refine his definition of the Superset Principle, Biskup returns to a previous section of his research where he has shown that the **event structure** is crucial in determining the order of adverbials. He has demonstrated that the **adverbial ordering doesn't need to be kept** when each of the adverbials refers

to a **different event**. In the following section, he wants to prove that the same thing applies to the adverbials of the same class.

Biskup's examples (105) and (106) show that the relative order of adverbials must be preserved if the adverbials relate to the same event. On the other hand, his examples (107) and (108) demonstrate that the order doesn't need to be maintained if the adverbials relate to different events in the sentence.

(105) *Zítra   bude   večer Pavel   vzrušený kvůli   tomu utkání.*
tomorrow will   evening Pavel$_{NOM}$ excited   because of the   match
'Pavel will be excited tomorrow evening because of the match.'

(106) * *Večer   bude   zítra   Pavel   vzrušený kvůli   tomu utkání.*
evening will   tomorrow Pavel$_{NOM}$ excited   because of the   match
'Pavel will be excited evening tomorrow because of the match.'

(107) *Zítra   bude Pavel   vzrušený kvůli   tomu utkání večer.*
tomorrow will   Pavel$_{NOM}$ excited   because of the   match   evening
'Pavel will be excited tomorrow because of the math in the evening.'

(108) *Večer   bude Pavel   vzrušený kvůli   tomu utkání zítra.*
evening will   Pavel$_{NOM}$ excited   because of the   match tomorrow
'Pavel will be excited in the evening because of the match tomorrow.'

4.8   The final version of the Superset Principle

This data makes Biskup **restrict his Superset Principle** to cases where the **adverbials** at question **relate to the same event** only. Hence, his definition of the Superset Principle is edited accordingly:

> **The final version of Biskup's Superset Principle (Biskup 2009:137):**
> The highest segment of the adverbial of the larger domain must c-command at least one segment of the adverbial of the smaller domain if the adverbials relate to the same event.

This exact definition of the Superset Principle is believed by Biskup to account for the adverbial order of same-class adverbials. The principle is based not only on **structural relations** between adverbials but also on their **lexicosemantic properties**. It also includes the necessity of accessing the **event-structural properties** of the sentence. That is why Biskup considers the **adjunct approach** to be **more appropriate** than the **feature-based approach**.

5 Comparison

In this chapter, I will compare all of the previously introduced and described approaches including Cinque's (1999) Feature theory, Ernst's (2002) Scope theory and Biskup's (2009) Superset principle.

5.1 The Feature Theory (Cinque 1999)

5.1.1 Summary

Cinque (1999) successfully lays the foundation for his theory by establishing a **hierarchy of adverbs** when it comes to the **effect of restrictions** on the adverbial order. However, the extent to which he was able to account for the possible **cause of these restrictions** is yet to be evaluated here.

His hierarchy of adverbs was built carefully and thoroughly using empirical evidence from **multiple languages** of **various language types**. By permutating various pairs of adverbs of different classes he constitutes a solid **universal hierarchy** of adverbs.

In a similar manner, the second pillar of his theory was constructed. Through an impressive analysis of the order of suffixes, auxiliaries and functional particles across different languages, Cinque created another solid hierarchy – a **hierarchy of functional heads**. With substantial empirical evidence from multiple languages of different types he provided a solid argument for a **universal functional hierarchy across languages**.

Despite being constructed independently, Cinque notices immediate similarities between the two hierarchies and ultimately merges these two together forming his theory that **adverbs are in a specifier position of functional heads**.

5.1.2 Contribution to the field

Cinque's (1999) research contributes greatly to the study of the relative order of adverbials. Cinque's analysis of suffixes, functional particles and auxiliaries from a multitude of languages revealed the universality of functional heads across languages contributing to the research of UG in the process.

Speaking about the **Feature theory** itself, although it is largely based on **speculation** and **approximation**, it is a solid basis for further research and a reference point from which the subsequent theories may develop. The theory, if proven successful would simplify the UG by merging two duplicate sets of rules governing two different elements into one. However, that is only if we suppose that adverbials are indeed governed by the same set of rules as the functional heads.

5.1.3 Strong points

Cinque's (1999) research excels in providing evidence from all types of languages. In establishing the hierarchy of adverbs, Cinque pays attention to all the languages' **idiosyncrasies** and avoids potential pitfalls of prematurely misinterpreting the nature of some of his examples' **ungrammaticality**.

In establishing his hierarchy of functional heads, Cinque employs even more languages and uses their differences to supplement each other and constructs a solid functional hierarchy as a result. By combining these two hierarchies, he establishes one of the first major approaches to account for the rigid relative order of adverbials.

5.1.4 Weak points

The first weak point of Cinque's (1999) research is that despite providing data from a **large number of languages**, there is little justification provided for his ungrammaticality claims. All the hierarchies described in his research are built on the binary grammaticality contrast between two examples which are deemed either grammatical or ungrammatical based on Cinque's **own assessment** and they are **not supported by corpus research**.

The second weak point is that most of the theory is based on speculation and approximation. Cinque himself admits that the merged hierarchy is only an approximation.

Furthermore, as the subsequent theories such as Ernst's (2002) show, Cinque's theory is **attractive only on the surface** as it doesn't account for some of its implications which Ernst discusses in relation to the **Scope theory**. There are phenomena including multiple positions for predicational adverbs, permutability and iterability of adverbs etc. which the Feature theory can only account for in a **contrived** way. Besides that, the idea that there is a **whole spectrum of non-overt functional heads** in every structure **complicates the syntax** to a great extent.

Regarding the form, Cinque unfortunately doesn't provide literal glosses for many of his examples from languages different than English.

5.2   The Scope Theory (Ernst 2002)

5.2.1 Summary

Three years after Cinque (1999) introduced his **purely syntactic approach** to the relative order of adverbials, Ernst (2002) presented his own approach based on **semantics**. In his theory, he opposes Cinque's **feature-based theory** and claims to offer a simpler and more reliable way of predicting the order of adverbials on the basis of **lexicosemantic properties** and **scope principles**. The center point of his work is that the order of adverbials may be best predicted by

a set of construction rules called the **FEO Principle**. He then provides seven arguments to prove this principle is superior to the feature-based approach.

5.2.2 Contribution to the field

Ernst's Scope theory considers Cinque's (1999) interpretation and provides an alternative position to analyze the adverbial ordering from. Ernst develops the research of this subject by **challenging Cinque's postulations** and presenting situations where the Feature theory falls short. Instead, he proposes a simpler yet not less restrictive **semantic solution** and with his **Scope theory** he becomes a major representative of adjunct-based approaches.

5.2.3 Strong points

Ernst's theory is successful in two levels. Firstly, he is able to **disqualify the effectivity of the Feature theory** to predict the relative order of adverbials. He does this by presenting several phenomena which are incompatible with the Feature theory. On the basis of empirical evidence, he demonstrates the **rigidity of the feature-based approach** and its need to resort to unrelated arbitrary and overcomplicated rules to account for these phenomena and justify its own existence.

On the second level, he is able to **substitute this unsatisfactory solution** for his own, **more elegant** and a **simpler** one. He manages to successfully predict the order of adverbial adjuncts and divide them into naturally grouped classes. He is able to account for all the phenomena, which the **Feature theory** struggled with, using a simple set of **mutually related rules** and **lexicosemantic properties** of the specific adverbial classes. In doing so, he relieves the syntax of unnecessary non-overt heads and complicated rules since the necessary information is already encoded in each adverbial's lexical entry. He supports all his claims with compelling arguments and empirical evidence.

5.2.4 Weak points

Ernst's arguments are overall very solid. Where his work perhaps falls behind the one of his predecessors is the fact that when Ernst presents his arguments in favor of the **Scope theory**, he uses only empirical **evidence from one language** – English. There is also one weak point that both of these texts share. Just like Cinque (1999), Ernst (2002) **relies on his own assessment** of his examples' **grammaticality** as well which may always be **subject to doubt**.

5.3 The Superset Principle (Biskup 2009)

5.3.1 Summary

Seven years later after, Biskup (2009) published his dissertation *The Phase Model and Adverbials* which includes a chapter about the order of adverbials. Ernst establishes a hierarchy of Czech adverbs using the same method as Cinque, although his **determinative criterium is the frequency** of a given combination of adverbs rather than his **personal evaluation** of its **grammaticality**. The final adverbial hierarchy corresponds to the ones by Cinque (1999) and Ernst (2002).[10] In addition to the work of his predecessors, Biskup also establishes a **hierarchy of same class circumstantial adverbials**.

Biskup (2009) deems the feature-base approach too narrow. He provides empirical evidence from Czech proving that the **order of adverbs must be preserved** even if one adverb is in the **matrix clause** and the other in an **embedded clause**. However, the **feature-based** approach accounts only for a **single clause**. On the other hand, the **adjunct-based** approach is **not disqualified** by this. He proves that the same scope relations and lexicosemantic properties apply across the two clauses in the same way as if the adverbials were in the same clause. He also confirmed the **relevance of event structure**.

When it comes to the co-occurrence of **same class** adverbials, Biskup claims that in this case the **Feature theory** is actually too **rough** as it cannot account for the rigid relative order of same-class adverbials. Information about all possible **superset and subset relations** would have to be somehow encoded in the phrase structure which is unimaginable. Instead, he proposes a solution which predicts the **order of same-class adverbials** based on a simple **semantic** principle – the **Superset principle**.

5.3.2 Contribution to the field

Biskup's dissertation contributed very much to the research of relative ordering of adverbials. Firstly, by independently **establishing an adverbial hierarchy** based on the **real data** from Czech National Corpus, Biskup supported previous adverbial hierarchies and the supposition that the hierarchy is **universal across languages**.

Secondly, Biskup provided additional evidence that the **Feature theory** is too **narrow** by demonstrating that the ordering restrictions apply even when one adverb is in the **matrix clause** of a complex sentence while the other adverb is in the **embedded clause**. On the contrary, he validated the **adjunct approach** by showing that it is not invalidated in case of complex sentences and also by confirming the **relevance of event structure**.

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[10] To an extent, the data from Czech National Corpus thus validate even Cinque's (1999) and Ernst's (2002) hierarchies.

Lastly, Biskup **successfully** formulated a **simple semantic principle** – the **Superset principle** predicting the relative order of same-class adverbials while disproving Cinque's (1999) account of the fact that **larger-domain adverbia**ls **precede smaller-domain adverbials**. His principle which is based on the adjunct approach can successfully predict grammaticality of sentences with same-class adverbs without overcomplicating the syntax while the **grammaticality claims are backed** with data from the Czech National Corpus.

5.3.3 Strong points

Biskup's research is built on a solid groundwork. His grammaticality claims are based on r**eal data from a corpus** and thus his hierarchy of Czech adverbs doesn't leave any space for doubt. His bulletproof argumentation uncovers one of the **Feature theory's biggest flaws** – limitation to a **single clause only** while the restrictions apply even across clauses. He provides additional phenomena solidifying the adjunct approach as the superior one and clearly supports all his claims with evidence.

5.3.4 Weak points

The only downside is that Biskup doesn't use much empirical evidence from languages other than Czech. Nevertheless, this can hardly be perceived as a flaw since Czech was the main focus of his analysis.

5.4 Comparison summary

Comparing all the previously introduced and described approaches and the arguments and empirical evidence supporting them, it seems the **Scope theory** introduced by Ernst (2002) **is indeed preferable** to the **Feature theory** introduced by Cinque (1999). The following arguments support this conclusion:

1. Cinque's (1999) hierarchy of projections is based on approximation, speculation and requires further study.
2. The whole spectrum of non-overt functional heads in every structure would complicate the syntax greatly.
3. Ernst's (2002) arguments demonstrate that the Feature theory must resort to a large number of unrelated arbitrary and complicated rules to account for phenomena including the movement of adverbs, multiple positions of adverbs, iterability, permutability, etc.
4. Ernst's (2002) Scope theory provides a simple and effective set of rules able to predict the distribution of adverbials and all the related phenomena.
5. Biskup's (2009) research reveals that the restrictions apply even in complex sentences when one adverbial is in the matrix clause while

the other one is in the embedded clause. This doesn't invalidate the Scope theory while it does disqualify the Feature theory.

6. Biskup (2009) demonstrates that the way the Feature theory accounts for the relative order of same-class adverbs can be disproved.

7. Biskup's (2009) Superset principle based on semantics is a simple yet effective solution able to predict the relative order of same-class adverbs.

The overwhelming number of arguments in favor of the semantic approach to adverbial ordering solidifies my conclusion that the **Scope theory is superior** to the **Feature theory**. Nevertheless, I believe the latter still deserves recognition.

6 Corpus

In this chapter, I am going to **validate crucial grammaticality claims** made by the three authors to substantiate the arguments preceding my conclusion in the previous chapter. For empirical evidence by Cinque (1999) and Ernst (2002) I will consult the **Corpus of Contemporary American English**.

Since some of the conclusions presented above were based on argumentation rather than nonvalidated empirical evidence[11], these will not be included in the corpus research. Only the cases where the conclusions rely on empirical evidence which may be disqualified by the results of the corpus research will be validated.

6.1 Establishing the hierarchy of adverbs

Using the methods of Cinque (1999) and Biskup (2009) I will establish a **hierarchy of English adverbs**. I will test pairs of adverbs in the same environment and take note of the frequency of each permutation. Firstly, English equivalents of **pre-VP** adverbs chosen by Biskup (2009) will be tested. The criterium for relevancy remains the same as Biskup's (2009)[12].

6.1.1 Pre-VP adverbials

(109) **Evaluative** *fortunately* and **epistemic** *probably*

	combination	relevant results
a)	*fortunately probably*	22
b)	*probably fortunately*	0

(110) **Evaluative** *fortunately* and **frequentative** *often*

	combination	relevant results
a)	*fortunately often*	36
b)	*often fortunately*	0

(111) **Epistemic** *probably* and **celerative/manner** *quickly*

	combination	relevant results
a)	*probably quickly*	138
b)	*quickly probably*	0

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[11] For example Ernst's (2002) third argument where both approaches deem *tactfully* preceeding *probably* as ungrammatical, but diverge in their interpretations neither of which can be validated through corpus research.

[12] Only those results where the adverbs were part of the same hierarchy and were not coordinated were included.

(112) **Frequentative** *often* and **celerative/manner** *quickly*

	combination	relevant results
a)	*often quickly*	170
b)	*quickly often*	2

So far, the results correspond to the adverbial hierarchies established by Cinque (1999), Ernst (2002), Rizzi (2004) and Biskup (2009). Next, English equivalents of circumstantial adverbials selected by Biskup (2009) will be tested as well as newly selected phrases for the sake of achieving higher amount of results.

6.1.2 Circumstantial adverbials

(113) **Locative** *in the town* and **temporal** *yesterday*

	combination	relevant results
a)	*in the town yesterday*	2
b)	*yesterday in the town*	7

(114) **Manner** *loudly* and **temporal** *today*

	combination	relevant results
a)	*loudly today*	8
b)	*today loudly*	1

(115) **Locative** *at home* and **manner** *carefully*

	combination	relevant results
a)	*happily PREP_ the beach*[13]	8
b)	*PREP_the beach happily*	0

Although these **circumstantial adverbials** can be **permuted freely** without deeming the sentence ungrammatical, there definitely seems to be a **preferred ordering** in English and it seems to be **different as opposed to Czech**. According to Biskup's (2009) corpus research, the preferred ordering of circumstantial adverbials in Czech is the one in (116).

(116) temporal > locative > manner

Data from COCA suggest that **in English the order is reversed** and that the preferred order of circumstantial adverbials is the one in (117).

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[13] For example *along the beach, on the beach, at the beach*.

(117) manner > locative > temporal

6.1.3 Interim conclusion

Cinque (1999) claims that all languages share the same hierarchy of functional projections. If **adverbials are in the Spec position** of functional heads and if the order of adverbials is determined by the functional hierarchy than both languages should have the **same preferred ordering**, or the **meaning should be changed**.

Ernst already demonstrated in example (45) that this is not the case and he used it as an argument against the Feature theory. Moreover, the fact that **different languages have a different preferred ordering** is an additional challenge for the Feature theory.

6.2   Cinque's ruling out of semantic factors

Using examples (19) and (20) duplicated for the sake of convenience as examples (118) and (119), Cinque (1999) **rules out the possibility of semantic factors** determining the order of *soon* and *almost*. He claims that the reasons for the ungrammaticality of sentence (118b) are not semantic since sentence (119) with the same logical form is not problematical. However, results from the corpus **do not support this argumentation** since there was only one result for *about to soon* while there were three cases of *soon about to*.

(118)   a. *He will soon almost be there.*
        b. **He will almost soon be there.*

(119)   *He is about to soon be admitted to hospital.*

(120) **Combinations** of *soon* and *about to*

	combination	relevant results
a)	*about to soon*	1
b)	*soon about to*	3

6.2.1 Interim conclusion

Cinque's (1999) argument **ruling out semantic factors cannot be supported** by the data from corpus since there is not enough data to confirm his empirical evidence.

6.3 Ernst's arguments against the Feature theory

This section will present the data from corpus to validate Ernst's (2002) arguments against the Feature theory.

6.3.1 Multiple positions for predicational adverbs

The first of Ernst's (2002) arguments involves a **classification of adverbials** into **natural groupings** based on their semantic properties. The table is presented again in (121). Based on this classification Ernst **predicts the positions** each class of adverbials can occupy. One adverbial of each category will be tested in COCA to see whether it occupies one of the predicted positions. **One hundred** instances were recorded for each adverbial, and only **relevant** results were taken into account.[14]

(121)
```
      a. manner:                        DP    Infl      Aux ✓ V ✓ XP ✓
      b. subject-oriented/      ✓ DP ✓ Infl ✓ Aux ✓ V    XP
         exocomparative:
      c. epistemic/             ✓ DP ✓ Infl ✓ Aux  ? V    XP
         evaluative:
      d. speech-act: ✓ Comp ✓ DP ✓ Infl ✓ Aux       V    XP
               [CP        [IP        [AuxP   [PredP [VP        ]]]]]
```

(122) **Manner** *loudly*

0%	DP	1%	Infl	0%	Aux	25%	V	58%	XP	14%

(123) **Subject-oriented** *rudely*

90%	DP	2%	Infl	0%	Aux	8%	V	0%	XP	0%

(124) **Epistemic** *probably*

2%	DP	38%	Infl	60%	Aux	0%	V	0%	XP	0%

(125) **Speech-act** *admittedly*

77%	DP	9%	Infl	8%	Aux	0%	V	0%	XP	0%
6%[15]										

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[14] For example, clausal readings of *loudly* and adverbs modifying adjectives were ignored. In some cases, the position of the adverbial was ambiguous – it could have been located before or after Infl, but since these positions are always grouped together, it isn't relevant for the argument.

[15] In 6% of the sample, *admittedly* was used as a disjunct behind the clause.

6.3.1.1 Interim conclusion

Based on the data above, we can see that Ernst's **classification** based on semantic criteria **is able to predict possible positions** for these adverbials. The only thing that wasn't anticipated by Ernst was the occurrence of adverbial **disjuncts** following the clause as was the case with *admittedly*.

6.3.2 Licensing of coordinate adjuncts

In his sixth argument, Ernst (2002) points out that the only way Feature theory can account for the **coordination of adjuncts** is to assume they were derived from larger phrases. In this view, sentence (126) would be derived from sentence (127), but that would require **stranding the adverbial** *frequently* before the deletion site which Ernst claims is generally impossible. He demonstrates this on example (128).

(126) *They had frequently and briefly stopped off to see her.*

(127) *They had frequently [stopped off to see her] and [they had (only)] briefly stopped off to see her.*

(128) **We had seldom stopped off to see her, but they had frequently.*

The **corpus data do not refute the ungrammaticality** claim of (128). The phrase *have always* was tested instead of *had frequently* due to higher frequency. There were more than **15 000** results for the phrase out of which only one was used **elliptical**ly with a **stranded adverbial** as in (128).

6.3.2.1 Interim conclusion

Hence, in accounting for the **coordination** of adjuncts, the **Feature theory** relies on a procedure which is considered **ungrammatical** – a supposition supported by the corpus data.

6.4 Event structure relevance and the Superset Principle

In the next section, I am going to validate Biskup's (2009) grammaticality claims concerning the **empirical evidence** he used to support his **Superset Principle**. In the following paragraph, the wording of this principle is repeated:

> **The final version of Biskup's Superset Principle (Biskup 2009:137):** The highest segment of the adverbial of the larger domain must c-command at least one segment of the adverbial of the smaller domain if the adverbials relate to the same event.

To support this theory, Biskup (2009) provides several examples where the adverbial of the **smaller domain preceding** the adverbial of the **larger domain** results in an **ungrammatical** sentence.

Testing this claim using English data from the corpus proved challenging for one reason, namely the fact that **English temporal adverbials may function as frame adverbials** even when at the **end of the sentence**. Consider example (129a) which is synonymous with (129b). The same adverbial is included in both sentences in example (130). Here however the meanings differ.
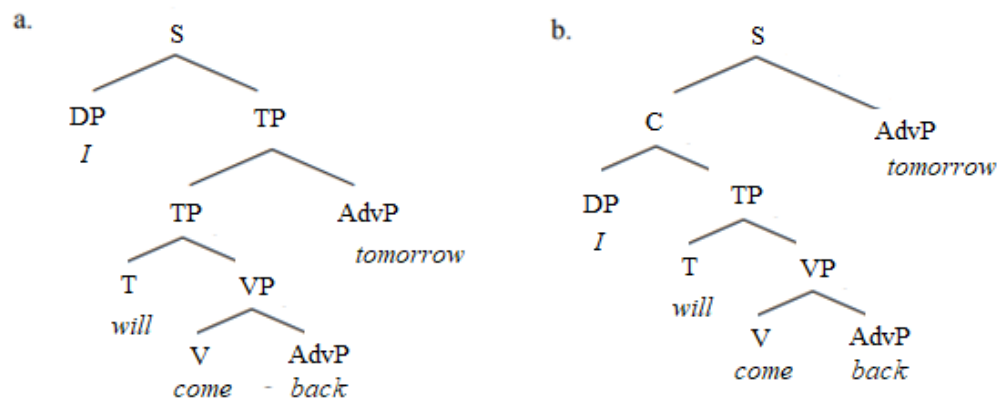
(129)   a) *We will not do this anymore tomorrow.*
        b) *Tomorrow, we will not do this anymore.*

(130)   a) *I will do it tomorrow.*
        b) *Tomorrow, I will do it.*

A sentence presented in example (131) can therefore be **ambiguous**. The possible structures are demonstrated in a scheme (132).
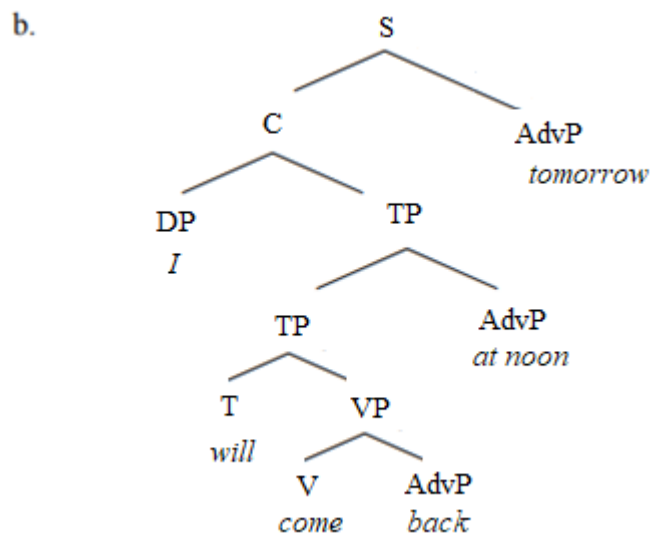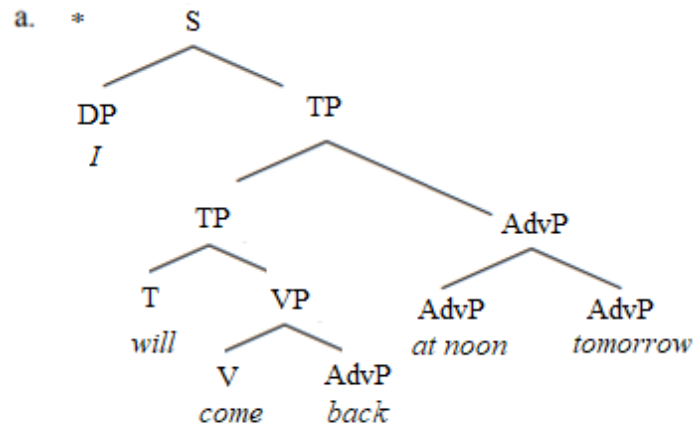
(131) *I will come back tomorrow.*

(132)

This **ambiguity persists** even when there are **two adverbials at the end of the sentence**. Biskup's Superset Principle requires **larger-domain** adverbial to **c-command** at least one segment of the **smaller-domain** adverbial, hence structure (133a) should be impossible. However, the principle doesn't disqualify structure (133b) which has the identical surface.

(133)

a. *
```
              S
           ┌──┴──────┐
          DP         TP
          I      ┌────┴─────┐
                TP          AdvP
            ┌───┴───┐    ┌───┴────┐
            T      VP  AdvP      AdvP
           will  ┌──┴──┐ at noon  tomorrow
                 V    AdvP
                come  back
```

b.
```
                    S
               ┌────┴──────┐
               C          AdvP
          ┌────┴────┐    tomorrow
         DP         TP
         I      ┌───┴────┐
               TP       AdvP
           ┌───┴───┐   at noon
           T      VP
          will ┌──┴──┐
               V    AdvP
              come  back
```

For this reason, there were many results where *at noon* preceded *tomorrow*. However, the vast majority of these **could be interpreted** as having the same structure as the previous example (133b) which **doesn't violate Biskup's Superset Principle** in any way since **frame adverbials scope over all other adverbials** in the clause. Only two results unambiguously violated the principle, one of them can be observed in example (134). Nevertheless, there were significantly more results where *tomorrow* preceded *at noon* as you can see in (135).

(134) **At noon tomorrow, you'll be transported under guard to the bay…*

(135) **Same-class** adverbials *at noon* and *tomorrow*

	combination	relevant results
a)	*at noon tomorrow* (ambiguous)	31
b)	*at noon tomorrow* (nested)	2
c)	*tomorrow at noon*	130

6.4.1 Interim conclusion

Although at first, the English **data from COCA seemed to clash** with Biskup's (2009) account for the order of same-class adverbials, further analysis demonstrated that his **theory remains unscratched**. The amount of data which could disqualify his Superset Principle was negligible.

6.5   Corpus data evaluation

The **corpus research supported** Cinque's (1999), Ernst's (2002), Rizzi's (2004) and Biskup's (2009) **adverbial hierarchies**. **It didn't support Cinque's empirical evidence** based on which he ruled out the influence of semantic criteria on adverbial ordering. The data **supported Ernst's adverbial classification's** ability to successfully **predict multiple possible positions** for different classes of adverbials. It also validated the claim that the Feature theory relies on an ungrammatical procedure in order to account for coordinated adjuncts. Finally, **the data was consistent with Biskup's Superset Principle**.

7 Conclusion

The goal of this master's thesis was to introduce and describe **three theories** representing **two general approaches** accounting for the **rigid relative order of adverbial**s – **syntactic** approach and **semantic** approach. Three theories were introduced: **The Feature theory** by Guglielmo Cinque (1999) representing the syntactic approach, **The Scope theory** by Thomas B. Ernst (2002) and **The Superset Principle** by Petr Biskup (2009) both representing the **semantic approach**. These theories were compared and evaluated.

I concluded that Ernst (2002) managed to provide convincing argumentation supported by compelling empirical evidence to prove that the **Feature theory was unstable**, fragile, and unnecessarily complicated in comparison to the solution based on semantics presented by Ernst as an alternative. His **Scope theory succeeded** in accounting for the restricted order of adverbials with a s**imple set of semantic rules** where the **Feature theory** had to resort to a **multitude of arbitrary, unrelated, and unnecessarily complicated rules**. Biskup (2009) expanded on this by pointing out another major **deficiency of the Feature theory** – the **intractability** of **adverbials** even in **matrix** and **embedded** clauses which is beyond the Feature theory's **one-clausal scope**. Furthermore, he demonstrated that there is a **rigid order** even among **same-class adverbials** and based on **semantic criteria**, he formulated his **Superset Principle** which successfully predicts the order and syntactic structure of multiple same-class adverbials.

Then, I used the Corpus of Contemporary American English to **validate several grammaticality claims** upon which some of the authors' points depended. The corpus research **supported** Cinque's (1999), Ernsts's (2002) and Biskup's (2009) **adverbial hierarchies.** It **didn't support Cinque's empirical evidence** used to rule out semantic criteria as a possible source of constriction of the adverbial ordering. On the contrary, **it supported Ernst's (2002) argumentation** against the **Feature theory**, and it validated several of his arguments in favor of the **Scope theory**. Finally, the data proved consistent with Biskup's (2009) formulation of his **Superset Principle**. All in all, the corpus data only confirmed the conclusions made by comparisons in the previous chapter, that is, the **Scope theory is a preferable theoretical framework** to account for the principles determining the relative order of adverbials.

8 České resumé

Cílem této magisterské práce bylo představit a popsat tři teorie reprezentující dva obecné způsoby vysvětlující rigidní relativní pořadí adverbií – syntaktický přístup a sémantický přístup. Byly představeny tři teorie: Funkční teorie od Guglielma Cinqueho (1999) zastupujícího syntaktický přístup, Teorie Skoposu od Thomase B. Ernsta (2002) a Superset Principle – „zásada nadmnožin" Petra Biskupa (2009), které obě zastupují sémantický přístup. Tyto teorie byly následně porovnány a vyhodnoceny.

Došel jsem k závěru, že Ernst (2002) dokázal poskytnout přesvědčivou argumentaci podpořenou pádnými empirickými důkazy dokazujícími, že Funkční teorie je nestabilní, křehká a zbytečně komplikovaná v porovnání s řešením založeným na sémantických kritériích, které Ernst nabízí jako alternativu. Jeho Teorie Skoposu úspěšně dokázala vysvětlit omezené možnosti řazení adverbií na základě jednoduchého sady sémantických pravidel, zatímco Funkční teorie se musela uchýlit k řadě arbitrárních, nesouvisejících a zbytečně komplikovaných pravidel. V podobném duchu pokračoval Biskup (2009), který upozornil na další velký nedostatek Funkční teorie – interaktibilitu adverbií v hlavní a vedlejí větě, kterou Funkční teorie nedokáže vysvětlit kvůli svému limitovanému rozsahu na jednu větu. Mimoto také ukázal, že rigidní je i pořadí adverbií stejné třídy a na základě sémantických kritérií formuloval svoji zásadu, která úspěšně předvídá pořadí a syntaktickou strukturu více adverbií stejné třídy.

Na závěr sem použil Korpus současné americké angličtiny, abych ověřil řadu tvrzení o gramatičnosti, na kterých závisela řada argumentů prezentovaných všemi třemi autory. Korpusový výzkum potvrdil Cinqueho (1999), Ernstovu (2002) i Biskupovu (2009) sestavenou hierarchii adverbií. Nepodpořil však empirický důkaz, o který se Cinque opíral při vyloučení sémantických kritérií jako možného zdroje omezení pořadí adverbií. Naopak, podpořil Ernstovu (2002) argumentaci proti Funkční teorii a ověřil řadu jeho argumentů ve prospěch Teorie Skoposu. V neposlední řadě se data z korpusu ukázala být konzistentní s Biskupovou (2009) formulací jeho Superset Principle – „zásady nadmnožin". Sečteno a podtrženo, data z korpusu jen stvrdila závěry vynesené porovnáním teorií v přechozí kapitole, a to, že Teorie Skoposu je vhodnějším teoretickým rámcem pro vysvětlení principů determinujících relativní pořadí adverbií.

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