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SYNTACTIC PROCESSES AND INTERFACE PHENOMENA  
IN COMPARATIVES

MONDATTANI FOLYAMATOK ÉS INTERFÉSZJELENSÉGEK  
A HASONLÍTÓ SZERKEZETEKBE

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### **Syntactic Processes and Interface Phenomena in Comparatives**

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2 November 2010

Kántor Gergely

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# Chapter One

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## Introduction

The core problem considered in this dissertation is that of the syntax of comparison. The main research question in the broadest possible sense therefore may be formulated as what the structure of comparatives looks like. Although this might sound to be an attractive starting point, the expressions *structure* and *comparatives* need to be further refined. As for structure, the theoretical framework forming the background of this research will be a version of Chomskyan minimalist syntax including Phase Theory (see, e.g., Chomsky 1993, 1995, 2001, 2004, 2005). As far as this research is concerned, I will aim at using the tools and mechanisms provided by mainstream generative grammar in order to describe and explain the emerging problems. As is known, this branch of linguistic analysis tries to capture and describe the native linguistic competence of speakers; that is, the analysis provided in this study must be such that children could possibly acquire it during the period of language acquisition. This clearly has an effect on my approach to comparatives: assuming that Ockham's razor (or *lex parsimoniae*) serves as an appropriate guide in the development of the syntactic analysis of comparatives, I will try not to postulate the existence of more phenomena (elements, projections, functional layers, mechanisms *et cetera*) than what seems to be supported by empirical data. Nevertheless, I certainly do not claim that the analysis presented in this dissertation is not or will not be refutable from a scientific perspective; in fact, I intend to contribute to the literature on the syntax of comparison with newer problems and solutions, which

might help us get a more precise picture of what the structure of comparatives looks like and what kind of mechanisms are involved in them.

As far as comparative constructions are concerned, they have long been in the forefront of generative syntactic theories, as their appearance and behaviour might raise several problems to many conceptions on structure. As a result, even though many dilemmas have been resolved since the 1970s, new questions are posed, as mainstream generative syntactic theories change and develop, which have direct influence on the structural description of comparatives as well. The underlying properties of comparative constructions were observed in the 1970s from a generative perspective (for example, in Bresnan 1973 and 1975), and the debate on the conditions generating their structure has been uninterrupted since then (for example, in Bresnan 1977; Chomsky 1977; Corver 1990, 1993b; Kenesei 1992b; Izvorski 1995a, 1995b; Lerner & Pinkal 1995; Kennedy 1997; Kennedy & Merchant 1997; Lechner 1999; among others).

In this chapter, following a brief glance at comparatives and the background framework, I will also list and group some of the problems to be investigated, thus formulating the goal and the outline of the dissertation.

## 1.1 Comparatives: a first glance

In this subchapter, I will provide an overview of what is usually known about comparatives from a descriptive, yet formal syntactic point of view.

To start with, comparison between entities based on some common property and their relative ordering is possible wherever human language is spoken (Sapir 1944). In fact, comparison consists of a semantic function of assigning different positions on a common scale to different entities (see also Stassen 1985:24). Throughout this research, we will be mostly concerned with comparatives found mostly in Indo-European languages and Hungarian. The reason for Hungarian also being in the centre of attention is that, to my knowledge, no extensive generative description of Hungarian comparatives is available to date. One of the premises of looking at Hungarian is that it may provide a deeper insight into the universal properties of degree expressions as well.

To start with, let's have a look at a rough version of the comparative machinery of human languages, as outlined in (1):

- (1) Butch sokkal magasabb, mint Fluffy. (Hungarian)  
 Butch much taller than Fluffy  
 ‘Butch is much taller than Fluffy.’

TARGET OF COMPARISON	DEGREE MODIFICATION	GRADABLE PREDICATE	COMPARATIVE MORPHEME	STANDARD MARKER	STANDARD OF COMPARISON
Butch	sokkal	magas-	-(a)bb	mint	Fluffy

I took the informal labels of the semantic constituents of comparatives from Kennedy (2005), and they only serve to show that a full-fledged explicit comparative construction may include all these macroconstituents. The picture in (1) is rough because, hopefully, the internal structure of comparatives will be slightly more complicated as we progress towards the end of this research.

Naturally, comparative constructions all include gradable predicates, as they form a subpart of degree constructions, such as those below:

- (2) a. Butch is **less** aggressive than Fluffy.  
 b. Butch is **older** than Fluffy.  
 c. Butch is not **as** obedient as Fluffy.  
 d. Butch is **too** lazy to play with Fluffy.  
 e. Butch is not fast **enough** to catch Fluffy.  
 f. Butch is **so** hungry that he would eat Fluffy’s dinner.  
 g. **How** proud is Butch of Fluffy?

What degree expressions have in common is that they include some indication of the degree to which the property expressed by the gradable predicate is true of its target (see, e.g., Neeleman *et al.* 2004). Therefore, what the predicate primarily does in these degree expressions is associate the target (e.g., the target of comparison *Butch* in (1) above) with a degree. In this respect, as far as the comparative in (1) is concerned, the target (i.e., the subject) is an argument of the predicate, similarly to absolute constructions (*Butch is smart: Butch* is the argument of *smart*) or the ones in (2).<sup>1</sup> In this study, we will be concerned with the constituent that includes the macroconstituents but the target (the DEGREE PREDICATE), as that is what makes degree expressions and/or comparatives

---

<sup>1</sup> The reason for this is that the element representing the reference value has different functions in the matrix clause (e.g., it might be given a thematic role), as opposed to the comparative complement, as we will see later:

(i) A man [taller than Bill] loves Mary.

Certainly, in attributive comparatives the target is not base-generated as the (internal) argument of the degree predicate. However, this also falls out of the scope of this research. See also Neeleman *et al.* (2004:28, especially example 66).

special.<sup>2</sup> I would also like to add that, naturally, the standard marker and the standard value are considered to form a constituent (with the standard marker selecting the standard value) and whenever standard is mentioned, it refers to this constituent henceforth, unless indicated otherwise.

**1.1.1 A typology of comparatives.** Turning now to the typology of comparatives, the terminology presented here is based on classical assumptions (Bresnan 1973, 1975, 1977, Chomsky 1977, Pinkham 1985, von Stechow 1984, Kennedy 1997, Lechner 1999 etc.). From a basic and descriptive point of view, comparatives can be categorized on the basis of the position of the degree predicate (i.e., the core of the comparative construction): it may be predicative, attributive or nominal, and the nature of the standard: it may be clausal, phrasal or even mixed.<sup>3</sup>

(3) *Clausal comparatives*

- |  |                               |
|--|-------------------------------|
| a. Butch is older than Fluffy is.  | <i>predicative</i>            |
| b. Butch is taller than the kennel is high.  | <i>pred. subcomparative</i>   |
| c. Butch ate a bigger bone than Fluffy ate.  | <i>attributive</i>            |
| d. Drágább autót vettem, mint Péter hajót.<br>costlier car-ACC I.bought than Peter boat-ACC<br>'The car I bought is costlier than the boat Peter bought.'                                  | <i>attr. sub. (Hungarian)</i> |
| e. Butch ate more bones than Fluffy ate.   | <i>nominal</i>                |
| f. Több kutya nyalt nyulat, mint macska egeret.<br>more dogs licked rabbit-ACC than cat mouse-ACC<br>'The number of dogs that licked rabbits exceeds the number of cats that licked mice.' | <i>nom. sub. (Hungarian)</i>  |

---

<sup>2</sup> According to Szabolcsi (1986) and É. Kiss (1993), certain superlative sentences can also have a comparative reading, as can be seen below:

- (i) PETER climbed the highest mountain. (Peter is focused, receives main stress).  
(ii) Peter climbed higher mountains than the others.

Even though the above interpretation (as in ii) of (i) might be classified as special type of comparative construction, due to the fact that – as É. Kiss (1993) argues – the comparative reading of superlatives is a semantic property, it falls outside the scope of the current research. For an in-depth analysis, see the references above.

<sup>3</sup> *Mixed* refers to comparative standards which – as hybrid constructions – seem to show properties of phrasal and clausal comparatives as well:

- (i) Roma è più bella [di [quanto Milano è meravigliosa]]. (Italian)  
Rome is more beautiful P<sup>0</sup> *wh*-OP Milan is marvellous  
'Rome is more beautiful than Milan is marvellous.'

As can be seen, the standard is introduced by the preposition *di*, which appears in phrasal comparatives, and it takes a clausal complement, hence the standard is mixed. I will return to them later; see also Bácskai-Atkári (2009) for further discussion.

As can be seen, predicative comparatives follow the copula *be*. The clause representing the standard value is typically partial (Lees 1961, Hale 1970, Bresnan 1973, Kennedy 1997:138), as some missing elements (e.g., *d-old* in (3a) above; *d* refers to a certain absolute degree) have been elided by Comparative Deletion (CD). CD in English is known to delete the degree predicate in the subordinate clause, if it is identical to its matrix clause counterpart:

- (4) a. Butch has more fleas than Fluffy has \_\_\_\_<sub>CD</sub>. (\_\_\_\_<sub>CD</sub> = d-many fleas)  
 b. \*Butch has more fleas than Fluffy has many fleas.

The ungrammaticality of (4b) indicates that CD is obligatory in English. When they are not identical, Comparative Subdeletion (SD) obligatorily deletes any degree word or measure phrase in English (i.e., in (3b) this deleted element is *d* in *d-high*; see Kennedy 1997:138 and Izvorski 1995b:203). SD is also taken to be responsible for the deletion of the degree word and the gradable predicate (the adjective) when more than one constituents serve as the basis of comparison in the subordinate clause:

- (5) Butch has more fleas than Fluffy has \_\_\_\_<sub>SD</sub> fluffs. (\_\_\_\_<sub>SD</sub> = d-many)

Although the deleted degree word and the adjective cannot be seen overtly, they can easily be detected by applying a complement of any gradable predicate (Bresnan 1977:163). For example, *proud* subcategorizes for an *of*-PP, and *many* or *much* may also occur with *of*-PPs in partitive phrases.

- (6) a. John is prouder of Mary than Tom is \_\_<sub>CD</sub> of Christine. (\_\_<sub>CD</sub> = d-proud)  
 b. \*John is prouder of Mary than Tom is [AP proud [PP of Christine]].  
 c. \*Tom is of Christine.  
 d. There were more of teachers than there were \_\_<sub>CD</sub> of students.  
 (\_\_<sub>CD</sub> = d-many)  
 e. \*There were more of teachers than there were many [PP of students].  
 f. \*There were of students.

The standard would be seriously ill-formed without SD (see (6b) and (6e) above), whereas in a non-comparative sentence (see (6c) and (6f)) applying SD is impossible. It also seems evident that the elided words have corresponding equivalents in the matrix degree predicate. As a consequence, they can easily be recovered from the matrix of the comparison (Bresnan 1977:163). Sometimes it is not evident how to make difference between Comparative Deletion and Subdeletion. It has been established that Comparative Deletion may elide a sequence of words consisting of a certain degree morpheme (i.e., *-er*, *more*, or  $\emptyset$  as

absolute degree) related to the adjective, the adjective and some other material in the compared constituent, whereas Subdeletion elides only the degree morpheme and the adjective, as can be seen in the nominal comparative below:

- (7) a. Butch has more fleas than Fluffy has ~~d-many fleas~~<sub>CD</sub>.  
 b. Butch has more fleas than Fluffy has ~~d-many~~<sub>SD</sub> fluffs.

As (7a) is a nominal comparative, whereas (7b) is a subcomparative, the deletion rules are supposed to be CD in (7a) and SD in (7b). Nevertheless, if the elided material consists of a degree material and an adjective, if it is in predicative position (following, for instance, the verb *be*), the operation deleting them is also Comparative Deletion, as can be seen, for example, in Chomsky (1977) and below:

- (8) The fleas are bigger than they were ~~d-big~~<sub>CD</sub> yesterday.

On the other hand, if the degree morpheme and adjective string is elided in a prenominal position, Subdeletion is to be blamed:

- (9) Butch has bigger fleas than Fluffy has ~~d-big~~<sub>SD</sub> fluffs.

Still, the deleted material is the same in both cases. The reason for this phenomenon is that the compared constituent in the case of predicative comparatives is the AP itself, as opposed to attributive comparatives, in which the compared constituent is a DP with an embedded AP (or DegP) in it. As Subdeletion may be considered a subpart of Comparative Deletion, it has been more appropriate to say that whenever Comparative Deletion (CD) can be blamed for eliding the compared constituent, CD applies, although certain cases could be explained only with Subdeletion. Still, there is no straightforward syntactic means to differentiate between the adjectival expressions in (8) and (9), as they are identical (*d-big*).

Turning back to clausal comparatives in (3), attributive comparatives are optional modifiers of other constituents (see (3c) above). Certain languages allow attributive subcomparatives as well (e.g., Hungarian, as can be seen in (3d) above), while others may opt for using relative clauses instead:

- (10) a. Butch has a bigger house than Fluffy has (\*a den).  
 b. Butch has a bigger house than the den that Fluffy has.

In fact, the subordinate clauses in attributive comparatives may come in two different forms: one of them is (3c) above, in which the subclause has a structure

parallel with that of the matrix clause. On the other hand, the subclause can also have a predicative pattern, as can be seen below:

- (11) Butch licked a tastier bone than this one (?is).

Based on Lerner and Pinkal (1995), attributive comparatives similar to the one in (3c) are called Wide Reading Attributive Comparatives (WRA). On the other hand, (11) is called Narrow Reading Attributive Comparative (NRA), and it is different inasmuch as its subclause patterns with predicative comparatives. Turning back to (3e) and (3f), nominal comparatives are also known as comparative quantifiers, as they count as quantifiers generated within functionally extended nominal expressions, and the quantification of a nominal is compared to that of a noun in the standard value (for a fully compositional analysis of nominal comparatives, see Hackl 2000). As can be seen in (3f), subdeletion can also occur in nominal comparatives.

In connection with deletion in comparatives, Comparative Ellipsis (CE) elides syntactic structure inside the *than*-XP that is distinct from any structure already deleted by Comparative Deletion but has an appropriate antecedent in the matrix clause. According to Pinkham (1985: 99ff.), Comparative Ellipsis in English is an optional verb deletion rule that elides other categories in the *than*-XP. The process may be identified in the following sentence:

- (12) Butch had more fleas yesterday than Fluffy \_\_\_\_<sub>CE1</sub> \_\_\_\_<sub>CD</sub> \_\_\_\_<sub>CE2</sub>.  
(\_\_\_\_<sub>CE</sub> = had; \_\_\_\_<sub>CD</sub> = d-many fleas; \_\_\_\_<sub>CE2</sub> = yesterday)

Although this descriptive approach thoroughly captures the phenomenon, it can be asked whether other syntactic principles, such as VP-ellipsis, Gapping, Right Node Raising or Across-the-Board movement, can supersede Comparative Ellipsis, as argued in Lechner (1999:99ff). I will return to deletion in comparatives in Chapter 4.

Now let us move on to phrasal comparatives:

- (13) *Phrasal comparatives*
- |    |   |              |             |
|----|---|--------------|-------------|
| a. | Fickó kedvesebb Pihénél.                      | <i>pred.</i> | (Hungarian) |
|    | Butch nicer Fluffy-ADE                        |              |             |
|    | ‘Butch is nicer than Fluffy.’                 |              |             |
| b. | Fickó nagyobb csontot nyalogat Pihénél.       | <i>WRA</i>   | (Hungarian) |
|    | Butch bigger bone-ACC is.licking Fluffy-ADE   |              |             |
|    | ‘Butch is licking a bigger bone than Fluffy.’ |              |             |

- c. Fickó nagyobb csontot nyalogat Pihéénél. *NRA* (*Hungarian*)  
 Butch bigger bone-ACC is.licking Fluffy's-ADE  
 'Butch is licking a bigger bone than Fluffy's.'
- d. Tíznel több kutya nyalogatott csontot. *nom.* (*Hungarian*)  
 ten-ADE more dog was-licking bone-ACC  
 'More than ten dogs were licking bones.'

As far as English is concerned, ever since Hankamer's (1973) seminal paper, there has been an ongoing discussion whether or not English has phrasal comparatives; the question is whether they are derived from a clausal source (see, for example, Bresnan 1973, Hazout 1995, Lechner 1999) or they are given a different syntactic and semantic interpretation (see, e.g., Heim 1985). I will return to this issue later; for the time being, I will be using Hungarian constructions to exemplify phrasal comparatives, as this language obviously uses inherently case-marked definite nominals of type <e> in such constructions, which is a clear indicator of a construction fundamentally different from that of its clausal counterparts.

Finally, let's have a look at how comparatives with mixed standards look like:

- (14) a. Maria è più alta di me. (*Italian*)  
 Mary is more tall P<sup>0</sup> me  
 'Mary is taller than me.'
- b. Faccio quanto mi piace. (*Italian*)  
 I.do what I-DAT appeal-3<sup>RD</sup>.SG-PRES-IND  
 I do what I like.' (headless free relative)
- c. Roma è più bella di quanto<sub>i</sub> pensassimo che fosse t<sub>i</sub>. (*Italian*)  
 Rome is more beautiful P<sup>0</sup> what we.thought that be-3.SG-PAST-SUBJ  
 'Rome is more beautiful than we thought it was.'
- d. [<sub>PP</sub> di [<sub>DP</sub> [<sub>DP</sub> Ø [<sub>CP</sub> quanto<sub>i</sub> [<sub>C</sub> Ø [<sub>IP</sub> pensassimo che fosse t<sub>i</sub>]]]]]]]  
 (Bácskai-Atkári 2009: 16ff., exx. 7a, 15a, 14)

In line with Bácskai-Atkári (2009), (14a) is a phrasal comparative, which consists of a preposition (*di*) selecting a DP in Italian; (14b) shows that the headless free relative includes an A'-moved operator (*quanto*); finally, in (14c) the standard consists of the preposition *di* and a headless free relative clause. The complementizer position is empty due to the Doubly Filled COMP Filter (Chomsky and Lasnik 1977: 446). On the other hand, there is another form of mixed comparatives, in which the relative clause is adjoined to an overt DP:

- (15) a. Roma è più bella (Italian)  
 Rome is more beautiful  
 di quello che pensassimo che fosse ti.  
 P<sup>0</sup> DEM that we.thought that be-3<sup>RD</sup>.SG-PAST-SUBJ  
 ‘Rome is more beautiful than we thought it was.’  
 b. [PP di [DP [DP quello] [CP OP<sub>i</sub> [C<sup>0</sup> che [IP pensassimo che fosse t<sub>i</sub>]]]]]  
 (Bácskai-Atkári 2009: 18, ex. 14)

As can be seen, the demonstrative pronoun *quello* is in the DP, and instead of filling specCP, C<sup>0</sup> is filled here by the complementizer *che*.

**1.1.2 Comparative operator movement.** The reason why mixed standards are relevant is that they may help unearth some characteristics of the phenomenon called comparative operator movement. Since Chomsky (1977), it is a widely accepted assumption that comparatives involve *wh*-movement. In fact, Chomsky originally claimed that Comparative Deletion in reality is nothing else but a case of *wh*-movement (*ibid*: 87). The argumentation in favour of Chomsky’s statement consists of three observations: (i) there is direct evidence for such an analysis, (ii) in a certain context, the sentence may not have an overt matrix clause, which could trigger and control deletion, and (iii) Comparative Deletion observes the general characteristics of *wh*-movement. Accordingly, the benefit of such an attitude towards Comparative Deletion is that the need for this rule, being superfluous, would cease to exist.

First of all, let me start with the first argument. In certain dialects of American English, *wh*-movement can be captured overtly, as can be seen in the examples below:<sup>4</sup>

- (16) a. John is taller than what Mary is.  
 b. John is taller than what Mary told us that Bill is.  
 (Chomsky 1977:87, examples 51a, 51b)

The sentences in (16) implicate that *wh*-movement generally applied in questions and relative clauses could be extended to comparatives as well. Secondly, it may also be declared that *wh*-movement functions in comparatives in other dialects of English too.<sup>5</sup> Consider the following examples:

- (17) a. Mary isn’t the same [as she was five years ago].  
 b. Mary is (more or less) [as she was five years ago].

<sup>4</sup> The deleted material is only a Deg<sup>0</sup>-A<sup>0</sup> string, but as it is in predicative position, as in (16), it is elided by Comparative Deletion.

<sup>5</sup> Chomsky (1977) treats equatives as comparatives.

- c. Mary is (more or less) [as what she was five years ago].  
(Chomsky 1977:87-88, examples 52a, 53a, 54a)

The construction in (17a) is acceptable to all English speakers. (17b) presents a more interesting phenomenon, in which *the same* does not appear; still, the construction is very similar. However, as Chomsky argues, “there is no overt matrix phrase that can trigger and control deletion” (1977:88); that is, a deletion analysis does not seem applicable here. In those dialects that allow (16) the sentence in (17c) is also grammatical. Consequently, there are reasons to believe that there is *wh*-movement in degree constructions, at least in comparatives and equatives. The third argument in favour of Chomsky’s analysis may be that comparative constructions conform to the general characteristics of *wh*-movement, some of which can be found below:

- (18) a. *Wh*-movement leaves a trace coindexed with its A'-antecedent.  
(Haegeman 1994:393)  
b. Movement out of a complex NP is blocked.  
(Complex NP Constraint; Ross 1967)  
c. Movement out of embedded CPs introduced by *wh*-constituents is blocked. (*wh*-island constraint; Ross 1967)

Ross’ constraints in (18b-c) were given a more general treatment in the form of Bounding Theory, in which the Subjacency Condition stipulates that “movement cannot cross more than one bounding node, where bounding nodes are IP and NP” (Haegeman 1994:402). Notwithstanding, it can easily be noticed that the Subjacency Condition, or Ross’ constraints are respected in comparatives, as is exemplified in the following set of sentences as well:

- (19) a. Mary isn’t different than [what she was five years ago].  
b. Mary isn’t different than [what John believes [that Bill claimed [that she was five years ago]]].  
c. \*Mary isn’t different than [what John believes [Bill’s claim [that she was five years ago]].  
d. \*Mary isn’t different than [what I wonder [whether she was five years ago]].  
(Chomsky 1977:88, exx. 56a-d)

Examples (19a-b) are considered grammatical in certain American dialects of English already mentioned above; moreover, (19c) is ruled out because of the condition in (18b), and (19d) is ungrammatical due to the constraint in (18c).

What this means is that this is also an argument in favour of Comparative Deletion's being simply an instance of *wh*-movement.<sup>6</sup>

Nevertheless, there are missing links in this analysis. Even though it has been proved that there exists *wh*-movement in comparatives, it is not adequately specified what element is moved in the comparative complement. Furthermore, the moved element must be placed into an A'-position, which seems to be a feasible step, though; still, this operation is not precisely displayed. It is also unexplained why it is the *wh*-word *what* that is moved to the front of the comparative clause. It can also be asked what triggers *wh*-movement. Thirdly, as Bresnan (1977) argues, Subdeletion, the subpart of Comparative Deletion responsible for deleting the degree morpheme in the comparative complement, might present certain oddity in its behaviour with regard to Chomsky's movement analysis.

Consequently, the above problems must be solved. First of all, it has to be mentioned that, throughout this study, I will adopt the view that *than* subcategorizes for a Complementizer Phrase, as in Kenesei (1992b) and Lechner (1999). As the moved element can always be found at the front of the CP, it may be assumed that it lands in the specifier of that CP. As specCP is an A'-position for movement, the condition in (18a) is properly satisfied. I will return to the issue of how to place the *wh*-element into specCP later, in Chapter 4, providing empirical arguments in favour of the latter hypothesis.

Secondly, the questions *what moves*, *why it moves*, and *where it moves from* should also be answered. Lechner (1999) claims that "comparatives are analyzed as empty operator movement constructions" (*ibid*:40). Consequently, it may not be the degree morpheme but an empty operator that moves from within the comparative clause into its specCP. It is also true that this empty operator is not empty in certain American dialects, as could be seen above. Several questions arise in connection with such an approach, which will be discussed in Chapter 4.

Now let us turn to the possibility of movement in subdeletion constructions. Bresnan (1977) alleges that Subdeletion constructions cannot be analyzed as instances of *wh*-movement. She lists three arguments to support her statement: (i) the measure-phrase modifiers elided by Subdeletion cannot be moved away from the constituents they modify by known movement rules; (ii) no overt evidence can be found indicating that a constituent is moved in Subdeletion constructions; and (iii) if a string consisting of a degree modifier and an adjective (Deg<sup>0</sup>+A<sup>0</sup>) undergoes movement prior to its deletion, one would expect obligatory pied-piping of the rest of the material that is modified by the adjective (*ibid*:167).

As far as the first statement is concerned, the examples below might cast some light upon it:

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<sup>6</sup> I will return to this mechanism in Chapter 4, taking into consideration that comparative operator movement in English may as well be covert.

- (20) a. She has as many boyfriends as she has \_\_\_\_<sub>SD</sub> books. \_\_\_\_<sub>SD</sub> = d-many  
 b. \*Many<sub>i</sub> though she has t<sub>i</sub> books, she wants more.  
 c. [Many books]<sub>i</sub> though she has t<sub>i</sub>, she wants more.  
 (Bresnan 1977:167, examples 21, 25a, 25b)

*Many* is a quantifier here, and supposedly it is in a functional specifier position in the DP-structure.<sup>7</sup> However, in a modified version of *wh*-movement analysis just presented, it may not be claimed that the adjective or its degree morpheme should move to the front of the clause, as an empty comparative operator may originate somewhere else. As a consequence, the example in (20b) does not raise a problem for the empty operator movement. (20c) is grammatical, because the sequence [*many books*]<sub>i</sub> forms a phrasal constituent, which can be preposed. Secondly, that no overt movement can be found in Subdeletion constructions is not surprising at all, as the empty operator that moves is evidently a covert element. As a result, the second argument does not undermine the *wh*-movement analysis. Finally, the third argument may be based on the following pair of examples below:

- (21) a. Butch hasn't seen as many fleas as [Fluffy has \_\_\_\_<sub>SD</sub> fluffs].  
 \_\_\_\_<sub>SD</sub> = d-many  
 b. \*Butch hasn't seen as many fleas as [[\_\_\_\_<sub>SD</sub> fluffs]<sub>i</sub> Fluffy has t<sub>i</sub>].  
 \_\_\_\_<sub>SD</sub> = d-many

On the basis of what can be seen in (21a), it may be assumed that movement of the prenominal Deg<sup>0</sup>+A<sup>0</sup> sequence to the front of the clause is accompanied by obligatory pied-piping of the modified elements. That is, if *d-many* undergoes movement, (21b) should be a grammatical sentence. As there is no need to stipulate that *d-many* undergoes movement, the example in (21b) is not problematic with regard to a *wh*-movement analysis.

In fact, Bresnan's all three claims are associated with one simple statement: neither the degree morpheme, nor the adjective moves to the front of the clause. To continue with movement in Subdeletion constructions, it may be checked whether they conform to general characteristics of *wh*-movement. For instance, Subdeletion observes Ross' Complex NP Constraint:

- (22) a. I'll have to give as many Fs as you've proposed to give As.  
 b. \*I'll have to give as many Fs as you've discussed a proposal to give As.  
 (Chomsky 1977:119, examples 227a and 227b)

---

<sup>7</sup> According to Abney (1987: 184ff.), these quantifier phrases are base-generated in specNP. On the basis of Zamparelli (2000), there are several functional projections inside the DP, and quantifiers like *many* are in the specifier position of one of the functional heads.

It should also be checked whether Subdeletion does observe Ross' *wh*-island constraint in (18c). The following sentences may be helpful to do so:

- (23) a. Butch ate bigger chicken wings than Fluffy ate \_\_\_\_<sub>SD</sub> chicken thighs.  
 b. ?Butch ate bigger chicken wings than I said that Fluffy ate \_\_\_\_<sub>SD</sub> chicken thighs.  
 c. \*Butch ate bigger chicken wings than I wondered whether Fluffy ate \_\_\_\_<sub>SD</sub> chicken thighs.  
 In all cases (23a-c): \_\_\_\_<sub>SD</sub> = d-big

In (23a), a regular Subdeletion construction can be seen. It is known from Bresnan that Subdeletion occurring in a sentence with more than one tensed embedded clause “gets worse faster” than Comparative Deletion in the same circumstances (1977:169). That is the reason why the sentence in (23b) does not sound perfectly acceptable to native speakers; still, I risk that it is on the verge of grammaticality. Nevertheless, the example in (23c) presents an obvious *wh*-island constraint violation, having *whether* in the lower specCP, which should function as a temporary landing site for the successive cyclic *wh*-movement of the empty operator, which moves from within the lowest embedded clause to the higher specCP; hence the ungrammaticality of (23c).

Consequently, the above data might implicate that there is *wh*-movement in Subdeletion constructions as well. The benefit of this result may be that, from this aspect, Subdeletion constructions and Comparative Deletion constructions are not different.

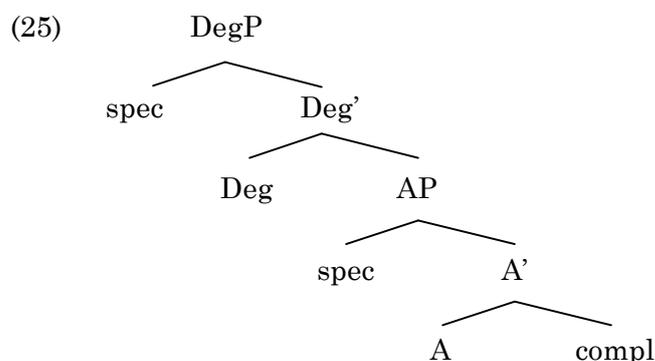
**1.1.3 The Functional AP-Hypothesis.** Before closing this subchapter, let us survey the functional AP-Hypothesis and the standard value's syntactic relation to the rest of the degree predicate.

To start with, Bresnan's (1973) analysis was based on the assumption that the core of the degree predicate (i.e., the whole construction excluding the target) was the gradable predicate itself (i.e., the adjective or adverb). In this (lexical) analysis, measure phrases and degree modifiers (e.g., *very* or *much*) were base-generated in specAP:

- (24) a. Butch is very intelligent.  
 b.
- |  |      |             |
|--|------|-------------|
|  | AP   |             |
|  | /    | \           |
|  | DegP | A'          |
|  | △    |             |
|  | very | A           |
|  |      |             |
|  |      | intelligent |

This approach was adopted by Jackendoff (1977), McCawley (1981) and Hazout (1995) as well. With respect to comparatives, it is straightforward, though, that positioning the comparative morpheme and the standard *than*-XP might be a little demanding here.

The next step was the Functional AP-Hypothesis, which is based on the assumption that a parallel syntactic treatment of functional categories (for example, Determiner, Inflection, Degree variable/adverb) is attractive, as they all specify the reference of the lexical phrases they might subcategorize for (Corver 1990:34, based on Abney 1987). That is, an AP is thought to be embedded under a functional Degree Phrase (DegP). This has been accepted by a number of researchers, such as Kennedy (1997), Kennedy and Merchant (1997), and Lechner (1999). Based on Corver (1990:41), the schema of “full-fledged” adjective phrases is the one that can be seen below:



In fact, the benefit of the analysis with a functional layer can be captured in that positioning the *than*-clause becomes easier: according to Corver (1990, 1993a), Kennedy (1997) and Kennedy and Merchant (1997), the AP is the complement of the Degree head, while the *than*-XP is right-adjoined to Deg<sup>0</sup> or the Degree Phrase. On the contrary, as was assumed in Izvorski (1995a), Lechner (1999) and Kántor (2001), the *than*-clause functions as a complement of the Degree modifier head under a DegP analysis. Although I would not like to give an in-depth analysis here, the latter idea is more likely due to semantic reasons (to be evolved in section 2.1 and 2.3). On the other hand, if it is accepted that the *than*-XP is the complement of Deg<sup>0</sup>, it may be asked where the AP is generated; this question will be answered in section 2.4. In Corver’s (1990) analysis, adjectives undergo head movement from A<sup>0</sup> to Deg<sup>0</sup>, which might explain the synthetic forms of comparative adjectives, while the lack of this movement may result in the periphrastic form, in which Deg<sup>0</sup> hosts *more*; *than* may be considered a Preposition, which takes clausal complements in clausal comparatives (Chomsky 1977: 88):

- (26) a. Butch is [[[DegP tall<sub>i</sub>-er [AP t<sub>i</sub>]][PP than Fluffy]].  
 b. Butch is [[[DegP more [AP intelligent]][PP than Fluffy]].

Finally, turning to the standard value's syntactic relation to the rest of the degree predicate, the *than*-XP is generally thought to be in a subordinate relation to the rest of the degree predicate and the matrix clause (Bresnan 1973) and be base-generated within the degree predicate (either as a complement: Izvorski (1995a), Lechner (1999) and Kántor (2001), or as an adjunct: Corver (1990, 1993a), Kennedy (1997) and Kennedy and Merchant (1997), as can be seen in (26) above). On the other hand, certain phenomena suggest that comparatives also share the properties of coordination; in this view, *than* serves as a coordinating conjunction, thus the matrix clause and the clause representing the standard value are parallel conjuncts. This idea is supported by the following examples (based on Corver (2005), who collected the arguments in favour of this approach):

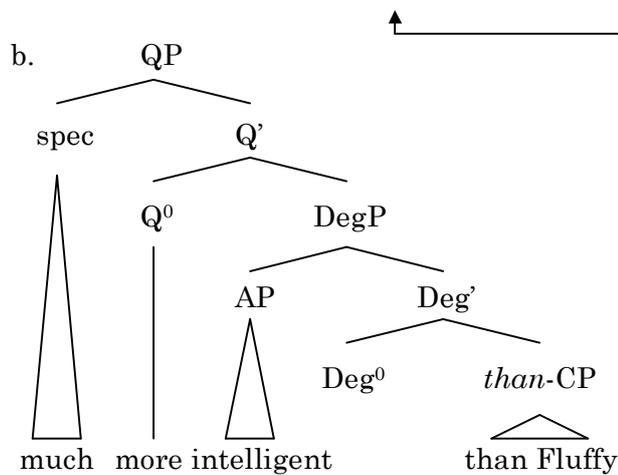
- (27) a. Butch licked more bones than Fluffy \_\_\_ toys.  
 b. Butch wanted to try to begin to lick more bones than Fluffy  
 (\*wanted/\*wanted to try/\*wanted \_\_\_ to begin) \_\_\_ toys.  
 c. \*Butch killed more ants than \_\_\_ cats killed mice.  
 d. More dogs liked \_\_\_, than cats hated [the women who owned Butch].  
 e. Which man do more dogs like \_\_\_ than cats hate \_\_\_?

As can be seen, comparative subclauses can also include Gapping, which is typical of coordination (see (27a); consult Huang (1977) and Hendriks (1995) for further discussion). Moreover, Gapping is known to delete a verb only if the other verbs to its left are also deleted (see (27b); Ross 1970). Also, deletion in subcomparatives requires a parallelism between the main clause and the *than*-clause; i.e., the compared projections must be in parallel positions (see (27c), in which the compared constituents in the main clause and the *than*-clause are the object and the subject respectively, as observed by George (1980)). Right Node Raising, also a diagnostic of coordination, can also be found in comparatives, as exemplified by (27d). Finally, it is known that extraction out of a conjunct is allowed only in an Across-the-Board fashion (Ross 1986); in fact, (27e) may be reminiscent thereof. However, in this dissertation, I will adopt the view that *than*-XPs are in a subordinate relation to the rest of the degree predicate, and the problematic examples in (27) will be discussed in Chapter 4.

## 1.2 The problems to be discussed

The main goal of this research is to provide an alternative structural analysis of comparatives, which is capable of explaining more empirical data than its predecessors and can also be extended to Hungarian; it can be seen in (28):

(28) a. Butch is [<sub>QP</sub> much much+er<sub>i</sub> [<sub>DegP</sub> intelligent t<sub>i</sub> [<sub>CP</sub> than Fluffy]]].



In this analysis, the comparative morpheme takes the standard as its complement, while the AP is in specDegP; there is a QP on the top of the DegP: its head may host a quantifier-like degree item (*more* here), while elements responsible for degree modification are located in specQP. The building blocks of this analysis can be found in a number of earlier analyses, even though it may look different from widely known descriptions.<sup>8</sup> For example, the fact that the gradable/dimensional predicate (AP, occasionally AdvP) is base-generated in the specifier position of a functional projection (DegP here) is not that surprising at all, as a lot of researchers have proposed such an analysis (Izvorski 1995a, White 1998, Lechner 1999, 2004, Corver 2000, 2009, among others). One of the principal ideas is that the internal structure of comparatives is alike: predicative, attributive as well as nominal comparatives are assigned this particular representation. Furthermore, I hypothesize that there is a structural parallelism between degree expressions with respect to the major constituents; this means that certain positions (e.g., Deg<sup>0</sup> and Q<sup>0</sup>) may appear in both absolute and comparative constructions, certainly hosting the appropriate elements respectively.

In fact, a number of questions may arise in connection with the structural representation above. For example,

<sup>8</sup> For example, in the original DegP-hypothesis, there was only one functional layer in the construction, in which a Deg<sup>0</sup> subcategorized for an AP (Abney 1987, Corver 1990). In the article introducing determiner- and quantifier-like degree items, Corver places a QP between the DegP and the AP (1997a), and generates determiner-like degree items in specDegP, and quantifier-like degree items in Q<sup>0</sup>. The two approaches are illustrated by the representations below:

(i) [<sub>DegP</sub> Deg<sup>0</sup> [<sub>AP</sub> A]] (Abney 1987, Corver 1990)

(ii) [<sub>DegP</sub> Deg<sup>0</sup> [<sub>QP</sub> Q<sup>0</sup> [<sub>AP</sub> A]]]] (Corver 1997a)

The proposed representation in (28b) differs from these to some extent; still, these differences will all be argued for.

- (i) why is the *than*-XP in the complement position of Deg<sup>0</sup>?
- (ii) why is the *than*-XP labelled as CP?
- (iii) why is the AP/AdvP in the specifier position of DegP?
- (iv) what is the QP and why is it generated above DegP?
- (v) why are degree modifiers generated in specQP?

As mentioned in Chapter 1, English is thought to have only clausal comparatives (Lechner 1999; although some residual problems are still to be resolved). Also, the nature of Deg<sup>0</sup> hosting the comparative morpheme also brings about the question of what this head in other types of degree expressions subcategorizes for. Moreover, even if the semantic constituency of Deg<sup>0</sup> and the *than*-XP has been mentioned, it may be asked what the syntactic reasons are to put forward this idea, especially because the *than*-XP and the comparative morpheme are sometimes separated by another constituent:

(29) Butch licked a bigger bone **than Fluffy did**.

Moving on to the next set of problems, it may seem problematic how to handle the relationship of the gradable predicate and the degree head (resulting in the synthetic form of comparative adjectives, like [*tall* +- *er*]), as the latter tends to be a bound morpheme, thus it must be immediately adjacent to some (A<sup>0</sup> or Adv<sup>0</sup>) head to host it, even if that head has a PP-complement. On the other hand, in periphrastic forms (as in (28b) above) the comparative morpheme undergoes Deg<sup>0</sup>-to-Q<sup>0</sup> head movement, where it morphologically fuses with a dummy quantifier *much*; still, how can the presence of such an element be proven? And the last set of questions targets degree modifiers: it may be asked why they are base-generated in specQP, how this can be proven, and how they are related to the other macroconstituents of the comparative degree predicate. I intend to address all of these questions in this work.

### 1.3 An outline of the dissertation

The general organization of this work is as follows. I will start with the macrostructure of comparatives in Chapter 2; here I will provide a closer insight into the structure of degree expressions, arguing that the structural representation in (28) is right. Chapter 3 deals with degree modification; the behaviour of different types of degree modifiers and measure phrases will be investigated, followed by a morphosyntactic explanation of *much*-support and a novel approach to multiple degree modification, in which each degree operator/modifier – as a logical predicate – predicates over one degree variable. Chapter 4 discusses comparative complements (i.e., *than*-XPs), with special

attention paid to Hungarian examples, partly because (i) Hungarian comparative operators can always be overt, thus it can be seen what the detectable properties of comparative operator movement are, and partly because (ii) Hungarian *than*-XPs – to my knowledge – have not yet been described in the generative literature in detail. Chapter 5 is devoted to rightward movement in comparatives; that is, I will provide a phase-based explanation of why the comparative complement has to move to the right in attributive comparatives. Finally, Chapter 6 deals with comparative correlatives in Hungarian, as their behaviour clearly shows that the structure of comparatives proposed in (28) is the basis of how these constructions work.

# Chapter Two

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## The macrostructure of comparatives

In this chapter, I would like to address some issues related to the proposed syntactic analysis presented in the previous chapter, which will provide justification that it is the syntactic backbone of comparative constructions. I will start with a short semantic background regarding the macroconstituents analysed here; second, the external characteristics of the *than*-XP will be looked at, including the puzzle why it is base-generated as the complement of the degree morpheme; third, it will be shown what the relationship between the gradable predicate and the degree morpheme is like; fourth, I will argue for the existence of a  $Q^0$  position generated above DegP; fifth, degree modifiers in comparatives will also be allocated.

### 2.1 The significance of meaning in comparatives

With a limited number of exceptions, I will not go into much detail concerning the semantics of comparison; the semantic phenomena mentioned are here only to help constrain the field of investigation as well as explore the semantic requirements that the syntax has to fulfil, so that the construction could be computable at the conceptual-intentional interface. In other words, this section is a starting point.

**2.1.1 The scalar analysis.** As far as the semantic analysis of comparatives is concerned, I will adopt Kennedy’s (1997 and *seq.*) version of the scalar analysis. As for gradable predicates, I am adopting a scalar analysis thereof: it is assumed that they are relational expressions; in other words, individuals and abstract representations of measurement (or degrees) are connected to each other (Kennedy 1997:50ff). In this sense, a scale is “a dense, linearly ordered set of points (...), where the ordering is relativized to a DIMENSION” (*ibid*:51). Every gradable adjective is associated with a dimension, which determines the ordering of objects in the adjective’s domain (*ibid*:18), and “corresponds to a gradable property such as *height, length, speed, density, beauty*, etc., and provides a means of differentiating one scale from another” (*ibid*:52).<sup>1</sup> In order to put the above notion – the dimensional parameter – into practice, let’s have a look at the following examples:

- (1) a. Butch is smart.  
b. Butch is smarter than Fluffy is.

In (1a), Butch’s smartness is relative, and its degree is relativized on the scale of ‘smartness’; it can be said that – with a phonologically empty – degree variable, *Butch is d-smart*; that is, Butch is related to a certain standard value on the scale. According to Bierwisch (1989), the standard value is determined contextually; following Creswell (1976), von Stechow (1984), Heim (1985) and Kennedy (1997), the semantic value of a gradable predicate can be expressed in the following way:

- (2)  $\llbracket \text{smart} \rrbracket = \lambda d \lambda x. \text{smart}(x) \geq d$

In other words, if *smart* appears in a discourse, there are two indispensable arguments around it: one is an individual that *smart* is predicated of (i.e., an individual that is smart to some extent), and the other one is the degree to which the individual is smart. The truth value of *smart* is valid if and only if the degree to which the individual is smart in reality is at least as great as the one appearing in the discourse. In the case of (1b), two values are represented on the scale: that of Butch’s smartness and that of Fluffy’s. The former is called

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<sup>1</sup> As a summary, the following three claims are fundamental to the analysis:

‘First, gradable adjectives denote measure functions – functions from individuals to degrees (...). Second, the context-dependent standard in an absolute construction, a measure phrase in an absolute construction, and the comparative clause (the complement of *than* or *as*) perform the same semantic function: they introduce the standard value. Third, degree morphemes denote relations between the reference value and the standard value, i.e., they introduce the degree relation.’ (Kennedy 1997:95-96)

reference value indicating the degree to which the subject is  $\phi$  ( $\phi$  = gradable adjective in its absolute form), while the latter is represented inside the comparative complement (*than*-XP), which is a definite description that denotes a maximal degree (von Stechow 1984; “the complement of *than* denotes the set of degrees that satisfy the restriction derived by abstracting over the degree variable in the comparative clause”, as adopted in Kennedy (1997:56); see also Schwarzschild and Wilkinson (2002), Rullmann (1995) and Heim (2001) for further discussion). For example, in (1b) *Fluffy’s smartness* as a maximal degree denotes all the degrees that are either not as great as or are equal to Fluffy’s age on the scale, thus it demarcates the set of degrees that the degree of *Butch’s smartness* can be greater than, but cannot be equal to. Notwithstanding, it must be stipulated that, if there is a degree construction with a maximal degree (e.g., a comparative construction, see (1b)), there is no other standard value present, and when there is an absolute degree construction (see 1a), there is no *than*-XP (maximal degree). Consequently, as the standard degree and the maximal degree may be claimed to be in complementary distribution, they will both be called *standard (value)* henceforth. Accordingly, the semantic value of the standard value represented by the constituent introduced by *than* can be formalized as follows:

$$(3) \quad \llbracket \text{than Fluffy is} \rrbracket = \max\{d'' \mid \mathbf{smart}(\text{fluffy}) \geq d''\} = \mathbf{d}_{\text{sta}}$$

In other words, the constituent representing the standard value denotes a definite description of a maximal degree, which corresponds to the degree to which the subject of the subordinate clause is  $\phi$ . (3) provides a possible approach to how the maximal degree providing the standard value can compositionally be derived (cf. Gazdar 1980, Hellan 1981, von Stechow 1984, Heim 1985, 2001, Bierwisch 1989, Rullmann 1995 for further discussion); in fact, in the forthcoming chapters it will be referred to as  $\mathbf{d}_{\text{sta}}$ , as the compositional derivation in (3) also ends up providing a degree that is introduced by the comparative clause (cf. Heim 1985, Rullmann 1995, Hazout 1995).

Finally, there is a degree relation, which holds between the reference value and the standard value (Kennedy 1997:95). This relation is manifested by the presence of the overt comparative degree morpheme, whose semantic value may be formalized as follows (also based on Kennedy 1997 and subsequent works):

$$(4) \quad \llbracket \text{-er} \rrbracket = \lambda d \lambda g_{\langle d, \text{et} \rangle} \lambda x. \max(g)(x) > d$$

As gradable predicates are expected to relate individuals and degrees, the semantic type of the constituent representing the standard value is  $\langle d \rangle$

(referring to a definite *degree*). However, we will see later that the standard may be of different type, too.

**2.1.2 Combining the three basic constituents.** I would like to show how the three semantic macroconstituents already discussed are thought to be manifested in the semantic computation of comparatives. Due to the nature of Merge (or the binary branching constraint), it has to be decided which two form a constituent before the third joins in. Since Bresnan (1973), it is known that the comparative morpheme and the standard count as one constituent of some sort (at least at LF or underlyingly); for example, Bhatt and Pancheva (2004) mention that the degree head imposes selectional restrictions on the standard marker, even if the two are not adjacent:

- (5) a. Cleo ate *more* apples *than/as/that* Matilda did.  
 b. David is *less* worried *than/as/that* Monica is.  
 c. Anastasia is *as* tall *as/than/that* Daniel is.  
 (Bhatt and Pancheva 2004:3, exx. 1a-b, 1c)

Furthermore, according to Heim (2001), the comparative morpheme and the standard must form a constituent, which may undergo Quantifier Raising to the front of the matrix clause (see also Hackl 2000:47); the expected ambiguity caused by this movement is exemplified below:

- (6) Every girl is taller than 4 feet.  
 a.  $\forall x[\text{girl}(x) \rightarrow \max\{d: \text{tall}(x,d)\} > 4']$   
 b.  $\max\{d: \forall x[\text{girl}(x) \rightarrow \text{tall}(x,d)]\} > 4'$   
 (Heim 2001: 218, ex. 10)

In Heim's (2001) view, [*-er than 4 feet*] lands either above or below *every girl* post-QR, thus there is a scope ambiguity, as demonstrated by (6a) and (6b).<sup>2</sup> However, there are weak points in this approach.

First, this ambiguity is not truth-conditional, thus a broad scope interpretation of the comparative complex is truth-conditionally equivalent to a narrow scope interpretation (*ibid*: 223-4). In fact, (6a) means that it is true for each girl that her height exceeds 4 feet, while in (6b) a set of degrees need to be formed such that *every* girl is tall to *d* (the maximal degree here is that of the shortest girl), and this *d* is greater than 4 feet.

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<sup>2</sup> Ora Matushansky (p.c.) warned me that, because of this QR operation, the moved constituent must be a maximal projection (XP), which my syntactic analysis of comparatives does not obey. That is why I am trying to refute that this QR operation exists at all.

Second, in the light of the Heim-Kennedy Constraint (Heim 2001: 223, Bhatt and Pancheva 2004: 15), testing the scope ambiguity created by QR-ed comparatives may not be successful:

(7) *Heim-Kennedy Constraint*

If the scope of a quantificational DP contains the trace of a DegP, it also contains that DegP itself.<sup>3</sup>

In other words, the constituent consisting of the comparative morpheme and the standard value can never take scope over a quantificational DP, as can be seen below:

(8) (John is 4 feet tall.) Some girl is exactly 1 inch taller than that.

a.  $\exists x[\text{girl}(x) \ \& \ \max\{d: \text{tall}(x,d)\} = 4' + 1"]$

b.  $\# \max\{d: \exists x[\text{girl}(x) \ \& \ \text{tall}(x,d)]\} = 4' + 1"$

(Heim 2001: 222, ex. 21)

(8a) means that there exists a girl such that the (maximal) degree to which she is tall is four feet and one inch. On the other hand, the wide scope interpretation in (8b) suggests that the maximal degree to which some girl is tall is four feet and one inch; that is, the tallest girl is four feet and one inch tall, which is clearly not an available reading for (8).

Third, the *than*-constituents in Heim's examples serving to point out this ambiguity tend to contain an embedded quantifier (*than four feet, than five pages, than 60 hours*), and it is even more difficult to see the purported ambiguity presented in (8) above, if there is no quantification in the standard value:

(9) Every dog is smarter than Fluffy is.

a.  $\forall x[\text{dog}(x) \rightarrow \max\{d: \text{smart}(x,d)\} > \lambda d'. \text{smart}(\text{fluffy}, d')]$

b.  $\max\{d: \forall x[\text{dog}(x) \rightarrow \text{smart}(x,d)]\} > \lambda d'. \text{smart}(\text{fluffy}, d')$

(9a) means that for every dog, there is a degree to which each of them is smart (i.e., the degree to which the stupidest dog is smart), and this is greater than the degree to which Fluffy is smart. On the other hand, in (9b) a set of degrees *d* is formed to which *every* dog is smart, and this exceeds the degree to which Fluffy is smart.

Fourth, turning back to the original problem of how to group the gradable predicate, the comparative morpheme and the standard marker, the following example might be helpful. Some adjectives are known to be able to take propositional complements, which in turn may include quantified DPs (e.g.,

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<sup>3</sup> Here DegP refers to the constituent to be QR-ed.

*happy about every meal*); the quantified DP in this case is deeply embedded in the AP, with PP being the complement of the gradable adjective. There are two possibilities to group these macroconstituents, as can be seen below:

- (10) a. Butch is happier about every meal than Fluffy is.  
 b. [[[happy about every meal] [-er]] [than Fluffy is]]  
 c. [[happy about every meal] [[-er] [than Fluffy is]]]  
 d. [<sub>AP</sub> [<sub>A'</sub> happy [<sub>PP</sub> about [<sub>DP</sub> every meal ]]]]

As can be seen, there are non-adjacency problems in connection with the adjective and *-er*, which is a bound morpheme; still, this is a syntactic problem, and will be handled later. As for the possible groupings, if Heim (2001) is right and the comparative morpheme and the standard marker need to be QR—ed as one constituent, only (10c) is available. However, this is not the only way of justifying (10c) over (10b): if [-er + standard] is not able to take scope over the universal quantifier, it means that it cannot undergo QR; what's more, this is independent of the Heim-Kennedy Constraint, as the universal quantifier in (10) is deeply embedded in the AP (see 10d), and it can c-command neither the comparative morpheme nor the standard marker, regardless of whether (10b) and (10c) will ultimately prevail. All in all, neither the comparative morpheme, nor the standard marker is expected to be in the scope of the universal quantifier. Let's have a look at the example below:

- (11) a.  $\forall x[\text{meal}(x) \rightarrow \max\{d: \text{happy}(\text{butch}, x, d)\} > \max\{d': \text{happy}(\text{fluffy}, x, d')\}]$   
 b.  $\max\{d: \forall x. [\text{meal}(x) \rightarrow \text{happy}(\text{butch}, x, d)]\} > \max\{d': \forall x. [\text{meal}(x) \rightarrow \text{happy}(\text{fluffy}, x, d')]\}$

(11a) means that it is true of each meal that the maximal degree to which Butch was happy about it is greater than the maximal degree to which Fluffy was happy about it; this is in line with the distributive reading of the universal quantifier. On the other hand, in (11b) a set of degrees *d* is formed such that it is true for *every* meal that Butch was happy about it to degree *d* (therefore, the lowest degree of happiness is taken into consideration), and another set of degrees *d'* is formed such that it is true for *every* meal that Fluffy is happy about it to degree *d'* (therefore, the lowest degree of happiness is taken into consideration), and *d* exceeds *d'*. The problem with (11b) is that it allows a non-distributive reading as well, which is not really available according to my native

informants.<sup>4</sup> In order to point out my concern, I would like to present a possible scenario: both dogs (Butch and Fluffy) are happy about each meal event to some extent; in the tables below, this happiness factor can have a degree from 0% to 100%. In the case of a distributive reading, the degree to which Butch is happy about each meal exceeds the degree to which Fluffy is happy about that meal event (see (12a) below). However, in the case of a non-distributive reading, two sets of degrees are formed such that it is true that Butch and Fluffy are happy about the meal events respectively.

(12) *Happiness degrees of dogs Butch and Fluffy w.r.t. 3 meal events:*

a. <i>Distributive</i>	Meal 1	Meal 2	Meal 3	Overall
Butch	80%	40%	100%	---
Fluffy	60%	30%	20%	---
b. <i>Non-distributive</i>	Meal 1	Meal 2	Meal 3	Overall
Butch	80%	40%	100%	40%
Fluffy	100%	30%	20%	20%

As can be seen, the problem arises in (12b), inasmuch as it is true that Butch was (at least) 40% happy about the meals, and it is true that Fluffy was (at least) 20% happy about the meals, but Fluffy was 20% happier about Meal 1 than Butch, which is not available for (12a).<sup>5</sup> In sum, no constituent consisting of only the comparative morpheme and the standard value take scope over a Quantified DP; in line with this, Kennedy (1997) concludes that this QR operation does not exist.

Nevertheless, since the maximality operator is related to the standard value (see (3) above), it sounds reasonable that this constituent should be generated lower than the gradable predicate so as to avoid the problems seen in (11b). That is, scope tests support the grouping in (10c); this will also be taken into consideration while providing a syntactic configuration of the macrostructure of comparatives in the forthcoming chapter. Here I would only

<sup>4</sup> *Every* can occasionally have an ambiguous distributive/collective reading, as noted by Vendler (1967) and McCawley (1981). For example, (i) is ambiguous, but (ii) is not:

- (i) Butch took a picture of everyone at home.  
 a. one picture, everyone is on the picture (collective)  
 b. one picture per person (distributive)
- (ii) Every dog ate two cans of dogfood.  
 a. \*regardless of the number of dogs, the content of exactly two cans vanished  
 b. two cans per dog

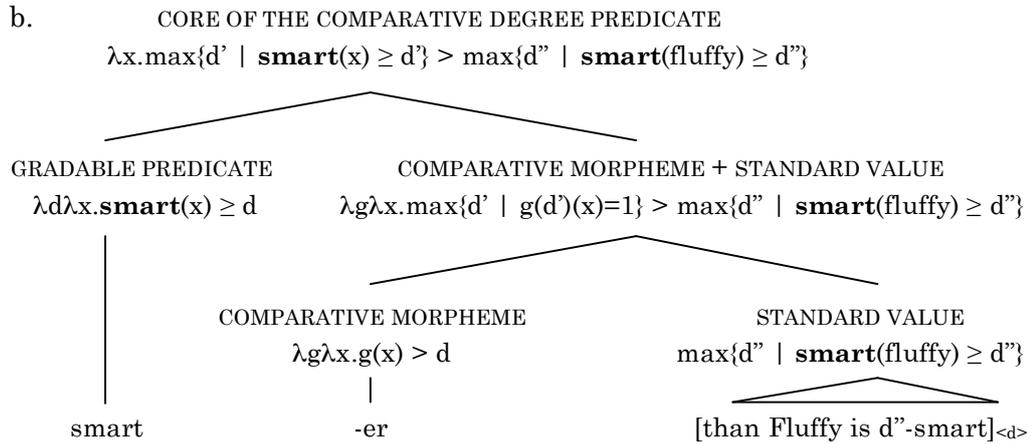
(10a) is similar to (ii) in this respect. Although the example may sound a little weird, if *every* is substituted by the distributive-only *each*, we arrive at a similar conclusion:

- (iii) Butch is happier about each meal than Fluffy is.

<sup>5</sup> Bhatt and Takahashi (2007) arrive at similar conclusions regarding such scope ambiguities.

like to show the details of the composition of the comparative degree predicate (based on Kennedy 2007):

(13) a. Butch is smarter than Fluffy is.



The most important findings apparent also in (13b) are the following (cf. Kennedy 2007): first, there is special morphology (*smart* + *-er*), which expresses arbitrary ordering relations between degrees: the reference value (associated with the target, which appears here as  $\lambda$ -bound variable  $x$ ) is greater than the standard value:  $\mathbf{d}_{\text{ref}} > \mathbf{d}_{\text{sta}}$ ; second, there are pairings connecting individuals and arbitrary degrees; third, the standard value is marked by a specified degree, which is syntactically represented by a constituent of type  $\langle d \rangle$  (**stnd**<sub><d></sub>).<sup>6</sup>

As has been mentioned, the standard marker and the standard value (in (1) above) are generally taken as one constituent. This is not surprising, as *than* is generally taken to be semantically vacuous (Heim 1985, 2001; Kennedy 1997, 2001; Lechner 2001, Hackl 2000, Schwarzschild and Wilkinson 2002), and the constituent headed by *than* is of type  $\langle d \rangle$ , as well as the clause subcategorized for by *than* is of type  $\langle d \rangle$ ; in other words, *than* does not change the semantic type of the constituent representing the standard value in the syntax.<sup>7 8</sup>

<sup>6</sup> This is true of clausal comparatives;  $\langle d \rangle$  stands for definite degree, similarly to  $\langle e \rangle$  in phrasal comparatives, which marks a definite expression.

<sup>7</sup> This fact can formally be expressed as  $[XP_{\langle d \rangle} \text{ than } [CP_{\langle d \rangle} OP_{[+wh]} [IP \dots]]]$ .

<sup>8</sup> The fact that both constituents are of type  $\langle d \rangle$  are proven by the appearance of comparative operators appearing in the left periphery of the embedded clause, immediately below *than*; comparative operators (to be discussed later) function as exact designators of the standard value (cf. Chomsky 1977), while the comparative morpheme also subcategorizes for an element of type  $\langle d \rangle$ .

**2.1.3 Phrasal comparatives.** Phrasal comparatives may be a little more demanding, as they tend to be based on definite nominal expressions supplied with special morphology:

- (14) Fickó kedvesebb [DP Pihénél]<sub><e></sub>. (Hungarian)  
 Butch nicer Fluffy-ADE  
 ‘Butch is nicer than Fluffy.’

Actually, a definite DP denoting an individual may not compositionally express a definite degree, as it lacks a subordinate degree predicate as well as the maximality operator, unlike its clausal counterpart. There are two approaches to resolve this problem: it could be purported that the DP undergoes type-shifting ( $\langle e \rangle \rightarrow \langle d \rangle$ ); alternatively, *-er* has a different semantic value in phrasal contexts, so that it could compensate for the semantic deficit of the phrasal standard:

- (15)  $[-er] = \lambda y \lambda g_{\langle d, et \rangle} \lambda x. \max(g)(x) > \max(g)(y)$

In other words, the comparative morpheme defines a degree relation between the maximal degrees associated with  $x$  and  $y$ , as defined by the gradable predicate  $g$ , where the degree related to  $x$  exceeds the one related to  $y$ . At the same time, the role of the standard is only to define  $y$ . On the other hand, in measure phrase comparatives, the standard value is explicitly marked. According to Hackl (2000), measure phrase comparatives are reduced clauses, not even bare phrases:

- (16) a. John is heavier than 80 kilograms.  
 b. John is *[-er* [than [OP<sub>[+wh]:1</sub> 80 kilograms ~~is t<sub>i</sub>-much~~]]] heavy.  
 c. *[-er* [ $\lambda d_1$  (80kgs is  $d_1$ -much)]]  $\lambda d_2$  John is  $d_2$ -heavy  
 (on the basis of Hackl 2000)

The underlying construction can be seen in (16b), in which there is a covert dummy *much* providing the subordinate counterpart of the matrix gradable predicate *heavy*. However, the clausal nature of measure phrase comparatives may not be maintained in Hungarian, as measure phrases may be assigned Adessive Case, which is typical only of phrasal comparatives:

- (17) a. János (Péternél / 80 kilónál) nehezebb.  
 John Peter-ADE 80 kilo-ADE heavier  
 ‘John is heavier than Peter/than 80 kilos.’

- b. János nehezebb (Péternél / mint Péter / 80 kilónál / mint 80 kiló).  
 John heavier Peter-ADE than Peter 80 kilo-ADE than 80 kilo  
 ‘John is heavier than Peter/than 80 kilos.’
- c. Eljött ötnél több ember.  
 came five-ADE more person  
 ‘More than five people came.’

Still, the fact that measure phrases clearly provide an explicit degree as the standard value and yet they syntactically behave the same way as phrasal DP-comparatives, which can be seen in (17) above, supports the idea that phrasal comparatives can indeed be explicit markers of the standard value. In other words, measure phrases with explicit standard quantifiers are of type <d> (cf. Schwarzschild 2005), as they name a point on a scale (for example, 3 o’clock, 50 kilograms etc.), even if they behave as phrasal comparatives. Accordingly, as this question may not even be relevant for syntax, it will not be taken into consideration. Nevertheless, certain asymmetries that arise between clausal and phrasal comparatives will have to be explained on other grounds (in Chapter 4).

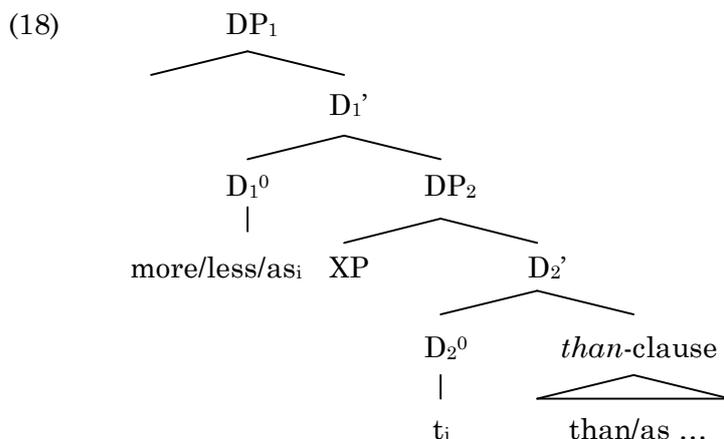
## 2.2 A DP-shell for comparatives

Bearing in mind that there are well-supported semantic requirements that the standard value is the complement of the degree morpheme, Izvorski (1995a) offered a shell structure for comparatives, which would accommodate both arguments of *-er*. The idea that comparative constructions involve a complex two-place determiner was put forth by Keenan (1987). In addition, Larson (1988a) offered a novel structural representation of double-object verbs, in which one VP is embedded under another VP (or vP); the objects are placed into specVP and the complement position of V respectively, and the verb moves from the lower  $V^0$  to the higher  $v^0$  in order to be followed by both objects. This is so, because on the one hand, the strict binary branching approach in phrase structure (cf. Kayne 1984) can be applied with the use of VP-shells; on the other hand, this representation conforms to the semantic expectations.

To continue, Izvorski (1995a) combined the idea of a shell analysis (Larson 1988a) with the appearance of the Functional AP-Hypothesis<sup>9</sup> (DegP; Abney 1987, Corver 1990). In her theory, there is one DP embedded under another DP, as can be seen in the diagram below, and she refers to *more*, *less* and *as* as comparative determiners: DPs are DetPs here (Izvorski 1995a):

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<sup>9</sup> In a shell analysis, it may not be accurate to claim that a DP is the functional extension of an AP, as neither of the DPs take an AP complement in the complement position.



Izvorski (1995a) works with restrictions placed on the XP (the first comparative argument) in the lower specDP, as it can be an NP in the case of nominal comparatives, an AP in predicative comparatives, or an AP+NP in attributive comparatives. The (comparative) determiner is said to move from the lower D<sup>0</sup> to the higher D<sup>0</sup> to receive information regarding its categorial status (*ibid.*: 14ff); this may resemble V<sup>0</sup>-to-v<sup>0</sup> raising in VP-shells. Furthermore, the DP-shell analysis has another advantage: Izvorski also claims that certain modifiers of the degree morpheme are arguments of Deg<sup>0</sup> itself (*ibid.*); these modifiers, such as numerals, can be placed into the higher specDP:

- (19) a. We read [DP *seven* [D' [D *more*<sub>i</sub>] [DP books *t<sub>i</sub>* than they read magazines]]].  
 b. She is [DP *10 cm* [D' [D *less*<sub>i</sub>] [DP tall *t<sub>i</sub>* than Mary]]].  
 c. John can type [DP *three times* [D' [D *as*<sub>i</sub>] [DP fast *t<sub>i</sub>* as Mary can]]].  
 (Izvorski 1995a: ex 24a-c).

However, the greatest benefit of Izvorski's proposal is that the two arguments indicated in Keenan (1987) are placed into fixed positions, and the semantic expectations (briefly outlined in the previous section) are also met.

Nevertheless, there are weak points in Izvorski's analysis. First of all, it is left unexplained what syntactic feature or property decides on the category of the XP in the lower specDP, as it is a mere stipulation that in nominal comparatives it can be an NP, in other types of comparatives it can be an AP, and so forth. Second, the proposal would have the consequence that even in predicative comparatives, where the DegP or AP is thought to be subcategorized for by the verb *be* directly, a DP headed by a degree morpheme should also appear. On the contrary, in the original version of Determiner Phrases (Abney 1987), the DP was the extended functional layer of the NP. As a result, applying DP here without having any nouns inside the structure does not seem to be supported enough by empirical data. Although Izvorski offers an ingenious solution (the functional

shell hypothesis) to the problem of double arguments, this analysis is to be modified slightly, which I will do in the following section.

## 2.3 The degree head and the comparative complement

After going through a short semantic survey of and an earlier approach to comparative constructions, now let us turn to the *than*-XP. As mentioned above, there are well-supported semantic factors that expect the standard to be the complement of the degree head. In this subchapter, I intend to investigate the *than*-XP's relation to the degree head from a syntactic point of view.

First, one may wonder if the standard is truly a complement. Mark Newson (p.c.) remarked that this constituent can occasionally (or even optionally) be absent from the construction, and optionality is a diagnostic of adjuncthood. Let's have a look at the following example:

- (20) A: We need a very smart colleague to talk to furious customers.  
       I suggest that we should appoint Judy to that position.  
       B: I think Melissa is smarter.

It is quite straightforward that the absence of the *than*-XP does not mean that the comparison does not have a standard value (similarly to the absence of the internal argument in *I am eating*, since something has to be eaten; otherwise the Theta Criterion would be violated). That is, even if the standard value is implicit and has to be recovered contextually, it must be present for the semantic computation. As mentioned in the previous subchapter, selectional restrictions show that degree morphemes select their standards. However, why isn't it comparative adjectives (especially synthetic and suppletive forms) that select *than*? As is known, *so* pronominalisation is capable of substituting the adjectival core together with its lexically selected complement in predicative constructions, and this is possible even if the adjective is not gradable (see 21b):

- (21) a. Ginger is [proud [PP of Butch]] and Fluffy is *so*, too.  
       b. Ginger is [pregnant [PP with Butch's puppies]] and Fluffy is *so*, too.

It also seems straightforward that *so* must substitute a maximal projection, since it is capable of fronting:

- (22) a. Ginger is [AP proud of Butch] and *so* is Fluffy.  
       b. Ginger is [AP pregnant with Butch's puppies] and *so* is Fluffy.

However, the degree morpheme is not part of the constituent substituted by *so* in the examples below:

- (23) a. Ginger<sub>i</sub> is [AP proud of Butch], but Fluffy is more *so* than her<sub>i</sub>.  
 b. Ginger<sub>i</sub> couldn't be more proud of Butch,  
 but Fluffy is even \*(more) *so* than her<sub>i</sub>.

As can be seen, in the periphrastic comparative the presence of *more* (including the comparative morpheme)<sup>10</sup> is indispensable even if in the first conjunct there is an appropriate antecedent containing it. In sum, it is a natural assumption that *so* can replace the lexical AP.

Furthermore, as is argued by Grashchenkov (2008: 387), certain languages do not even allow standards to precede the comparative form of the adjective, either phrasal or clausal:

- (24) a. Дети читают сказки охотнее чем рассказы. (Russian)  
 children read tales willingly-er than stories  
 b. Дети читают сказки охотнее рассказов.  
 children read tales willingly-er stories-GEN  
 'Children more willingly read fairy tales than stories.'  
 c. \*Чем рассказы дети читают сказки охотнее.  
 d. \*Рассказов дети читают сказки охотнее.  
 e. \*Дети читают сказки чем рассказы охотнее.  
 f. \*Дети читают сказки рассказов охотнее.  
 (Grashchenkov 2008, exx. 30-32)

As Grashchenkov argues (*ibid*), this is a clear argument in favour of Russian *than*-XPs being complements of the degree head.

Another phenomenon in line of the previous argumentation is based on Case. Languages having genuine phrasal comparatives (i.e., nominal expressions responsible for representing the standard value in the construction with no preposition on the top), which cannot be constructed via clausal reduction, tend to be inherently Case-marked. Following Woolford (2006), it is assumed that Case is divided into structural (e.g., nominative and accusative in English, Hungarian and a number languages following the nominative-accusative paradigm) and non-structural types, and the latter is further subdivided into lexical and inherent Case:

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<sup>10</sup> *More* consists of a dummy *much* in Q<sup>0</sup> and the comparative morpheme moved Deg<sup>0</sup>-to-Q<sup>0</sup>; this will be elaborated later.

(25) *Non-structural Case*

- a. *Lexical Case*: idiosyncratic non-structural Case, lexically selected by particular verbs, licensed by V inside the VP proper at vP structure.  
 b. *Inherent Case*: relatively predictable non-structural Case, licensed by little v/light v heads above the VP proper at vP structure.

(Woolford 2006: 126)

Certainly, Woolford (2006) examines Case phenomena related to verbal predicates; in this sense, elements in the verbal predicate can be Case licensors in the case of non-structural Case. The two types of non-structural Case are in complementary distribution with regard to the theta-roles that they are associated with: while lexical Case tends to be on themes and internal arguments, inherent Case may be on external arguments or (shifted) DP goal arguments (*ibid*: 113). The difference between them is exemplified below:

- (26) a. *Bátnum hvolfdi.* (Icelandic)  
 boat-DAT capsized  
 'The boat capsized.'  
 (Levin and Simpson 1981, ex. 1b)
- b. *Þeir gáfu konunginum ambáttina.* (Icelandic)  
 they gave king-the-DAT slave-girl-the-ACC  
 'They gave king the slave-girl.'  
 (Maling 2002 (44a))  
 (both cited by Woolford 2006: 112)

As is argued, the dative Case on the subject, which is an internal argument, in (26a) is totally idiosyncratic (and is licensed by the lexical verb), while the use of dative in (26b) is predictable on the goal.

However, Case phenomena are also apparent in degree predicates: both the lexical gradable predicate (the Adjective) and the core of the degree predicate (the degree morpheme in Deg<sup>0</sup>) assign non-structural Case to their complements. The parallelism between comparative degree predicates and verbal predicates can be captured in that the lexical gradable predicate (the adjective) licenses idiosyncratic lexical Case, while – in phrasal comparatives – the functional core of the predicate predictably licenses inherent Case. These Cases are also morphologically realized (as case). Let's have a look at the following sets of examples:

- (27) a. *Fickó büszkébb Pihére Vörösnel.* (Hungarian)  
 Butch prouder Fluffy-SUB Ginger-ADE  
 'Butch is more proud of Fluffy than Ginger.'

- b. Fickó boldogabb a velőscsonttól Pihénél.  
Butch happier the marrow.bone-SUB Fluffy-ADE  
'Butch is happier about marrow bones than Fluffy.'
- c. Fickó sikeresebb csaholásban Pihénél.  
Butch successful-er baying-INE Fluffy-ADE  
'Butch is more successful in baying than Fluffy.'
- d. Vörös terhes Fickótól.  
Ginger pregnant Butch-ABL  
'Ginger is pregnant with Butch's puppies.'
- e. A dízel autóm tankja VÉLETLENÜL van csak  
the diesel car-POSS-1.SG tank-POSS-3.SG by.accident is only  
csurig benzinnel.  
full gasoline-INS  
'The tank of my diesel car is full of gasoline only by accident.'

As can be seen, even non-gradable adjectives license lexical Case: *terhes* (*pregnant*) licenses ablative in (27d), and *csurig* (*full*) instrumental in (27e). On the other hand, although some gradable adjectives can also license lexical Case (e.g., *büszke* (*proud*) licenses sublative in (27a), *boldog* (*happy*) ablative in (27b) and *sikeres* (*successful*) inessive in (27c) above), the DP representing the standard value is always in adessive. There is no Case variation: the complements of the lexical adjectives cannot be given adessive case in (27). In fact, what is common in the examples containing adessive DPs is the comparative morpheme; therefore, it is reasonable to assume that it is this element that inherently licenses adessive Case.

In connection with the genitive Case of phrasal comparatives, Russian maintains a strict adjacency principle, which is similar to that of Russian adnominal genitives (Grashchenkov 2008: 388), unlike clausal comparatives:

- (28) a. Дети охотнее читают сказки чем рассказы. (*Russian*)  
children willingly-er read tales than stories
- b. \*Дети охотнее читают сказки рассказов.  
children willingly-er read tales stories-GEN  
'Children more willingly read fairy tales than stories.'
- c. Папа Маши пришёл.  
father Masha-GEN came
- d. \*Папа пришёл Маши.  
father came Masha-GEN  
'Masha's father came.'
- (on the basis of Grashchenkov 2008, exx. 33-34)

As can be seen, the clausal comparative complement in (28a) can be stranded, whereas its phrasal counterpart *рассказов* in (28b) cannot, similarly to *Маши* in (28c-d).

Before closing this subchapter, I would like to make a loosely related remark, just as a short interjection. Even though later in the dissertation, comparative complements (*than*-XP) will be investigated in detail, it is still connected to Case phenomena whether all phrasal comparatives can be derived from their clausal counterparts via reduction. Evidently, this seems to be a viable step in English (as argued for by, for example, Lechner (1999: 100); with some residual problems, as will be shown in Chapter 4), but definitely not in languages marking phrasal comparatives with inherent Case, such as Russian or Hungarian. This is so, because inherently Case-marked DPs in phrasal comparatives always receive the language-specific inherent Case associated with the theta-role given to them by the core of the degree predicate, i.e., the degree head (as mentioned above, this Case is genitive in Russian and adessive in Hungarian;<sup>11</sup> according to Katalin É. Kiss (p.c.), the theta-role in question is the STANDARD (VALUE) itself). On the other hand, if it were derived from a clausal source, it would also be assigned the inherent Case of its matrix counterpart (cf. Grashchenkov 2008: 389). In order to test whether this is true, let us have a look at the following examples:

- (29) a. Jobban megbízom Péterben Jánosnál/\*Jánosban (*Hungarian*)  
 better<sub>ADV</sub> I.trust Peter-INE John-ADE/John-INE  
 ‘I trust Peter more than John.’
- b. Яблоки нравятся детям больше груш (*Russian*)  
 apples be.nice children-DAT more pears-GEN  
 ‘Children like apples more than pears.’  
 (Grashchenkov 2008, ex. 37b)

As can be seen, if there were an underlyingly clausal *than*-XP in genuine phrasal comparatives, one would expect non-structural Case-marking to follow the Case-marking pattern in the main clause; however, this is not the case.

In sum, the facts of *so* pronominalisation and inherent Case licensing support the idea that the constituent representing the standard value in comparatives is base-generated as the complement of the degree head, the comparative morpheme.

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<sup>11</sup> There is a dialectal difference regarding the inherent Case of phrasal comparatives in Hungarian: certain dialects tend to use ablative instead of adessive:

(i) János magasabb Pétertől.  
 John taller Peter-ABL  
 ‘John is taller than Peter.’

Still, standard Hungarian always uses adessive.



adjectives ending in *-er* in English and *-bb* in Hungarian. This certainly implies that in this case the degree head is a phonologically empty bundle of features, and the comparative morpheme is a derivational affix (see also Austerlitz (1966) and Blevins (2001) for further discussion). If the feature that is uninterpretable on the head is not checked by the AP in its specifier, the comparative dummy *more* in  $Q^0$  agrees with the comparative  $Deg^0$  below, thus the derivation converges.

In fact, this approach is not entirely without theoretical foundations. First, Bobaljik (2007) points out that the suppletive form of a comparative adjective renders the superlative form also suppletive:

(32) *The Comparative-Superlative Generalization (CSG):*

If the comparative degree of an adjective is suppletive with respect to the basic (positive) form, then the superlative is also suppletive.

(Bobaljik 2007: 2, based on Ultan 1972: 144)

Furthermore, Bobaljik (2007) extends this generalization to change-of-state verbs derived from comparative adjectives as well:

(33) *The Comparative-Change-of-State Generalization*

If the comparative degree of an adjective is suppletive with respect to the basic (positive) form, then the (basic) corresponding change-of-state verb is also suppletive.

(Bobaljik 2007: 2)

This generalization is exemplified below:

- (34) a. *bad* → *worse*      *worsen*<sup>13</sup>  
       b. *wide* → *wider*      *widen*

As can be seen, *worsen* is derived from the comparative form *worse*. Assuming that word-formation processes in derivational morphology are word-based, where words are stored in the Lexicon (Aronoff 1976: 21-23), it may be suggested that comparative forms of adjectives are also separate entries stored in the Lexicon, as the comparative is considered as a derivational category (Blevins 2001).

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<sup>13</sup> Although there are examples that may seemingly be counterexamples to the Comparative-Change-of-State Generalization, Bobaljik (2007) successfully manages to prove that these are only illusory. For example, the verb *badden* does exist; however, as Bobaljik (2007) argues, it is related to another sense of the adjective *bad*, which also tolerates a paradigmatic realization of the comparative form (*badder*).

The main problem with this analysis is that comparative affixation seems to be highly productive cross-linguistically; for example, every Hungarian gradable adjective has a regularised way of forming its comparative counterpart: by adding the suffix *-bb* (or some allomorph thereof).<sup>14</sup> This is quite counterindicative of comparative adjective formation being in the realm of derivational morphology, especially if it is assumed that word formation rules are applied once only, then the new word is added to the speaker's Lexicon (Aronoff 1976: 22). Instead, I accept Stephany's (1982) and Zwicky's (1989) arguments in favour of an inflectional analysis of English comparatives.<sup>15</sup>

**2.4.2 A morphosyntactic approach to synthetic comparatives.** To start with, *-er* is a bound morpheme, thus it needs to lean on a host, which can be the adjective head<sup>16</sup>. As is known, certain bound morphemes can behave as (free) enclitics to the preceding Phonological Phrase (cf. Selkirk 1984), such as *'s* in English (both the contracted form of *is* and the Saxon Genitive):

- (35) a. The manager I was talking to's coming right here.  
b. The boy next door's diary was stolen.

As can be seen, the bound morphemes lean on a phrase, not only on the word preceding them. On the other hand, certain affixes are attached to particular Phonological Words, and by merging the affix and the word another Phonological Word may come into being (e.g., plural *-s* in English):

- (36) a. \*[The manager I was talking to]s are coming right here.  
b. The managers I was talking to are coming right here.

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<sup>14</sup> There are irregular comparative quantifiers, though; for instance, *sok* (*many/much*) – *több* (*more*).

<sup>15</sup> As Zwicky argues, comparatives “exhibit almost all the symptoms of inflection, lacking only the property of morphological generality” (1989: 146), as not all adjectives have comparative or superlative forms; however, “the property of being comparative or superlative [...] is involved in constraints on syntactic form [...], it forces no change of category, it is manifested in exterior rather than interior affixes, and so on” (*ibid*).

<sup>16</sup> As is known, adverbs may also be gradable predicates, and English *-ly* adverbs do not tolerate the comparative morpheme *-er*: hence *\*quicklier* is not available. Either periphrastic comparatives are used here (e.g., *more quickly*) or *-ly*-less base forms (*quicker<sub>ADV</sub>*). However, this is a purely language-specific and morphological problem, as Hungarian, for example, tolerates both suffixes, but in reverse order:

(i) gyors -abb -an  
fast -er -ly  
'faster<sub>ADV</sub>'

See Zwicky (1989) and (1995) for further discussion.

As can be seen, plural *-s* in English is a suffix that is attached to noun heads;<sup>17</sup> thus, adding *-s* to the noun stem gives a Phonological Word (see Selkirk (1995) for further discussion). It is quite straightforward that comparative *-er* (in English) or *-bb* (in Hungarian) follows the latter pattern; that is, it can fuse with particular categories: gradable adjectives and gradable adverbs, as can be seen below:

- (37) a. \*Butch is happy about the results-er than Fluffy is.  
 b. Butch is happier about the results than Fluffy is.

Second, as for the connection between the syntactic derivation and the morphological derivation, the following rule may also be informative:

- (38) *The Mirror Principle*  
 Morphological derivation reflects syntactic derivation and vice versa.  
 (based on Baker 1985)

In other words, “the order of morphemes in a complex word reflects the natural syntactic embedding of the heads that correspond to those morphemes” (Baker 2002: 326).

The problem with the analysis of comparatives proposed in Chapter 1 is that the AP in the specifier of DegP does not always consist of a sole adjective head, as it may have a complement:

- (39) a. Butch is happy about the results.  
 b. Butch is happier about the results than Fluffy.

As can be seen, the PP [*about the results*] follows the comparative morpheme in (39b), while it is the complement of the adjective *happy*. There are two possible approaches here. One of them includes the step that the PP complement of the adjective is moved out of the AP to the right, while the other one suggests that the comparative morpheme undergoes head-movement to  $Q^0$  and, via morphological merger (see Marantz 1984, 1988, and Bartos 1998, 1999 and 2000 for discussion), it is merged with the AP that it c-commands from  $Q^0$ . I suggest taking both options into consideration: I will outline the former now, and I will return to the latter in section 2.4.4.

To start with, Ackema and Neeleman (2000) point out that the selectional properties of affixes are supposed to be distributed: some properties should be regarded as morphosyntactic (indicated as AFFIX), while others are

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<sup>17</sup> Although some idiomatic expressions are exceptions; e.g., *attorney-at-laws* vs *attorneys-at-law*, *Attorneys General* vs *Attorney Generals* etc.

morphophonological (indicated as /affix/) in nature. AFFIX has the role of selecting the appropriate category for affixation; for instance, the affix *-ist* in Dutch selects a nominal host to be attached to, which may either be a head or a maximal projection from a syntactic point of view (*ibid*). On the other hand, /affix/ attaches to a word that corresponds to the category that AFFIX selected (*ibid*). Let us have a look at the following example:

- (40) [[KLASSIEK GITAAR] IST] ↔ (Dutch)  
 [[<sub>ω</sub> klassiek] [<sub>ω</sub> gitaar ist]]  
*classical guitar ist*  
 (Ackema and Neeleman 2000, ex. 42a)

As can be seen, this explains the bracketing paradox that, from a syntactic point of view, the affix stays outside the nominal expression *klassiek gitaar*, even though it belongs to the same phonological word as *gitaar* (cf. Pesetsky 1985, Sproat 1985, DiSciullo and Williams 1987 and Spencer 1988).<sup>18</sup> However, the morphophonological properties of affixes – or /affixes/ – determine that an overt suffix cannot be attached to an XP that includes the category selected by the affix ( $X^0$ ) and the complement of  $X^0$  (Ackema and Neeleman 2000: 327):

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<sup>18</sup> Ackema and Neeleman explain that the structure could also be [*classical [guitarist]*]; however, they prove that this is only illusory (2000: 330-1). Dutch prenominal modifiers must end in a declensional schwa (written as *-e*) in definite DPs in certain contexts (*ibid*; see (i) below). In other contexts, this declensional schwa cannot appear (*ibid*; see (ii) below). The reading causing the bracketing paradox cannot include this declensional element; if *-e* appears on the prenominal modifier *klassiek* when *-ist* is attached to the noun, it can only mean ‘a guitarist, who is classical as a person’ and not ‘a person, who (professionally) plays classical guitar’ (*ibid*):

- (i) de beroemde\*(-e) gitarist  
 the famous-DECL guitarist  
 ‘the famous guitarist’  
 (ii) Hij spelt klassiek(\*-e) gitaar.  
 He plays classical guitar  
 ‘He plays classical guitar.’  
 (iii) de klassiek gitarist  
 the classical guitarist  
 ‘the classical guitarist’ (a person, who (professionally) plays classical guitar)  
 (iv) de klassiek-e gitarist  
 the classical-DECL guitarist  
 ‘the guitarist, who is classical as a person’

(based on Ackema and Neeleman 2000, exx. 43a, 44a, 45a)

- (41) a.  $[Y[XP X WP] \text{AFFIX}] \leftrightarrow$   
 $*/x/-/wp/-/affix/$   
 (Ackema and Neeleman 2000, ex. 35)  
 b.  $[[\text{happy about the results}] -er]$

However, the problem of the selected lexical head having a post-head complement is strongly connected to the phonological properties of the affix: if it has no phonological value (i.e., it is covert, e.g., the zero nominalizing suffix in English, as can be seen below), the problem vanishes (*ibid*):

- (42) a.  $[z[Y[XP X WP] \text{affix-1}] \text{affix-2}] \leftrightarrow$   
 $/x/-/wp/-/affix-2$   
 b.  $[[[\text{PUSH UP}]_V \text{NOM}] \text{PLUR}] \leftrightarrow$   
 $[[\omega \text{ push}] [\omega \text{ up s}]]$   
 (Ackema and Neeleman 2000, exx. 36, 38d-d')

This suggests that the problematic examples in (36a) and (37a) can be filtered out by the morphophonological (or PF) requirements of the comparative suffix *-er*. This certainly implicates that the morphophonological requirements of an affix (i.e.,  $/affix/$ ) may result in a crash that was not foreseen by the morphosyntactic properties or features (i.e., AFFIX) thereof. On the other hand, if the PP complement of the adjective is extraposed, the derivation converges:

- (43) Butch is  $[_{\text{DegP}} [_{\text{AP}} \text{happy} [\_\_\_]] -er] [_{\text{PP}} \text{about the results}]$ .



Nevertheless, this is problematic, as it is not straightforward how to account for or trigger obligatory PP-extraposition in this case. Also, it is not yet clear what the position of the extraposed PP complement is with respect to the *than*-XP, which is the complement of the comparative morpheme itself, as that element also needs to be extraposed, since it would normally follow the PP complement (compare (39b) above). These issues will be addressed in section 2.4.4, following the discussion on the existence of the  $Q^0$  position, as the solution to the problem makes use of that, too.

**2.4.3 The  $Q^0$  position.** As opposed to Izvorski (1995a), it is assumed that degree morphemes constitute a different class of functional categories from determiners (cf. Abney 1987, Corver 1990). However, claiming that there is a functional DegP on the top of an AP, as could be noticed in Corver (1990), might not be an explanation satisfactory enough in order to account for all the constituents appearing inside the degree expression.

Let me start with a proposal adopted by Corver (1997a; originally made by Bresnan 1973), according to which there is an underlying Quantifier Phrase in adjectival expressions, and this QP is headed by the quantifier *much*. The following examples may present her idea:

- (44) a. So wonderful.  
 b. [AP [QP [DegP so] [Q' [Q *much*]]] [A' [A wonderful]]]

*Much* is covert, if it is immediately followed by an adjective or adverb, due to a specific *much*-deletion rule:

- (45)  $much \rightarrow [... \text{ \_\_\_\_\_\_ } A_{AP}]$ , where A(P) = Adjective or Adverb (Phrase)  
 (Corver 1997a:120, on the basis of Bresnan 1973)

However, such a rule seems to be a solution *ad hoc*. Also, Bresnan published her theory before the invention of the Functional AP-Hypothesis (Corver 1990); that is why the QP is in specAP. Still, the motivation to believe that there is a QP inside the functionally extended degree expression stems from examples of *so*-pronominalization in English, as shown in Corver (1997a:126ff). It is widely accepted that *so* can replace the whole adjective phrase, as in the sentence below:

- (46) Butch seems [*fond of Fluffy*], and Snoopy seems [*so*] too.

However, it can be proved that the functional layer of the adjectival expression may not be affected by the pronominalization:

- (47) a. Butch seems [*fond of Fluffy*]. Snoopy seems less [*so*].  
 b. Butch seems [<sub>DegP</sub> more [<sub>AP</sub> *polite*]] than Fluffy.  
     In contrast, Snoopy seems less [*so*] than Fluffy.  
 c. Butch seems [<sub>DegP</sub> *polite*<sub>i</sub>-er [<sub>AP</sub> *t<sub>i</sub>*]] than Fluffy.  
     In contrast, Snoopy seems less [*so*] than Fluffy.

In Corver's (1990) analysis, the comparative degree marker *-er* and the adjective are adjoined in the process of head-adjunction at an upper functional head after head-movement of the adjectival lexical head, as in (47c), and *so* replaces the adjective<sup>19</sup>. Still, the following examples may be problematic, as far as functional layers are concerned:

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<sup>19</sup> In the DP-shell hypothesis (Izvorski 1995a), it might raise a problem if *-er* remains in situ, in DEG<sub>2</sub><sup>0</sup>, and *so* replaces only the AP. That is, the final word order could also be \**Snoopy seems so-er than Fluffy*; (*so* = polite). This problem is due to morphological reasons, since *-er* as an affix in the sense of Ackema and Neeleman (2000) cannot be

- (48) a. Butch is *fond of Fluffy*.  
       Maybe he is [too **\*(much)** *so*].  
       Maybe he is [as **\*(much)** *so* as Bill].  
 b. The muffins are *tasty* today – [so **\*(much)** *so*, that I ate twenty of them].  
 c. Butch is *fond of Fluffy*, but Snoopy wonders [how **\*(much)** *so*] he is.  
 d. Butch is *fond of Fluffy*, but Snoopy is not [that **\*(much)** *so*].

The problem is that the degree elements *too*, *as*, *so*, *how*, and *that* cannot immediately precede and modify the adjective, whereas *more* and *less* can. As Corver (1997a) argues, the two groups of degree adverbials belong to diverse classes: he calls the former group determiner-like degree items, and the latter quantifier-like degree items. The obligatory appearance of *much* in (48) suggests that there is a position between that of determiner-like degree items and that of the adjective. In Corver's (1997a) view, the structure of the above degree constructions can be seen below:

- (49) a. [<sub>DegP</sub> *too/so/as/how* [<sub>QP</sub> **much** [<sub>AP</sub> *so*]]]  
 b. [<sub>DegP</sub> *too/so/as/how* [<sub>QP</sub> interesting<sub>i</sub> [<sub>AP</sub> t<sub>i</sub> ]]]

It is assumed here that determiner-like degree items are located in Deg<sup>0</sup>, whereas quantifier-like degree items (such as *more*, *less* and dummy *much*) in Q<sup>0</sup>. In such constructions, as Corver (1997a) argues, the late insertion of this dummy element *much* is triggered by the necessity that the Degree head (*too/so/as/how*) has to theta-bind the degree argument *G* (Grade, probably identical to the standard value in absolute constructions, even though it did not get a position in the syntactic representation) that is associated with the adjective inside the AP, and this theta-binding relationship must be local. That is, if the adjective undergoes A<sup>0</sup>-to-Q<sup>0</sup> head movement (see (49b) above), the degree head can locally theta-bind the adjective in Q<sup>0</sup>; on the other hand, in the case of *so*-pronominalization, as *so* replaces the whole AP, no head is available for head movement, thus *much* is inserted in order to represent Grade (*ibid*: 130ff.). In other words, whenever there is a determiner-like degree item in the highest functional head position (Deg<sup>0</sup> in (49) above) and *so* replaces the AP, there should be a dummy *much* in Q<sup>0</sup>, while it is also argued that adjectival degree modifiers, such as *extremely* or *unbelievably*, are merged into specQP (*ibid*: 154ff.), as is exemplified below:

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attached to *so*, which is similar to certain adjectives in this respect (e.g., ones that are longer than two syllables, such as *satisfactory*).

- (50) a. so extremely much so  
 b. [DegP [Deg' so [QP extremely<1> [Q' [Q much<G>] [AP so<1,G>]]]]]  
 (Corver 1997a: 157, ex. 108c)

As can be seen, *so* in Deg<sup>0</sup> locally binds the Grade argument represented by *much* in Q<sup>0</sup>, while *extremely* is in specQP.

To continue, even though it is true that *more* and *less* immediately precede the adjective, the hypothesis that *much* and quantifier-like degree items are in complementary distribution is not straightforwardly supported by the following data:

- (51) a. Butch is much more intelligent than Fluffy.  
 b. Butch is five IQ-points more intelligent than Fluffy.  
 b. \*Butch is *fifty IQ-points much/much fifty IQ-points* more intelligent than Fluffy.

That is, *much* in (51a) is not situated in the same position as *more*. Moreover, *much* seems to be in complementary distribution with the degree modifier phrase [*fifty IQ-points*]. This would implicate that *much* belongs to the determiner-like degree items, as [*fifty IQ-points*] is in complementary distribution with them, as can be perceived below:

- (52) a. Butch is fifty IQ-points intelligent.  
 b. Butch is so intelligent.  
 c. \*Butch is *so fifty IQ-points/fifty IQ-points so* intelligent.

However, *much* can appear together with determiner-like degree items:

- (53) Butch is so much intelligent.

In order to solve this perplexing behaviour of *much*, Corver (1997a) declares that there exist two *much*'s: one of them is a lexical element and acts as a degree operator (*much*<sub>LEXICAL</sub>), as opposed to dummy *much*, which can appear in Q<sup>0</sup> (*much*<sub>2</sub>). It is assumed in his theory that “the Q<sup>0</sup> position is lexically empty (...) at the underlying level” (*ibid*:129), and “in order to obtain a legitimate LF representation, the Q<sup>0</sup> position must be lexically supported in the course of the derivation” (*ibid*). As a result, *much*-support is thought to work similarly to *do*-support in the extended verbal projection (*ibid*; cf. Chomsky 1991).

However, there are weak points in this analysis. First, Corver has to point out that he takes “the comparative forms not to be transformationally derived but to be base-generated as such in syntax” (1997a: 123), contra Corver (1990), in

line with Jackendoff (1977); nevertheless, this fails to capture the seemingly obvious relationship between dummy *much* in absolute constructions and *more* in comparative ones, if the latter were transformationally derived (as a suppletive form combining *much* and *-er*, as in Bresnan (1973)). Second, if it is so important for the degree elements in the highest maximal projection (DegP in Corver's representation, see (49) above) to locally theta-bind the degree argument Grade that is in  $Q^0$ , the following example may be problematic:

- (54) a. Science fiction always sounds [**way/far so much more interesting**]  
 than history these days.  
 b. ... way more interesting...  
 c. ... far more interesting...  
 d. ... so much more interesting...  
 e. ... much more interesting

The problem is that the bracketed constituent in (54a) could easily be substituted with any of those in (54b-e), even though Corver maintains only one head position (for determiner-like degree items; Deg<sup>0</sup> in (49) above) and one specifier position (specQP, for adjectival degree modifiers, such as *extremely*, *highly*, *unbelievably* etc.) for such degree modifiers (1997a: 154ff.). Furthermore, it can be seen that any degree modifier preceding *much* in (54a) must be further away from Grade, violating the local theta-binding requirement. Third, although (54) is a possible and well-formed example, Corver's (1997a) analysis fails to capture the difference between examples including an adjectival degree modifier (e.g., *extremely*) and those that lack such an element from the point of view of *much*-support:

- (55) Butch is talented.  
 a. He is so \*(much) so that he has won several competitions.  
 b. He is so extremely (much) so that he has won several competitions.<sup>20</sup>

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<sup>20</sup> Although sometimes grammatical judgments are a little fuzzy in connection with this type of examples, let me quote some of those that my native informants judged grammatical:

- (i) What I'm saying is that you CAN handle your fear, and if you don't give yourself a chance, then you are coward. OK, maybe not **so extremely so**, but still, don't let your chance go away.  
 (ii) Bush's misspeaks were comical, but Obama's not **so extremely so**.  
 (iii) I hate spinach. **So extremely so** that I will never eat it. I will not, even if Popeye himself is begging me.  
 (iv) Iraq has a hot climate, but well, not **too extremely so**, so the temperature is normally in the high 20s, maybe low 30s.

As can be seen, *much*-support is not obligatory in (55b), although the highest functional position seems to be filled by the determiner-like degree item; this evidently questions the validity of the local theta-binding requirement (and thus the representation in (50b) also seems to be merely hypothetical). Fourth, it is clear that theta-binding should be necessary for the interpretation of the construction at LF; however, no such effects are detected cross-linguistically:

- (56) a. Fickó büszke Pihére. Vörös is az. (Hungarian)  
 Butch proud Fluffy-SUB Ginger too so  
 ‘Butch is proud of Fluffy. So is Ginger.’  
 c. És én is {annyira / nagyon} az vagyok.  
 and I too REL-that.much-SUB very so am.  
 And I am that/very much so, too.’

If theta-binding here exists at all, it is not clear why it cannot wait until LF, why LF operations cannot deal with the problem after the relevant phase is transferred to the interfaces. Fifth, although Corver (1997a) emphasizes the parallelism between *much*-support and *do*-support, it must be recalled that the latter occurs partly due to morphological or morphosyntactic (i.e., PF) reasons (e.g., to host a bound tense morpheme), whereas *much*-support is supposed to be triggered by LF properties (i.e., theta-binding).

However, the main problem of this proposal is that the *than*-XP cannot be taken as the complement of the degree element, as proposed by Izvorski’s (1995a) DP-shell analysis. Thus, although it is accepted that there is need for a QP generated in comparatives, the structural representation in (49) is hereby rejected. On the other hand, Corver’s (1997a) and Bresnan’s (1973) findings are very valuable from the point of view of this research, since it is known that there must be a Quantifier position immediately preceding that of the adjective (hosting *more*, *less*, dummy *much* etc.), and there must be another, higher position for determiner-like degree items. The proper functional structure of degree expressions as well as the trigger of *much*-support will be presented in Chapter 3.

**2.4.4 Another morphosyntactic approach to synthetic comparatives.** It was shown in the previous section that there is a  $Q^0$  position above DegP, essentially projecting a Quantifier Phrase. It is quite indicative that dummy *much* is inserted into this position under certain circumstances in absolute constructions; there is no reason why this should not be the case in periphrastic

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(v) This acquisition is very bad for the company. **Very extremely so.** I don’t know what is going to happen now.

comparatives, as could be seen in (31), in which *much* and *-er* are fused together as *more*. However, one may wonder what triggers Deg<sup>0</sup>-to-Q<sup>0</sup> movement.

If the morphosyntactic/morphophonological approach (based on Ackema and Neeleman (2000)) presented in section 2.4.2 is taken into consideration, it seems to follow naturally from the lexical properties of syntactic (or lexical) items that *-er* has affixal properties; translated into the code of the syntactic (and possibly morphosyntactic) derivation, this means that it is a natural feature of *-er* that it must be attached to an appropriate host: an adjective, an adverb or maybe a quantifier (e.g., *bigger*, *faster*, *more* respectively). It is likewise a lexical property of lexical items whether or not they can tolerate affixes, clitics, bound morphemes attached to them, and if so, what kinds they can be merged with. These pieces of information are supposed to be encoded as features in the derivation (e.g., [AFFIX], [FREE MORPHEME] etc.), as they represent the requirements of affixation from a syntactic (or morphosyntactic) point of view, in the sense of AFFIX (and not as /affix/) in Ackema and Neeleman (2000).

For example, to my knowledge, all Hungarian gradable adjectives can tolerate the comparative morpheme *-bb*, unlike their English counterparts (e.g., *more interesting*). On the other hand, *so* pronominalization requires *much*-support even in Hungarian:

- (57) Bár Fickó nagyon ügyes,  
 although Butch very smart  
 de Pihe annál is sokkal inkább az.<sup>21</sup>  
 but Fluffy that-DEM-ADE also much rather so  
 ‘Although Butch is very smart, but Fluffy is even much more so.’

This suggests that Deg<sup>0</sup>-to-Q<sup>0</sup> movement is triggered by morphosyntactic reasons; that is, the features triggering movement are based on the lexical properties of *-er* and its possible hosts.<sup>22</sup>

On the other hand, Bartos (1998, 1999, 2000) presents an approach to inflectional phenomena that is slightly different from the one put forward by Ackema and Neeleman (2000). Based on the investigation of the internal structure of Hungarian DPs and VPs, using Distributed Morphology as a theoretical background (see Halle and Marantz (1993, 1994) and Marantz (1997) for further discussion), Bartos (2000: 664ff.) claims that the operation called ‘morphological merger’ (cf. Marantz 1984, 1988) is responsible for merging bound suffixes and their hosts.

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<sup>21</sup> Hungarian *inkább* is inherently comparative only; however, the comparative morpheme *-bb* can be recognized in it.

<sup>22</sup> I would like to avoid discussing whether head movement is a PF-phenomenon or purely syntactic in nature. I tentatively adopt Roberts’ (2003) approach.

(58) a. **Morphological Merger** (Marantz 1988)

At any level of syntactic analysis (d-structure, s-structure, phonological structure), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the lexical head of Y.

(Marantz 1988: 261)

b. **Morphological Merger** (Bartos 2000)

Two *structurally adjacent* categories are merged into one phonological word, if the morphological requirement of one of them is satisfied in this way (e.g., the affixes' requirement to be attached to a host).

(Bartos 2000: 664, ex. 8)

c. **Structural Adjacency**

X and Y are structurally adjacent iff

1. X c-commands Y, and
2. there is no Z such that it is in the same projection level (head or phrase) as X, when X c-commands Z and Z c-commands Y.

(Bartos 2000: 665, ex. 9)

For example, in the light of Baker (1988), head movement in narrow syntax may necessarily be followed by morphological merger, as two terminal nodes are adjoined to each other, making up one phonological word. Also, the English past tense affix *-ed* and the verb are morphosyntactically merged (lowered) in this way:

## (59) a. Elmer [often talked to Hortense].

b. [<sub>FinP</sub> -ed [<sub>VP</sub> [<sub>AdvP</sub> often][<sub>VP</sub> talk [<sub>PP</sub> to Hortense]]]

└──┘

{-ed + talk}

(on the basis of Bartos 2000: 665, exx. 10a, 11)

As can be seen, morphological merger is capable of linearizing discontinuous constituents as one phonological word in a position defined by the host's original position, even if the linear order of the merged elements was different in the structure derived by the syntactic computation. In fact, this mechanism seems to have a fundamental role in Hungarian DPs as well:

- (60) a. Péter-nek az új kalap -ja -i -t  
 Peter-DAT the newhat -POSS-PL -ACC  
 ‘Peter’s new hats<sub>ACC</sub>’  
 b. [<sub>KP</sub> -t [<sub>DP</sub> [<sub>DP</sub> Péternek] [<sub>D</sub> az [<sub>NumP</sub> -i [<sub>PossP</sub> -ja [<sub>NP</sub> [<sub>AP</sub> új][<sub>NP</sub> kalap]]]]]]]]]<sup>23</sup>

(60b) is based on Bartos (2000), and the real contribution of this method is that the relevant affixes can be attached to the noun without any movement involved, thus it is regarded as a more economical way of affixation (*ibid*: 671). As can be seen, the affixes are in various functional head positions in the syntactic structure in (60b), and their syntactic order reflects their final order, inasmuch as the latter is the mirror image of the former.<sup>24</sup>

Turning back to synthetic comparatives, one may wonder if this approach is suitable for them. The comparative morpheme *-er* must be structurally adjacent to the AP for the Morphological Merger to be able to operate on them; this also means that, on the basis of (58c), *-er* must c-command the AP. These requirements can be satisfied if *-er* moves to Q<sup>0</sup> in synthetic comparatives as well:

- (61) a. Butch is [taller than Fluffy is].  
 b. [<sub>QP</sub> -er<sub>i</sub> [<sub>DegP</sub> [<sub>AP</sub> tall] t<sub>i</sub> [than Fluffy is]]]  
 └──────────┘  
 {-er + tall}

This is a possible and viable approach; however, the question is what triggers this movement. In periphrastic comparatives, it is quite clear that the [AFFIX] feature of *-er* (representing morphosyntactic information) needs to be checked, as it is uninterpretable for the semantic component (or rather for both interfaces).

<sup>23</sup> Case suffixes are base-generated in K<sup>0</sup>, specDP hosts dative possessors, plural affixes are base-generated in Num<sup>0</sup>, and possessive affixes in Poss<sup>0</sup> (Bartos 2000: 670ff.).

<sup>24</sup> Certainly, (60) could be analyzed by a series of XP-movements as well: e.g., (i) NP [*új kalap*] to specPossP, (ii) PossP [[*új kalap*]-ja] to specNumP, (iii) NumP [[*új kalapja*]-i], and following the completion of the DP layer, (iv) the whole DP [*Péternek az új kalapjai*] could be moved to specKP, thus having the final [[*Péternek az új kalapjai*]-t]. The problem with such an analysis is that it seems to violate the Head Movement Generalization, as this would involve several XP-movements from the complement position of a head into its specifier:

(i) *Head Movement Generalization*

Suppose a head H attracts a feature of XP as part of a movement operation.

a. If XP is the complement of H, copy the Head of XP into the local domain of H.

b. Otherwise, copy XP into the local domain of H.

(Matushansky 2006: 74, ex. 5; based on Pesetsky and Torrego 2001)

Alternatively, it could be hypothesized that there are other functional projections intervening the probes and goals of movement. As one may run into difficulties justifying the existence of such projections, I will not venture an analysis here.

On the contrary, if morphological merging is completely dealt with in the morphological module (i.e., at PF, on the way towards the phonetic realization of the utterance, in the sense of Distributed Morphology), and the affix must precede its host in the syntactic structure, and this order is then swapped by Morphosyntactic Merge, there must be another feature that always triggers Deg<sup>0</sup>-to-Q<sup>0</sup> head movement: here I tentatively suggest that there is an uninterpretable feature on Q<sup>0</sup>, which triggers Deg<sup>0</sup>-to-Q<sup>0</sup> head movement; in Chapter 3, I will argue that this uninterpretable feature makes sure that Q<sup>0</sup> agrees with Deg<sup>0</sup> whether they are absolute, comparative or superlative, and this is done by moving the degree morpheme to Q<sup>0</sup>. The empirical support behind this reasoning can be captured in that certain pre-Q<sup>0</sup> degree modifiers (e.g., *extremely*, *totally*) can appear in absolute constructions only, whereas lexical *much* emerges in comparatives; also, determiner-like degree items (e.g., *this*, *that*, *how*, *so*, *too*) have strict selectional restrictions regarding the absolute nature of the degree expression they appear in – I will return to these issues later. Still, making sure that Q<sup>0</sup> agrees with Deg<sup>0</sup> can satisfy these requirements.

However, the advantage that the representation in (61) has is that it provides another perspective of the formation of synthetic comparatives. Recall that the problem in (43) was that the extraposition of the PP-complement of the adjective was not triggered:

(62) Butch is [<sub>DegP</sub> [<sub>AP</sub> happy [\_\_\_\_]] –er] [<sub>PP</sub> about the results].

└──────────────────┘↑

Also, PP extraposition is not really attested in similar situations:

- (63) a. \*A [proud t<sub>i</sub>] man [of his wife]<sub>i</sub>.  
 b. A proud [teacher [of Physics]].  
 c. \*A [proud t<sub>i</sub>] teacher [of Physics]<sub>i</sub>.

As can be seen, the extraposition of a PP from within a degree expression (see 63a and 63c) does not seem to be possible, unlike that of a *than*-XP:

(64) a [taller t<sub>i</sub>] man [than Bill]<sub>i</sub>

In fact, this problem arises only if the degree morpheme is base-generated in Deg<sup>0</sup> and does not move, but is forced to be morphologically merged with the gradable predicate in its specifier, when that includes an internal complement. On the contrary, if the degree morpheme is moved to Q<sup>0</sup> and is merged with the AP to its right (in specDegP), the relation between the merged elements is

different from a PF perspective. This is highlighted by the following examples as well:

- (65) a. John is a good-looking model.  
 1. He is better-looking than Bill.  
 2. He is more good-looking than Bill.  
 b. John is a well-known stage director.  
 1. He is better-known than Bill.  
 2. He is more well-known than Bill.

As can be seen, *good-looking* and *well-known* are complex adjectives, and their internal syntactic structure can be seen below:

- (66) a. [*looking* [good][*looking*]]  
 b. [*known* [well][*known*]]

That is, from a syntactic perspective, *good* and *well* modify *looking* and *known*, as far as the internal structure of these complex adjectives is concerned. On the other hand, when they are in comparative degree expressions, it is the internal modifier *good* or *well* that is merged with the comparative morpheme (see 65a1 and 65b1). The question is how to account for this puzzle.

There are two assumptions to be made here. First, the partition of the idiosyncratic properties of affixes manifested by morphosyntactic AFFIX and morphophonological /affix/ features – as proposed by Ackema and Neeleman (2000) – is compatible with the idea that morphological merger merges two adjoined terminal nodes (e.g., following head movement) or two structurally adjacent categories (e.g., in the case of affix lowering (59b) or comparative adjective formation (61b)). Second, it is the morphophonological /affix/ feature that requires the affix to be attached to and morphologically merged with its host; AFFIX is only responsible for finding a categorially appropriate host.

In (65a1) and (65b1), AFFIX is checked by the gradable predicate (i.e., the APs *good-looking* and *well-known* respectively) before Transfer, and the degree morpheme is moved to Q<sup>0</sup>. When Transfer applies, the visible constituents are mapped to PF. However, the way the structure is linearized is slightly different from what it looked like before Transfer, as can be seen below:

- (67) a. [<sub>QP</sub> –er<sub>i</sub> [<sub>DegP</sub> [*looking* [good][*looking*]] t<sub>i</sub> ]]      before Transfer  
 b. [ –er [ good [ *looking* ] ] ]      PF  
     └───┘  
     morphological merger → better (suppletive)

As can be seen, this is yet another instance of bracketing paradoxes, which can emerge quite often in the field of affixation, as mentioned in section 2.4.2. In fact, the first constituent of the complex adjective is taken as the constituent that is adjacent to the comparative morpheme at PF, as opposed to its position embedded in the AP before Transfer. If this is so, adjectives morphologically marked as comparative with a PP complement are not cumbersome any longer:

- (68) a. [QP -er<sub>i</sub> [DegP<sub>AP</sub> happy [PP about the results]] t<sub>i</sub>]      before Transfer  
 b. [-er [ happy [about the results]]]      PF
- └──────────┘  
 morphological merger → happier

The question is whether it is a problem that the host of the affix has a complement; on the basis of (67) and (68), it is not. However, this is also supported by other cases when the morphological merger is active; for example, in the case of affix lowering (see 59), the verb acting as the host does have a complement, and this is not problematic for the process either.

## 2.5 Degree modifiers in comparatives

Assuming that there is a fundamental structural parallelism among gradable degree expressions, one may wonder how the positions of certain degree modifiers detected in absolute constructions can be filled in their comparative counterparts. It has been established that there are good reasons to believe that quantifier-like degree items (e.g., *more*, *less*, dummy *much*) are in a head position immediately preceding DegP. In order to see other types of degree modifiers, let us start with the following examples:

- (69) a. Butch is [[one metre] tall].      *measure phrase*  
 b. Butch is [[extremely] tall].      *adjectival degree modifier*  
 c. Butch is [[this] tall].      *determiner-like degree item*<sup>25</sup>

Adopting the terminology of Corver (1997a), measure phrases (MP), adjectival degree modifiers (ADM) as well as determiner-like degree items (DDI) can all modify the degree predicate. What's more, they can also combine in absolute constructions:

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<sup>25</sup> I adopt the terminology of Corver (1997a).

- (70) a. Butch is [**two inches**] **too** tall to fit into the kennel. *MP+DDI*  
 b. Butch is **so extremely mind-blowingly** tall. *DDI+ADM+ADM*  
 c. \*Butch is extremely one metre tall. *\*ADM+MP*  
 d. \*Butch is one metre extremely tall. *\*MP+ADM*

It is clear that each of these degree modifiers can modify the degree predicate on its own (e.g., *two inches tall*, *too tall*, *so tall*, *extremely tall*, *mind-blowingly tall*). It must be noted, however, that MPs and ADMs seem to be in complementary distribution (as (70c-d); cf. Emonds (1985) for discussion); however, this is going to be reconsidered in Chapter 3. On the contrary, I would like to make the claim that comparative constructions allow only one degree modifier, which may be either simple or complex:

- (71) a. Butch is **much** taller than Fluffy.<sup>26</sup>  
 b. Butch is [**so much**] taller than Fluffy.  
 c. \*Butch is **so/too/how** taller than Fluffy.  
 d. Butch is [**so totally much**] more awesome than Fluffy.  
 e. \*Butch is **so/too/how** more awesome than Fluffy.  
 f. Butch is one foot taller than Fluffy.  
 g. \*Butch is **so/too** one foot taller than Fluffy.  
 h. \*Butch is extremely one foot taller than Fluffy.  
 i. \*Butch is one foot extremely taller than Fluffy.

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<sup>26</sup> The adverb *totally* – similarly to other lexical ADMs – also seems to be able to modify comparative degree expressions:

(i) Butch is totally more awesome than Fluffy.

However, this is only illusory, as this type of ADMs can also modify vPs (as predicate adverbials), as can be seen in (ii) and (iii) below:

(ii) Butch is totally in love with Fluffy.

(iii) Butch will totally kiss Fluffy.

The question is whether they can really appear in specQP in comparatives. In fact, when the copula *be* cannot move out of the vP, it seems straightforward that it modifies the whole predicate and is not only in specCP:

(iv) *Hamlet* is totally more interesting than *Doctor Faustus*.

(v) ?I want to see an extremely/totally more interesting play than *Doctor Faustus*.

(vi) It will totally be more interesting than it was yesterday.

(vii) ?It will be totally more interesting than it was yesterday.

As can be seen, when the comparative degree expression is attributive, there is no predicate for *extremely* or *totally* to modify, which degrades the acceptability of (v). Also, when the adverbial is forced to intervene between the copula *be* in (vii), where it should appear if it is generated in specQP, the example becomes marked, as opposed to (vi), in which it modifies the whole predicate as an adverbial adjoined to vP. This suggests that there are selectional restrictions: *totally* and *extremely* as ADMs can appear in absolute degree expressions, whereas lexical *much* (see 71a) can appear in comparatives.

As can be seen, the modifier complexes are made up of the modifier types just mentioned. Recall that the instances of *much* in (71) are all manifestations of lexical *much*, an ADM, as discussed in section 2.4.3. However, the following generalizations can be made on the basis of the examples in (71): (i) DDIs do not seem to be able to modify comparative degree expressions on their own (compare (71c) and (71e) to (69c)),<sup>27</sup> (ii) MPs and ADMs can modify comparative degree expressions on their own (compare (71a) and (71f) to (69a-b)); (iii) ADMs and MPs seem to be in complementary distribution, similarly to the case of absolute constructions (compare (71g-i) to (70c-d)). From a descriptive perspective, these facts suggest that only one degree modifier may be present in comparative degree expressions. However, this may be contradicted by the fact that the DDI *so* and the ADM (lexical) *much* both appear in (71b); what's more, there is another ADM (*totally*) intervening them in (71d); in fact, as the bracketing suggests, I will argue in Chapter 3 that these are all modifiers with a complex internal structure. However, as the objective of this chapter is to assign comparatives a structural representation, I will not go into details concerning complex modifiers here.

Finally, Corver proposes that ADMs in absolute degree expressions are always in specQP (*ibid*: 154-161). The question is whether this can be extended to comparatives as well. I would like to suggest that degree modifiers be base-generated in the specifier position of QP for three reasons. First, if it is really so that there can be only one degree modifier constituent in comparative degree expressions, placing them in a designated specifier position provides a structural reason why there cannot be more of them. Third, as has been mentioned, inherent Case assignment is relatively predictable regarding the relationship between the Case assignee and its licensor; in fact, Hungarian degree modifiers in comparatives are generally assigned instrumental case, regardless of whether they are measure phrases or adjectival degree modifiers:

- (72) a. Fickó sokkal magasabb Pihénél.  
 Butch much-INS taller Fluffy-ADE  
 'Butch is much taller than Fluffy.'  
 b. Fickó 10 centivel magasabb Pihénél.  
 Butch 10 cm-INS taller Fluffy-ADE  
 'Butch is 10 centimetres taller than Fluffy.'

As both MPs and ADMs are assigned instrumental Case in Hungarian comparatives, it is reasonable to assume that they are merged into the same position. A fourth reason, based on semantic expectations, will be presented in Chapter 3.

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<sup>27</sup> There exists one blatant counterexample: *the* (as a DDI) appears in English comparative correlatives; nevertheless, it is barred from absolute constructions:

(i) \*The talented Butch is, the nicer he seems.

# Chapter Three

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## Degree modification

This chapter aims at investigating the properties of degree modification in degree expressions. In fact, the field of research cannot be constrained to comparatives only, once the hypothesis of structural parallelism among degree expressions is accepted. That is, there is supposed to be a structural parallelism among degree expressions with respect to the major constituents, as mentioned in Chapter 1; this means that certain positions (e.g., Deg<sup>0</sup> and Q<sup>0</sup>) may appear in both absolute and comparative constructions, certainly hosting the appropriate elements respectively. I will not try to provide a detailed structural analysis of every possible type of degree expressions, as that would require the whole thesis to be centred around this problem; I will use non-comparative degree expressions only to illustrate the structural analysis of comparatives.

The issues addressed in this chapter include modification by a degree modifier in the functionally extended degree expression, a feature-motivated morphosyntactic explanation of *much*-support as well as an approach to multiply embedded degree modifiers.

### 3.1 Degree modifiers

In section 2.5, it was presented that there are three main types of degree modifiers: measure phrases (MP; e.g., *two metres*), adjectival (or adverbial)

degree modifiers (ADM; e.g., *extremely*) and determiner-like degree items (DDI; e.g., *this*). It was also argued that, in the case of comparatives, there might be only one constituent that modifies the difference between the reference value and the standard value; in this subchapter, I will discuss this phenomenon based on the semantic properties of degree modification. First, I will overview the relationship between the degree modifier and the modified degree; later the behaviour of degree modifiers in absolute and comparative degree expressions will be looked at. While addressing these issues, I will reassess degree modifiers and allocate them to different structural positions, partly on the basis of the analysis of MPs and ADMs discussed in Corver’s (2000, 2009) and Schwarzschild’s (2005).

**3.1.1 Degree variables and degree modification.** To start with, I adopt the generally uncontroversial and standard assumption that there is a degree representing the standard value available in absolute as well as comparative degree constructions (see section 2.1.1; cf. von Stechow 1984, Bierwisch 1989, Rullmann 1995, Lerner and Pinkal 1995, Heim 2001, among others).<sup>1</sup> In the functional AP hypothesis suggested by Corver (1990), this degree variable is an argument internal to the adjective itself (manifested as *G(rade)*; see, e.g., Corver 1997a: 130ff.); on the other hand, Lechner (1999, 2004) proposes a structural representation in which the AP is in specDegP and the standard value is in the complement position of the degree head. In this research, as far as the minimal structure of degree expressions (i.e., the constituent that includes the gradable predicate AP, the degree head and the standard value) is concerned, I adopt Lechner’s approach, which includes that the degree variable is generated in the complement position of the Deg<sup>0</sup>:

- (1) a. Butch is [d-tall].  
 b. [<sub>DegP</sub> [<sub>AP</sub> tall] [<sub>Deg'</sub> Deg<sup>0</sup> d<sub>sta</sub>]]

Second, as far as the relationship between degree modifiers and the degree variable is concerned, I partly build upon the analysis of Higginbotham (1985), Zwarts (1992) and ultimately Corver (1997a), who did not use the structural analysis presented in (1b) above. In fact, what I am trying to do is describe the mechanisms of degree modification (partly) on the basis of the structural representation in (1b).

Accordingly, I suggest getting familiarized with how the degree modifier and the modified degree are related in Corver (1997a). He argues that “functional

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<sup>1</sup> In fact, the appearance of the degree variable can also be traced back to Russell (1905), who proposed that both the reference value and the standard value are associated with a definite degree respectively, and d<sub>ref</sub> exceeds d<sub>sta</sub>; von Stechow (1984) and Meier (2002) point out that such a simple analysis faces serious challenges, though.

degree words (...) as operators (...) bind a referential argument position associated with the adjectival predicate” (*ibid*: 131), assuming that such a position “is an argument position over degrees” (*ibid*):

- (2) He will never be that<sub>i</sub> tall<sub>(1, G<sub>i</sub>)</sub>.  
(on the basis of Corver 1997a. ex. 34a)

As can be seen, this relationship is manifested by a certain type of binding, and – following Higginbotham (1985) – Corver assumes that this is theta-binding<sup>2</sup> (1997a: 131ff.), in which an argument position of the theta-grid of a lexical predicate is discharged (*ibid*: 132-133). In fact, because of the Theta Criterion, Higginbotham also states that, regarding the theta-grid of predicates, “every thematic position is discharged” (1985: 561). Therefore, the modified degree variable is theta-bound by the degree modifier (Corver 1997a: 131ff.). For example, adjectival degree modifiers like *remarkably* and the Grade argument of the gradable adjective are in a theta-identification relationship (Corver 1997a: 156):

- (3) [remarkably<sub>i</sub> wide<sub>(1, G<sub>i</sub>)</sub>]  
(on the basis of Corver 1997a, ex. 106)

That is, in ‘*the room is remarkably wide*’, the room is considered wide to degree *d* and *d* is remarkable (*ibid*). In this way, following Zwarts (1992), *remarkably* and the like are regarded as predicates predicating over the degree of width (*ibid*).

This has two implications, though. First, based on the Theta Criterion, as the degree variable is the argument of the degree modifier, it should always enter into a theta-identification or theta-binding mechanism with such an element; on the other hand, degree modification is optional, and there are adjectival expressions consisting of an adjective only:

- (4) Butch is big.

In this example, the Grade argument is not bound by a degree modifier. Corver postulates two possible approaches to overcome this problem (1997a, footnote 21): it is either hypothesized that null  $Q^0$  – as a bundle of features – (or maybe, as I see it, a hypothetical, null degree modifier in its specifier position) acts as a potential theta-binder (similarly to Bresnan’s (1973) analysis),<sup>3</sup> or it can be

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<sup>2</sup> Indices in this chapter refer to the predicate-argument relationship between degree modifiers and the degree variable or Grade argument, not A-binding.

<sup>3</sup> In Bresnan’s (1973) analysis, every gradable predicate is associated with functional *much* (i.e., the element overtly emerging in *much*-support), which is deleted throughout

purported – based on Zwarts (1992) – that bare positive adjectives are not associated with scales or degrees, only properties. In fact, Lechner (1999, 2004) describes this phenomenon as follows: “the internal argument position of the degree head could be filled by an empty, contextually determined degree variable” (2004: 231). From this perspective, the analysis based on Bresnan (1973) seems to be more compatible, as it maintains a consistent approach to gradable adjectives, inasmuch as they are always associated with degrees, in line with the semantic approach presented in section 2.1.1. However, this problem is beyond the scope of this research, and I will simply accept Lechner’s description quoted above.

Accordingly, adjectival degree modifiers and determiner-like degree items are considered degree operators or degree predicates of some kind (Corver 1997a), which I adopt in this research. However, Corver (1997a) also purports that DDIs are supposed to locally theta-bind a degree variable and ADMs should enter into a theta-identification mechanism with it, which is incorporated into the adjective as a lexical item in Corver’s analysis (1997a), but is manifested separately, as the complement of the degree head in Izvorski’s (1995a) and Lechner’s approach (1999, 2004). As has been mentioned, in this section I aim at combining the structural representation in (1b) with the semantic description of degree modification, (partly) based on Corver (1997a).

In fact, Corver’s (1997a) analysis is more restricted, inasmuch he assumes – in line with Higginbotham’s (1985) original view – that theta-binding must be local, whereas Lechner’s (2004) absolute degree expressions involve a degree variable in the complement position of Deg<sup>0</sup>, and the relationship between this degree variable and the degree operator associated with them is definitely not local. I suggest reviewing the reasons how locality here could be conceptualized and why Corver (1997a) assumes that this local relationship should be enforced. In the end, I will adopt Lechner’s (2004) view regarding locality.

First, in Higginbotham’s analysis, local theta-binding was guaranteed by establishing a government requirement on the modifier and the modified element (1985: 564); as this approach preceded *Barriers* (Chomsky 1986b), government was regarded as a very strictly local relationship, based on Chomsky (1981):

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the course of the derivation, and it is this element that seems to theta-bind the degree variable.

- (5) *Government*  
 $\alpha$  governs  $\beta$  if and only if  
 $[\beta \dots \gamma \dots \alpha \dots \gamma \dots]$ , where  
 (i)  $\alpha = X^0$ .  
 (ii) where  $\phi$  is a maximal projection, if  $\phi$  dominates  $\gamma$  then  $\phi$  dominates  $\alpha$ .  
 (iii)  $\alpha$  c-commands  $\gamma$ .  
 (Chomsky 1981:165)

As can be seen, strict locality means that there must not be an intervening maximal projection between the governor  $\alpha$  (a terminal node itself) and  $\gamma$ . This is not always satisfied in Corver's (1997a) system, as ADMs are located in specQP, the specifier position of the functional head above AP:

- (6)  $[_{QP} \text{remarkably}_i [_Q' Q^0 [_{AP} \text{wide}_{\langle 1, G_i \rangle}]]]$  (Corver 1997a)

As can be seen, *remarkably* does not function as a potential governor in Chomsky's (1981) original system of Government and Binding Theory. In fact, Corver (1997a) claims that it is Rizzi's (1990) Relativized Minimality that determines locality in the case of degree expressions as well:

- (7) *Relativized Minimality*  
 a. ... X ... Z ... Y ...  
 b. X  $\alpha$ -governs Y iff there is no Z such that  
 i. Z is a typical potential  $\alpha$ -governor for Y,  
 ii. Z c-commands Y and does not c-command X.  
 iii.  $\alpha$ -governors: heads, A *spec*, A' *spec*.  
 (Rizzi 1990)

Relativized Minimality is primarily a constraint on chains, typically created by movement. However, there is a partition between head-chains, A-chains and A'-chains here. The most important word in the definition is *potential*, as minimality (or locality) is relative with respect to the type of movement: e.g., (i) only an intervening head can block government in the case of head-chains, (ii) only an intervening XP in an A'-specifier position can block the government in an A'-chain, and (iii) only an intervening XP in an A-specifier position can block the government in an A-chain. For example, there is no intervening specifier filled by a potential governor in (6). However, Corver (1997a) assumes that the adjective must move to  $Q^0$  when it is modified by a DDI:

- (8) [DegP too/as/so/how<sub>i</sub> [QP intelligent<sub>(G<sub>i</sub>)k</sub> [AP t<sub>k</sub>]]]  
 (Corver 1997a, ex. 37)

As can be seen, the adjective is thought to move to Q<sup>0</sup> triggered by the fact that its Grade argument must be locally licensed, since the Q<sup>0</sup> position would disrupt local theta-binding between the DDI and the A head position; in this view, the movement is triggered by Greed (*ibid*: footnote 22). That is why it is not a problem in Corver's (1997a) analysis that a DDI and an ADM can simultaneously enter into a theta-binding and theta-identification mechanism respectively with the Grade argument of the adjective:

- (9) [DegP *sol/how/toolas/this/that*<sub>i</sub> [QP *extremely*<sub>j</sub> [Q' Q<sup>0</sup>+*tall*<sub>(1,G<sub>i,j</sub>)k</sub> [AP t<sub>k</sub>]]]]  
 (based on Corver 1997a, ex. 112)

As can be seen, in Corver's (1997a) system, degree modification comes from two different structural positions.

In fact, as was discussed in Chapter 2, this analysis was born in order to explain why there is *much*-support when pro-form *so* substitutes the AP when there is a DDI in the construction, and why there is no *much*-support if there is an ADM along with *so*. Let us have a look at the following examples, which reflect Corver's (1997a) analysis:

- (10) a. Butch is tall<sub>(1,G)</sub>.  
 b. Bill is extremely<sub>i</sub> so<sub>(1,G<sub>i</sub>)</sub>, too.  
 c. Bill is this<sub>i</sub> \*(much<sub>(G<sub>i</sub>)</sub>) so<sub>(1,G<sub>i</sub>)</sub>.

As can be seen, *extremely* in specQP predicates over the Grade argument of *so* in (10b), which is considered a local relationship. On the other hand, there is an intervening functional head (Q<sup>0</sup>) between *this* in the highest functional head position (i.e., Deg<sup>0</sup> in Corver's (1997a) system) and *so* in (10c), thus *much* is inserted and the Grade argument of *so* is copied onto it. Therefore, if it is accepted that there is a locality requirement (in the sense of Relativized Minimality) on the relationship between the degree operator/modifier and the degree variable (or Grade argument of the adjective), it is straightforward that an intervening Q<sup>0</sup> between *this* and *so* needs *much*-insertion in Q<sup>0</sup>.

Nevertheless, there are a lot of problems with Corver's (1997) approach. First, it is not obvious why it is not enough for the Grade argument associated with *so* to percolate to Q<sup>0</sup> after Spell-Out. If this is only feature movement, if it does not involve the movement of any other overt element, why does it have to occur overtly? Another question is what triggers this movement. Second, support mechanisms are usually not semantically motivated: see, for example, *do*-support

(cf., e.g., Embick and Noyer 2001; this will be discussed later in detail). Third, although *so* can replace a number of predicate types that do not encode Grade, it cannot substitute attributive degree expressions that inherently encode Grade, as can be seen below:

- (11) a. I danced and she [<sub>T</sub> did [<sub>VP</sub> **so**]], too.  
 b. It is important *so*<sub>i</sub> [<sub>TP</sub> to do *t*<sub>i</sub>].  
 c. \*Joe is a cool guy, and John is a (very much) *so* man.  
 d. \*This car is big; I want a *so* car.

That is, it is arbitrary and *ad hoc* to assume that *so* inherently includes the Grade argument when it replaces the AP in degree expressions, since *so*-pronominalization is dependent on the predicative nature of the element it replaces rather than some argument thereof. Moreover, it is not obvious why *so* is incompatible with measure phrases, regardless of the presence or absence of *much*-support, which is also left unexplained by Corver's (1997a) analysis:

- (12) \*Joe is 5 feet tall, while Bill is 6 feet (much) *so*.

Finally, the greatest problem with Corver's (1997a) analysis is that it is completely disregarded that not only APs can be gradable predicates in degree expressions:

- (13) a. I am extremely into syntax.  
 b. I am this much into syntax.

As can be seen, the ADM *totally* can co-occur with a PP-predicate, while the combination of the DDI *this* and the PP require *much*-support. The problem is that a PP does not consist of a sole lexical item, unlike an AP, which can indeed consist of a sole adjective as its terminal node. However, if the PP can be a gradable predicate in a degree expression, it is obvious that the Grade argument cannot be contained within a PP, as compositionally none of its constituents tends to have the lexical property of encoding Grade:

- (14) a. Butch is (\*extremely) in prison.  
 b. Butch stepped (\*extremely) into the prison.  
 b. I bought a book on (\*extremely) syntax.

As can be seen, the PP in (14a-b) or the nominal expression in (14c) cannot be modified by a degree modifier; this implicates that the Grade argument cannot generally be contained within PPs, e.g, the one in (13). What's more, as PPs are

maximal projections, one may wonder where they appear in degree expressions in Corver's (1997a) analysis; it may be expected to appear in the position of the AP, as can be seen below:

(15) [so<sub>i</sub> [QP extremely<sub>j</sub> [Q<sub>i</sub> much<sub>j</sub> [PP into syntax]]]]

The problem with this is that the DDI *so* and the ADM *extremely* do not seem to be able to enter into a theta-binding or theta-identification mechanism with any degree variable, if the representation in (15) is valid. However, if the Grade argument necessarily appears in a position separate from the PP, there must be another functional projection below QP, similarly to Lechner's (2004) approach. The question is whether Grade appears in the head position of this functional projection or it is a maximal projection. It is known that the standard value in absolute constructions can be manifested by a measure phrase, and in some languages this element follows the gradable predicate:

(16) Butch è alto trenta centimetri. (*Italian*)  
 Butch is tall thirty centimetres  
 'Butch is 30 centimetres tall.'

As can be seen, measure phrases representing the Grade argument are not atomic elements but XPs; therefore, it is reasonable to assume that the functional head (which is Deg<sup>0</sup> in the proposal put forward in this research) below Q<sup>0</sup> does not itself contain Grade. As the Italian example above suggests, the specifier of this low functional phrase hosts the gradable predicate, whereas its complement is the element representing the standard value (or Grade in Corver 1997a).

In sum, Corver's (1997a) strict locality constraint seems to be too restrictive. Therefore, I suggest that ADMs and DDIs are logical predicates predicating over the degree variable in the complement position of Deg<sup>0</sup>, without locality restrictions posited by Corver (1997a). In other words, as ADMs and DDIs are considered as logical predicates predicating over Grade in Corver (1997a), I suggest that this should be accepted, with locality restrictions removed, as in Lechner (1999, 2004)

**3.1.2 Predicate Inversion in absolute constructions.** To start with, there exist two rival approaches to measure phrases in the literature: the traditional one takes them as arguments of the gradable predicate (i.e., the adjective) inside the degree expression (see, e.g., Creswell 1976, von Stechow 1984, Heim 2001, Meier 2003); a relatively more recent approach considers MPs to be predicates base-generated in the complement position of a functional head and moved to the

front of the degree expression via Predicate Inversion (see, e.g., Corver 2000, 2009, Schwarzschild 2005). In this study, I will adopt the latter one.

In fact, it should not be surprising that MPs predicate over adjectives. Schwarzschild (2005) and Corver (2009) list a range of arguments in favour of such an analysis; here I will limit myself only to a few. First, it is known that they are never formed with strong quantifiers (17b), they are never referential definites (see 17d and 17f) or pronominals (see 17g) (Schwarzschild (2005: 223) and Corver (2009: 73); cf. Moltmann (1989), Mittwoch (1998), Klooster (1972: 18ff.)):

- (17) a. Butch is one metre long.  
 b. \*Butch is every metre long.  
 c. Butch is one metre tall.  
 d. \*Butch is my height tall.  
 e. Butch is two years old.  
 f. \*Butch is the/those years old.  
 g. Butch knows [Fluffy's age]<sub>i</sub>, and he told me it<sub>i</sub>.  
 \*It turns out that Ginger is also it<sub>i</sub> old.

(based on Schwarzschild 2005, exx. 52-55 and Corver 2009, exx. 13-15)

Second, MPs can never be extracted out of the domain of negation, as opposed to argument NPs (Corver 2009: 73):

- (18) a. ?[How many pigs]<sub>i</sub> don't you think John will weigh t<sub>i</sub>?  
 b. \*[How many pounds]<sub>i</sub> don't you think John will weigh t<sub>i</sub>?  
 (Corver 2009, ex. 17)

Based on these phenomena, Corver (2000, 2009) proposes that the underlying structure of the MP+A construction *six feet tall* before and after Predicate Inversion should look like (19a-b) below:

- (19) a. [XP tall [<sub>X'</sub> X [six feet]]]  
 b. [<sub>FP</sub> [six feet]<sub>i</sub> [<sub>F'</sub> [XP tall [<sub>X'</sub> X t<sub>i</sub>]]]]

As can be seen, the gradable AP *tall* is in specXP, while the measure phrase *six feet* is base-generated as the complement of X<sup>0</sup> and then is moved to the specifier position of another functional phrase, FP, which dominates XP (*ibid*).

As for adjectival (or adverbial) degree modifiers (ADMs), Corver (2000) proposes a similar structure for the Romanian *extrem de înalt* (*extremely tall*) construction:

- (20) a. *extrem de înalt*  
 extreme of tall  
 ‘extremely tall’  
 b.  $[_{FP} \text{extrem}_i [_{F'} F(=de)+X_j [_{XP} \text{înalt} [X' t_j t_i]]]]$   
 (Corver 2000; 2009, ex. 29b)

As Corver argues, the appearance of the nominal copula *de* is a reflex of the head movement and adjunction of  $X^0$  (2009: 113). In a way, *extrem* behaves similarly to MPs in this respect in Romanian. However, there are clear differences between Romanian *extrem* in (20) and English ADMs: first, no copula surfaces in English, when English ADMs modify a degree expression. Second, English ADMs are usually morphologically marked as adverbs by *-ly*, unlike Romanian *extrem*, which is an adjective with no agreement marking (Corver 2000). All in all, I accept Corver’s (1997a: 154ff.) view regarding the position of ADMs, who argues that they are base-generated in the specifier position of the phrase whose head hosts dummy *much*; i.e., they are in specQP (both in Corver’s (1997a) and my analysis).

Nevertheless, apart from the fact that MPs are predicates, one might wonder what suggests that they are base-generated in the complement position of the lowest functional head, which is  $\text{Deg}^0$  in the proposal put forward in this research. First, as has been mentioned in section 2.1, absolute constructions also have to be associated with a standard value, and it is straightforward that it is represented by MPs, when they are present. In other words, the semantic motivation behind this argumentation can be based on the fact that measure phrases represent an explicit evaluation or manifestation of the standard value on the scale determined by the gradable predicate (cf. Kennedy and McNally 2005b), which is syntactically realized as an MP being in the complement position of the functional head  $X^0$  (in Corver’s (2009) approach, identical to the degree morpheme or  $\text{Deg}^0$  in my proposal), whose specifier hosts the gradable predicate AP. Second, there are examples in English as well as Hungarian in which the measure phrase follow the adjective:

- (21) a. Butch is (\*so/\*very/\*quite/\*extremely) talented to the extreme.  
 b. \*Butch is to the extreme talented.  
 c. Butch is extremely talented.  
 d. \*Butch is talented extremely.  
 e. Fickó (\*annyira/\*nagyon/\*hihetetlenül) ügyes nagyon.  
 Butch so very incredibly talented very  
 ‘Butch is very talented.’  
 f. Fickó nagyon ügyes.  
 Butch very talented  
 ‘Butch is very talented.’

As can be seen, *to the extreme* in (21a) is *in situ*, and in fact it cannot be preposed (21b), while its *-ly*-ending ADM counterpart is in the pre-adjectival specQP position in (21c), as it cannot follow the adjective (21d). On the other hand, Hungarian *nagyon* (*very*) can either appear before or after the adjective (21e-f), behaving in a way similar to Romanian *extrem*. However, what is obvious here is that the appearance of a MP *in situ* blocks the emergence of other degree modifiers in a pre-adjectival position (see (21a) and (21e) above). That is, as was argued in the previous section, degree operators and modifiers – as logical predicates – need to predicate over a degree variable, as their theta role would not be properly discharged otherwise. This implicates that once the standard value is set *in situ*, no degree modification is possible, since a measure phrase is not a proper argument for a degree modifier, as the degree explicitly manifested by an MP can never be modified.

However, one may wonder what triggers the inversion of measure phrases, and whether the moved constituent lands in an A- or an A'-position. I suggest looking at den Dikken's (2006) proposal for the trigger of Predicate Inversion:

(22) *The Trigger of Predicate Inversion*

Predicate Inversion involves A-movement to subject position triggered by the need to license an empty predicate head.

(den Dikken 2006: 98, ex. 37)

However, one may still wonder why MPs are not simply base-generated in specFP always. One of the effects of Predicate Inversion on the subject of the inverted predicate is that it becomes "frozen" in a way (den Dikken 2006: 83, and section 4.4):

- (23) a. I think the best candidate is this man.  
 b. \**Which man* do you think the best candidate is *t*?  
 (den Dikken 2006: 83, ex. 5a-b)

In fact, a similar phenomenon may be detected in degree expressions including measure phrases:

- (24) a. Tall<sub>i</sub>, he certainly is (\*six feet) *t*<sub>i</sub>.  
 b. As for Butch, alive, he certainly is.

As can be seen, adopting Corver's (2000) and (2009) and Schwarzschild's (2005) proposal that the AP is base-generated in specXP (specDegP in the current research) and the measure phrase in the complement position of X<sup>0</sup> (or Deg<sup>0</sup>)

here), once Predicate Inversion moves the MP to specFP, the AP freezes, and it cannot be preposed, only if there is no MP in the construction (24a). On the other hand, this could be viable step otherwise, as even non-gradable adjectives can be preposed (24b).

**3.1.3 Degree modification in absolute degree expressions.** To start with, DDIs are clearly different from ADMs and/or MPs; apart from *much*-support, Neeleman *et al.* (2004:9) characterise DDIs as elements with no internal structure; they argue – in line with Corver (1997a) – that DDIs are heads, as they can be found in the head position of a functional phrase on the top of the QP headed by dummy *much*.<sup>4</sup> This sounds reasonable, especially because DDIs can indeed be found in a position preceding dummy *much*; I am going to refer to the phrase they project as FP, with their position being F<sup>0</sup>. However, it is not a coincidence that the projection whose specifier hosts inverted measure phrases (and possibly some ADMs in certain languages, such as Romanian *extrem*) is called FP, too (see (19) and (20)). Let us have a look at the following set of examples:

- (25) a. The rug is two inches too wide.  
b. The rug is wide. It is too much so.

As can be seen, the DDI *too* is preceded by the MP *two inches* in (25a), while it is followed by dummy *much* in (25b). The only head position available between specFP and Q<sup>0</sup> filled by dummy *much* is F<sup>0</sup>. Therefore, I suggest that F<sup>0</sup> is the position of DDIs. This is exemplified below:

- (26) [<sub>FP</sub> MP [<sub>F</sub> DDI [<sub>QP</sub> ADM [<sub>Q</sub> (dummy *much*) [<sub>DegP</sub> AP [<sub>Deg'</sub> Deg<sup>0</sup> STND]]]]]]]

In fact, the trigger of Predicate Inversion as presented in (22) is totally compatible with the allocation of positions in (26) above, as it is known that inverted MPs do not tolerate DDIs in the degree expression they are in. Certainly, it may be asked if it is really necessary to postulate three different positions for degree modifiers: specFP for measure phrases, F<sup>0</sup> for determiner-like degree items, and specQP for adjectival degree modifiers. It would be convincing if one could see an example, in which all three positions are filled at

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<sup>4</sup> They consider DDIs as elements in the head position of a DegP on the top of the QP:

- (i) [<sub>DegP</sub> too/so/as/how [<sub>QP</sub> much [<sub>AP</sub> so]]] Corver (1997a)  
(ii) [<sub>DegP</sub> Deg [<sub>QP</sub> Q XP]] Neeleman et al. (2004)

The XP in (ii) in Neeleman *et al.*'s (2004) representation reflects that, in fact, the gradable predicate can also be PP or DP, even VP (*ibid*: 10ff.), as can be seen below:

- (iii) I am very \*(much) into syntax.  
(iv) I am more a syntactician than a lawyer.

the same time; if a degree variable could be predicated over by more degree operators (similarly to Corver's (1997a) analysis, in which a Grade argument could be simultaneously theta-bound by a DDI and an ADM), the following example could be analyzed in such a way:

- (27) a. An ethical employer is [twice as extremely important].  
 b. [FP twice [F as<sub>i</sub> [QP extremely<sub>j</sub> [Q [DegP [AP important] Deg<sup>0</sup> stnd<sub>i;j</sub>]]]]]  
 c. Salary is important, but an ethical boss is [twice as extremely much so].  
 d. [FP twice [F as<sub>i</sub> [QP extremely<sub>j</sub> [Q much [DegP [so] Deg<sup>0</sup> stnd<sub>i;j</sub>]]]]]

However, if this is so, the MPs in (25a) and (27) are special, inasmuch as they seem to maintain a closer relationship with the DDI than with Deg<sup>0</sup>:

- (28) a. The rug is two inches too wide.  
 b. The rug is two inches wide.  
 c. An ethical employer is twice as important as salary.  
 d. \*An ethical employer is twice important.

As can be seen, the standard value associated with the scale determined by *wide* in (28a) is not two inches, as (28a) does not entail (28b), in which it indeed is. Also, if the DDI is omitted (see 28c-d), the measure phrase *twice* cannot be taken as the standard marker for *important*. In sum, measure phrases combining with DDIs do not represent the standard value associated with the gradable predicate. Here they simply adhere to the overt DDIs in the construction and refine the difference between the reference value and the standard value; this implicates that there is a degree variable in the complement position of Deg<sup>0</sup> in (25a), (27a) and (27c) regardless of the MP preceding the overt DDI. This is so, since the degree modifiers would not be able to predicate over it, as they cannot take a measure phrase argument, which explicitly marks the standard value and can never be modified in absolute constructions; in fact, this is the reason why measure phrases explicitly representing the standard value are in an illusory complementary distribution with DDIs and ADMs. For instance, *extremely* in (27b) would predicate over the base position of the MP in the complement position of Deg<sup>0</sup>, if it were base-generated there before Predicate Inversion. As has been mentioned, if the standard value were explicitly present in the construction (e.g., *two inches* in (28b) above), no degree modifier would be capable of modifying it, as the addition of such an element would have no semantic effect (Kennedy and McNally 2005b). This is clearly shown by the denotations below:

- (29) a. This rug is three feet wide.  
 b.  $\llbracket \text{three feet} \rrbracket = \lambda g \lambda x \exists d [d \geq 3' \cap g(d)(x)]$   
 c.  $\llbracket \text{three feet wide} \rrbracket = \lambda x \exists d [d \geq 3' \cap \text{wide}(x)=d]$   
 (on the basis of Kennedy and McNally 2005a: 368, exx. 59-60)

As can be seen, the standard value (*three feet*) is not a degree variable but a genuine degree on a scale (which is determined by a gradable predicate:  $\lambda$ -bound *g* and *wide* in (29b) and (29c) respectively), and *d* is the width of the rug, which is the reference value. The ‘at least’ component ( $\geq$ ) is derived from the numeral inside the measure phrase (Kennedy and McNally 2005a, fn. 17).

Let us examine the representation in (26) and the examples in (27) again. It was established in the previous section that MPs are in fact not degree modifiers but explicit designators of the standard value in absolute constructions, even though sometimes they may also function as optional degree refiners alongside DDIs (see 25a, 28a, 28c). However, I will later argue that a degree variable can be predicated over by only one degree modifier, either a DDI or an ADM, and yet I would like to maintain the structural representation in (26). There are two structural distinctions between the behaviour of DDIs and ADMs suggesting that (26) is right: one of them is connected to Case assignment, the other one to extraction phenomena.

First, let us have a look at the Hungarian examples below; all contain absolute degree expressions and involve some kind of degree modification:

- (30) a. Fickó olyan/ \*olyanra/ \*olyannal magas.  
 Butch so so-SUBL so-INS tall  
 ‘Butch is so tall.’  
 b. Milyen/ \*milyenre/ \*milyennel magas ez a Fickó!  
 how how-SUBL how-INS tall this the Butch  
 ‘How tall Butch is!’  
 c. Fickó baromira / tökre / tisztára hülye.  
 Butch brutal-SUBL perfect-SUBL clean-SUBLstupid  
 ‘Butch is very stupid.’

As can be seen, determiner-like degree items (*olyan – so; milyen – how*) do not seem to tolerate case-marking. On the other hand, adjectival degree modifiers can be adjectives (with no *-ly*-type adverbial suffixation) equipped with inherent case-marking (e.g., with the sublative suffix *-ra*). Following Bartos’ (2000: 699ff.) approach to Case-marking in Hungarian, Case-marked constituents are always complex, and they can never be atomic (e.g., a mere terminal node  $X^0$  case-marked *in situ*), as the case morpheme is expected to be base-generated in a separate functional head. This is in fact borne out in the examples above: DDIs

are not case-marked, as they are atomic and are merged into  $F^0$ . On the other hand, an ADM – being in specQP – must be a maximal projection (XP); that is, case-marking is a viable step for them.<sup>5</sup> This also proves the structural difference between DDIs and ADMs.

The investigation of the other difference between DDIs and ADMs can be traced back to the 1970s (see, for example, Bresnan’s (1976) Relativized A-over-A Condition). To start with, let us have a look at the following example:

- (31) a. Butch is this big.  
 b. \*How<sub>i</sub> is Butch t<sub>i</sub> big?

As can be seen, the DDI *this* precedes the adjective in (31a) as expected, although it is still inside the degree expression. On the other hand, its [+wh] counterpart *how* undergoes operator movement triggered by the strong feature on  $C^0$ . In an approach similar to Jackendoff’s (1977), in which degree modifiers are placed in specAP, it is not very easy to account for the ungrammaticality of (31b), as specifiers host maximal projections, and yet *how* cannot be moved to the front. On the other hand, on the basis of the representation proposed in (26), *how* is base-generated in a functional head position, and it is quite straightforward why it cannot undergo operator movement alone, without the constituents dominated by its maximal projection, FP. However, Hungarian has an ADM with a very similar pragmatic function, and the expected structural differences are borne out, as can be seen below:

- (32) a. Milyen magas vagy?  
 how tall are-2.SG  
 ‘How tall are you?’  
 b. \*Milyen vagy magas?  
 how are-2.SG tall  
 c. \*Mennyire magas vagy?  
 how.much-SUBL tall are-2.SG  
 d. Mennyire vagy magas?  
 how.much-SUBL are-2.SG tall  
 ‘How tall are you?’

As can be seen, *milyen*, the Hungarian equivalent of *how*, cannot be moved alone. On the other hand, *mennyire* is a *wh*-quantifier equipped with sublative case marking, which indicates that it is an ADM as well as a maximal projection;

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<sup>5</sup> Bartos (2000: 699) suggests that there is a separate  $K^0$  position on the top of case-marked nominal expressions, hosting the case morpheme, which is attached to the end of the case-marked constituent via morphological merge. However, this KP projection is not indicated in the representations here for the sake of simplicity.

*mennyire* is base-generated in specQP, and it can easily be moved to its designated landing site,<sup>6</sup> as it does not have to move out of a left branch constituent in predicative comparatives. Nevertheless, the situation is different in attributive comparatives, as attributive degree expressions can be DP-internal left branch constituents, and in that case the whole constituent has to be moved, even if the [+wh] goal is *mennyire*:

- (33) a. [Milyen nagy labdát]<sub>i</sub> vettél t<sub>i</sub>?  
       how big ball-ACC you.bought  
       ‘How big ball did you buy?’  
       b. \*[Milyen nagy]<sub>i</sub> vettél [DP [NP t<sub>i</sub> [NP labdát]]]?  
       c. \*Milyen<sub>i</sub> vettél [DP [NP [FP [F t<sub>i</sub> [QP nagy]]][NP labdát]]]?  
       d. [Mennyire nagy labdát]<sub>i</sub> vettél t<sub>i</sub>?  
       how.much-SUBL big ball-ACC you.bought  
       ‘How big ball did you buy?’  
       e. \*[Mennyire nagy]<sub>i</sub> vettél [DP [NP t<sub>i</sub> [NP labdát]]]?  
       f. \*Mennyire<sub>i</sub> vettél [DP [NP [FP [QP t<sub>i</sub> [Q nagy]]][NP labdát]]]?

As can be seen, the whole DP containing a [+wh] element has to be moved, regardless of whether that element is a head or a maximal projection in the degree expression.

In sum, it is reasonable to assume that there are structural differences between DDIs and ADMs, which can be explained if DDIs are considered atomic elements occupying F<sup>0</sup>, whereas ADMs are regarded as maximal projections in specQP. As for measure phrases, if they explicitly mark the standard value in absolute degree expressions, they are base-generated in the complement position of Deg<sup>0</sup> and subsequently moved to specFP (as adopted from Corver 2009); on the other hand, when they immediately precede a DDI (which is in F<sup>0</sup>), they are likewise in specFP, but it can be argued that the semantic effect of their presence in the construction is simply the refinement of the difference between the reference value and the standard value.

**3.1.4 Degree modification in comparative degree expressions.** As could be seen in the previous section, every position associated with degree modifiers that can be found in absolute constructions is also available in comparatives: specFP can serve as the landing site of phrasal comparative complements in Hungarian (i.e., adessive DPs), which requires an empty F<sup>0</sup> (on the basis of den Dikken 2006). The Hungarian counterpart of lexical *much*, *sokkal* is an ADM merged in specQP. One may wonder why it is not regarded as a DDI here. Apart from the

<sup>6</sup> *Wh*-phrases in Hungarian tend to be inherently focussed and move to specFocP, the syntactic position of exhaustively identified (or contrastively focussed) constituents. See, e.g., É. Kiss (2002: 89ff.) for further discussion.

fact that  $F^0$  has to be null in order to trigger the movement of the phrasal comparative complement (as described in the previous section), it is also straightforward that *sokkal* is a case-marked quantifier:

- (34) Fickó sokkal magasabb Pihénél.  
 Butch much-INS taller Fluffy-ADE  
 ‘Butch is much taller than Fluffy.’

As has been argued, atomic constituents cannot be Case-marked, as the case morpheme sits in a separate functional head, thus *sokkal* is supposed to pattern with the only type of constituents that can be Case-marked in absolute constructions, namely ADMs. However, it is clear that the (instrumental) Case assigned to ADMs in comparatives is different from the (sublative) Case in absolute degree expressions.

On the other hand, measure phrases can also appear in comparatives:

- (35) Fickó 20 centivel magasabb Pihénél.  
 Butch 20 cm-INS taller Fluffy-ADE.  
 ‘Butch is 20 centimetres taller than Fluffy.’

The question is how to explain their behaviour here. First, MPs in absolute constructions do not tolerate visible (morphological) case-marking, as opposed to their counterparts in comparatives. Second, their roles are also different: as has been mentioned many times, MPs in absolute constructions manifest the standard value itself, whereas MPs in comparatives simply manipulate the standard value by modifying the maximal degree it denotes. In fact, comparatives modify the scale determined by the adjective in such a way that the reference value cannot be placed below the standard value; in other words, the (interval of) degrees below the standard value is ripped off from the rest of the scale, making it bottom-closed (cf. de Vries 2010 and Kennedy 1997), which makes it mandatory to associate the reference value with a degree on the scale that is still available, i.e., higher than the standard value. Furthermore, the connection between an ADM in specQP and the standard value can be captured in that the ADM modifies the interval of degrees that is associated with the standard value in such a way that it becomes slightly greater; for example, lexical *much* (or its Hungarian counterpart *sokkal*) extends the standard value on the scale to some extent; therefore, a greater portion of the scale is unavailable for the reference value to be mapped on, thus the difference between the reference value and the standard value is extended.

Accordingly, what measure phrases do in comparative degree expressions is manipulate the standard value in such a way that results in an explicitly defined difference between the reference value and the standard value. In fact,

this is the same function as that of *sokkal* (lexical *much*), an ADM. Moreover, in line with Woolford (2006), inherent Case assignment is supposed to be predictable, and both ADMs and MPs in Hungarian comparatives can be assigned (morphologically realized) instrumental case, an inherent case itself. In fact, the lack of instrumental case marking on ADMs or MPs in Hungarian comparatives results in serious ungrammaticality, as can be seen below:

- (36) a. \*Fickó sok magasabb Pihénél.  
 Butch much taller Fluffy-ADE  
 ‘Butch is much taller than Fluffy.’ (*intended meaning*)  
 b. \*Fickó 20 centi magasabb Pihénél.  
 Butch 20 cm taller Fluffy-ADE.  
 ‘Butch is 20 centimetres taller than Fluffy.’ (*intended meaning*)

In fact, the only position in which MPs can appear without instrumental case marking in Hungarian comparatives is that of the standard value itself; in that case, however, it is assigned another inherent Case: adessive, as can be seen below:

- (37) Fickó magasabb 20 centinél.  
 Butch taller 20 cm-ADE  
 ‘Butch is taller than 20 centimetres.’

The standard value is explicitly manifested in the example above. Nevertheless, the appearance of a measure phrase in the position of the standard value does not prevent another measure phrase from being able to modify the standard value:

- (38) a. Fickó 5 centivel magasabb 20 centinél.  
 Butch 5 cm-INS taller 20 cm-ADE  
 b. 20 centinél Fickó 5 centivel magasabb.  
 20 cm-ADE Butch 5 cm-INS taller  
 ‘Butch is 5 centimetres taller than 20 centimetres.’

The adessive MP in (38a) can be found *in situ*, whereas it has undergone sentential topicalization in (38b), as it precedes the subject. The examples above are completely grammatical, and they only sound a little bizarre or superfluous, because they both mean ‘*Butch is 25 centimetres tall*’, and this information does not necessarily require the use of a comparative construction. Still, they clearly show that an MP in instrumental Case and another one in adessive Case have different roles in Hungarian comparatives: the former can be an optional modifier, whereas the latter can represent the standard value itself.

In sum, it is reasonable to assume that ADMs and MPs in instrumental Case have the same function in Hungarian comparative degree expressions; i.e., they can optionally modify the standard value, which results in the modification of the difference between the reference value and the standard value.

## 3.2 *Much*-support

In this section I intend to review the analysis of *much*-support from the perspective of the structural analysis presented in (26), according to which measure phrases can be found in specFP, while determiner-like degree items are base-generated in F<sup>0</sup>, and ADMs in specQP.

**3.2.1 *Much*-support in absolute degree expressions.** To start with, Corver's (1997a) analysis was summarized in the previous chapter; on the other hand, I will try to provide an alternative approach based on morphosyntactic features.

To start with, I suggest looking at the following set of examples:

- (39) Butch is tall.  
 a. Fluffy is tall, too.  
 b. Fluffy is so, too.  
 c. Fluffy is extremely (much) so.  
 d. Fluffy is so \*(much) so that she needs a new kennel.

As can be seen, *much*-support is necessary in the case of *so*-pronominalisation combined with the presence of a DDI. In order to solve this problem, let us recall the properties of the degree element in the light of Ackema and Neeleman (2000). First, as argued in section 2.4.2, certain properties of affixes are distributed: some of them are morphosyntactic (marked as AFFIX), whereas some of them are morphophonological in nature (marked as /affix/); AFFIX – as a syntactic feature or bundle of features – has the role of selecting an appropriate category for affixation, whereas /affix/ requires the element to be phonologically attached to the category selected by AFFIX (*ibid*).

Now let us suppose that the Deg<sup>0</sup> head is not empty in absolute constructions from a semantic point of view, but is filled by a phonologically empty degree relator; see Kennedy and McNally (2005a: 350) and Svenonius and Kennedy (2006) on the existence of such a null degree morpheme; see also Creswell (1976) and Bierwisch (1989). In fact, certain languages are capable of expressing this element overtly; for example, Chinese gradable adjectives must be accompanied by an overt degree element *hen* to denote the absolute status thereof whenever the degree expression is not licensed by a [-wh] operator (Liu 2010; see also Grano 2010 for further discussion):

- (40) a. zhangsan gao. (Mandarin Chinese)  
 Zhangsan tall  
 ‘Zhangsan is taller (than someone contextually recoverable).’
- b. zhangsan hen gao.  
 Zhangsan HEN tall  
 ‘Zhangsan is tall.’  
 (Sybesma 1999: 27)

Based on this evidence, I assume that absolute  $\text{Deg}^0$  – as an AFFIX – is also a bundle of features, even if it is a null element having no morphophonological features.<sup>7</sup> It is a lexical property of, e.g., adjectives, adverbs as well as quantifiers that they can be marked as absolute or comparative; this suggests that the affixal  $\text{Deg}^0$  – either absolute or comparative – has an uninterpretable feature to check with such elements. In other words, the AFFIX feature wants the degree marker to find a gradable constituent that it can check its feature with:

- (41) a. Butch is [ $\text{DegP}$  [ $\text{AP}$  tall]  $\emptyset_{[+\text{AFF}]}$  ]  
 b. Butch is [ $\text{FP}$  so [ $\text{QP}$  much $_{[\text{DEG}] + \emptyset_{[+\text{AFF}]i}}$  [ $\text{DegP}$  [ $\text{AP}$  so]  $t_i$  ]]]  
 c. Butch is [ $\text{QP}$  [extremely] [ $\text{Q}$   $\text{Q}^0_{[\text{DEG}] + \emptyset_{[+\text{AFF}]i}}$  [ $\text{DegP}$  [ $\text{AP}$  so]  $t_i$  ]]]  
 d. Butch is so.

As can be seen, the uninterpretable syntactic AFFIX feature of affixal  $\text{Deg}^0$  is checked via spec-head agreement in (41a) with the  $\text{AP}/\text{A}^0$  *tall*. In (41b), pro- $\text{AP}$  *so*, as an element replacing the whole  $\text{AP}$ , cannot check this feature; thus dummy *much* is inserted into  $\text{Q}^0$ ,  $\text{Deg}^0$  moves there via head-movement, and since *much* is a gradable quantifier, head adjunction checks off the AFFIX feature. On the other hand, the presence of the DDI *so* in  $\text{F}^0$  does not help the valuation of this feature, as it is one projection higher than  $\text{Q}^0$ , thus the syntactic AFFIX feature cannot be checked against a higher head, as syntactic feature checking is done via spec-head agreement, and  $\text{F}^0$  does not have an uninterpretable feature to trigger yet another instance of head movement. It may be asked what triggers  $\text{Deg}^0$ -to- $\text{Q}^0$  head movement in this case; I propose that quantifiers in  $\text{Q}^0$  (e.g., *much*, *little*) always need to agree with the underlying  $\text{Deg}^0$  whether they are absolute, comparative or superlative; this feature (marked as  $\text{DEG}$  in (41) above) is uninterpretable on  $\text{Q}^0$  and can be checked against that of  $\text{Deg}^0$ . This is empirically supported by the fact that the ADMs appearing in specQP in

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<sup>7</sup> In line with Ackema and Neeleman (2000), being a phonologically null element means that it has no morphophonological properties, which is realized in the absence of /affix/, although it is still considered a bundle of features from a syntactic perspective.

comparatives are different from those appearing there in absolute constructions,<sup>8</sup> and DDIs base-generated in  $F^0$  also have strict selectional restrictions regarding the absolute or comparative nature of their complement, QP; for example, as was argued in section 2.5, DDIs *how*, *too*, *that*, *this* and *so* cannot appear in a comparative degree expression (see example (71) in Chapter 2 and the explanation there), on the other hand, *the* can appear in comparative correlatives, which means that *the* selects a comparative QP as its complement as a DDI.<sup>9</sup>

In fact, this DEG feature can be seen as a reflex feature of AFFIX; this may resemble Chomsky's (2001:3ff.)  $\phi$ -features and Case features, as  $\phi$ -features are uninterpretable on  $T^0$  and have to agree with the matching interpretable  $\phi$ -features of some nominal, which may be somewhere near or even far from  $T^0$ . The uninterpretable  $\phi$ -features on  $T^0$  trigger movement, and what the nominal gets in return is that its own uninterpretable Case feature is checked off once it has landed in specTP.

Turning back to the examples in (41), the gradable degree modifier *extremely* is in specQP in (41c), while pro-AP *so* is again incapable of checking the AFFIX feature of  $Deg^0$ ; the structural difference between (41b) and (41c) can be captured in that specQP is filled by a gradable element, and the AFFIX feature can be checked against this degree modifier. One may wonder whether it is a feasible step to have a syntactic feature of the degree head checked against a constituent that is a degree expression itself, i.e., a functional projection that includes the same type of degree element:  $Deg^0$ .<sup>10</sup> First of all, recall that the affixal nature of the degree element is not relevant for the semantic computation of the degree expression, but it is important for the PF interface, as the Morphological Merger can operate on two syntactically adjacent constituents. That is, what is important for PF is to find an appropriate host to the affix, and if they are not syntactically adjacent, which could stop the Morphological Merger from merging the host and the affix, the syntactic computation must make sure

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<sup>8</sup> For example, as was argued in section 2.5, *totally*, *extremely* and the like can appear in absolute degree expressions, whereas *much* can modify comparatives. Although the former can also appear in examples containing predicative comparative degree expressions, it is only illusory that they seem to be in specQP: see footnote 26 in Chapter 2.

<sup>9</sup> The negative determiner *no* also displays a peculiar behaviour in predicative comparatives:

(i) Butch is no better than Fluffy.

As can be seen, *no* may also seem to be a DDI merging with comparative QPs.

<sup>10</sup> That ADMs are full-fledged degree expressions is supported by the fact that an ADM modifying an absolute construction can be comparative on its own:

(i) Butch is [more extremely  $t_i$ ] talented [than Fluffy]<sub>i</sub>.

This example entails that both Butch and Fluffy are extremely talented, but Butch is more so. As can be seen, (i) involves rightward movement, which will be discussed in Chapter 5.

that they are adjacent before transferring them to the interfaces. This can be done in terms of feature checking, or if necessary, in terms of movement triggered by feature checking.

As for the syntactic attachment of the null degree morpheme to its own modifier containing another null degree modifier, let us have a look at the following set of examples:

- (42) a. the war's destruction of the infrastructure  
 b. the infrastructure's destruction  
 c. the NATO's war's destruction of the infrastructure of Iraq  
 d. Iraq's infrastructure's destruction

Assuming that *destruction* has a similar argument structure to its verbal counterpart *destroy*, two arguments are expected to be present at least implicitly: an agent (or actor) and a patient (or theme). In (42a) and (42c) it is the actor that is moved to the specifier position of the functional head that hosts the genitive clitic (or copula) 's; on the other hand, it is the theme that is moved to that position in (42b) and (42d); see, for example, den Dikken (1998, 1999), Bernstein and Tortora (2005), Radford (2000) and Alexiadou *et al.* (2007, especially Part IV. Chapter 1 and 2) for further discussion. That is, the uninterpretable feature on 's triggers the movement of one of the DP arguments; moreover, the same type of functional element (i.e., 's) can be found inside the moved DP that the clitic is attached to in (42c) and (42d), and yet the derivation converges. I suggest that something similar can be noticed in degree expressions, in which the null degree morpheme checks its syntactic AFFIX feature against the QP modifier containing *extremely* in (41c).

Turning to (41d), one may wonder where the degree morpheme is in this example, as *so* cannot function as an appropriate host, and yet it is grammatical. Nevertheless, it is not difficult to accept that *so* can substitute a number of different types of predicates. For instance, it can replace vPs, too:

- (43) She wrote a splendid thesis, and he did *so*, too.  
 (den Dikken 2008, ex. 4)

As can be seen, it can replace the whole verbal predicate (vP) in a clause, and it is preceded by dummy *do* in T<sup>0</sup> (for further discussion on *so*, see den Dikken 2008). On the other hand, it does not seem to be able to replace non-predicative adjectives or degree expressions, as can be seen in the English and Hungarian examples below:

- (44) a. This bitch is pregnant, and that one is *so*, too.  
 b. \*I bought a pregnant bitch, and you bought a *so* one, too.

- c. \*I bought a pregnant bitch, and you bought a so cat.  
 d. Ez a szuka vemhes, és az is az.  
 this the bitch pregnant and that also that  
 ‘This bitch is pregnant, and so is that one.’
- e. \*Vettem egy vemhes kutyát, majd vettél egy az macskát.<sup>11</sup>  
 I.bought a pregnant dog-ACC then you.bought a that cat-ACC  
 ‘I bought a pregnant dog, and then you bought a pregnant cat.’ (*intended*)
- g. This car is very fast, and that one is so, too.  
 h. \*I bought a very fast car, and you bought a so one, too.  
 i. \*I bought a very fast car, and you bought a so motorcycle.
- j. Ez a kocsi nagyon gyors, és az is az.  
 this the car very fast and that also that  
 ‘This car is very fast, and so is that one.’
- k. \*Vettem egy gyors kocsit, majd vettél egy az robogót.  
 I.bought a fast car-ACC then you.bought a that scooter-ACC  
 ‘I bought a fast car, then you bought a fast scooter.’ (*intended*)

As can be seen, *so* (or Hungarian *az*) can replace predicative constituents. Also, this does not seem to be language-specific, as Hungarian displays the same hesitation towards pronominalized APs in attributive contexts. As (41d) contains a predicative degree expression, and *so* is an underspecified pronominal element, it can also replace the whole degree expression, including FP, QP and DegP as well (cf. Corver 1997a and Neeleman *et al.* 2004:4). Furthermore, once the constituent also containing the degree head (in fact, the whole degree expression) is substituted by *so*, there is no reason to search for traces of *much*-support.

Moving on, let us have a look at the following sets of examples:

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<sup>11</sup> I have been notified that certain pro-AP pronominalizations in Hungarian can occur in attributive contexts as well. My own native hunch says they sound quite horrible, although some of my informants happily accept them as grammatical. However, such examples include *olyan* (*so*), which can even be gradable as well, with the comparative morpheme attached to it:

- (i) *Context: a lot of newborn animals are expected to be born in the near future, and there are no plans yet as to how we shall handle the situation.*  
 ?A kutya teherbe esett, majd vettél egy olyan macskát.  
 the dog pregnancy-ILL fell then you.bought a so cat-ACC  
 ‘The dog became pregnant, then you bought a pregnant cat.’
- (ii) A: Á, olyan lett a kezem!  
 Ouch so became the hand-POSS-1.SG  
 ‘Ouch, my hand is like that now.’  
 B: Nyugi, az enyém olyanabb.  
 relax the mine so-er  
 ‘Relax, mine is more like that.’

In sum, *olyan* does not seem to substitute merely the maximal projection, but also the head in an AP in Hungarian, as opposed to the pronominal *az* (*that*) in (44) above.

- (45) Butch is tall.  
 a. In fact, he is 2 feet tall.  
 b. \*In fact, he is 2 feet so.  
 c. \*In fact, he is 2 feet much so.
- (46) John is late.  
 a. In fact, he is 10 minutes late.  
 b. \*In fact, he is 10 minutes so.  
 c. \*In fact, he is 10 minutes much so.

As can be seen, measure phrases are incompatible with *so*-pronominalization. In Corver's (1997a) analysis, measure phrases and ADMs were base-generated in the same position: specQP. In this respect, they are both supposed to be able to license *so*-pronominalization, because – in Corver's (1997a) argumentation – they are local to the Grade argument of the AP. However, measure phrases do not license *so*-pronominalization, regardless of the presence or absence of *much*-support. In sum, there must be a fundamental difference between MPs and ADMs, which – to my knowledge – has not yet been described so far.

In fact, it is possible to model the causes of this contrast in terms of structural differences, if the proposal presented in this study is accepted. First, recall that measure phrases and degree variables are in complementary distribution when they represent the standard value in a degree expression:

- (47) \*Fickó magasabb Pihénél 20 centinél.  
 Butch taller Fluffy-ADE 20 cm-ADE  
 '\*Butch is taller than Fluffy than 20 centimetres.'

Second, recall that measure phrases are discrete designators of actual degrees on the scale determined by the gradable predicate. That is, they are not variables in the semantic computation of the construction.

Furthermore, from a syntactic perspective, the role of QP in absolute constructions is to host ADMs in its specifier, as its head is filled only in case *much*-support is necessary. In connection with this, let us have a closer look at its widely known counterpart: *do*-support is generally taken as a rescue strategy operative at the PF interface (see, e.g., Halle and Marantz 1993 and Bobaljik 1994, 2002 for further discussion); that is, whenever a bound tense morpheme is in need of a host in T<sup>0</sup>, the dummy auxiliary *do* is inserted on the spot and is adjoined to the tense morpheme, thus the derivation is saved from perdition. This is exemplified below:

- (48) i. [IP Sam [T -s] not [VP eat- ham]].  
 ii. O ---- \* ---- O Adjacency disrupted  
 iii.  $\emptyset \rightarrow do$  do insertion  
 iv. Sam does not eat ham.  
 (on the basis of Bobaljik 2002:12)

As can be seen, sentential negation blocks Affix Lowering, thus *do* is inserted in I<sup>0</sup>. However, there are two problems emerging in connection with this approach. First, Embick and Noyer (2001:584ff.) remark that *do* is by definition a light verb essentially base-generated in a v<sup>0</sup> position, thus it is a syntacticosemantic object, which is not the type of object that Morphology (or PF) can simply insert (*ibid.*). Second, as outlined also by Embick and Noyer (*ibid.*), a purely PF-based account of *do*-support runs into serious difficulties in the case of constituent negation:

- (49) a. [TP John [T -s [vP always [vP not agree]]]]  
 b. \*John always not agrees.  
 c. \*John does always not agree.  
 d. John doesn't always not agree.  
 (on the basis of Embick and Noyer 2001, exx. 71a, 71b, 73)

As can be seen, there is vP-internal (constituent) negation in (49a). As has been mentioned, *do*-support occurs whenever something blocks Affix Lowering; it is fairly straightforward that this is the case here (see 49b). Nevertheless, *do*-support is also illicit (see 49c) at the same time. On the other hand, (49d) shows that sentential negation can co-occur with *do*-support even if there is vP-internal constituent negation. Embick and Noyer (*ibid.*) argue that the problem can be explained in terms of the difference between how the syntactic derivation handles *do*-support and how the PF interface does so: the syntax inserts *do* if, e.g., T<sup>0</sup>'s sister complement is NegP in the case of sentential negation, as this information (i.e., what is the complement of T<sup>0</sup>) is available in this module of the derivation, but not at PF. On the other hand, if there is vP-internal (constituent) negation (see 49c), there is no trigger for *do*-support (i.e., no NegP as the complement T<sup>0</sup>, no T<sup>0</sup>-to-C<sup>0</sup> movement; *ibid.*). However, Affix Lowering at PF has the negative copula *not* (vP-internal Neg) as its visible target, without semantically analyzing that this is not a case of sentential negation, and the appearance of a tense morpheme on *not* is morphologically illegitimate (*ibid.*: 590). In sum, it can be seen that even *do*-support has a syntactic and a morphophonological side, which makes it essentially syntactic, too (*ibid.*: 586). Furthermore, as is known, *do*-support is not licensed in subject *wh*-questions, as can be seen in (50a) below:

- (50) a. Who ate all the eggs?  
 b. What did you eat?

(50a) is a subject *wh*-question (which is obviously syntactic information), as opposed to (50b), which is not. Should *do*-support be a purely morphophonological mechanism, PF would have to execute syntactic analysis in order to make difference between (50a) and (50b) whether or not to insert dummy *do*, which clearly goes against reasonable principles of derivational economy.

As a last remark, *do*-support has been a challenge to mainstream generative syntax, as it is allowed only when it is required:

- (51) a. Butch ate eggs.  
 b. \*Butch did eat eggs. (did is not emphatic)  
 c. \*Butch not ate eggs.  
 d. Butch didn't eat eggs.

Nevertheless, if *do*-support were always an option, it would not be easy to understand why (51b) is ungrammatical.<sup>12</sup> The problem with this option is that it yields ungrammatical results (see 51b), even if certain clauses (e.g., 51d) require *do*-support. This is why Hornstein, Nunes and Grohmann (2005:364) state that “[t]he last resort nature of *do*-support thus suggests that *do* is a non-lexical grammatical formative whose use is costly.” In other words, the insertion of dummy *do* should be avoided if it is possible. Accordingly, *do*-support always occurs when there is a position already generated by the syntactic derivation hosting some element that needs dummy insertion for morphosyntactic reasons (cf. Hornstein, Nunes and Grohmann 2005; see Haddican 2007 on Basque *egin*-support and Benincà and Poletto 2004 for a parallel phenomenon in Monnese). As a matter of fact, the only question is when this *do*-insertion occurs exactly: before or after Transfer; in the light of the data discussed above (vP-internal constituent negation (see 49) and subject *wh*-questions (see 50)), adopting Embick and Noyer’s (2001) proposal, it seems obvious that *do* is inserted into T<sup>0</sup> before Transfer, in visible syntax.

Turning to *much*-support again, QP has the role of hosting degree modifiers in functionally extended degree expressions, inasmuch as its specifier position hosts ADMs. It is quite clear that degree modification by ADMs is

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<sup>12</sup> In a derivational analysis that makes use of the Numeration, which contains lexically elements pre-selected for the derivation, and is cut into sets (Lexical Arrays) corresponding to the derivational cycles, and that requires that each cyclic derivation must exhaustively use all items in the designated Lexical Array (cf., e.g., Hornstein, Nunes and Grohmann 2005), this would mean that *do* is available in the Numeration:

- (i) Numeration<sub>(51a)</sub> = {{C<sub>1</sub>, T<sub>1</sub>}{Butch<sub>1</sub>, v<sub>1</sub>, eat<sub>1</sub>, eggs<sub>1</sub>}}  
 (ii) Numeration<sub>(51b)</sub> = {{C<sub>1</sub>, T<sub>1</sub>, do<sub>1</sub>}{Butch<sub>1</sub>, v<sub>1</sub>, eat<sub>1</sub>, eggs<sub>1</sub>}}

optional: if there is an ADM, it is merged into specQP and (as a degree modifier and logical predicate) it predicates over the degree variable in the complement position of Deg<sup>0</sup>:

(52) Butch is extremely<sub>i</sub> tall STND<sub>i</sub>.<sup>13</sup>

As can be seen, Q<sup>0</sup> is necessarily merged into the construction as a phonologically null bundle of features, as *extremely* is subsequently merged into its specifier via external merge, triggered by some feature of Q<sup>0</sup>. On the contrary, as has been argued, absolute degree expressions whose standard value is fixed by measure phrases do not tolerate any degree modification in specQP:

(53) Butch is 30 centimetres (\*extremely) tall.

The reason why *extremely* cannot appear here can be modelled as follows: generally there is no need for degree modification here, as standard values set by measure phrases cannot be modified; that is why the Q<sup>0</sup> position in examples like this suffers from a feature deficit: Q<sup>0</sup> never needs to have the feature responsible for merging an ADM into its specifier here. As it is ADMs that are sensitive to the absolute/comparative/superlative property of degree expressions, the [DEG] feature triggering Deg<sup>0</sup>-to-Q<sup>0</sup> movement is also unnecessary here, as Q<sup>0</sup> in absolute degree expressions with an MP-standard would never have a semantic value (cf. Kennedy and McNally 2005b). By looking at the final results of the derivation at the two interfaces, as degree modification is impossible in (53), it seems to be obvious why Q<sup>0</sup> is not only phonologically empty, but also semantically slightly deficient.<sup>14</sup>

Furthermore, this fundamental fact does not change if the AP is replaced by *so*, as degree modification of standard values remains impossible in that case, too. Therefore, with degree modification being illicit in (53), there is no feature on Q<sup>0</sup> to trigger the head movement of the degree morpheme and to serve as its landing site. The problem caused by these circumstances is that the syntactic AFFIX feature of the degree head remains unchecked; therefore, the derivation crashes, and this is a way of modelling why measure phrases in absolute degree

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<sup>13</sup> In a Numeration-based account (cf., e.g., Hornstein, Nunes and Grohmann 2005), both the ADM and Q are present:

(i) Numeration<sub>(52)</sub> = {{ C<sub>1</sub>, T<sub>1</sub> }, { Butch<sub>1</sub>, be<sub>1</sub>, extremely<sub>1</sub>, Q<sub>1</sub>, tall<sub>1</sub>, Deg<sub>1</sub> } }

The copula *be* relates *Butch* to the predicative degree expression functioning as a REL(ATOR) in the sense of den Dikken (2006: 22-29, 64-79); in this study, however, I will not investigate this issue any further

<sup>14</sup> In a Numeration-based account (cf., e.g., Hornstein, Nunes and Grohmann 2005), as Q<sup>0</sup> would have no function at all from the perspective of either of the interfaces, it could also be suggested that Q<sup>0</sup> – as a phonologically null bundle of features – is missing from the Numeration.

expressions are incompatible with *so*-pronominalization. Moreover, this may be so even if we want to force *much*-support, as the problem with this mechanism here is that – similarly to its verbal counterpart: *do*-support – dummy *much* can be inserted into the construction only if there is a morphosyntactic feature to be supported in an appropriate position, which is thus in need of this mechanism; however, absolute degree expressions in which the standard value is fixed by a measure phrase never include an average  $Q^0$  position, as that would be responsible for degree modification, which is completely unavailable here. As a result, the null degree morpheme remains *in situ* with its uninterpretable syntactic feature (AFFIX), which – being unvalued – ultimately makes the derivation crash.

If this is so, one would expect MP standard values to be incompatible with *so*-pronominalization in other languages as well. This is exactly what we can find in Hungarian, as can be seen below:

- (54) a. Fickó 30 centi magas, és Pihe is 30 centi magas.  
 Butch 30 cm tall and Fluffy also 30 cm tall  
 ‘Butch is 30 centimetres tall, and Fluffy is also 30 centimetres tall.’  
 b. \*Fickó 30 centi magas, és Pihe is 30 centi az.  
 Butch 30 cm tall and Fluffy also 30 cm that  
 ‘\*Butch is 30 centimetres tall, and Fluffy is also 30 centimetres so.’  
 c. Fickó 30 centi magas, de Pihe csak 25 centi magas.  
 Butch 30 cm tall but Fluffy only 25 cm tall  
 ‘Butch is 30 centimetres tall, and Fluffy is only 25 centimetres tall.’  
 d. \*Fickó 30 centi magas, de Pihe csak 25 centi az.  
 Butch 30 cm tall but Fluffy only 25 cm that  
 ‘\*Butch is 30 centimetres tall, and Fluffy is only 25 centimetres so.’

As was argued in connection with (41d), it is not a problem for this analysis if the pronominal substitutes the whole predicative degree expression, as the MP is also included in that constituent, as can be seen below:

- (55) a. Fickó [30 centi magas], és Pihe is az. (az = 30 centi magas)  
 Butch 30 cm tall and Fluffy also that  
 ‘Butch is 30 centimetres tall, and so is Fluffy.’

Having said that, one may wonder what happens to null degree morphemes in Hungarian, when there is DDI in the top functional head of the absolute degree expression and the gradable predicate is replaced by a pronominal element. The theory presented here predicts here that somehow the uninterpretable syntactic AFFIX feature of the degree morpheme must be valued, or the derivation crashes. This is exactly what we can find in Hungarian: the derivation crashes in this

case, as there is no dummy quantifier that could be inserted into  $Q^0$  in absolute constructions in Hungarian:

- (56) Láttam egy szuper filmet.  
 I.saw a superb film-ACC  
 'I saw a superb film.'  
 a. Olyan szuper volt.  
 SODDI superb was  
 'It was so superb.'  
 b. \*Olyan az volt.  
 SODDI that was  
 'It was so much so.' (*intended meaning*)

On the contrary, ADMs in specQP can support the degree morpheme, and the derivation thus converges:

- (57) Láttam egy szuper filmet.  
 I.saw a superb film-ACC  
 'I saw a superb film.'  
 a. Hihetetlenül szuper volt.  
 incredibly superb was  
 'It was incredibly superb.'  
 b. Hihetetlenül az volt.  
 incredibly that was  
 'It was incredibly so.'

In sum, the Hungarian examples above support the analysis, according to which the degree morpheme has an uninterpretable feature to check against a gradable constituent (e.g., A, Adv or Q), whereas  $Q^0$  in the degree expression has an uninterpretable feature to trigger Deg<sup>0</sup>-to- $Q^0$  head movement. The syntactic AFFIX feature can be checked against the gradable predicate in specDegP, the overt dummy quantifier in  $Q^0$  or the degree modifier in specQP; as has been mentioned, dummy insertion is not a possibility in Hungarian absolute constructions, though.

The last issue I would like to discuss in this section is when *much* is inserted into  $Q^0$  in clauses involving *much*-support. This is definitely worth problematizing, as this will also serve as the basis of the formation of periphrastic comparatives, to be discussed in the forthcoming section. In fact, I have been deliberately implying that *much* is inserted before Transfer, in visible syntax, and one of the reasons for doing so is the similarity between support mechanisms: *do*-insertion has been suggested to occur before Transfer for a number of reasons (see (49-50) and the discussion provided there; cf. Embick and

Noyer 2001), thus *much*-support would display a parallel behaviour if it also did. The other reason can be found in the connection between the morphosyntactic and morphophonological features: AFFIX and /affix/:

“[A]FFIXes in syntax can take a phrase as their host; it is their phonological counterpart, the /affix/, that selects a word. But not any word will do: by input correspondence, the word to which an /affix/ attaches corresponds to the category selected by the AFFIX, or to its head if the selected category is a phrase.”

(Ackema and Neeleman 2000: 327)

In other words, input correspondence means that both the morphosyntactic and the morphophonological properties of affixes try to achieve that the affix is properly attached to an appropriate host; in fact, an appropriate host is of the appropriate category (from a syntactic perspective) and it can also tolerate being merged with an affix by morphological merger (from a morphophonological point of view). This can be achieved if and only if it is the host selected by the morphosyntactic AFFIX feature that the affix is merged with by the morphological merger at PF, as requested by the morphophonological /affix/ feature.

Still, why is this important and how is this related to the time of *much*-insertion? Let us evaluate the possibility that *much* is inserted at PF, after Transfer; it will be shown that this process gives wrong predictions about *much*-support. So, if *much* is inserted into  $Q^0$  at PF, this happens in order to satisfy the morphophonological /affix/ feature. Still, what is in  $Q^0$  before Transfer? Supposedly a phonologically null bundle of features, which is responsible for (i) selecting DegP as its complement and (ii) optional degree modification by merging an ADM into its specifier position. The question is whether a null  $Q^0$  can satisfy the morphosyntactic feature, AFFIX. Recall that AFFIX makes sure in the derivation that the host and the affix are adjacent to each other, so that the morphological merger can do its job at PF. If a null  $Q^0$  could check off AFFIX before Transfer, it would practically always be vacuously satisfied, whenever the construction involves Deg<sup>0</sup>-to- $Q^0$  movement and  $Q^0$  is empty. However, null  $Q^0$  is practically always available in absolute degree expressions – apart from the cases of *much*-support with MP-standards. If this is so, and if AFFIX and /affix/ can be checked by one and the same constituent during the structural derivation, the costliness of *much*-support cannot be explained in terms of derivational processes.

In other words, if the insertion of dummy *much* occurred at PF only, PF would certainly execute this process whenever there is an unsupported bound affix in  $Q^0$ , thus saving the construction from perdition. Accordingly, the only information PF has is that there is an affix in  $Q^0$  without an appropriate host. As both AFFIX and /affix/ can be checked by the same constituent, if null  $Q^0$  could

simply check AFFIX, it would also have to check /affix/. This does not seem to be problematic for gradable positive forms in absolute degree expressions, as they check the morphosyntactic affix feature while it is in specDegP and the degree morpheme is still in Deg<sup>0</sup>; once the degree morpheme has moved to Q<sup>0</sup> and the construction is transferred to the interfaces, the higher copy of the degree morpheme and the adjective are morphologically merged. Both AFFIX and /affix/ are checked against the gradable predicate here, as can be seen below:

- (58) a. [QP [Q<sup>0</sup><sub>DEG+∅<sub>i</sub>] [DegP [AP tall] t<sub>i</sub> ]                    before Transfer  
       b. [∅<sub>/aff/i</sub> [ [tall] t<sub>i</sub> ]    PF  
           └──────────┘  
           *Morphological Merge* → tall</sub>

The other empirical problem raised by this representation is that the absolute (or positive) degree morpheme lacks visible phonological features in English and Hungarian, thus it is questionable whether /affix/ really has a role in the case of covert affixes or whether there is morphological merge here at all; still, let us hypothesize that this is not a problem for the time being.

Furthermore, in the case of *much*-support, *so* cannot check AFFIX, and both features are checked by Q<sup>0</sup>, which is filled by *much* at PF:

- (59) a. [FP so [QP Q<sup>0</sup><sub>DEG+∅<sub>AFF;i</sub>] [DegP [AP so] t<sub>i</sub> ]                    before Transfer  
       b. [so [much+∅<sub>/aff/i</sub> [ [ so] t<sub>i</sub> ]                                    PF  
           └──────────┘  
           *Morphological Merge* → much</sub>

On the other hand, in the presence of an ADM, if *much* could be inserted at PF and null Q<sup>0</sup> could check AFFIX, it would also have to check /affix/, which would necessarily result in *much*-support (as checking /affix/ at PF results in the morphophonological processes that merge the affix and its host), contrary to fact:

- (60) a. [QP [extremely] [Q<sup>0</sup><sub>DEG+∅<sub>AFF;i</sub>] [DegP [AP so] t<sub>i</sub> ]                    before Transfer  
       b. [QP[extremely] [much<sub>DEG+∅<sub>/aff/i</sub>] [DegP [AP so] t<sub>i</sub> ]                    PF  
           └──────────┘  
           *Morphological Merge* → much</sub></sub>

As can be seen, DEG on Q<sup>0</sup> triggers head movement before Transfer; once the null degree morpheme is there, it is adjoined to null Q<sup>0</sup>. Since now we are incorrectly hypothesizing that null Q<sup>0</sup> can check the AFFIX feature of the degree morpheme, this occurs right after head movement, before *extremely* is merged into specQP. As AFFIX and /affix/ have to be checked by the same constituent, satisfying /affix/

at PF means that dummy *much* is inserted into  $Q^0$ , which is a clearly wrong prediction (see (41c) and the analysis provided above).

As a result, I claim that null  $Q^0$  is not supposed be able to check AFFIX. There are two important premises of this proposal: first, if only an overt element (e.g., the gradable predicate, an ADM or dummy *much*) can check AFFIX, *much*-insertion can be dealt with in visible syntax, and this could explain why there should not be *much*-insertion in (60); second, adopting Ackema and Neeleman's (2000) approach, it is more economical if null affixes can have null /affix/ features, which means that such zero morphemes are not even mapped to PF. If this is so, the PF realizations of (58-60) also look much simpler:

- (61) a. [<sub>QP</sub> [ $Q^0_{DEG+\emptyset_i}$ ] [<sub>DegP</sub> [<sub>AP</sub> tall]  $t_i$ ]] before Transfer  
 b. [tall] PF

As can be seen, AFFIX is checked by the gradable predicate when it is merged into the construction, then the degree morpheme moves to  $Q^0$  triggered by DEG; as the only overt element here is the adjective, it is transferred to PF. In the case of *much*-support, the picture is slightly different

- (62) a. [<sub>FP</sub> so [<sub>QP</sub> *much*<sub>DEG+\emptyset\_{AFF;i}</sub>] [<sub>DegP</sub> [<sub>AP</sub> so]  $t_i$ ]] before Transfer  
 b. [so [*much* [so]]] PF

As can be seen, *much* checks AFFIX after the zero degree morpheme has moved to  $Q^0$ ; however, as the degree morpheme is not an overt element, it is not transferred to PF along with its dummy host. Finally, let us have a look at a better version of (60):

- (63) a. [<sub>QP</sub> [extremely] [ $Q^0_{DEG+\emptyset_{AFF;i}}$ ] [<sub>DegP</sub> [<sub>AP</sub> so]  $t_i$ ]] before Transfer  
 b. [[extremely] [so]] PF

As can be seen, DEG on  $Q^0$  triggers head movement, but null  $Q^0$  cannot check AFFIX here, as it is checked via spec-head agreement by the gradable modifier in specQP. On the other hand, as the degree morpheme and  $Q^0$  are covert, they are not transferred to PF, only the ADM and *so* are.

In sum, *much*-support is triggered by checking the morphosyntactic AFFIX feature of the degree morpheme.

**3.2.2 *Much*-support in comparatives and superlatives.** As for *much*-support in comparatives and superlatives, the argumentation is in line with what was suggested in the previous chapter and the previous section. In the case of synthetic comparatives, following Deg<sup>0</sup>-to- $Q^0$  movement (triggered by uninter-

pretable DEG on  $Q^0$ , as argued in the previous section), morphological merger is considered to take the (syntactically adjacent) degree morpheme (already in  $Q^0$ ) and the AP in specDegP and merge them at the PF interface, as requested by the /affix/ feature of the degree morpheme, if the AP is suitable for such an operation. However, not every gradable adjective or adverb is capable of hosting an affix. Ackema and Neeleman's (2000) input correspondence suggests that adjectives that reject being merged with the comparative morpheme *-er* can check neither /affix/, nor AFFIX. What this means is that *-er* – because of its morphosyntactic AFFIX feature – has to find an appropriate host as early as in visible syntax, and dummy *much* – inserted into  $Q^0$  in visible syntax – is a perfect match:

- (64) a. [<sub>QP</sub> [<sub>Q'</sub> [<sub>Q</sub> much<sub>DEG</sub> + -er<sub>AFFix</sub>] [<sub>DegP</sub> [<sub>AP</sub> interesting] t<sub>i</sub>]]] before Transfer  
 b. [[much + -er<sub>/affix/</sub>] [interesting]] PF

*Morphological Merge* → more

In fact, one may wonder whether the AFFIX feature of the zero absolute degree morpheme and that of comparative *-er* are alike; this is not the case, as it is an idiosyncratic, lexical property of adjectives and adverbs whether they can be morphologically marked as comparative or superlative, and this feature is not the same as their being gradable. For example, certain adjectives in Latin have no comparative form at all, although comparative affixation is relatively unrestricted in Latin (see, e.g., Bennett 1918, sections 71-75):

(65)	POSITIVE	COMPARATIVE	SUPERLATIVE	
	a. <i>vetus</i>	* <i>veterior</i>	<i>veterrimus</i>	<i>old</i>
	b. <i>novus</i>	* <i>novior</i>	<i>novissimus</i> <sup>15</sup>	<i>new</i>
	c. <i>sacer -cra -crum</i>	* <i>sacrior</i>	<i>sacerrimus</i>	<i>sacred</i>

The missing forms are replaced by the comparative forms of synonymous adjectives; e.g., *vetustior* (from *vetustus* – *aged*), *recentior* (from *recens* – *recent*) and *sanctior* (from *sanctus* – *saint*). Another possibility for such adjectives is *much*-support, which is available in Latin as well,<sup>16</sup> although periphrastic forms of these irregular adjectives (e.g., *magis novus* – *more new* or *magis vetus* – *more old* etc.) are generally considered “unclassical” (see, e.g., Ogilvie 1901:187). Furthermore, it seems as though such Latin adjectives have this property for no phonological reasons, as opposed to their counterparts in English, in which it is

<sup>15</sup> In fact, *novus* and *novissimus* have become *faux amis*, as the latter exclusively means *last*, and not *newest*.

<sup>16</sup> For example, *dubius -a -um* (dubious) → \**dubior*, *necessarius -a -um* (necessary) → \**necessarior*; instead, comparative *magis* or superlative *maxime* carries the degree morpheme; e.g., *magis dubius*, *maxime dubius*, *magis necessarius*, *maxime necessarius*.

somewhat predictable whether a particular adjective or adverb can bear comparative or superlative affixation by looking at the morphosyntactic and morphophonological properties thereof,<sup>17</sup> even if there are a number of idiosyncratic exceptions. Therefore, it is a lexical property of these elements whether they can check the affixal features of the comparative degree morpheme. The Latin examples above also show that this property is not pegged to gradability, as *vetus* and the like allow superlative affixation; therefore, the property of not being able to check the affix feature of the comparative degree morpheme does not imply that it cannot check that of the superlative one either; furthermore, this is so vice versa, as the following Latin adjectives show (cf. Bennett 1918):

(66)	POSITIVE	COMPARATIVE	SUPERLATIVE	
	a. <i>ingens</i>	<i>ingentior</i>	* <i>ingentissimus</i>	<i>great</i>
	b. <i>iuvenis</i>	<i>iunior</i>	* <i>iunissimus</i>	<i>young</i>
	c. <i>senex</i>	<i>senior</i>	* <i>senissimus</i>	<i>old</i>

As can be seen, these adjectives do not have morphologically marked superlative forms, even if they have comparative ones.

In sum, not all adjectives and adverbs can check the affixal features of the comparative and superlative degree morpheme. Still, why is this important? Because this clearly indicates that *much*-insertion occurs in narrow syntax in the case of comparatives and superlatives as well. In fact, if AFFIX of the comparative degree morpheme could be checked simply by any gradable predicate in specDegP (on the basis of gradability), and *much* were inserted only at PF rescuing (and checking) /affix/, this would violate the input correspondence; that is, AFFIX and /affix/ would be checked by different constituents: the former by the gradable predicate (AP or AdvP) and the latter by dummy *much*. This problem can be obviated only if *much*-support occurs as early as in visible syntax.

### 3.3 Multiple degree modification

The aim of this subchapter is to provide an approach to examples containing multiply embedded degree modifiers, such as the ones below:

- (67) a. Butch is [[**so extremely absolutely mind-blowingly**] handsome].  
 b. Butch is [[**so extremely much**] more talented than Fluffy].

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<sup>17</sup> As is known, monosyllabic adjectives and disyllabic ones ending in *-y* tend to be able to take comparative suffixation (e.g., *bigger*, *lovelier*), but there are exceptions (e.g., *\*apter*); see, e.g., Aronoff (1976: 92) for further discussion.

As the bracketing suggests, I aim at analyzing multiple degree modifiers as one complex modifier, whose internal characteristics determine to what extent they modify the standard value of the associated degree head. However, as Corver's (2009) analysis of measure phrases was adopted for absolute constructions in section 3.1.2, which postulates that MPs are base-generated as predicates subsequently fronted by Predicate Inversion, one may wonder why this is not so in the case of determiner-like degree items (DDIs) and adjectival degree modifiers (ADMs). Certainly, as has been mentioned, DDIs are not suitable for Predicate Inversion, as they are atomic (cf. Neeleman *et al.* 2004) and thus are base-generated in the  $F^0$  position. Second, the co-occurrence of ADMs and an overt standard value in comparatives clearly show that they are in different structural positions, as can be seen in (67b): [*so extremely much*] cannot be base-generated in the same position as [*than Fluffy*]. Third, as was discussed in section 3.1.3, inherent Case assignment in Hungarian clearly shows that MP degree modifiers in comparatives are base-generated in the same position as ADMs, as they are also assigned instrumental Case, regardless of being MPs. Therefore, it is clear that such a Predicate Inversion approach for optional degree modification cannot hold.

In this subchapter, I will first overview multiple degree modification in absolute constructions, followed by the analysis thereof in comparatives.

**3.3.1 Multiple degree modification in absolute constructions.** To start with, recall that determiner-like degree items (DDIs) and adjectival degree modifiers (ADMs) are degree operators/modifiers; i.e., they are logical predicates that take the standard value of degree expressions as their only argument (see section 3.1.1). This is a standard assumption, and it is accepted by Corver (1997a: 156) as well (see also Zwarts 1992).

However, as DDIs/ADMs and standard values are in a predicate-argument relationship, it is reasonable to assume that one such logical predicate may take only one degree argument, and one degree argument may be associated with only one degree modifier/operator; in fact, this naturally follows from the Theta Criterion. Nevertheless, this is not accepted by Corver (1997a); let us have a look at (9) again, which is conveniently repeated here as (68):

- (68) [ ${}_{\text{DegP}} \text{sol/how/tool/as/this/that}_i$  [ ${}_{\text{QP}} \text{extremely}_j$  [ ${}_{\text{Q}} \text{Q}^0 + \text{tall}_{\langle 1, \text{G}_{i,j} \rangle k}$  [ ${}_{\text{AP}} \text{t}_k$ ]]]]<sup>18</sup>  
(based on Corver 1997a, ex. 112)

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<sup>18</sup> Note that Corver (1997a) stipulates that the underlying structure of degree expressions is [ ${}_{\text{DegP}} \dots$  [ ${}_{\text{QP}} \dots$  [ ${}_{\text{AP}} \dots$ ]]], with DDIs in  $\text{Deg}^0$ , ADMs in  $\text{specQP}$ , dummy *much* in  $\text{Q}^0$ , and adjectives lexically encode their Grade argument; also, adjectives always raise to  $\text{Q}^0$  whenever there is a DDI in  $\text{Deg}^0$ . The problems of this analysis have been discussed.

Note that this represents Corver’s (1997a) analysis, not the one argued for in this research and serves demonstration purposes only. In fact, Corver argues that the “degree argument G contained in the  $\theta$ -grid of the (...) adjectival predicate is close enough to *so* and *extremely* to be able to enter into a  $\theta$ -binding and  $\theta$ -identification relation, respectively, with these elements” (1997a: 156). What this means is that the Grade argument in this degree expression is modified by two degree operators at the same time, although it is clear that predication involves arguments that are predicated over, and one constituent should not be able to bear the same type of theta-roles associated with two different predicates. Let us have a look at the examples below:

- (69) a. \*John likes his coffee  $hot_A$   $steaming_A$ .  
 b. \*Peter was promoted by the CEO by the CFO.

Assuming that there is no coordination in the examples above, *his coffee* cannot be the argument of both *hot* and *steaming* in (69a), and the *Chief Executive Officer (CEO)* and the *Chief Financial Officer (CFO)* cannot both take the agent argument role in (69b). Accordingly, it sounds reasonable that the predicate-argument relationship between degree operators/modifiers and the standard value in degree expressions should also be restricted on similar grounds.

In order to analyze multiply embedded degree modifiers as one, internally complex constituent, it must be assumed that the lexical entries of ADMs are associated with a full-fledged degree expression. In other words, *extremely* should also be associated with its own standard value (or Grade argument in Corver’s (1997a) terms) within the degree modifier complex:

- (70) a. Butch is [extremely tall].  
 b. [QP [DegP [extremely] Deg<sup>0</sup> d<sub>sta-extremely</sub>] [Q' [DegP tall d<sub>sta-tall</sub>]]]

As can be seen, the underlined portion of the degree expression is the ADM, as it is suggested that it also contains a DegP projection with a standard value (or Grade argument). In fact, Corver (1997a: 158-159) opposes such a treatment of degree modifiers: he purports that (i) ADMs cannot co-occur with *very*, which would indicate that they are not even gradable; (ii) they are not able to have comparative forms, which would also be indicative of the lack of gradability. However, this reasoning is fundamentally flawed, as can be seen below:

- (71) a. First person shooter video games are very extremely creepy.  
 b. Butch is more extremely talented than Fluffy.

As can be seen, *very* immediately precedes *extremely* in (71a), which necessarily implicates that *very* and *extremely* can co-occur in the same degree expression; also, *extremely* can indeed be comparative, and my native informants say (71b) entails that Butch and Fluffy are both extremely talented, but the degree to which Butch's talent is extreme exceeds the degree to which Fluffy's talent is extreme. Moreover, the sequence *very*+ADM can even be modified by a DDI:

(72) I am [so very extremely] excited about the syntax of comparison.

The fact that this *so* is not related to the standard value (or Grade argument) associated with *excited* in the matrix degree expressions can easily be seen in the following comparative examples:

(73) a. Butch is [so much] more excited about syntax than Fluffy.  
b. \*Butch is so more excited about syntax than Fluffy.

As can be seen, the “matrix” degree expression, whose gradable predicate is *excited*, is comparative in both examples. As is known, *so* can occur only in absolute constructions, and yet (73a) is grammatical, as opposed to (73b). The reason for this is that the ADM *much* can appear in comparative degree expressions, and it is still absolute itself, and its functionally extended degree expression also includes *so* in (73a). On the other hand, there is no absolute degree expression in (73b), thus the appearance of *so* bleeds the constructions. All in all, adjectival degree modifiers (ADMs) are gradable degree expressions, thus it is reasonable to assume that they are associated with a full-fledged degree expression involving the usual functional projections: FP, QP and DegP; it will be shown in a minute that the positions in these phrases can indeed be filled.

In fact, there is a fundamental distinction between DDIs and ADMs with respect to multiply embedded degree modification: ADMs can generally be recursive, whereas DDIs cannot:

(74) a. I am [so extremely definitely absolutely mind-blowingly] excited.  
b. I am [extremely definitely absolutely mind-blowingly] excited.  
c. \*I am [so this extremely] excited.  
d. \*I am [so this] excited.

As can be seen, there can be a number of ADMs, but only one DDI in degree modification processes. The question is why this is so.

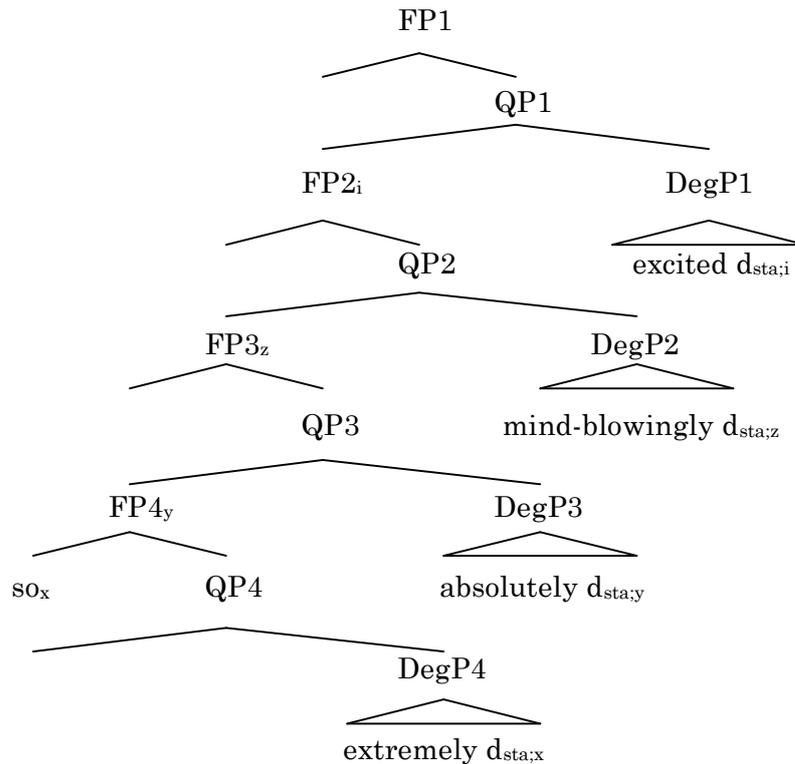
To start with, it is known that DDIs and ADMs are degree operators/modifiers that take a degree argument. As has been mentioned, on the basis of the Theta Criterion, one constituent should take a specific type of theta-

role (e.g., agent, theme, etc.) only once; that is, a given constituent should not be the agent of two or more different predicates at the same time. Also, as has been argued, DDIs are atomic elements base-generated in  $F^0$ , whereas ADMs are in  $\text{specQP}$ . If there is an ADM in  $\text{specQP}$ , this then blocks further degree modification from a higher node, say,  $F^0$ . That is why the DDI *so* is a constituent within the degree modifier, as can be seen below:

- (75) a. Butch is [[*so extremely*] tall].  
 b.  $[\text{QP}[\text{FP } \underline{\text{so}}_i [\text{QP}[\text{DegP}[\text{AdvP } \textit{extremely}] [\text{Deg}^0 \textit{d}_{\text{sta};i}]]]]_x [\text{Q}[\text{DegP}[\text{AP } \textit{tall}] [\text{Deg}^0 \textit{d}_{\text{sta};x}]]]]$

As can be seen, *so* predicates over the standard value associated with *extremely*, whereas the underlined complex degree modifier *so extremely* predicates over the standard value associated with *tall* in the matrix degree expression; in this way, it can be maintained that one degree variable is predicated over by only one degree modifier. Still, why is there a maximum of one DDI per degree expression? Let us have a look at the following diagram:

- (76) a. Butch is [*so extremely absolutely mind-blowingly*] excited.  
 b.



First, *so* is in the head position of  $\text{FP}_4$  and predicates over the degree variable in  $\text{DegP}_4$ , which also contains *extremely*. Second,  $\text{FP}_4$  is a complex degree modifier itself (*so extremely*); it is in the specifier position of  $\text{QP}_3$  and predicates over the degree variable in  $\text{DegP}_3$ , which also contains *absolutely*. Third,  $\text{FP}_3$  is a complex

degree modifier itself (*[[so extremely] absolutely]*); it is in the specifier position of QP2 and predicates over the degree variable in DegP2, which also contains *mind-blowingly*. Fourth, FP2 is a complex degree modifier itself (*[[[so extremely] absolutely] mind-blowingly]*); it is in the specifier position of QP1 (the “matrix” degree expression) and predicates over the degree variable in DegP1, which also contains *excited*.

Turning back to the reason why DDIs cannot be recursive, while ADMs can, it can easily be noticed that this distinction is related to the fact that DDIs are atomic and are merged into  $F^0$ , whereas ADMs are maximal projections in specQP. It naturally follows from what has been discussed that each DDI and ADM must predicate over a distinct degree variable. If extra DDIs appeared in the  $F^0$  positions of the multiply embedded degree expressions in the diagram above, the DDIs in FP3, FP2 and FP1 would not be able to predicate over the standard values  $d_{sta;y}$ ,  $d_{sta;z}$  and  $d_{sta;i}$  respectively, since those degree variables are already predicated over by the complex ADMs in specQP3, specQP2 and specQP1 respectively. Moreover, DDIs cannot appear interchangeably with ADMs either:

(77) \*Butch is *[[so extremely this absolutely that mind-blowingly] excited]*.

Apart from the problem mentioned above, the reason for this is that ADMs, such as the complex ones in (76), are always merged into specQP; therefore, the word order in (77) could never be derived, since *[so extremely]* (FP4) in specQP3 would always be preceded by the DDI in the head position of FP3, and *[[so extremely] absolutely]* (FP3) in specQP2 would always be preceded by the DDI in the head position of FP2. Therefore, the syntactic derivation would be capable of producing only the following example, which crashes at LF, since the extra DDIs (*that* and *this*) have no degree variables to predicate over:

(78) \*Butch is *[[that this so extremely absolutely mind-blowingly] excited]*.

In sum, it can be concluded that multiple degree modification necessarily involves just as many degree variables as degree operators/modifiers, and adjectival degree modifiers are associated with a degree variable, similarly to ordinary gradable predicates (e.g., adjectives), unlike atomic determiner-like degree items.

**3.3.2 Multiple degree modification in comparatives.** To start with, multiple degree modification seems to work on the same basis as in absolute constructions. Let us have a look at (73) again, which is conveniently repeated below as (79):

- (79) a. Butch is [so much] more excited about syntax than Fluffy.  
 b. \*Butch is so more excited about syntax than Fluffy.

As has been argued, it seems as though lexical *much* is capable of degree modification in comparative degree expressions as an ADM, unlike its counterparts ending in *-ly*:

- (80) \*I saw a [totally taller man than John].

However, if *so* modifies *totally*, and *totally* modifies *much*, with the whole construction becoming a complex degree modifier, the derivation converges even in comparatives:

- (81) a. Butch is so much more awesome than Fluffy.  
 b. Butch is totally much more awesome than Fluffy.  
 c. Butch is so totally much more awesome than Fluffy.

Furthermore, this is supported by Case phenomena in Hungarian comparatives as well. As has been mentioned earlier, degree modifiers are assigned inherent instrumental Case in Hungarian comparatives:

- (82) a. Fickó sokkal magasabb Pihénél.  
 Butch much-INS taller Fluffy-ADE  
 'Butch is much taller than Fluffy.'  
 b. Fickó 20 centivel magasabb Pihénél.  
 Butch 20 cm-INS taller Fluffy-ADE.  
 'Butch is 20 centimetres taller than Fluffy.'

In fact, the only way of adding extra degree modifiers to (82a) is to place them in front of *sokkal*, which suggests that these modifiers are within the FP that contains *sokkal*, and they predicate over the degree variable associated with *sokkal*:

- (83) a. Fickó annyira sokkal magasabb Pihénél.  
 Butch that.much-SUBL much-INSTaller Fluffy-ADE  
 'Butch is so much taller than Fluffy.'  
 b. \*Fickó annyira magasabb Pihénél.  
 c. Fickó olyan sokkal magasabb Pihénél.  
 Butch so much-INS taller Fluffy-ADE  
 'Butch is so much taller than Fluffy.'  
 d. \*Fickó olyan magasabb Pihénél.

As can be seen, degree modification without a modifier in instrumental Case bleeds the derivation (see 83b and 83d). Still, *annyira* is assigned sublative Case; as has been pointed out, sublative Case is typical of ADMs in absolute degree expressions. This implicates that *annyira* is an ADM modifying *sokkal*, which is contained within a functionally extended absolute degree expression itself. On the other hand, *olyan* is an atomic element, it is a DDI, and as such it can also modify only absolute degree expressions. Still, what is important here is that both *annyira* and *olyan* are logical predicates predicating over the degree variable associated with *sokkal*. This can be seen below:

- (84) a. [QP1 [FP2 [QP2 [annyira]<sub>i</sub> [Q'2 sokkal d<sub>sta-sokkal;i</sub>]]]<sub>j</sub> [Q'1 magasabb d<sub>sta-magas;j</sub>]]  
 b. [QP1 [FP2 olyan<sub>i</sub> [QP2 sokkal d<sub>sta-sokkal;i</sub>]]]<sub>j</sub> [Q'1 magasabb d<sub>sta-magas;j</sub>]]

Nevertheless, one may wonder why it is not possible to add extra degree modifiers to (82b):

- (85) a. \*Fickó annyira 20 centivel magasabb Pihénél.  
 Butch that.much-SUBL 20 cm-INS taller Fluffy-ADE.  
 ‘Butch is so 20 centimetres taller than Fluffy.’  
 b. \*Fickó olyan 20 centivel magasabb Pihénél.  
 Butch so 20 cm-INS taller Fluffy-ADE.  
 ‘Butch is so 20 centimetres taller than Fluffy.’

If *annyira* and *olyan* could directly predicate over the degree variable associated with the “matrix” adjective (as in Corver’s (1997a) system), it would be extremely cumbersome to account for the ungrammaticality of the examples in (85). However, the analysis put forward in this research correctly predicts that these examples cannot be good. Recall that measure phrases, such as *20 centimetres*, can never co-occur with a degree variable in absolute degree expressions, as they explicitly manifest the standard value themselves. If this is so, the maximal projection in specQP that contains the measure phrase cannot contain a degree variable either. Accordingly, if an ADM or a DDI were added to the construction, they would not be able to predicate over a degree variable, which would result in a crash:

- (86) a. \*[QP [annyira<sub>i</sub> 20 centivel]<sub>j</sub> [Q' magasabb d<sub>sta-magas;j</sub>]]  
 b. \*[QP [olyan<sub>i</sub> 20 centivel]<sub>j</sub> [Q' magasabb d<sub>sta-magas;j</sub>]]

In sum, multiple degree modification in comparatives works on the same basis as in absolute degree expressions.

# Chapter Four

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## Comparative complements

The target of this chapter is to investigate the internal characteristics of comparative complements, both phrasal and clausal. These include the categorial label of the comparative subordinator (*than* in English), the left periphery of the comparative subclause, comparative operator movement as well as phrasal-clausal asymmetries. Another interesting property of clausal comparative complements is that (seemingly) special types of deletion operations are active in this constituent, such as Comparative Deletion, Comparative Subdeletion and Comparative Ellipsis, as mentioned in Chapter 1; although I will not try to cross-linguistically identify and explain every deletion mechanism in comparatives in detail, as that would indeed require the whole dissertation to be about it, I will present a new type of deletion in comparatives, which may help us get a clearer picture of elliptical comparatives in general.

In fact, my analysis of comparatives so far has maintained that *than*-XPs are subordinate constituents base-generated as complements of the degree head; on the other hand, there have been a number of approaches (e.g., Moltmann 1992; Lechner 1999: 183-213, 2004) that treated comparatives as hybrid constructions, as they exhibit properties of coordination as well, as if they were coordinated with the matrix clause. In this chapter, I will argue against such a coordination analysis by addressing some of the challenges that a subordination analysis has to face.

## 4.1 The comparative subordinator

To start with, supplying the comparative subordinator (*than* in English) with a categorial label may be necessary to analyze the structure of the whole clausal comparative complement which hosts the comparative operator, as mentioned in Chapter 1. Here I adopt Kenesei's proposal that the comparative subordinator is a complementizer (1992b:42ff); English *than* as a complementizer may face challenges, which will be addressed later.

First of all, the motivation to believe that Kenesei is right can be found in cross-linguistic data, apart from Kenesei's adequately presented argumentation (*ibid*). For example, in certain languages, the syntactic and semantic functions of the standard – represented by *than* in English – are embodied by other complementizers, and *than* does not exist separately, as in Spanish:

- (1) a. Te digo que tu mamá está en México. (Spanish)  
 you-DAT tell-PRES-1<sup>ST</sup>.SG that your mum is in Mexico  
 'I am telling you that you mother is in Mexico.'
- b. El avión es más rápido que el coche. (Spanish)  
 the plane is more fast that the car  
 'Planes are faster than cars.'
- c. Tengo más dinero que mi hermano. (Spanish)  
 have-PRES-1<sup>ST</sup>.SG more money that my brother  
 'I have more money than my brother.'

On the basis of the above examples, it can be deduced that the complementizer *que* (*that*) acts as *than* in both predicative comparatives (e.g., 1b) and nominal comparatives (e.g., 1c), as Spanish does not have a separate complementizer to introduce comparative complement clauses.

Secondly, it is also incorporated into Kenesei's theory that words generally taken to be complementizers can appear juxtaposed to each other within the left periphery of the same clause (Kenesei 1992b:40-41; see also Marác 1989: 35ff., 332ff.). That is, assuming a split CP, there is supposed to be a CP embedded under another one. The following Hungarian example can justify the latter assumption:

- (2) Pál észrevette azt [hogy-ha Anna éhes volt].  
 Paul-NOM noticed it-ACC that if Anna-NOM hungry was  
 'If Anna was hungry, Paul noticed it.'  
 (Kenesei 1992b:40, example 8c)

Kenesei adds that the reverse order of the above constituents, *ha-hogy* was also quite frequent at an earlier stage of the Hungarian language (*ibid*). These multiple CP-layers allow the comparative subordinator to appear at the front of the same clause together with another complementizer, as can be seen below:

- (3) a. Kiment                    inkább, mint(sem)hogy kidobják.  
       out-went-3<sup>RD</sup>.SG rather than not that out-throw-3<sup>RD</sup>.PL-DEF.OBJ  
       ‘He went out rather than being thrown out.’  
 b. Fösvényebb            bátyám, hogy sem mint megajándékozhatna.  
       more-niggardly my.brotherthat not than present-COND-3<sup>RD</sup>.SING  
       ‘My brother is too niggardly to present you with a gift.’  
 (Kenesei 1992b:43, examples 14a-b)

That is, *mint* (the Hungarian counterpart of *than*) can appear at the front of the same clause together with another complementizer; moreover, their order can be reversed. Another interesting phenomenon also arises: the operator that was argued to be generally covert in English, and only some American dialects allow its overt appearance (Chomsky 1977), can be overt in Hungarian. As a result, in a framework using only one CP layer, *than* would have to precede the operator that is in specCP, and within the boundaries of a clause, this may be purported to be possible with two CPs, with *than* in the upper C<sup>0</sup>. The following example may draw attention to the latter assumptions:

- (4) Mari kedvesebb, mint amilyennek Józsi fényképén tűnik.  
       Marynicer than what-DAT Joe-NOM photo-POSS-3<sup>RD</sup>.SG-SUPlooks  
       ‘Mary is nicer than (what) she looks in Joe’s photo.’

If it is claimed that the comparative subordinator is a preposition in the example above, it could not easily be explained why it follows a complementizer (and negation) in (3b), as no complementizer tends to take a preposition as its complement (with or without negation in between), which in turn would take a TP complement, as *megajándékozhatna* is a finite verb:

- (5) a. \*[<sub>CP</sub> C<sup>0</sup> [<sub>PP</sub> P<sup>0</sup> [<sub>TP</sub> T<sup>0</sup> ...]]]  
       b. \*[<sub>CP</sub> C<sup>0</sup> [<sub>NegP</sub> Neg<sup>0</sup> [<sub>PP</sub> P<sup>0</sup> [<sub>TP</sub> T<sup>0</sup> ...]]]]]

As a result, the subordinators *mint* (in Hungarian) and *que* (in Spanish) are treated as complementizers henceforth. On the other hand, for the time being, I will not assign a categorial label to English *than*.

## 4.2 The left periphery of clausal comparative complements

In this subchapter, I intend to investigate the left periphery of clausal comparative complements. As was mentioned in Chapter 1, comparative subclauses are thought to involve a special type of operator movement, which moves a clause-internal constituent to the left periphery of the clause. Although standard English does not have an overt version of this operator, its Hungarian counterpart can always be detected in the form of a relative operator:

- (6) Fickó magasabb, mint amilyen magas Pihe.  
 Butch taller than OP tall Fluffy  
 ‘Butch is taller, than Fluffy is.’

Hungarian *amilyen* is a relative operator; in fact, there are three emerging questions concerning its role in comparatives: where is it base-generated, where does it move, and what triggers this movement? Each of these questions is going to be addressed; on the other hand, to my knowledge – confirmed by István Kenesei (p.c.) – the position of Hungarian relative operators has not yet been examined in the literature. Therefore, the three questions will be tackled in the next subchapter (4.3). Here I will try to provide independent evidence regarding the landing site of Hungarian relative operator movement.<sup>1</sup>

**4.2.1 Relative operators.** One of the approaches to relative operators in English tends to generate these elements inside the VP (either as arguments or adjuncts), and move them to specCP, similarly to the case of *wh*-questions (cf. Haegeman 1994: 436ff.). However, on the basis of Kenesei (1992a: 586-8), this may not be so in Hungarian, because relative operators can follow complementizers:

- (7) a. Az ég sötétebb, [*mint amilyennek* Endre képén mutatkozik]  
 the sky darker as what-like-DAT Endre picture-SUP seems  
 ‘The sky is darker than it seems on Endre’s picture.’  
 b. Elemér úgy javította meg a gépet,  
 Elmer so mended VM the machine-ACC  
 [*mint ahogy* Ervin megmutatta neki]  
 as how Erwin VM.showed him  
 ‘Elmer mended the machine the way Erwin showed him.’  
 (Kenesei 1992a: 586, exx. 72a, 72b)

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<sup>1</sup> Section 4.2 is based on Kántor (2008a).

As can be seen above, the relative operators *amilyennek* (*REL-how-DAT*) and *ahogy* (*REL-how*) both follow *mint* (meaning *as* or *than*), which was proven to be a complementizer (Kenesei 1992b: 42ff.). Naturally, if an operator follows the complementizer, it cannot be in the specifier thereof.

Furthermore, relative operators can be preceded and followed by topics:

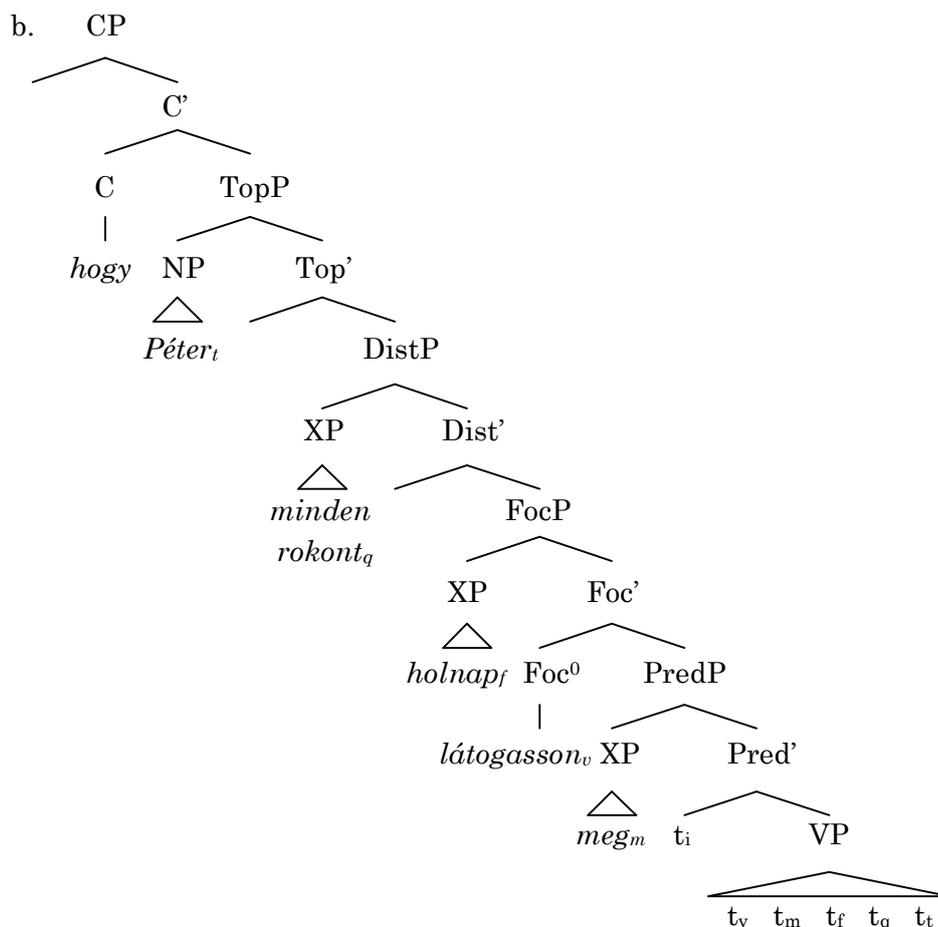
- (8) [DP [CP Péternek<sub>z</sub> aki<sub>x</sub> [a könyvet]<sub>y</sub> odaadta  $t_x t_y t_z$ ], ügyes volt.  
 Peter-DAT who the book-ACC VM.gave clever was  
 ‘Whoever gave Peter the book was clever.’

Both *Péternek* and *a könyvet* are topics undergoing optional topicalization in (8), and the relative operator is between them. This would suggest that relative operators move out of the predicate domain via optional topicalization in Hungarian, and their landing site is not specCP, as complementizers typically precede topics (cf. Kenesei 1992a, 1992b: 46).

Nevertheless, the question is then why relative operators can be preceded by topics and complementizers, which will be accounted for in detail. Scope relations support the hypothesis that they undergo obligatory A'-movement even in Hungarian, and the landing site of this movement is a designated specCP. Therefore, an alternative analysis is needed in order to accommodate relative operators. The advantages of such an approach include the fact that in this way Hungarian relative clauses would conform to the behaviour of their counterparts seen cross-linguistically, and it could be explained why relative operator movement is obligatory.

**4.2.2 The structure of Hungarian clauses.** In this section, I will present the basic schema of Hungarian clauses, excluding negation. On the basis of É. Kiss (2002, 2006), the core constituent of Hungarian predicates is a VP, in which the arguments of the verb are base-generated; on the top of VP a PredP (Predicate Phrase) can be found, the specifier of which hosts verb modifiers; on the top of the PredP, there is a Focus Phrase (FocP), into the specifier of which a constituent exhaustively identified can be moved, while the verb can be moved into Foc<sup>0</sup> (see also Brody 1990a, 1990b, 1995); above FocP, there may be iterable Distributive Phrases, the specifier of which can host distributive quantifiers, such as universal quantifiers, quantified phrases involving *sok* (*many*), or *is* (*also*) phrases; topicalized constituents move to the specifiers of iterable Topic Phrases (TopP) above DistPs; the topmost maximal projection is a CP. This representation is exemplified below:

- (9) a. János azt akarja, [hogy Péter minden rokont HOLNAP  
 John that wants that Peter every relative-ACC tomorrow  
 látogasson meg].  
 visit-PRES-3/SG/SUBJ VM  
 ‘John wants it to be tomorrow when Peter visits every relative.’



If the relative operator is to be moved to a specCP, a position in which it could freely be preceded by topicalized constituents, the representation in (9b) must undergo minor modifications, which will be explained in the following sections.

**4.2.3 Obligatory versus optional movement.** Based on cross-linguistic data, it is known that relative operators undergo obligatory operator movement to specCP; e.g., this is so in English, French (cf. Labelle 1996), Spanish (Zagona 2002: 56ff.; Gutiérrez-Bravo 2003: 152), Chinese (Wu 2000: 98), Polish and Russian (Szczielniak 2004):

- (10) a. La dame que j'ai connue travaille [en tant que] docteur. (*French*)  
 the lady who I.AUX know-PP works as doctor  
 'The lady who I knew works as a doctor.'
- b. \*La dame j'ai connue que travaille en tant que docteur.
- c. La mujer a quién conocí trabaja como doctor. (*Spanish*)  
 the woman P who knew-1<sup>st</sup>-SG works as doctor  
 'The woman I knew works as a doctor.'
- d. \*La mujer conocí a quién trabaja como doctor.
- e. Жена, которую я знал, сейчас работает врачом. (*Russian*)  
 woman who-ACC-FEM I knew now works doctor-INST  
 'The woman I knew works as a doctor now.'
- f. \*Жена, я знал которую, сейчас работает врачом.

That is, if the relative operator remains *in situ*, the clause becomes ungrammatical. The same requirement can be noticed in Hungarian, too:

- (11) a. A lény, amivel a Ligetben sétáltam, a kutyám volt.  
 the creature which-INST the Park-INE walked the dog-POSS-1<sup>st</sup>/SG was  
 'The creature I was walking with in the Park was my dog.'
- b. \*A lény, a Ligetben sétáltam amivel, a kutyám volt.
- c. A bogár, amit megöltem, rövid ideig élt.  
 the bug which-ACC VM.killed-1<sup>st</sup>-SG, short time-TERM lived  
 'The bug I killed lived for a short time.'
- d. \*A bogár, megöltem amit, rövid ideig élt.

On the other hand, topicalization is optional in languages without V2-requirements (Müller 1995: 98); for example, this is so in Hungarian and English:

- (12) a. John gave a book to Mary. (*no topic*)  
 b. [To Mary]<sub>i</sub> John gave a book *t<sub>i</sub>*. (*one topic*)  
 c. Odaadott János Marinak egy könyvet. (*no topic*)  
 VM.gave John Mary-DAT a book-ACC  
 'John gave a book to Mary.'
- d. János<sub>x</sub> odaadott *t<sub>x</sub>* Marinak egy könyvet. (*one topic*)  
 e. János<sub>x</sub> egy könyvet<sub>z</sub> odaadott *t<sub>x</sub>* Marinak *t<sub>z</sub>*. (*two topics*)  
 f. Egy könyvet<sub>z</sub> János<sub>x</sub> Marinak<sub>y</sub> odaadott *t<sub>x</sub> t<sub>y</sub> t<sub>z</sub>*. (*three topics*)

It seems to be clear that optional topicalization cannot account for obligatory operator movement. That is, alternative theoretical assumptions are to be made.

**4.2.4 The position of relative operators in the left periphery.** In Marác's representation, the left periphery in Hungarian may not include only one CP

layer (1989: 35ff.; 332ff.); that is, there may be more below each other. This is in line with Rizzi (1997, 2001, 2004), in which there are two C<sup>0</sup> positions: one of them starts the left periphery by determining the illocutionary force, while the other one closes off the domain, specifying finiteness; it is also shown that there can be topics between the two complementizer positions:

- (13) Dywedais i [*mai* ‘r *dynion fel arfer a* [werthith y ci]] (Welsh)  
 Said I C<sup>0</sup> the men as usual C<sup>0</sup> will-sell the dog  
 ‘I said that the men would sell the dog as usual.’  
 (Rizzi 2004, ex. 46)

In (13), both ‘r *dynion* (*the men*) and *fel arfer* (*as usual*) sit in topic positions, which are between the two complementizers: *mai* and *a*.

In sum, the left periphery relevant for Hungarian relative clauses<sup>2</sup> can be seen below:

- (14) [Force-CP [TopP\* [Fin-CP [ ... ]]]]

In other words, there are topic positions in the left periphery, and there exists a CP, which is preceded by topics. However, it is also known that topics can appear between relative operators and distributive quantifiers; see (15) below:

- (15) Győző egy olyan apa, aki a fiait minden nap megdicséri  
 Victor a so father who the sons-POSS-3/SG-ACC every day VM.praises  
 ‘Victor is a father, who praises his sons every day.’

The constituent *a fiait* (*his sons* in accusative case) is located between *aki* (*who*), a relative operator and *minden nap* (*every day*), a distributive quantifier. In the light of the basic structure of Hungarian clauses (see 9b), this topic is in the TopP immediately on the top of DistP.

Consequently, there are two possible positions for iterable TopPs: one between the two C<sup>0</sup> positions, and another one between the left periphery and the topmost DistP. This representation is schematized below:

- (16) [Force-CP [TopP\* [Fin-CP [TopP\* [DistP\* [FocP [PredP [VP ]]]]]]]]

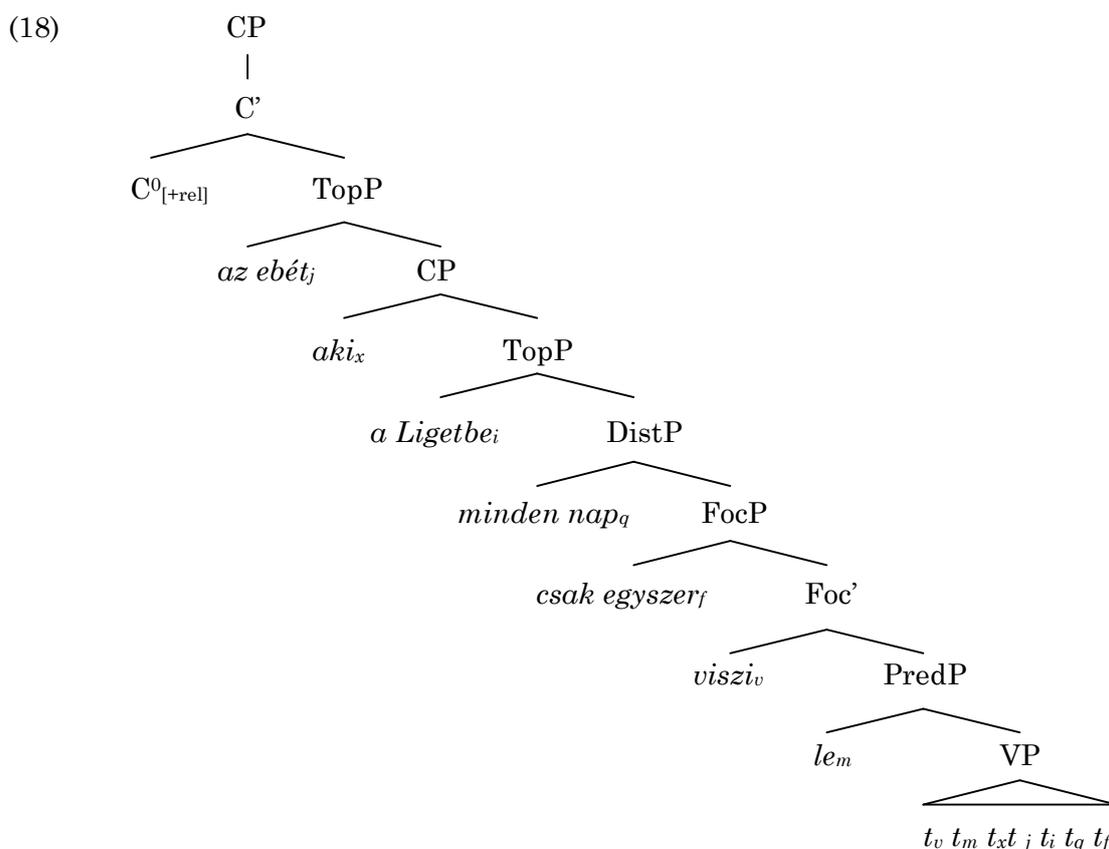
In order to see how these projections are manifested, let us have a look at (17):

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<sup>2</sup> According to Rizzi (1997, 2001, 2004), there may appear focused constituents in the left periphery as well; for example, this is so in Italian. However, as Hungarian reserves specFocP for contrastively focused constituents (cf. É. Kiss 2002), this is irrelevant here.

- (17) Az ebét aki a Ligetbe minden nap CSAK EGYSZER viszi le,  
 the dog-POSS-ACC who the Park-ILL every day only once takes VM,  
 az nem rendes ember.  
 that not decent person.  
 ‘Whoever takes his dog for a walk to the Park only once a day is not a  
 decent person.’

The structural representation of the relative clause in (17) can be seen below:



That is, the relative operator moves to the specifier of the lower CP; there are TopPs both between the two CPs and between the lower CP and the DistP. The non-neutral V–VM order shows that focusing has taken place, as *csak* (*only*) phrases are inherently focus-marked (cf. É. Kiss 2002: 90).

Although one might still argue that relative operators are in fact topicalized, which is being refuted here, the following examples may provide further evidence in favour of the above analysis:

- (19) Az ebét ha a Ligetbe minden nap CSAK EGYSZER viszi le,  
 the dog-POSS-ACC if the Park-ILL every day only once takes VM,  
 akkor nem rendes ember.  
 then not decent person.  
 ‘If (s)he takes his dog for a walk to the Park only once a day, (s)he is not a  
 decent person.’

The only structural difference between (17) and (19) is that in the latter the lower CP is headed by the complementizer *ha (if)*, and because it is not a relative clause, the agent of the predicate is represented by a *pro* as the covert counterpart of the pronoun *ő ((s)he)*. However, (19) proves that the lower CP does exist in fact, since a topic can precede *ha (if)*, which is a complementizer. One might wonder if it could be purported that only one CP layer exists and TopPs may be positioned on the top of the whole construction; however, this idea is immediately falsified by the following example:

- (20) a. Úgy borotválkoztam, mint apám ahogyan megmutatta nekem.  
 so shaved-1/SG as my-father how VM.showed I-DAT  
 ‘I shaved the way my father showed me.’  
 b. \*Úgy borotválkoztam, apám mint ahogyan megmutatta nekem.

It can be noticed in (20a) that the upper  $C^0$  hosts the complementizer *mint (as)*, while the lower specCP serves as the landing site of the relative operator *ahogyan (how)*. There is a topic between the two CPs in (20a); however, the appearance of a topic higher than the upper CP is prohibited (see 20b). As a result, placing Topic Phrases on the top of the whole construction is impossible.

**4.2.5 Testing: Satisfying the Doubly Filled COMP Filter.** According to the Doubly Filled COMP Filter, ‘when an overt *wh*-phrase occupies the Spec of some CP the head of that CP must not dominate an overt complementizer’ (Haegeman 1994: 383; based on Chomsky and Lasnik 1977). Certainly, this rule is observed by relative clauses as well. The question is whether Hungarian relative clauses satisfy this generalization. To start with, let us have a look at the following examples:

- (21) a. János egy olyan ember, aki kap támogatást.  
 John a so person who gets support  
 ‘John is a person who gets support.’  
 b. \*János egy olyan ember, aki *ha/hogy/mint* kap támogatást.  
 John a so person who if/that/as gets support

As can be noticed in (21b), a relative operator and a complementizer cannot be in the same CP at the same time. There are certain examples in which the operators seem to co-occur with complementizers; however, these are either base-generated in the upper CP or in a higher subclause, as can be seen below:

- (22) a. János egy olyan ember, [<sub>CP</sub> aki [<sub>CP</sub> ha kap támogatást], örül].  
 John a so person who if gets support-ACC is-happy  
 ‘John is a person who is happy if he gets support.’
- b. János egy olyan ember, [<sub>CP</sub> aki örül [<sub>CP</sub> ha kap támogatást]].  
 John a so person who is-happy if gets support-ACC  
 ‘John is a person who is happy if he gets support.’
- c. Úgy tűnsz, mint-ha szellemet láttál-volna.  
 so look-2/SG as if ghost-ACC see-COND-PAST-2/SG  
 ‘You look as of you had seen a ghost.’
- d. Úgy tűnsz, mint aki szellemet látott.  
 so look-2/SG as who ghost-ACC see-PAST-3/SG  
 ‘You look like someone who has seen a ghost.’
- e. \*Úgy tűnsz, mint aki ha szellemet látott.  
 so look-2/SG as who if ghost-ACC see-PAST-3/SG

The only difference between (22a) and (22b) is that the conditional clause is left-adjoined in the former, whereas it is extraposed in the latter. In fact, (22b) shows that the relative operator *aki* (*who*) and the complementizer *ha* (*if*) are situated in completely different clauses. (22c) and (22d) show that either the complementizer or the relative operator can be found in the given CP domain; it is impossible to have them both in one CP (see 22e).

Still, there is a problematic construction, in which the relative operator originates in the clause that includes a CP headed by the complementizer *ha*:

- (23) Péter [olyan ember, [<sub>CP</sub> akit<sub>i</sub> [<sub>CP</sub> ha látsz *ti*], menekülj]].  
 Peter so person who-ACC if you.see flee-PRES-2/SG-SUBJ  
 ‘Peter is a person such that whenever you see him, run!’

The relative operator is base-generated as the internal argument of *látsz* (*see*), as it receives accusative case *in situ*, prior to movement. However, it moves across the overt complementizer *ha* to a position in a higher subclause, the predicate of which is the verb *menekülj* (*flee*); this may be explained in terms of scrambling (cf. Surányi 2006).<sup>3</sup> Still, the Doubly Filled COMP Filter is satisfied, because the

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<sup>3</sup> Alternatively, it could be purported that this is a case of long operator movement. Still, what is important here is that the final landing site of the relative operator is in the left periphery of the clause that contains *menekülj* (*flee*).

operator is scrambled out of the lower clause, thus it cannot be present overtly in the specifier of the CP headed by *ha*.

In sum, it can be said that relative operators satisfy the Doubly Filled COMP Filter in Hungarian.

**4.2.6 New evidence: scope relations.** To start with, it is widely known that Hungarian operators observe the scope principle almost trivially in visible syntax; that is, they c-command their scope (É. Kiss 2002: 113-114). This generalization holds true for preverbal quantifiers, as can be seen below:

- (24) a. [<sub>TopP</sub> János [<sub>DistP</sub> minden süteménnyel [<sub>DistP</sub> sok embert [<sub>VP</sub> megkínált]]]].  
 John every cake-INS many people-ACC VM.offered  
 ‘For every cake, it is true that John offered them to many people.’  
 b. [<sub>TopP</sub> János [<sub>DistP</sub> sok embert [<sub>DistP</sub> minden süteménnyel [<sub>VP</sub> megkínált]]]].  
 John many people-ACC every cake-INS VM.offered  
 ‘For many people, it is true that John offered every cake to them.’

The only exception is the group of postverbal stressed quantifiers, which are to be analyzed as if they have moved to specDistP (É. Kiss 2002: 119):

- (25) a. [<sub>DistP</sub> Mindkét süteményből [<sub>FocP</sub> KEVÉS GYEREK evett]]  
 both cake-ELA few children ate  
 ‘For both cakes, few children ate from them.’  
 b. [<sub>FocP</sub> KEVÉS GYEREK evett [<sub>VP</sub> ’mindkét süteményből]]  
 few children ate both cake-ELA  
 ‘For both cakes, few children ate from them.’

That is, the quantified constituent *mindkét süteményből* (*from both cakes*) takes scope over the focused one if it precedes the latter or is stressed *in situ*.

Second, it is also assumed in the literature that topic movement is A'-movement, but not operator movement, as a topic is not a logical operator, and it does not take scope<sup>4</sup> (É. Kiss 2002: 13). For example, if a DP includes a positive existential quantifier, it becomes severely marked if topicalized, while it can naturally move to specDistP or specFocP:

- (26) a. Péter meghívott sok embert. *sok embert in situ*  
 Peter VM.invited many people-ACC  
 ‘Peter invited many people.’

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<sup>4</sup> É. Kiss mentions that a topic as a referential expression can be assigned a maximally wide scope existential quantifier (2002: 13); still, distributive quantifiers and those with inherent focus marking constitute the core of the research here.

- b. Péter sok embert meghívott. *sok embert* in specDistP  
 Peter many people-ACC VM.invited  
 ‘Peter invited many people.’
- c. Péter SOK EMBERT hívott meg. *sok embert* in specFocP  
 Peter many people-ACC invited VM  
 ‘It was many people that Peter invited.’
- d. Sok embert PÉTER hívott meg. *sok embert* in specDistP  
 Many people-ACC Peter invited VM  
 ‘It was Peter who invited many people.’
- e. \*Sok embert Péter meghívott. *sok embert* topicalized<sup>5</sup>  
 Many people-ACC Peter VM.invited  
 ‘Many people, Peter invited.’

Assuming that *sok embert* (*many people*) is given regular topic intonation in (26e), it can be noticed that quantified constituents cannot be topicalized.

The question is what happens if a constituent involves both a relative operator and a quantifier. But before answering this question, let’s discuss the following examples:

- (27) a. Vicces, hogy Ede minden tortával milyen sok embert megkínált.  
 funny that Ede every tart-INS how many people-ACC VM.offered  
 ‘It is funny that, for every tart, how many people John offered them to.’
- b. Vicces, hogy Ede milyen sok embert megkínált ’minden tortával.  
 funny that Ede how many people-ACC VM.offered every tart-INS  
 ‘It is funny that, for every tart, how many people John offered them to.’

It can be seen that the main clause predicate *vicces* subcategorizes for an embedded exclamatory clause (i.e., it is not interrogative, as the verb modifier immediately precedes the verb here, the two constituting a complex form). Still, *wh*-expressions are inherently focus-marked in Hungarian (É. Kiss 2002: 98), and they are the most prominent phonological elements, even if they are followed by a VM+V complex. Therefore, preverbal distributive quantifiers straightforwardly take wide scope over them (see 27a), and this is so if they are stressed *in situ* (see 27b), too. In fact, if *milyen sok embert* is focussed as a *wh*-constituent in (27b), it is straightforward that *minden tortával* that is stressed *in situ* takes scope over it, since postverbal stressed quantifiers are analyzed as if they were in specDistP (É. Kiss 2002: 119ff.). However, four out of the eleven native speakers I interviewed find (27b) ambiguous, as opposed to (27a). This might indicate that even if *milyen sok embert* includes a *wh*-expression, the constituent is not necessarily focussed, since (27b) is not interrogative but

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<sup>5</sup> If *sok embert* is specific, the example above may be grammatical, though.

exclamative. Nevertheless, practically the same clause has a different interpretation, if it is expressed by means of a relative clause:

- (28) a. *Amilyen sok embert Ede minden tortával megkínált, az vicces.*  
 how many people-ACC Ede every tart-INS VM.offered that funny  
 ‘It is funny that for how many people it is true that John offered every tart to them.’
- b. *Amilyen sok embert Ede megkínált minden tortával, az vicces.*  
 how many people-ACC Ede VM.offered every tart-INS that funny  
 ‘It is funny that for how many people it is true that John offered every tart to them.’

As (28a) and (28b) show, Hungarian is capable of expressing roughly the same meaning as that of (27) using relative clauses. However, scope relations are different here, inasmuch as preverbal distributive quantifiers in specDistP (e.g., *minden tortával* in (28a)) have narrow scope and the constituent undergoing relative operator movement has obligatory wide scope. Opponents of the present proposal could say that this is so because the relative operator simply precedes – and therefore c-commands – *minden tortával* here. However, the landing site of this movement that moves the relative operator cannot be simply a higher specDistP, because if this were the case, scope relations between the relative operator and the distributive quantifier stressed *in situ* in (28b) would be ambiguous; the reason for this is that stressed quantifiers *in situ* are simply taken as if they have moved to specDistP. In other words, if the constituent including both a relative operator and a positive existential quantifier (*amilyen sok embert*) were moved into a specDistP, the stressed quantifier *in situ* (*minden tortával*) could take scope in a specDistP higher than that hosting the former. The fact that the former takes obligatory wide scope over the latter clearly indicates that this is not the case. Still, it is assumed that an optional [+topic] feature, not being a logical operator feature, cannot change the scope relations between quantifiers.

As a matter of fact, it seems as though either the [+dist] feature of *sok* has been overridden by the [+rel] feature of *amilyen* in (28a) and (28b), or following the movement to specDistP, the constituent moved along to the specifier position of the lower CP, hence checking both features. To see which version holds true, I suggest that the following example be scrutinised:

- (29) *Amilyen kevés embert Ede minden süteménnyel megkínált, az vicces.*  
 how few people-ACC Ede every cake-INS VM.offered that funny  
 ‘It is funny that for how few people it is true that John offered every cake to them.’

*Amilyen kevés embert (how few people)* is a DP, which includes a relative operator (*amilyen*) and a negative existential quantifier (*kevés*), which is inherently focus-marked in Hungarian (É. Kiss 2002: 90). As a result, the DP is equipped with both a [+rel] and a [+foc] feature. The question is whether the former overrides the latter and thus movement takes place from within the VP to the designated specifier position of the lower CP, or first the DP moves to specFocP and then to specCP. It is known that focus movement triggers the movement of the verb to the Foc<sup>0</sup> head, hence creating the non-neutral verb – verb modifier order. However, such a movement is impossible in (29), as can be seen below:

- (30) \*Amilyen kevés embert Ede minden süteménnyel kínált meg, az vicces.  
 how few people-ACC Ede every cake-INS offered VM that funny

Consequently, it is purported that [+dist] and [+foc] features can be overridden by [+rel]. As a matter of fact, checking all these features results in obligatory operator movement, while topicalization does not; that is why it would be counter-intuitive to suggest that [+top] could override [+dist] or [+foc].

In sum, scope relations also support the proposal that relative operators move to a designated A'-position in the left periphery, which is the specifier of the lower CP.

### 4.3 Comparative operator movement

This subchapter is about comparative operator movement. First I will provide a survey of its analysis mainly based on English examples, then I will describe comparative operators in Hungarian, which can always be manifested overtly, as opposed to their English counterparts, thus providing a clearer picture of the phenomenon.

**4.3.1 Comparative operator movement in general.** In this section, I would like to summarize what is generally known about comparative operator movement. For example, Chomsky (1977) suggests that there is *wh*-movement in comparatives; however, one can find many inconsistencies and unresolved problems in that analysis, which have been discussed in detail since the emergence of current developments in syntax since the early 1990s.

It was mentioned in Chapter 1 that Chomsky's (1977) movement analysis of Comparative Deletion had some odd properties. For instance, as far as *wh*-movement is concerned, its landing site must be an A'-position; this syntactic expectation can be satisfied by adopting Kenesei's (1992b) and Lechner's (1999) theory, in which *than* subcategorizes for a CP, the specifier of which can serve as the landing site of the comparative operator.

To start with, there are two approaches to the above questions. First, Chomsky states that Comparative Deletion is nothing else but a case of *wh*-movement only (Chomsky 1977:87, see also Larson 1988b). That is, a full adjectival constituent is supposed to be moved to specCP. However, this movement does not indicate why it is, for example, the *wh*-word *what* that may be manifested as the result of *wh*-movement in certain American dialects, as at LF it is clearly not *what* that is reconstructed:

- (31) a. Butch is more talented than [<sub>CP</sub> what<sub>i</sub> Fluffy is t<sub>i</sub>].  
 b. LF: \*Butch is more eloquent than [<sub>CP</sub> Fluffy is *talented what / what talented*].

The appearance of *what* could easily be explained, if it appeared only in the case of nominal comparatives, where it could substitute a whole DP; however, this view cannot be extended to other types of comparatives, as can be seen above.

The second analysis states that a degree item is moved, and the remaining material is elided by other rules (for instance, Comparative Deletion; Izvorski 1995b:208ff, see also Heim 1985), as can be seen below:

- (32) a. Fluffy has bigger fleas than Snoopy has.  
 b. Fluffy has bigger fleas than [<sub>CP</sub>[*the extent to which/what*]<sub>i</sub> Snoopy has [<sub>DP</sub> [<sub>DegP</sub> big t<sub>i</sub>] fleas].  
 c. You have more books than we have magazines.  
 d. ... than [*in what quantity*]<sub>i</sub> we have magazines t<sub>i</sub>.  
 (Izvorski 1995b:208, ex 16a)

However, this degree item cannot be Deg<sup>0</sup> due to semantic expectations. To be precise, the degree construction in the comparative complement (*than*-clause) is claimed to be an absolute construction (Kennedy 1997, Lechner 1999), in which the moved element specifies the standard value and not the degree relation of the construction. In absolute degree constructions, Deg<sup>0</sup> relates the object right onto the point of the scale specified by the complement. If this complement position is left empty, it is hypothesized that the point on the scale is equivalent to the standard value inherently embodied within the adjective's dimension, and correctly deduced contextually (Bierwisch 1989).

That is the reason why, for the time being, I accept Lechner's (1999, 2004) structural representation, in which the comparative operator is base-generated in the complement position of the lower Deg<sup>0</sup>, and moved to the lower specCP, as will be seen in (34). This implies that the operator and a *than*-clause, as complements of Deg<sup>0</sup>, are in complementary distribution. As an absolute Deg subcategorizes for an absolute or implicit standard value, whereas comparative Deg for a *than*-CP, this seems to be a feasible conclusion. However, in multiply

embedded comparatives,<sup>6</sup> the upper embedded clause serves as the complement of the matrix clause, and as the matrix clause of the lower embedded clause, as can be seen below:

- (33) a. You are tall.  
 b. I am taller than you.  
 c. You are taller than Robert and Lucia.  
 d. Therefore, I am taller than Robert and Lucia.  
 e. Therefore, I am taller than whoever you are taller than.  
 f. I am taller [<sub>than-XP1</sub> than [<sub>CP1</sub> whoever you are taller [<sub>than-XP2</sub> than [<sub>CP2</sub> ]]]].  
 g. I am taller than whoever you are taller than (\*Robert and Lucia).

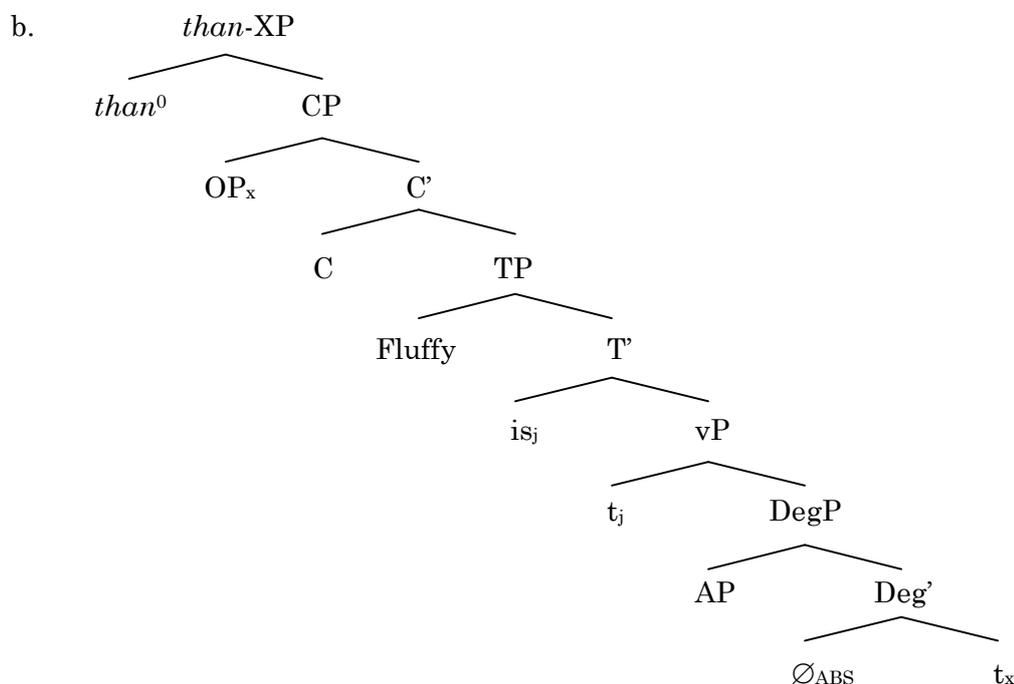
Consequently, *than-XP2/CP2* (in 33f) provides the standard value of the degree construction of *than-XP1/CP1*, and *than-XP1/CP1* offers the standard value for the matrix clause. The complementary distribution mentioned above is not violated, as Deg<sup>0</sup> in CP2 is comparative subcategorizing for a *than*-clause; still, due to structural requirements the standard value of the matrix clause and that of the degree construction in *than-XP1/CP1* must be identical. This is a possible conclusion owing to the fact that, for instance, *you (your height)* presents the standard value of the absolute construction in (33a), and can also represent the standard value of the matrix clause in (33b). That is the reason why another expression denoting the standard value (*Robert and Lucia's height*) must not be present in *than-XP2/CP2*, as could be noticed in (33g). In this case, *whoever* successive cyclically moves from specCP2 to specCP1. As a consequence, ('ordinary') comparative operator movement may look as is exemplified in the diagram below:

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<sup>6</sup> 'Ordinary comparatives' involve one comparison, unlike (i) below ('multiple comparative'):

(i) I am taller than [<sub>CP</sub> whoever you are taller than [<sub>CP</sub> ]].

(34) a. Butch is faster [than Fluffy is (speedy)/(\*fast)]



In fact, this representation reflects Lechner's (1999, 2004) proposal, and that is why the FP and QP layers of the functionally extended degree expression are missing. The semantic motivation behind the idea that the comparative operator is base-generated as the complement of  $\text{Deg}^0$  in the comparative subclause is that the whole *than*-clause is required to present a degree that could serve as the standard value of comparison; in other words, it must represent a degree. However, as was argued in section 2.1, there is a reference value and a standard value even in absolute degree expressions, such as the one inside the comparative complement. At the moment it seems evident that it is the standard value inside the comparative complement that the comparative operator is associated with, as a definite, top-closed interval of degrees is necessary for denoting the standard value in a comparison, and the reference value is compositionally not able to express that:

- (35) a.  $\llbracket \text{Deg}_{\text{ABS}} \rrbracket = \lambda g \lambda x \lambda d' \exists d [g(d)(x) \cap \text{ABS}(d)(d')]$   
 b.  $\llbracket \text{ABS}(d)(d') \rrbracket = 1$  iff  $\llbracket d \rrbracket \geq \llbracket d' \rrbracket$   
 (cf. de Vries 2010:95; see also Kennedy 1997:125ff.)

In other words, in order for the absolute degree element to be computable, there is some gradable predicate ( $g$ ), an argument ( $x$ ) that is associated with a degree ( $d$ ; the reference value) on the scale determined by  $g$ , and there is also another degree ( $d'$ ; the standard value), which represents a (maximal) value, where  $d$  is at least as great as  $d'$ . As can be seen,  $d$  can be greater than the (contextually

recoverable) standard value (d'), and only the latter denotes a finite (or definite) set of degrees, which is necessary for the computation of the standard value in a comparative degree expression. In sum, now it sounds reasonable to assume that the operator may be generated in the complement position of Deg<sup>0</sup> within comparative complement clauses; this is going to be reconsidered in the light of the behaviour of the Hungarian comparative operator, to be discussed in the next section.

To conclude, it can be said that it is not necessarily the whole degree expression (FP/QP), but it is the comparative operator base-generated in the complement position of Deg that is moved from within the embedded clause into the (lower) specCP. That A'-movement occurs inside clausal *than*-XPs is also supported by the fact that comparatives obey islands, as can be seen below:

(36) *Complex NP islands*

- a. \*Butch ate more bones than he had discussed a plan to eat.
- b. Butch ate more bones than he planned to eat.

(37) *Sentential subjects*

- a. \*Butch has more fleas than [that he has apples] is likely.
- b. Butch has more fleas than he has apples.

(38) *Wh-islands*

- a. \*Butch ate more bones than Fluffy wondered whether to lick.
- b. Butch ate more bones than Fluffy wanted to lick.

(39) *Negative islands*

- a. \*Butch is older than Fluffy is not old.
- b. Butch is older than Fluffy is chronologically challenged.

(40) *Adjunct islands*

- a. \*Butch ate more bones than he was walking with puppies.
- b. Butch ate more bones than he was given butterflies.

These examples are based on Bresnan (1975) and Izvorski (1995b: 206). In order to explain why this is so, it must be investigated where the comparative operator is moved. If it were an operator in A'-position, it would block movement out of the *than*-XP by occupying the escape hatch thereof. Assuming that *than* subcategorizes for a clause, specCP seems to be an appropriate landing site; therefore, if the movement of the comparative operator is blocked by another element on its way to the specCP immediately below *than*, the construction crashes:

- (41) [CP OP<sub>i</sub>[IP Fluffy[VP wondered[CP whether[IP to[VP lick[DP ~~many~~ t<sub>i</sub> ~~bones~~]]]]]]]]
- 

As can be seen, the appearance of *whether* in the intermediate specCP blocks the movement of the comparative operator, causing the ungrammaticality of the construction, while *many* and *bones* are deleted by Comparative Deletion (cf. Bresnan 1973, 1975).

Furthermore, Chomsky (1977) argues that clausal comparatives constitute a *wh*-island themselves. The comparative operator in specCP obstructs any further movement out of the *than*-XP, similarly to relative clauses and embedded *wh*-clauses. This can be seen below:

- (42) a. \*Who<sub>i</sub> are you richer [than [t<sub>i</sub> is ~~d-rich~~]]?  
 b. [CP who<sub>i</sub>[IP are you richer [than-XP than [CP OP<sub>x</sub>[IP t<sub>i</sub> is [QP tall t<sub>x</sub>]]]]]]
- 

As can be seen, the comparative operator in the lower specCP blocks the movement of the *wh*-operator, causing ungrammaticality.

In fact, detecting comparative operator movement in wide reading attributive comparatives (i.e., in which the degree expression in the comparative complement clause also follows an attributive pattern) in English is even more cumbersome than in predicative ones, as Comparative Deletion (CD) obligatorily deletes the constituent that (properly) contains the targeted degree expression from the surface representation (Pinkham 1985:47; see also Kennedy and Merchant 2000):

- (43) a. \*Butch bought a bigger house than Fluffy got \_\_\_<sub>SD</sub> a den.<sup>7</sup>  
 b. Butch bought a bigger house than Fluffy got \_\_\_<sub>CD</sub>.

As can be seen, CD in English deletes not only the degree expression but also the whole DP containing it in attributive comparatives. On the other hand, as Kennedy and Merchant (1997) argue, if the comparative operator could move to the front of the comparative subclause with the DP remaining overt *in situ*, this

<sup>7</sup> Kennedy and Merchant (2000) explain why Pseudogapping can save this construction in English:

(i) Butch bought a bigger house than Fluffy did \_\_\_<sub>CD</sub> a den.

The explanation includes (i) movement of the degree expression within the nominal expression, (ii) rightward extraposition of the DP, then (iii) deletion (CD) of the VP, which now properly contains the degree expression (*ibid*: 130-134).

would violate Ross' (1967) Left Branch Condition (see 44a, with the theme of the verb in specVP), similarly to the illicit *wh*-fronting attested in (44b-e):<sup>8</sup>

- (44) a. \*... than [CP OP<sub>x</sub> [IP Fluffy got [DP a [NP [QP ~~big~~ [t<sub>x</sub>]][NP den]]]].  
 b. \*How did Fluffy get a big den? (intended meaning: *how big (a) den...*)  
 c. \*[CP how<sub>i</sub> did<sub>j</sub> [IP Fluffy t<sub>j</sub> get [DP a [NP [t<sub>i</sub> big][NP motorcycle]]]]]]]?  
 d. \*How big did Fluffy get a motorcycle?  
 e. \*[CP [how big]<sub>i</sub> did<sub>j</sub> [IP Fluffy t<sub>j</sub> get [DP a [NP [t<sub>i</sub>][NP motorcycle]]]]]]]?

As a matter of fact, regardless of the fact that these examples are ungrammatical, it is quite difficult to examine comparative operator movement in English, as the operator itself always has to be covert.

**4.3.2 Comparative operator movement in Hungarian.** It has been argued in this chapter that clausal comparative complements are introduced by the complementizer *mint* in Hungarian and the left periphery of the clause is split, with the lower specCP serving as the landing site of comparative operator movement. It has also been pointed out that the comparative operator can always be overt in Hungarian. In this section, I am going to describe comparative subclauses with no deletion involved; elliptical comparatives will be dealt with in section 4.4.

To start with, depending on the type of the comparative construction, there can be various relative operators acting as comparative operators. Let us have a look at predicative comparatives:

- (45) a. Fickó magasabb volt, mint amilyen magas Pihe volt.  
 Butch taller was than OP1 tall Fluffy was  
 'Butch was taller than Fluffy was.'  
 b. \*Fickó magasabb volt, mint amilyen Pihe volt magas.  
 c. \*Fickó magasabb volt, mint Pihe volt amilyen magas.  
 d. %Fickó magasabb volt, mint amennyire magas Pihe volt.  
 Butch taller was than OP2 tall Fluffy was  
 'Butch was taller than Fluffy was.'  
 e. %Fickó magasabb volt, mint amennyire Pihe volt magas.  
 f. \* Fickó magasabb volt, mint Pihe volt amennyire magas.

As can be seen, there are two relative pronouns capable of taking the role of the comparative operator here: *amilyen* (*how* in a relative sense) is the default

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<sup>8</sup> As Kennedy and Merchant (1997, 2000) show, languages that allow left branch extractions also allow attributive subcomparatives of the type in (44a). See these references for further discussion.

comparative operator (marked as OP1), whereas *amennyire* (*how much* or *how many* in a relative sense, equipped with sublative case; marked as OP2) is not accepted by all speakers, although those who tolerate it find it completely grammatical and acceptable. It can be noticed that movement is obligatory for them, as they cannot surface in situ, following the copula *volt* (see 45c and 45f). On the other hand, *amilyen* has to move together with the adjective (compare 45a and 45b), whereas the adjective can be stranded when *amennyire* moves to the left periphery. It is also evident that there is no Comparative Deletion in (45), as the adjective in the subordinate clause is overt even if it is identical to that of the matrix clause.

Now let us continue with attributive comparatives:

- (46) Fickó nagyobb labdát vett,  
Butch bigger ball-ACCbought
- a. mint amilyen nagy labdát Pihe vett.  
than OP1 big ball-ACC Fluffy bought
- b. \*mint amilyen nagy Pihe vett labdát.
- c. \*mint amilyen Pihe vett nagy labdát
- d. \*mint Pihe vett amilyen nagy labdát.
- e. %mint amennyire nagy labdát Pihe vett.  
than OP2 big ball-ACC Fluffy bought
- f. \*mint amennyire nagy Pihe vett labdát.
- g. \*mint amennyire Pihe vett nagy labdát.
- h. \*mint Pihe vett amennyire nagy labdát.

‘Butch bought a bigger ball than Fluffy bought.’

As can be seen, the whole DP that properly contains the degree expression has to move in attributive comparatives. Finally, let us see what happens in nominal comparatives:

- (47) Fickó több labdát vett,  
Butch more balls-ACC bought
- a. mint amilyen sok labdát Pihe vett.  
than OP1 many balls-ACC Fluffy bought
- b. \*mint amilyen sok Pihe vett labdát.
- c. \*mint amilyen Pihe vett sok labdát.
- d. \*mint Pihe vett amilyen sok labdát.

- e. <sup>2</sup>/\*mint amennyire sok labdát Pihe vett.  
       than OP2           many ball-ACC Fluffy bought
- f. mint amennyi labdát Pihe vett.  
       than OP3           ball-ACC Fluffy bought
- g. \*mint amennyi Pihe vett labdát.
- h. \*mint Pihe vett amennyi labdát.

‘Butch bought more balls than Fluffy bought.’

In fact, *amilyen* behaves here the same ways as it does in attributive comparatives; on the other hand, *amennyire* does not sound right in nominal comparatives even for those who tolerate it otherwise. However, if it is not morphologically case-marked and the gradable predicate (*sok*) is omitted (see 47f), the structure converges; *amennyi* is marked as OP3 here, and it is quantifier in a relative sense.

Recall that there are three crucial questions in connection with comparative operators: (i) where are they base-generated, (ii) where do they move, and (iii) what triggers this movement?

First, *amilyen* (OP1) is the relative counterpart of *milyen* (*how*), a determiner-like degree item. In fact, this indicates that *amilyen* is base-generated in F<sup>0</sup> in comparative subclauses. Apart from this, extraction facts also suggest that *amilyen* is a head position and not a maximal projection, as it can never move out of the degree expression on its own: see (45a-c), (46a-d) and (47a-d). That is, I suggest that *amilyen* is base-generated in F<sup>0</sup> in comparative complement clauses. As far as *amennyire* (OP2) is concerned, it is peculiar that it is assigned sublative Case; as has been mentioned, this indicates that the constituent is a degree modifier in Hungarian absolute degree expressions. Apart from this, extraction phenomena also suggest that *amennyire* is in specQP, as it can be extracted out of the degree expression on its own in predicative examples, since it is a maximal projection; see (45d-e). However, it is straightforward that it cannot move out of the degree expression in attributive examples, since in this case it is embedded in a left branch modifier within a DP; see (46e-h). As for *amennyi* (OP3) in nominal comparatives, it can be concluded that it is base-generated in the same position as its *wh*-counterpart *mennyi* (*how much/how many*) within DPs; according to Bartos (2000: 669), such quantifiers can be base-generated in the specifier position of NumP, within the DP:

- (48) a. [DP [NumP sok [Num' [NP kutya]]]]  
           many           dog  
       ‘many dogs’
- b. [DP [NumP amennyi [Num' [NP kutya]]]]  
           how.many-REL   dogs

Second, let's turn to where these comparative operators move. As has been argued, relative operators in Hungarian must move to the specifier position of the lower CP, assuming that there is a split left periphery. Since comparative operators are relative operators themselves, they have to move to the designated A'-position in order to check their [+REL] feature.

On the other hand, the semantic motivation behind this reasoning may as well be that the function of comparative complement clauses is to present a degree such that it can serve as the standard value of the matrix degree expression. For the maximality operator (see section 2.1.1) to be able to compute this degree, it is pretty handy that the comparative operator moves to the front of the clause. However, this is reasonable only if the comparative operator represents a degree itself. In fact, OP3 (*amennyi*) is a relative version of a quantifier, so it may inherently encode degree; see (47f). On the other hand, *amilyen* and *amennyire* are not base-generated in a degree position: the former is in F<sup>0</sup>, while the latter is in specQP.<sup>9</sup> Still, recall that DDIs in F<sup>0</sup>, as well as ADMs in specQP are degree operators/modifiers taking the degree variable as their complement in absolute degree expressions. Comparative complement clauses are naturally absolute, as they are not comparative or superlative; therefore, they contain a degree variable associated with the gradable predicate. In fact, if it is accepted that the comparative operator, which is either in F<sup>0</sup> or in specQP, predicates over the degree variable in the subordinate clause, it sounds reasonable that the operator can indeed represent the standard value of the matrix degree predicate. In this view, the comparative operator may function as a maximality operator from a semantic perspective, as was argued in Chapter 2:

- (49) a. Butch is taller [than Fluffy is d-tall].  
 b. [than Fluffy is] =  $\max\{d'' \mid \mathbf{tall}(\text{fluffy}) \geq d''\} = \mathbf{d}_{\text{sta}}$

As can be seen, the function of the comparative complement is to compute the maximal degree such that Fluffy's height is at least as great as that degree; in this sense, the computed degree represents the standard value (represented by the degree variable) within the comparative complement clause, which is not comparative itself.<sup>10</sup>

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<sup>9</sup> Recall that the proposed structure of degree expressions, as modified in the previous chapter, can be seen below:

(i) [FP MP [F DDI [QP ADM [Q (dummy *much*) [DegP AP [Deg Deg<sup>0</sup> STND]]]]]]

<sup>10</sup> If we want comparative operator movement to function as it was described above, it is inevitable that the comparative complement clause contain a degree expression. In fact, this degree expression must contain a gradable predicate that is either identical to its matrix counterpart or has the same dimensional parameter as its matrix counterpart; this is a semantic requirement generally referred to as *incommensurability* (Kennedy 1997:61). For example, *wide* and *long* have the same dimensional parameter, while *old* and *hungry* do not:

**4.3.3 Comparative operator movement in English.** To start with, English comparative operators have presented an interesting puzzle, since they are phonologically null, and they can only be detected via island violations. In fact, Corver (1993b) even argued that subcomparatives in English and Dutch do not involve operator movement, which is based on the following examples:

- (50) a. Butch is a better father than Fluffy is a \_\_\_ mother.  
 b. Fickó jobb apa, mint anyanyénjó anya Pihe. (*Hungarian*)  
 Butch better father than OP good mother Fluffy  
 ‘Butch is a better father than Fluffy is a mother.’

The gap in the example above is supposed to contain the degree expression in the subordinate clause: *d-good*, which contains the base position of the comparative operator, the gradable predicate and the degree variable. Still, Comparative Deletion has deleted the degree expression. As the comparative operator is covert in English, I will not try to define which position it is generated in: specQP or F<sup>0</sup>. However, if there is always a comparative operator in clausal comparatives, it should be straightforward that (50a) also includes one, which subsequently moves to the left periphery of the *than*-clause. However, the problem here is that the comparative operator is embedded in an attributive degree expression, which in turn is embedded in a DP as a left branch modifier of the noun. On the other hand, Hungarian overt comparative operators have to move to the front, and the solution is that the whole DP that properly contains the degree expression is moved to the left periphery. On the contrary, the DP containing the covert degree expression in English is *in situ*, as can be seen in (50a); accordingly, it is predicted that the operator should not be able to move out of the degree expression and the DP on its own. In fact, this is similar to the fronting of the degree expression from within DPs:

- (51) a. [So talented]<sub>i</sub> Butch is t<sub>i</sub>, that he is my favourite dog.  
 b. \*[So talented]<sub>i</sub> Butch is [a t<sub>i</sub> dog], that he is my favourite dog.

As can be seen, the degree expression should not be able to move, if it is in a DP-internal attributive position.

In fact, there may be two approaches to the movement and deletion of comparative operators and the related degree expressions available. First, it could be purported that movement is obligatory before Spell-Out, and Comparative Deletion deletes the degree expression in the landing site, the degree expression containing the operator, while the lower copy would be

- 
- (i) The room is longer than it is wide.  
 (ii) #Butch is older than Fluffy is hungry.

eliminated because it is the lower copy; this approach can be found in, e.g., Kennedy (2002), Akiyama (2008) and Bácskai-Atkári (2010). The problem with this approach is that it does not account for the problem attested in (50a); that is, it remains agnostic as to how the comparative operator or the degree expression containing it could move out of the DP. Alternatively, I suggest that the comparative operator raises to its designated position at LF in English, which means that there is a parametric difference between English and Hungarian: on the basis of (50b), the comparative operator must always move to specCP in Hungarian. However, this could also be maintained if it is accepted that English comparative operators also move to specCP, but this movement occurs after Spell-Out. I would not like to go into detail concerning this problem, as I just wanted to indicate that examples like (50a) do not necessarily undermine the analysis of comparative operator movement as presented in the preceding sections.<sup>11</sup>

Another issue in connection with comparative operator movement can be seen in the examples below, which also contain subcomparatives:

- (52) a. More men than \_\_\_ women like Wagner.  
 b. Bill knows more musicians than \_\_\_ cooks.  
 (Lechner 1999: 97, exx. 3a-b)

It is generally assumed that *than*-XPs are underlyingly clausal in English and German (Lechner 1999, 2004; contra the direct analysis, see, e.g., Heim 1985); that is, every *than*-XP contains a subordinate clause involving comparative operator movement. However, if one looks at (52), it is not the easiest to see where the comparative subclause is. Still, the Hungarian counterparts of these examples show that these subordinate clauses exist indeed:

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<sup>11</sup> In fact, Corver (1993b) also considers multiple subcomparatives problematic for a movement-based account of comparative operators or for their existence:

- (i) Butch gave more bones to more puppies than Fluffy had given toys to kittens.  
 (ii) Butch made more puppies happier than Fluffy had made kittens sad.

As can be seen, *toys* and *kittens* are associated with comparative operators each in (i), as *kittens* and *sad* are in (ii). On the contrary, the Hungarian counterparts of these examples clearly show that these examples involve a maximum of one comparative operator, since the conjunction *és* (*and*) can appear in them:

- (iii) Fickó több csontot (és) több kutyakölyöknek adott,  
 Butch more bone-ACC and more puppy-DAT gave  
 mint amennyi játékot (és) amennyi kismacskának Pihe adott.  
 than how.many toy-ACC and how.many kitten-DAT Fluffy gave  
 'Butch gave more bones to more puppies than Fluffy had given toys to kittens.'

As can be seen, the coordinating conjunction shows that there is only one comparative operator per clause, since there is IP coordination here with Forward Deletion (cf. Wilder 1997 for further discussion on Forward Deletion):

- (iv) ... mint amennyi játékot ~~Pihe adott~~<sub>FD</sub> és amennyi kismacskának Pihe adott.

- (53) Több férfi szereti Wagnert, mint amennyi nő szereti Wagnert.  
 more man likes Wagner-ACC than OP woman likes Wagner-ACC  
 ‘More men like Wagner than women.’

As can be seen, supposedly Comparative Ellipsis deletes the invisible part of the subclause in the English examples (i.e., *like Wagner*). I leave this question open for future research; I just intended to indicate that these examples are not problematic for the analysis of comparative operator movement.

#### 4.4 Phrasal-clausal asymmetries

To start with, the aim of this subchapter is to provide an adequate explanation of the difference between extraction phenomena in clausal and phrasal comparatives, while supporting the reduced clause analysis of comparative complement clauses.<sup>12</sup> As has been mentioned, comparative constructions can be categorized as clausal (CCs) or phrasal (PCs), depending on the category or size of the complement of *than*, as can be seen below:

- (54) a. John is richer [than [Mary (is) ~~d-richer~~]].                    *clausal comparative*  
 b. John is richer [than [Mary]].    *phrasal comparative*

The dimensional predicate (i.e., the AP *rich* in (54)) undergoes obligatory deletion in the *than*-clause, if it is identical to that of the matrix clause (Bresnan 1973). However, according to the reduced clause analysis, phrasal comparatives can be derived from their clausal counterparts by optionally eliding certain constituents in the structure (Lechner 1999, 2004; Hackl 2000), thus it would only be an illusion that the complement of *than* is a DP.

As a matter of fact, one of the greatest challenges of the reduced clause analysis has been the fact that phrasal comparatives seem to be transparent for extraction, whereas clausal comparatives constitute islands (Hankamer 1973):<sup>13</sup>

- (55) a. \*Who<sub>i</sub> are you richer [than [t<sub>i</sub> is ~~d-richer~~]]?                    *CC-extraction*  
 b. Who<sub>i</sub> are you richer [than [t<sub>i</sub>]]?    *PC-extraction*

<sup>12</sup> This subchapter is based on Kántor (2008b).

<sup>13</sup> Unfortunately this is not the only problem that the reduced clause analysis has to face; for example, it is a puzzle what assigns accusative Case in the following example, if it is accepted that it also contains a clausal comparative complement:

(i) I am taller than **him**.

Although it does not seem to be impossible to come up with an explanation, this problem will be addressed by future research.

According to the direct analysis, as opposed to the reduced clause analysis, it should be maintained that (55b) is given a completely different structure from that of (54a) and the like; nevertheless, this may be regarded as a solution *ad hoc*. Since this distinction was first described (cf. Hankamer 1973), there has been no syntactic analysis that could provide a theoretically elegant explanation thereof.

To start with, the question is how (55b) could be derived from (55a), and if this is possible, why (55b) becomes grammatical, while its pre-deletion version is unacceptable. In this subchapter, I propose that, although the clausal complement of *than* constitutes an island, the violation of such island constraints can be ameliorated by sluicing, hence the deletion of the constituents in the *than*-clause. First, I will analyze the constituents providing the standard value of comparison (i.e., *than*-phrases); second, the distinction between phrasal and clausal versions will be examined; third, the characteristics of sluicing relevant for comparatives are to be reviewed; fourth, I will explain why reduced *than*-clauses can be converted into seemingly phrasal comparatives by sluicing, while retaining their grammatical acceptability.

**4.4.1 *Than* and the *than*-XP cross-linguistically.** The issue of assigning a categorial status to *than* and its counterparts in various languages has been controversial since the early 1970s; for example, *than* has been described as (i) a conjunction, because it tends to coordinate two clauses of very similar features (cf. Smith 1961, Williams 1984), (ii) a preposition, as it seems to be able to subcategorize for a bare DP (cf. Kennedy 1997), (iii) and a complementizer, because it can morphologically merge with another complementizer in the left periphery of a clause (Kenesei 1992b). However, even if *than* is regarded to be a preposition, it can still introduce both phrasal and clausal comparatives, as the following Italian examples show:

- (56) a. Carla è più bella di quanto pensassimo.  
       Carla is more beautiful P<sup>0</sup> what think-1/SG-PAST-SUBJ.  
       ‘Carla is more beautiful than we thought.’  
       b. Carla è più bella di Elisa.  
       Carla is more beautiful P<sup>0</sup> Elisa.  
       ‘Carla is more beautiful than Elisa.’

As can be seen, (56a) is a type of comparative subclauses that was referred to as mixed comparative in Chapter 1. In fact, the problem of phrasal-clausal asymmetry is worth solving even if one considers *than* to be a preposition, which may take a DP or CP complement. That is, the categorial status of *than* does not influence the question why there is a distinction between phrasal and clausal

comparatives with respect to extraction, and I will continue referring to the constituent as *than*-phrase or *than*-XP.

Still, I will adopt Lechner's (1999, 2004) hypothesis treating *than*-XPs uniformly clausal in this research. According to him, all comparative complements are underlyingly clausal (1999: 100), which seems to be valid with respect to English in general. Nevertheless, he remains agnostic as to how to explain the problems posed by extraction out of *than*-XPs (cf. Hankamer 1973), as it seems as though phrasal comparatives lacked comparative operators (see 54b).

As has been argued, comparative operators move to an A'-position in the left periphery of the comparative complement clause, thus blocking movement out of the *than*-XP by occupying the escape hatch thereof. Let us have a look at (41) again, which is repeated below:

- (57) a. \*Butch ate more bones than Fluffy wondered whether to lick.  
 b.  $[_{CP} OP_i [_{IP} Fluffy [_{VP} wondered [_{CP} whether [_{IP} to [_{VP} lick [_{DP} many\ t_i bones]]]]]]]$
- 

As can be seen, the movement of the comparative operator is blocked by another element on its way to the specCP immediately below *than*, thus the derivation crashes. Also, the comparative operator in specCP blocks any further movement out of the *than*-XP, as could be noticed in (42), repeated below:

- (58) a. \*Who<sub>i</sub> are you richer [than [t<sub>i</sub> is ~~d-r~~rich]]?  
 b.  $[_{CP} who_i [_{IP} are\ you\ taller\ [_{than\text{-}XP}\ than\ [_{CP} OP_x [_{IP} t_i\ is\ [_{QP} rich\ t_x]]]]]]]$
- 

Furthermore, similarly to *wh*-operators, relative operators are not able to move across the comparative operator either:

- (59) a. \*You met somebody who/OP<sub>i</sub> you are taller than OP<sub>x</sub> t<sub>i</sub> is t<sub>x</sub>-tall.  
 b. You met somebody who/OP<sub>i</sub> you are taller than OP<sub>x</sub> t<sub>i</sub> is t<sub>x</sub>-tall.

As can be seen, (59) would be grammatical if and only if all the overt constituents following the comparative operator were deleted; if *is* remains overt, the clause becomes ungrammatical. As Hankamer (1973) argues, *than* acts as a complementizer in clausal comparatives, and as a preposition in phrasal comparatives; however, maintaining the phrasal (preposition + bare DP) analysis for a limited number of problematic cases is not economical and is in conflict with

Lechner's (1999, 2004) proposal that comparative complements are underlyingly clausal in English and German.<sup>14</sup>

**4.4.2 Sluicing and islands.** In Ross' terms (1969), sluicing deletes everything that follows a *wh*-operator in the specifier position of a [+wh] CP; see (60) below:

- (60) a. *Someone* phoned today – guess *who* \_\_\_!  
 b. [VP guess [CP who [C ~~phoned today~~]]]

Sluicing can obviate island constraint violations (Ross 1969, Merchant 2001: 163ff.); e.g., Left Branch Condition violations (cf. Corver 1990):

- (61) a. I've just bought an expensive car – guess *how expensive* \_\_\_!  
 b. [CP *how expensive*<sub>i</sub> [IP I [VP ~~bought~~ [DP a [NP t<sub>i</sub> car]]]]]

In other words, the *wh*-constituent *how expensive* is extracted out of a Left Branch Condition island embedded in the subordinate clause, and it moves out of the DP, although it is base-generated as an adjunct of the noun; therefore, without sluicing (61a) would be ungrammatical.

Moreover, sluicing can ameliorate the problem posed by the appearance of multiple *wh*-operators in the same left periphery, as is exemplified below:

- (62) Everybody<sub>i</sub> said he<sub>i</sub>'d bring something different to the potluck, but I can't remember who<sub>1</sub> what<sub>2</sub> <t<sub>1</sub> said he<sub>1</sub>'d bring t<sub>2</sub> to the potluck>.  
 (Merchant 2006, ex. 55)

As can be noticed, two *wh*-operators are the remnants of sluicing, both moving into the left periphery of one subordinate clause, and this operator clash seems to be obviated by sluicing. Nevertheless, there is a restriction on multiple sluicing, inasmuch as only clausemate *wh*-operators can be fronted in this case (cf. Takahashi 1994, Nishgauchi 1998, Merchant 2001: 113), as can be seen below:

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<sup>14</sup> Another problematic set of examples is that of reflexives in the *than*-XP:

- (i) No man<sub>i</sub> is heavier than himself<sub>i</sub>.  
 (ii) \*No man<sub>i</sub> is heavier than himself<sub>i</sub> is.  
 (iii) No man<sub>i</sub> is heavier than he<sub>i</sub> (himself) (actually) is (himself).

If the reflexive is bound by the subject of the main clause, the *than*-XP or the complement of *than* cannot be a clause, because then it would constitute a minimal governing category, violating Principle A (cf. Hankamer 1973, Chomsky 1981). However, as (iii) shows, the same syntactic slot can be filled by a pronoun without the violation of Principle B. (ii) is ungrammatical, because English reflexives are inherently marked as accusative, and there is a clash between the accusative case of *himself* and the nominative case of the finite inflection. In fact, Principle A may not be violated in (iii), because *himself* can be an emphatic reflexive.

- (63) \*Everybody said Lucy'd bring something different to the potluck, but I can't remember who<sub>1</sub> what<sub>2</sub> <t<sub>1</sub> said Lucy'd bring t<sub>2</sub> to the potluck>.  
(Merchant 2006, ex. 53)

However, this might resemble certain principles of economy; for example, Attract (cf. Chomsky 1995) motivates the movement of the closest possible element. As far as (62) and (63) are concerned, it seems there is an economic difference between the movement of multiple operators from within the same clause and that from within a subordinate specCP.

**4.4.3 Extraction out of the *than*-XP.** I suggest we turn to (55a) and (58) again, which are conveniently repeated below:

- (64) a. \*Who<sub>i</sub> are you richer [than [t<sub>i</sub> is ~~d-richer~~]]?  
b. [CP who<sub>i</sub> [IP are you richer [*than*-XP than [CP OP<sub>x</sub> [IP t<sub>i</sub> is [QP t<sub>x</sub>-rich]]]]]]

It seems as though the problem with this example is that the comparative operator in specCP constitutes an island, thus blocking the movement of the *wh*-operator out of the *than*-XP. In the light of Chomsky (2005), the *wh*-operator must move into an escape hatch (specCP) in the subordinate CP, which is a phase-level constituent, otherwise it would not be available for further syntactic operations in the forthcoming cycles. This results in an operator clash in (64): both the trace of the *wh*-operator *who* and the comparative operator are in the left periphery. On the contrary, it has been mentioned that sluicing can circumvent such an island constraint violation (see 62).

First of all, it should be investigated if the *than*-XP in which the *wh*-operators under scrutiny are supposed to be base-generated can naturally take a CP complement in these cases. In other words, it would be important to see that *wh*-operators are base-generated and move out of clausal *than*-XPs, not phrasal ones. This can be seen below:

- (65) a. You are taller than who?  
b. Többet kereset, mint amennyit kicsoda? (*Hungarian*)  
more-ACC you.earn than REL-how.much-ACC who  
'You earn more than who?'

If (65a) is taken as an echo question, it can be noticed that *who* appears inside the *than*-XP, in its base position basically, and it receives a rising intonation,

similarly to other echo questions (cf. Parker and Pickeral 1985).<sup>15</sup> Interestingly, Hungarian can have the comparative operator overtly under such circumstances, which suggests that even (65) is clausal in nature. Let us move on to the next example:

- (66) a. Speaker A: The desk is longer than the rug is wide.  
 b. Speaker B: The desk is longer than what is wide?<sup>16</sup>

(66b) shows that the *wh*-operator later to be moved out of the *than*-XP can be base-generated therein; in other words, it is not true that a phrasal *than*-XP is needed to be maintained in case a *wh*-operator is placed in it. Furthermore, as the following Hungarian examples show, the comparative operator can also be overt here:

- (67) a. Az asztal hosszabb, mint amennyire a szőnyeg széles.  
 the table longer than how-much the rug wide  
 ‘The table is longer than the rug is wide.’  
 b. Az asztal hosszabb, mint amennyire mi széles?  
 the table longer than how-much what wide  
 ‘The table is longer than what is wide?’

Finally, the following example question is parallel to (58), the only difference being that the *wh*-operator does not move out of the *than*-XP:

- (68) a. Speaker A: Mary is nicer than Susan is.  
 b. Speaker B: Mary is nicer than who is?

It can be noticed here that prior to the movement of the *wh*-expression, certainly there is no operator clash in specCP.

The question is how to account for the derivation of (64). It has been shown that the *than*-XP, in which the *wh*-operator is base-generated, is not necessarily phrasal, and the construction converges until the *wh*-expression and the comparative operator clash in specCP. However, it is also known that sluicing can void *wh*-island effects, inasmuch as two clausemate operators can also be remnants of sluicing in the same left periphery (see (62) and (63)). Assuming that the *wh*-expression is placed in the CP complement of *than*, it is evident that, in order to move into the next phase, it needs to move to the escape

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<sup>15</sup> According to one of my native informants, a falling intonation is also possible on the *wh*-expression; e.g., a self-important TV presenter might ask questions in that way when he considers himself too good for the interviewees (compare ...*and you are who?*).

<sup>16</sup> Some of my native informants reported to me that (66b) was grammatical but stilted.

hatch (specCP), which is also targeted by the comparative operator. If both operators move to the same specCP (as described by, for example, Rudin 1985, Richards 2001), the same phenomenon can be seen as in (62); that is, sluicing obviates the island violation, and multiple *wh*-fronting occurs:

- (69) [CP who<sub>i</sub> [IP are you taller [*than*-XP than [CP t<sub>i</sub> OP<sub>x</sub> [IP t<sub>i</sub> is [QP t<sub>x</sub> tall]]]]]]
- 

It has been mentioned that there is a constraint requiring multiple operators in one position to be clausemate; this is satisfied in (69). Also, (69) shows that sluicing deletes practically the whole clause in the *than*-XP, only the constituent in specCP could survive, and the construction becomes seemingly phrasal, inasmuch as only one phrase can follow *than*. In other words, the *than*-XP in (55b) being phrasal is only illusory.

However, it is interesting that while sluicing elides the constituents following the specCP below *than*, which also hosts multiple operators, *who* moves on to the topmost specCP in the left periphery of the main clause. Still, once multiple operators have been hosted by an A'-position, it is not uncommon to have one of them move on:

- (70) Which of the new books<sub>i</sub> did you wonder [when<sub>j</sub> to buy t<sub>i</sub> t<sub>j</sub>]?

Referential direct object *wh*-expressions can be extracted out of infinitival or subjunctive indirect embedded questions (see (70) above), even if the specCP of the subordinate clause is occupied (cf. Chomsky 1986b, Cinque 1990, Ishii 2002). In the light of Chomsky (2005), the only possible way for *which of the new books* to move out of the subordinate clause is via the specCP thereof, which is occupied by *when* at the same time. That is, once a specCP is filled by multiple operators, it seems as though one of them may move further on.

Another interesting aspect of the analysis outlined in (69) is that although there is clearly an island violation undone by sluicing, this is not in line with Merchant (2001: 159ff.), who proposes that some islands can be considered PF-phenomena (e.g., left branches, COMP-trace phenomena, coordinate structures), hence they can be repaired by PF operations, such as sluicing, while extraction out of propositional islands (e.g., relative clauses and adjuncts) is only illusory. For example, a relative island violation that seems to be obviated by sluicing can have a 'short source' as well:

- (71) a. They hired someone who speaks a Balkan language, but I don't remember [CP which (Balkan language) \_\_\_\_].

- b. \*..., but I don't remember [<sub>CP</sub> which (Balkan language)<sub>i</sub> they hired someone [<sub>CP</sub> who speaks *t<sub>i</sub>*]].
- c. ..., but I don't remember [<sub>CP</sub> which (Balkan language) she speaks *t<sub>i</sub>*].

The sluice *which (Balkan language)* can be seen in (71a); (71b) shows the possible relative clause island violation, while (71c) presents an alternative proposal, in which the sluiced structure may be assigned a 'short source' (cf. Merchant 2001: 209ff.). However, as Lasnik (2001) as well as Fox and Lasnik (2003) argue, there is no convincing evidence supporting Merchant's (2001) proposal of distinguishing PF-islands and propositional ones, as not all sluices are compatible with a 'short source' analysis, as can be seen below:

- (72) a. Every linguist<sub>i</sub> met a philosopher who criticized some of his<sub>i</sub> work, but I'm not sure [<sub>CP</sub> how much of **his<sub>i</sub>** work ~~{every linguist<sub>i</sub> met a philosopher [<sub>CP</sub> who criticized *t<sub>i</sub>*]}~~].
- b. #Every linguist<sub>i</sub> met a philosopher who criticized some of his<sub>i</sub> work, but I'm not sure [<sub>CP</sub> how much of **his<sub>i</sub>** work ~~{the philosopher criticized *t<sub>i</sub>*}~~].

That is, had a truncated cleft been elided (see 72b) instead of that in (72a), the pronoun *his* (in bold face) would fail to be reconstructed in order to be bound (i.e., c-commanded) by *every linguist* (Lasnik 2001; see also Szczegielniak 2005). Therefore, it seems as though relative island violations can indeed be undone by sluicing. The reason why the argumentation in connection with (71) and (72) has been summarized is that Hungarian *than*-XPs pose a similar problem.

To start with, it must be noted here that *wh*-expressions are inherently focus-marked in Hungarian, thus they have to move to a designated focus position in the clause, which can be found on the top of the predicate (cf. É. Kiss 2002):

- (73) a. Péter azt kérdezte, hogy kinek van több pontja.  
Peter that-ACC asked that who-DAT is more point-POSS  
'Peter asked who had more points.'
- b. [<sub>CP</sub> hogy [<sub>FocP</sub> kinek<sub>k</sub> [<sub>Foc'</sub> van<sub>v</sub> [<sub>VP</sub> *t<sub>v</sub>* *t<sub>k</sub>* több pontja]]]]
- c. Valakinek több pontja van.  
someone-DAT more point-POSS is  
Péter azt kérdezte, hogy kinek \_\_\_\_.  
Peter that-ACC asked that who-DAT  
'Someone has more points. Peter asked who.'

Hungarian expresses predicative possession (i.e., the equivalent of possessive *have* in English) by using the copula *be* with two arguments: the possession

supplied with possessive suffixes, and the possessor in dative case, similarly to the *dativus possessivus* construction in Latin. (73b) shows that the focus-marked *wh*-expression moves to the specifier of the Focus Phrase (FocP), which is accompanied by the obligatory head movement of the verb from within the VP to the Foc head (cf. É. Kiss 2002). The focus position is relevant here because of the *Wh*/Sluicing Correlation:

(74) *Wh/Sluicing Correlation*

The syntactic features that the [E]-feature<sup>17</sup> has to check in a certain language are identical to the strong features a *wh*-phrase has to check in a regular constituent question.

(Craenenbroeck and Lipták 2006: 257)

In other words, it is not necessarily specCP where sluices can be found, as it depends on the particular language where it moves *wh*-constituents (see also Hoyt and Teodorescu 2004 for Romanian). As already mentioned, in Hungarian *wh*-elements typically move to the specifier of the Focus Phrase above vP, functioning as grammatically correct sluices. That is the reason why sluices can be preceded by the complementizer of the clause they are in (see 73c).

Turning now to *than*-XPs, the example below presents an interesting puzzle:

- (75) Tudom, hogy Péternek TÖBB PONTJA van mint valaki másnak,  
 know-1/SG that Peter-DAT more point-POSS is than someone else-DAT  
 de nem tudom, hogy KINEK \_\_\_\_ .  
 but not know-1/SG that who-DAT  
 ‘I know Peter has more points than somebody else, but I don’t know who.’

The constituents *több pontja* and *kinek* get main stress respectively, which indicates that they are both in focus positions (cf. É. Kiss 2002). *Kinek* precedes the constituent deleted by sluicing; however, it is not obvious what the elided sequence looked like prior to deletion.

First, one may wonder if a ‘short source’ analysis is available:

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<sup>17</sup> [E] is the feature that triggers the deletion of elements in sluicing (Merchant 2001:55-61)

- (76) Tudom, hogy Péternek TÖBB PONTJA van mint valaki másnak,  
 know-1/SGthat Peter-DAT more point-POSS is than someoneelse-DAT  
 de nem tudom, hogy KI / \*KINEK az.  
 but not know-1/SGthat who who-DAT that  
 ‘I know Peter has more points than somebody else, but I don’t know who  
 that is.’

(76) shows that a ‘short source’ is impossible here due to case assignment problems: the *wh*-expression as the logical subject of the subordinate clause is supposed to be assigned nominative case, not dative.

Second, it may also be interesting to examine whether, following Chung, Ladusaw and McCloskey (1995), the elided sequence is base-generated empty, and its meaning is recovered at LF via LF-copying. However, this is not possible either, as can be seen below:

- (77) #Tudom, hogy Péternek TÖBB PONTJA van mint valaki másnak,  
 know-1/SGthat Peter-DAT more point-POSS is than someoneelse-DAT  
 de nem tudom, hogy KINEK van több pontja, mint Péternek.  
 but not know-1/SGthat who-DAT is more point-POSS than Peter-DAT  
 ‘I know Peter has more points than somebody else, but I don’t know who  
 has more points than Peter.’

Although sluicing does not require strict syntactic parallelism (cf. Fox and Lasnik 2003), there must be semantic parallelism between the antecedent clause and the one elided by sluicing (cf. Merchant 2001). The problem with (77) is that it is semantically incongruent with (75); although it is grammatical and does not involve an island violation, it does not have a salient antecedent in the discourse, and that is why it is an invalid solution. For the construction to have the same meaning as that of (75), the AP in the deleted *than*-XP should be *kevesebb* (*fewer*), not *több* (*more*). However, LF-copying is able to copy constituents, not profoundly change them. In fact, changing the polarity of the predicative AP<sup>18</sup> to the opposite of that in the antecedent clause results in an evidently profound difference.

In order to see how sluicing can obviate island constraint violations in *than*-XPs, let us have a look at the following example:

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<sup>18</sup> Polarity means that although gradable adjectives can be placed on dimensional scales, they are often presented as antonymous pairs (e.g., *beautiful/ugly*, *broad/narrow*); positive and negative adjectives with the same dimensional parameter (e.g., *beauty*, *width* etc.) can be placed on different poles of the same scale. For further discussion, consult Seuren (1978), Bierwisch (1989) and Klein (1996).

- (78) \*Tudom, hogy Péternek TÖBB PONTJA van mint valaki másnak,  
 know-1/SGthat Peter-DAT more point-POSS is than someone else-DAT  
 de nem tudom, hogy<sub>[FocP KINEK]</sub> van Péternek több pontja  
 but not know-1/SGthat who-DAT is Peter-DAT more point-POSS  
 [<sub>than-XP</sub> mint [<sub>CP</sub> *ti* (amennyi)<sub>x</sub>] [<sub>FocP</sub> *ti* van<sub>v</sub>] [<sub>VP</sub> *t<sub>v</sub>* *t<sub>i</sub>* *t<sub>x</sub>*]  
 than how-many is  
 ‘I know Peter has more points than somebody else, but I don’t know who.’  
 (*intended meaning*)

The clause is evidently ungrammatical because, during the derivation of the *than-XP*, two operators occupy the same specCP, and one of them, the *wh*-operator *kinek* moves from there to the specifier of the Focus Phrase in a higher clause. As CP is a phase-level category, the movement of this operator must be via the problematic specCP. The problem is that sluicing is not applied in (78). One may wonder why it is not satisfactory if sluicing elides only the sequence following the specCP hosting the optionally overt comparative operator *amennyi* and the trace of *kinek*, similarly to the case of English multiple sluicing (see 62). However, as already mentioned, in line with the *Wh*/Sluicing Correlation, Hungarian sluices tend to be positioned in specFocP, and not in specCP. Therefore, sluicing must delete the sequence following specFocP, hence providing the construction seen in (75).

Nevertheless, if the *wh*-operator remains inside the *than-XP*, the deletion of most of the elements is unexplained, and the construction is severely ungrammatical with or without deletion. This is so, as the matrix verb *tudom* (*know*) selects an embedded interrogative clause; however, if the *wh*-operator is base-generated inside the *than-XP* and does not move into this interrogative clause, the [+wh] feature in the embedded interrogative clause remains unchecked:

- (79) \*Tudom, hogy Péternek TÖBB PONTJA van mint valaki másnak,  
 know-1/SGthat Peter-DAT more point-POSS is than someone else-DAT  
 de nem tudom, hogy Péternek több pontja van, mint KINEK.  
 but not know-1/SGthat Peter-DAT more point-POSS is than who-DAT  
 ‘I know Peter has more points than someone else, but I don’t know Peter  
 has more points than who.’

In sum, it can be declared that sluicing obviates island constraint violations in clausal *than-XPs*, even if those are propositional islands. In other words, the difference between phrasal and clausal *than-XPs* with respect to the possibility of extracting operators out of them is not due to fundamental syntactic differences. From the perspective of extraction phenomena, the existence of phrasal *than-XPs* is only illusory, because if *than* takes a clausal complement,

and then sluicing deletes everything in it with the exception of the phrase in specCP, the construction might indeed seem to be phrasal superficially. As has been argued, it is a must that sluicing be applied when an operator is extracted out of clausal *than*-XPs, because there would be an operator clash in the specCP immediately below *than*, as both the comparative operator and the *wh*-expression wanting to move out of the *than*-XP target this position: the former does so, because it is a (relative) operator, while the latter does so, because this position is the escape hatch of the clause.

## 4.5 Approaching elliptical comparatives in Hungarian

As has been mentioned, Hungarian comparative complement clauses introduced by *mint* (*than*) never involve obligatory deletion: everything can remain overt, even the comparative operator. In this section, I am going to provide an insight into what happens in Hungarian elliptical comparatives, when there is optional deletion. As will be argued, there are structural restrictions regarding the behaviour of the constituents of the *mint*-clause. The analysis put forward here supports the subordination approach to *than*-XPs; that is why I will first briefly review and refute some of the reasons why it is sometimes assumed that *than*-comparatives involve coordination. Second, it will be investigated how clause-internal constituents behave in *mint*-CPs in Hungarian, and what kind of deletion phenomena can be operative in Hungarian comparative complement clauses. Finally, I will discuss a peculiar phenomenon called Comparative Verb Gapping, which seemingly renders the finite verb to be obligatorily deleted under certain circumstances, which would contradict the general assumption that deletion in *mint*-CPs is optional.

**4.5.1 Elliptical versus non-elliptical *mint*-CPs.** To start with, Bácskai-Atkári (2009) provides a number of arguments against a coordination analysis of comparatives in general. I will concentrate only on the examples that seem to provide blatant evidence that there is coordination involved. Certainly, I am going to evaluate them from the perspective of Hungarian elliptical comparatives.

I suggest taking the clauses listed in Chapter 1 example (27) into consideration again. Here I will conveniently repeat and discuss them one by one:

(80) Butch licked more bones than Fluffy \_\_\_ toys.

As can be seen, it seems as though Gapping occurred in (80), which is typical of coordinated conjuncts: the verb *licked* is deleted in the *than*-XP. One can easily detect Gapping and make sure that it is not VP-ellipsis by looking at the example

and notice that the gap is followed by the internal argument (or object) of the verb.

On the other hand, Hungarian *mint*-CPs display a peculiar behaviour in similar examples. First, it is known that the comparatives inherently encode contrast: there exists an obvious contrast between the individual/entity that the reference value is associated with and the one that the standard value is associated with. This is manifested in, e.g., how Larson (1988b) formally approaches comparatives:

- (81) a. Max is taller than Felix is.  
 b.  $\exists d[-(d(\text{tall}(\text{felix}))) \ \& \ (d(\text{tall}(\text{max})))]$   
 (on the basis of Larson 1988b, quoted by White 1998, ex. 15)

This contrast can be noticed in Hungarian comparative subclauses as well. If there is only one element in the *mint*-CP that is contrasted with its main clause counterpart, that element must move to specFocP, which is the position of contrastively focussed constituents (indicated by SMALL CAPITALS below):

- (82) a. Aztán megpillantottam egy sokkal nagyobb macskát,  
 then VM.noticed-1<sup>ST</sup>/SG a much-INS bigger cat-ACC  
 mint amilyen nagy macskát PÉTER pillantott meg ma.  
 than OP big cat-ACC Peter noticed VM today  
 ‘Then I noticed a much bigger cat than Peter did today.’  
 b. <sup>?/??</sup>mint amilyen nagy macskát Péter ma megpillantott.  
 c. <sup>?/??</sup>mint amilyen nagy macskát Péter megpillantott ma.  
 d. <sup>?/??</sup>mint amilyen nagy macskát megpillantott ma Péter.

As can be seen, (82a) contains a non-elliptical comparative subclause; the contrasted constituent is the subject (*Péter*), which must immediately precede the verb, it must bear main stress, and it must be followed by a non-neutral verb-verb modifier order (see 82b-d). These characteristics are all diagnostics of focussing in Hungarian (cf. É. Kiss 2002: 77ff.).<sup>19</sup> In any way, focus seems to be a

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<sup>19</sup> It can be remarked that focussing may not always be obligatory in comparative constructions:

- (i) Péter több almát elfogyaszt, mint Mari.  
 Peter more apple-ACC VM.consumes than Mary  
 ‘Peter eats more apples than Mary.’

However, if there is no deletion in the subordinate clause, for an overwhelming majority of my native informants (8 out of 11) the example is degraded, if there is a neutral verb modifier-verb order in the *mint*-clause:

- (ii) Péter több almát elfogyaszt, mint amennyit Mari fogyaszt el.  
 Peter more apple-ACC VM.consumes than OP-ACC Mary consumes VM  
 ‘Peter eats more apples than Mary.’

reliable signpost or indicator of where the verb is in comparative subclauses, as the focussed constituent and the verb must be adjacent in Hungarian (see, e.g., Vogel and Kenesei 1987 and Kenesei 1994: 330, who argue that this is so for phonological reasons).

However, how is this connected to Gapping? First, let's see what happens to verb modifiers, if the verb is deleted. In fact, verb modifiers are either in specPredP (see 9), or – following É. Kiss (2002: 80), they are base-generated as VP-internal AdvPs. The latter view is supported by the fact that verb modifiers can be further away from the verb in non-neutral clauses:

- (83) Nem mentem ma el a kirándulásra.  
 not I.went today VM the excursion-SUBL  
 'I didn't go to the excursion yesterday.'

Regardless of which approach is chosen, it is clear that the verb modifier is in a different structural position from that of the verb. However, if the verb in a clause containing focus is gapped, the verb modifier must always be deleted along with the verb:

- (84) PÉTERT hívtam ma fel, aztán JÁNOST \_\_\_\_ (\*fel).  
 Peter-ACC I.called today VM then John-ACC VM  
 'I called Peter today, then I called John.'

However, assuming that the verb modifier remains in its VP-internal position in non-neutral clauses, its deletion in (84) suggests that not only the verb (as a terminal node) is deleted here, but also the whole VP along with it.

In sum, Gapping that deletes the verb only is simply not attested in Hungarian clauses containing a focussed constituent, as it is only illusory that the gap of the verb is between two overt constituents.<sup>20</sup> As has been mentioned,

- 
- (iii) ??Péter több almát elfogyaszt, mint amennyit Mari elfogyaszt.  
 Peter more apple-ACC VM.consumes than OP-ACC Mary VM.consumes  
 'Peter eats more apples than Mary.'  
 Moreover, if there are more contrasted constituents, one of them must be focussed, while the other(s) may surface either in a pre-focus position or postverbally:
- (iv) Fickó tegnap a szobában nagyobb csontot nyalt meg,  
 Butchyesterday the room-INE bigger bone-ACC licked VM  
 mint amilyen nagy csontot A KONYHÁBAN nyalt meg 'ma.  
 than OP big bone-ACC the kitchen-INE licked VM today  
 'Butch licked a bigger bone in the room yesterday than in the kitchen today.'
- (v) ... mint amilyen nagy csontot ma A KONYHÁBAN nyalt meg.  
 (vi) ... mint amilyen nagy csontot MA nyalt meg a konyhában.  
 (vii) ... mint amilyen nagy csontot a konyhában MA nyalt meg.

<sup>20</sup> In fact, this contradicts Bánréti's (1992: 744ff.) findings, who claims that a Hungarian verb can be elided in a position that is followed by one of its arguments:

comparative complement clauses in Hungarian always involve focussing; moreover, they behave similarly to the one in (84):

- (85) a. Fickó gyorsabb macskát kergetett meg tegnap,  
 Butch faster cat-ACC chased VM yesterday  
 mint amilyen gyorsmacskát PIHE kergetett ma meg.  
 than OP fast cat-ACC Fluffy chased today VM  
 ‘Butch chased a faster cat yesterday than Fluffy today.’  
 b. ... mint PIHE \_\_\_ (\*ma) (\*meg).

As can be seen, *ma* and *meg* can indeed surface postverbally in (85a). On the other hand, in elliptical comparatives, they are obligatorily deleted along with the verb (see 85b), which suggests that the deletion involved is not simply Gapping. On the other hand, one may wonder if the deletion mechanism is VP-ellipsis. If this were the case, the habitual auxiliary *szokott* would be able to be manifested overtly, followed by the gap of the deleted VP; however, we find that generally this is not the case:

- (86) a. Fickó gyorsabban szokott úszni, mint Pihe (\*szokott).  
 Butch faster HAB swim-INF than Fluffy HAB  
 b. Fickó gyorsabban szokott úszni,  
 Butch faster HAB swim-INF  
 mint amilyen gyorsan Pihe szokott.  
 than OP fast Fluffy HAB  
 ‘Butch usually swims faster than Fluffy.’

As can be seen, the habitual auxiliary cannot emerge in the comparative complement clause, except when the constituent containing the comparative operator is also overt (Kántor and Bácskai-Atkári 2010; I will return to this

- 
- (i) Mari otthon írta meg a regényét,  
 Mary home wrote VM the novel-POSS-SG/3-ACC  
 Péter pedig a nyaralójában \_\_\_ a novelláját.  
 Peter while the cottage-POSS-SG/3-INE the short.story-POSS-SG/3-ACC  
 ‘Mary wrote her novel at home, while Peter wrote his short story in his cottage.’  
 (Bánréti 1992, ex. 50a, 52a)

Bánréti (*ibid.*) claims that each conjunct contains two foci: a preverbal one (focus) and a postverbal one (*tükörfókusz*, mirror focus). However, I tested these examples on eleven of native speakers, and seven reported that the constituents supposedly following the gap of the verb – i.e., *a novelláját* – must bear the most prominent stress in the clause. Furthermore, the best results were those that involved contrastive topic intonation on *Péter*. On the contrary, if *a novelláját* is not the most prominently stressed constituent, the example is not that acceptable. This suggests that it is *a novelláját* that is focussed, and *a nyaralójában* is in a topic position; this also implicates that the gap of the verb in (i) should not precede but follow *a novelláját*.

phenomenon in section 4.5.3). However, even if there is VP-ellipsis attested in comparative subclauses, it is known that this kind of deletion can also occur in subordinate clauses (cf., e.g., Huang 2000: 132; Hardt and Rambow 2001). For example, Bácskai-Atkári (2009:37ff.) argues that the elided VP is generated within a subordinate clause, not a coordinated conjunct:

- (87) She thought that he would go abroad [PP before being asked to ~~go abroad~~].  
(Bácskai-Atkári 2009, ex. 44)

As can be seen, the VP *go abroad* is generated within a PP-adjunct, which is indicative of subordination. Furthermore, Szczegelnik (2004) proves that VP-ellipsis is responsible for the deletion inside relative clauses in Polish:

- (88) Ja odwiedziłem każde miastoco ty \_\_\_\_\_. (Polish)  
I visited every city that you  
'I visited every city that you did'  
(Szczegelnik 2004, ex. 141a)

In sum, VP-ellipsis does not implicate that Hungarian comparatives involve coordination.

Moving on, let's have a look at the following example:

- (89) Butch wanted to try to begin to lick more bones than Fluffy  
(\*wanted/\*wanted to try) \_\_\_ toys.

As was mentioned in Chapter 1, Gapping is known to delete a verb only if the other verbs to its left in the same clause are also deleted (cf. Corver 2005, Ross 1970). However, as has just been discussed, there is no Gapping in Hungarian comparatives, which suggests that the Hungarian equivalent of (89) should indeed be grammatical; in fact, this is exactly what we can find below:

- (90) Fickó nagyobb labdát akart megpróbálni elkezdni gurítani,  
Butch bigger ball-ACCwanter try-INF start-INF roll-INF  
mint amilyen nagy labdát PIHE (akart / akart megpróbálni).  
than OP big ball-ACCFluffy wanted wanted try-INF  
'Butch wanted to try to start to roll a bigger ball than Fluffy.'

As can be seen, Hungarian comparatives are exempt from this requirement. Let us move on to the next example:

- (91) \*Butch killed more ants than \_\_\_ cats killed mice.

This example shows that deletion in subcomparatives requires a syntactic parallelism between the main clause and the *than*-clause; i.e., the compared constituents must be in parallel positions. However, if Hungarian *mint*-CPs are not coordinated with the matrix clause, this requirement should not hold. In fact, this is exactly what we can find below:

- (92) Fickó TÖBB CSIGÁT evett meg,  
 Butch more snail-ACC ate VM  
 mint amennyi vízirózsa a tóban tegnap elhervadt.  
 than OP water.lilythe lake-INE yesterday wilted  
 ‘The number of snails that Butch ate exceeds the number of water lilies  
 that wilted in the lake yesterday.’

As can be seen, *több csigát* (*more snails*) is focussed in the matrix clause, whereas its subordinate counterpart containing the comparative operator (*amennyi vízirózsa*) is in the specifier position of the lower CP, as has been argued in the present chapter. That is, there is no syntactic parallelism between the compared constituents.

Moving on, let us have a look at the following example:

- (93) More dogs liked \_\_\_\_, than cats hated [the women who owned Butch].

Corver (2005) argues that examples like (93) involve Right Node Raising, which is typical of coordination, similarly to the one below:

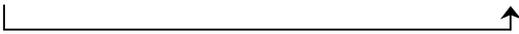
- (94) Dogs liked \_\_\_\_, but cats hated [the women who owned Butch].

However, it is fairly conspicuous that the shorter the bracketed constituent is, the less acceptable the example in (93) gets, unlike its true coordination counterpart in (94):

- (95) a. ??More dogs liked \_\_\_\_, than cats hated [this women].  
 b. ??\*More dogs liked \_\_\_\_, than cats hated her.  
 c. Dogs liked \_\_\_\_, but cats hated [this women].  
 d. Dogs liked \_\_\_\_, but cats hated her.

As Right Node Raising is not sensitive to the size of the DP, there must be some other property that is responsible for (95a-b). I suppose that the reason for this is that the bracketed constituent in (93) does not belong to the *than*-clause, but is shifted to the right via heavy DP-shift, and it is the internal argument of the

matrix predicate, while its counterpart in the subordinate clause has been eliminated by Comparative Ellipsis (CE):

- (96) More dogs liked  $t_i$ , than cats hated \_\_\_<sub>CE</sub> [the women who owned Butch]<sub>i</sub>.  


As heavy DP-shift is indeed sensitive to the size of the moved DP, this may explain the difference between (95a-b) and (95c-d).

Finally, let us have a look at the following construction:

- (97) Which man do more dogs like \_\_\_ than cats hate \_\_\_?

There is a problem with the assumption that (97) contains an Across-the-Board operation, if it is accepted that *than*-XPs containing an overt verb are islands, as was discussed in the previous subchapter. Furthermore, Across-the-Board movement is only illusory in the Hungarian equivalent of (97):

- (98) Melyik férfit szereti több kutya, mint amennyi macska utálja őt?  
 which man-ACC loves more dog than OP cat hates him  
 ‘Which man do more dogs like than cats hate?’

As can be seen, a pronoun coreferent with the *wh*-expression can surface in the second clause. In fact, the following set of examples can highlight this phenomenon, as they point out a difference between subordination and coordination:

- (99) Egy kollégát<sub>i</sub> Mari gyakrabban szidott  $t_i$ ,  
 a colleague-ACC Mary more.often scolded  
 a. mint (amilyen gyakran) dicsért  $pg_i$ .  
 than OP often praised  
 b. mint (amilyen gyakran) dicsérte  $pro$ .  
 than OP often praised-OBJ

‘Mary scolded a colleague more often than she praised him/her.’

As is known, the lack of objective agreement on the verb in Hungarian can be indicative of the presence of a parasitic gap in Hungarian (see É. Kiss 1985-86, 2001, 2002: 260ff. for further discussion), while definite *pro* is paired with a verb with objective agreement. The parasitic gap here is licensed by topicalization of

*egy kollégát* (a colleague) in the matrix clause, since topicalization can also license a parasitic gap in Hungarian (*ibid.*). On the other hand, (99b) cannot be analyzed as coordination involving Across-the-Board movement, since it clearly needs to contain a definite pronoun, otherwise there would not be objective agreement marking on the verb. That is, *egy kollégát* cannot be extracted from both predicates, since it is indefinite, which rules out the possibility of Across-the-Board movement.

In sum, it can be concluded that Hungarian clausal comparatives do not seem to involve coordination. Before closing this section, let us see what kind of deletion mechanism may be operative in these constructions. Recall that it was argued in section 4.4 that Hungarian comparative complement clauses can indeed involve sluicing (see (75) and the discussion following it). In fact, this does not contradict the fact that *mint*-CPs are subordinate to the matrix degree expression, since sluicing can occur in relative clauses (cf. Craenenbroeck and Lipták 2006), which are clearly not coordinated with the matrix clause:

- (100) a. A: Kit hívtál meg?  
           who-ACC invited-2SG VM  
           ‘Who did you invite?’  
       B: AZT, akit BÉLA [e].  
           that-ACC REL-who-ACC Béla  
           ‘The one who Béla did.’  
       (Craenenbroeck and Lipták 2006, ex. 9)

- b. Marival AKKOR szeretnék találkozni, amikor PÉTER [e].  
    Mary-INS then I.want meet-INF when Peter  
    ‘I want to meet Mary when Peter wants to meet her.’

As can be seen, on the basis of the *Wh*/Sluicing Correlation (see 74), the sequence following the focussed constituent is deleted in (100).

**4.5.2 Comparative Verb Gapping.**<sup>21</sup> In this section, I will present and try to explain a phenomenon that has not yet been discussed in the literature.

To start with, Comparative Verb Gapping could be described as follows: the verb in the comparative complement clause must be deleted, if the comparative operator is deleted. This is exemplified by the following Bulgarian examples as well:

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<sup>21</sup> Section 4.5.2 is based on Kántor and Bácskai-Atkári (2010).

(101) *Predicative comparatives*

- a. Мери по-висока беше от **колкото висок** Питър **беше**.  
 Mary taller was than **x-much tall** Peter **was**
- b. \*Мери по-висока беше от Питър **беше**.  
 Mary taller was than Peter **was**  
 ‘Mary was taller than Peter was.’
- c. Мери по-висока беше от Питър.  
 Mary taller was than Peter  
 ‘Mary was taller than Peter.’

(102) *Attributive comparatives*

- a. Жужа по-голяма котка видя,  
 Susan bigger cat saw  
 от **колкото** голяма котка Питър **къпеше**.  
 than **x-much** big cat Peter **bathed**
- b. \*Жужа по-голяма котка видя, от Питър **къпеше**.  
 Susan bigger cat saw than Peter **bathed**  
 ‘Susan saw a bigger cat than Peter bathed.’
- c. Жужа по-голяма котка видя, от Питър.  
 Susan bigger cat saw than Peter  
 ‘Susan saw a bigger cat than Peter.’

As can be seen, when the comparative operator is overt, the verb can also be overt; however, if the comparative operator is elided, so is the verb. In fact, the same phenomenon can be noticed in Hungarian as well:

(103) *Predicative comparatives*

- a. Péter sokkal kövérebb volt, mint amilyen kövér Jancsi volt.  
 Péter much fatter was than OP fat Johnny was  
 ‘Peter was much fatter than Johnny was.’
- b. \*Péter sokkal kövérebb volt, mint Jancsi volt.
- c. Péter sokkal kövérebb volt, mint Jancsi.  
 Peter much fatter was than Johnny  
 ‘Johnny was much fatter than Johnny.’

(104) *Attributive comparatives*

- a. Péter sokkal gyorsabb autót vett,  
 Peter much faster car-ACC bought  
 mint amilyen gyors autót Jancsi vett.  
 than OP fast car-ACC Johnny bought  
 ‘Peter bought a much faster car, than Johnny.’
- b. \*Péter sokkal gyorsabb autót vett, mint Jancsi vett.



As can be seen, *punch* entails *hurt*, thus the  $\exists$ -F-closure of *Carl hurt Fred* is naturally entailed by *John punched Bill*. That is, further restrictions are necessary to semantically determine whether an element counts as GIVEN or NEW. In fact, this restriction can be found in Merchant's (2001) definition, quoted above: the utterance involving deletion must also entail the  $\exists$ -F-closure of its antecedent. It is clear that the  $\exists$ -F-closure of *John punched Bill* is not entailed by *Carl hurt Fred*, as can be seen below:

- (109) a. John punched Bill and Carl \_\_\_ Fred.  
 b. John punched Bill and Carl hurt Fred.  
     punch(j,b) ENTAILS  $\exists x\exists y(\text{hurt}(x,y))$   
     \*  $\exists x\exists y(\text{punch}(x,y))$  IS NOT ENTAILED BY hurt(c,f)

Turning back to Comparative Verb Gapping, it seems as though verbs encoding new information cannot be deleted, even if the comparative operator has been elided from the comparative complement clause:

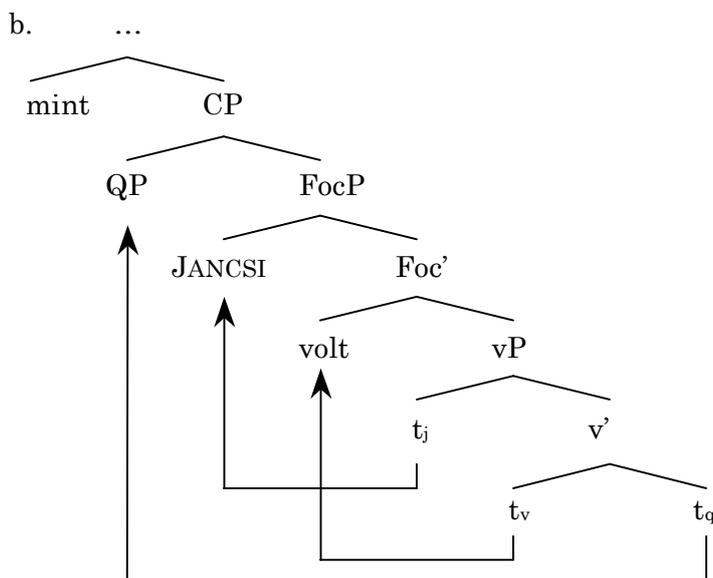
- (110) a. Péter sokkal kövérebb, mint (amilyen kövér) Jancsi (valaha.is) lesz.  
     Peter much fatter than OP fat Johnny ever will.be  
     ‘Peter is much fatter than Johnny will ever be.’  
 b. Péter kövérebb, mint <sup>?</sup>(amilyen) Jancsi lenne,  
     Peter fatter than OP Johnny be-3<sup>RD</sup>/SING-COND  
     ha élne.  
     if live-3<sup>RD</sup>/SING-COND  
     ‘Peter is fatter than Johnny would be, if he were alive.’  
 c. Kövérebb vagyok, mint voltam.  
     fatter am than I.was  
     ‘I am fatter than I was.’  
 d. <sup>?</sup>Több almát vettem, mint Péter hámozott.  
     more apple-ACC I.bought than Peter peeled  
     ‘The number of apples I bought is higher than that of those that Peter peeled.’  
 e. Nagyobb macskát láttam, mint <sup>?</sup>(amekkora macskát) Péter etetett.  
     bigger cat-ACC I.saw than OP cat-ACC Peter fed  
     ‘I saw a bigger than the one that Peter fed.’

In fact, the new information that the verbs carry can be based on tense (see 110a and 110c), mood (see 110b) or lexical differences (see 110d-e), too. The problem with Comparative Verb Gapping is that there seem to be contradicting predictions here: (i) it is known that comparative operators are optionally present

in the comparative subclause; however, (ii) if they are absent, the deletion of the verb is obligatory; still, (iii) a constituent can be deleted iff it is GIVEN (e-GIVEN).

In order to solve this puzzle, I suggest looking at the following diagram:

(111) a. Péter sokkal kövérebb volt, [mint [QP amilyen kövér] JANCSI volt].



(111) contains a non-elliptical predicative comparative complement. As for the triggers of movement, the QP moves to the specifier position of the lower CP to check its strong [REL] feature, *Jancsi* – as the contrasted constituent that the standard value is associated with – moves to specFocP to check [FOC], and the verb moves to Foc<sup>0</sup> in line with Brody (1995).

Before deriving the elliptical equivalent of (111), let us have a look at the following example, taken from Kennedy and Merchant (2000):

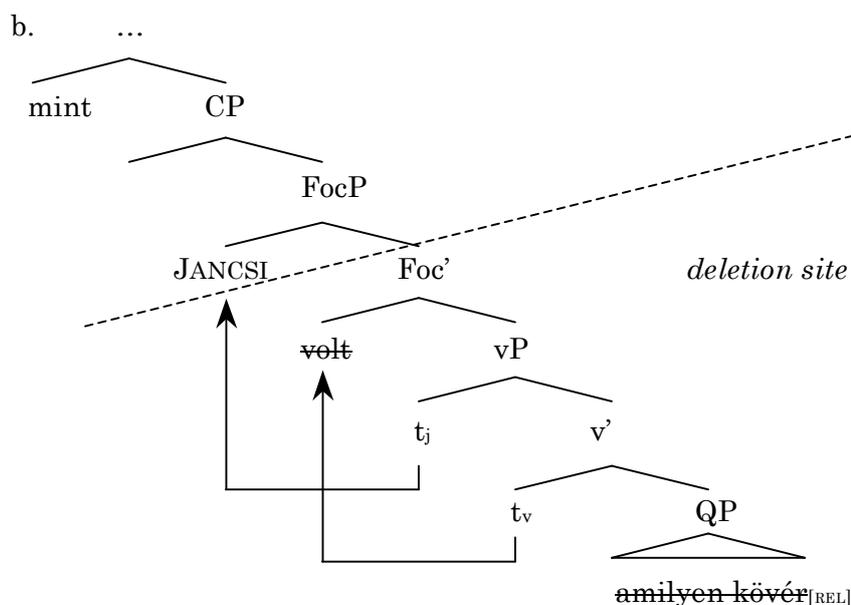
- (112) a. \*Pico wrote a more interesting novel than Brio wrote a \_\_\_ play.  
 b. Pico wrote a more interesting novel than Brio did a play.  
 c. than he did [<sub>VP</sub> write [<sub>FP</sub> [<sub>OP</sub><sub>[+wh]</sub> interesting]<sub>x</sub> [<sub>F</sub> F<sup>0</sup><sub>[+wh]</sub> [<sub>DP</sub> a t<sub>x</sub> play]]]]  
 d. than OP<sub>x</sub> he did [<sub>VP</sub> [<sub>VP</sub> write [<sub>FP</sub> t<sub>x</sub> [<sub>F</sub> F<sup>0</sup><sub>[+wh]</sub> t<sub>i</sub>]]]] [<sub>DP</sub> a t<sub>x</sub> play]<sub>i</sub>]  
 (Kennedy and Merchant 2000, exx. 7a, 77, 78)

As can be seen, English does not tolerate attributive subcomparatives (see 112a). On the other hand, Pseudogapping can save the construction (see 112b): Kennedy and Merchant (2000) argue that the attributive degree expression first moves out of the DP into the specifier position of a functional phrase FP on the top of the DP; second, the degree expression “infects” F<sup>0</sup> with its [+wh] feature via spec-head agreement, while the DP is extraposed to the right and is adjoined to the

VP; and third, as [+wh] is a strong feature, the only way to get rid of it is by deleting the constituent that properly contains it, since there is no [+wh] head in the construction, which could function as a probe.<sup>22</sup> In my opinion, this analysis might seem to be problematic, but I would not like to go into details concerning English here. As far as Comparative Verb Gapping is concerned, what is important is that one can get rid of an unvalued uninterpretable feature by deleting the constituent that properly contains it. In Kennedy and Merchant's words, "deletion effectively eliminates the otherwise fatal [+wh] F<sup>0</sup> head inside VP" (2000: 131).

Turning back to Comparative Verb Gapping, let us see how an elliptical version of (111) can be derived:

- (113) a. Péter sokkal kövérebb volt, [mint JANCSI].  
 Peter much fatter was than Johnny  
 'Peter was much fatter than Johnny.'



As can be seen, the QP *amilyen kövér* remains in situ, although it is equipped with an uninterpretable [REL] feature. However, both the verb (*volt*) and the gradable predicate are regarded as (e-)GIVEN constituents: the verb and the gradable predicate are the same as their matrix clause counterparts respectively (*volt* and *kövér*), while the comparative operator can optionally be covert, which suggests that it is recoverable from the function of the comparative complement clause. It is also straightforward that it is Foc' that is deleted in (113b); this is in line with how sluicing works in Hungarian: on the basis of the *Wh*/Sluicing

<sup>22</sup> Reglero (2006) discusses a similar phenomenon in Spanish, in which the verb must be gapped.

Correlation, sluicing targets Foc'. However, one may wonder why the comparative operator does not move in the example above. The answer that I can provide at the moment is that – for some reason – relative operators in general are not always triggered to move to the left periphery of the clause, even if this is a possibility for them:

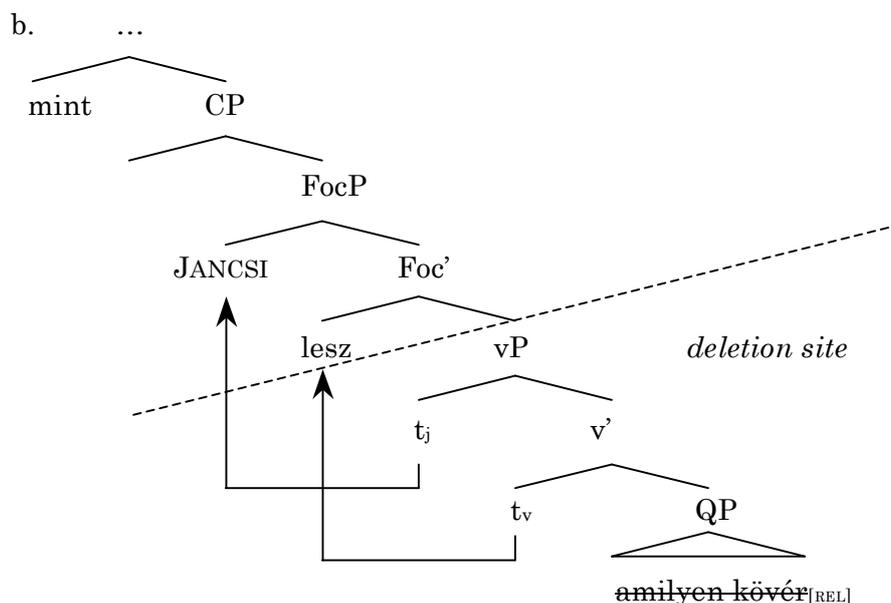
- (114) a. Същата книга чета, като **която** Питър **чете**. (*Bulgarian*)  
           that.same book read that **what** Peter **reads**  
       b. Същата книга чета, като Питър.  
           that.same book read that Peter  
       'I'm reading the same book as Peter.'

- (115) Ugyanazt a könyvet olvasom, (*Hungarian*)  
       same-ACC the book-ACC I.read  
       mint (amit) Péter.  
       than REL-what-ACC Peter  
       'I'm reading the same book as Peter.'

As can be seen, if there is an overt complementizer in the higher C<sup>0</sup> position, the relative operator may or may not surface in the lower specCP; in case it remains in situ, it is supposed to be deleted by sluicing. In fact, comparative operators in Hungarian seem to pattern with relative operators.

The last puzzle to solve is why isn't it always Foc' in Hungarian elliptical comparatives that is deleted. Let us have a look at the following diagram:

- (116) a. Péter sokkal kövérebb volt, [mint JANCSI lesz].  
           Peter much fatter was than Johnny will.be  
       'Peter was much fatter than Johnny will be.'



It is clear that only given information can be deleted; however, the verb in (116a) encodes new information as well, inasmuch as its tense differs from that of its matrix counterpart. That is, the maximal given constituent possible is vP in this example, thus vP is deleted, which also includes the QP with its [REL] feature. Assuming that this is so, one may wonder why it is not enough to delete the vP in all elliptical comparatives. The answer to this question is based on the fact that sluicing always targets the maximal given constituent possible (cf. Craenenbroeck and Lipták 2006: 254; see also Merchant 2008 for further discussion); this is also exemplified by (117):

- (117) They studied a Balkan language,  
 a. but I don't know which [e].  
 b. \*but I don't know which they did [e].  
 (Craenenbroeck and Lipták 2006, ex. 17)

In sum, the phenomenon of Comparative Verb Gapping can be explained by the optional trigger of relative movement, and if comparative operator movement is not triggered, the degree expression inside the comparative complement clause is deleted by sluicing.<sup>23</sup>

<sup>23</sup> Anikó Csirmaz and Huba Bartos (p.c.) remarked that the following Hungarian examples may be problematic for the analysis just presented above:

- (i) Jancsi sokkal részegebb volt, mint Olivér.  
 Johnny much drunk-er was than Oliver  
 'Johnny was much more drunk than Oliver was.'

- 
- (ii) Jancsi sokkal részegebb volt, mint amilyen részeg Olivér.  
 Johnny much drunk-er was than OP drunk Oliver  
 ‘Johnny was much more drunk than Oliver is.’

The contrast between the two examples can be captured in that the comparative subclause in (i) contains past tense, while (ii) contains present tense, although there is no overt verb form detected in either of them.

I claim that this is not problematic. It is widely known that the 3<sup>rd</sup>/singular form of the copula *be* in the present tense in Hungarian (i.e., the Hungarian equivalent of *is*) can be phonologically null, and this is what we can see (or, in fact, not see, as it is null) in (ii). I guess it is unlikely that VP-ellipsis occurs in (ii), since even if it did, as the null copula is much more frequent than VP-ellipsis in Hungarian, the parsing of such sentences would tend to analyze them as invariably having a null copula.

On the other hand, as the degree expression containing the comparative operator is deleted in (i), based on the argumentation above, sluicing must have taken place, thus the verb is probably also gone. Assuming that the verb encoded only given information, it cannot be anything else but *volt* (*was*), the same form as its matrix counterpart. Nevertheless, even if the empty verb form in (i) is generated as the present tense null copula, the problem with this is that the null verb form would be followed by the gap left by sluicing, and I suppose that the parsing of such a construction would invariably treat these null sequences as on, invariably giving the verb form a given interpretation.

# Chapter Five

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## Rightward movement in comparatives

In this chapter, I aim at providing a phase-based explanation of extraposition phenomena in attributive comparatives. Conforming to a semantic requirement, the *than*-expression is an obligatory complement of the functional Degree head, as was discussed in Chapter 2. However, there is need for an adequate explanation of extraposition, which seems to be syntactically unmotivated, if it involves movement to the right. Furthermore, this rightward movement is not even obligatory in head-final constructions.

My solution makes use of the fact that comparative complements are phase-sized constituents, and the cyclic Spell-Out of these elements determines their order with respect to other elements in the construction. This may be changed by feature-driven movements in the derivation, which accounts for the lack of extraposition in head-final constructions.

### 5.1 The problem

On the basis of earlier assumptions (Haider 2000, 2003), the ungrammatical sentences in (1a-b) were filtered out by a constraint called `EDGE EFFECT`,

according to which no syntactic object may appear on the right hand side of the modifier head in a head-initial phrase, within a pre-head adjoined modifier:<sup>1</sup>

- (1) a. \*A sas magasabban *mint a galamb* repül. (Hungarian)  
 the eagle higher-ADV than the pigeon flies  
 ‘Eagles fly higher than pigeons.’  
 b. \*I saw a taller [*than John*] man.  
 c. A sas magasabban repül *mint a galamb*. (Hungarian)  
 the eagle higher flies than the pigeon  
 ‘Eagles fly higher than pigeons.’  
 d. I saw a taller man [*than John*].

The *than*-constituents in italics are complements in the comparative degree expression; however, the constructions converge only if these constituents move to the right (see 1c-d). Such an instance of rightward movement raises several problems, if we aim at analyzing these sentences in present-day minimalist syntax, as movements to the right are syntactically unmotivated, since they cannot be triggered by feature checking.

Besides extraposition, there is yet another problem: the extraposition presented above does not appear in languages using head-final constructions:

- (2) a. Er hat es [sehr viel sorgfältiger als jeder andere] (German)  
 he AUX that much more carefully than anyone else  
 analysiert.  
 analyzed  
 ‘He analyzed it much more carefully than anyone else.’  
 b. He has [(much more) carefully (\*than anyone else)] analyzed it.

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<sup>1</sup> The edge effect constraint filters out not only comparative constructions, such as those in (1-2), but also constituents which are complements of a modifier head preceding the modified head in a head-initial phrase:

(i) Peter is a proud (\*of his son) man.

The PP *of his son* is the complement of *proud*, and it follows the head; meanwhile, *proud* is the pre-head modifier (attribute) of *man* in a naturally head-initial English NP.

The length of this paper does not enable me to account for sentences like (i) above, and that is the reason why edge effects as independent phenomena are beyond the scope of this article. Here I will focus solely on edge effects found in comparatives.

- c. Er hat es [viel weniger oft als ich (dachte)] (German)  
 he AUX that much less often than I thought  
 geprobt.  
 rehearsed  
 ‘He rehearsed it much less often than I thought.’
- d. He has [(much less) often (\*than I (thought))] rehearsed it.  
 (Haider 2003, exx. 4a-d)

As can be seen above, the lack of extraposition in German, which uses head-final VPs, APs and AdvPs,<sup>2</sup> does not make the clauses ungrammatical, as opposed to English, in which only head-initial phrases can be found. There has not yet been any explanation given to the head-final versus head-initial distinction with respect to extraposition, which I will attempt to provide in this paper.

In section 5.2, I present and discuss Haider’s account on edge effects as well as other possible approaches to rightward movement in comparatives. The remaining sections will be dedicated to the solution to the problems, based on Phase Theory (Chomsky 2001, 2004, 2005).

## 5.2 Earlier approaches to edge effects

On the basis of Haider (2000: 4, 2003), the edge effect constraint can be formulated as follows:

(3) ***Haider’s edge effect constraint***

In a head-initial phrase, within a pre-head adjoined modifier, no syntactic object may appear on the right hand side of the modifier head.<sup>3 4</sup>

This supposition is also supported by the examples in (1), where problematic constructions are saved by extraposition. However, there are three problems with Haider’s analysis.

First, the result of a syntactic constraint is extraposition; i.e., rightward movement (Bresnan 1973, Kennedy & Merchant 1997). However, the Minimalist Programme (Chomsky 1993, 1995, 2001, 2004, 2005) denies all such movements, as these cannot be motivated with strong features. Accordingly, if extraposition

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<sup>2</sup> On the head-final versus head-initial distinction in German, see Haider (2002).

<sup>3</sup> Williams (1981) suggested a similar approach by formulating the Head Final Filter. This filter was operative at s-structure, and ruled out any prenominal modifier unless its last constituent was its own head.

<sup>4</sup> Haider introduced the edge effect constraint to support the assumption that AdvPs are freely adjoined to modified XPs (Cf. Costa 2000, Ernst 2002, Svenonius 2002; contra Laenzlinger 1993, 2000, Alexiadou 1994, 1997, Cinque 1999, 2004).

exists at all, it should be dealt with at PF (Koster 1978, Rochemont 1982, Zwart 1990: 2, Chomsky 2001).

Second, Haider's account is purely descriptive, especially because it does not explain why there is a distinction between head-initial versus head-final constructions.

Third, Haider remains agnostic as to how to explain the sensitivity of elements commonly known to be generated in specifier positions to edge effects. For example, certain quantifiers (such as *few*, *little*, *several*, *many*) are base-generated in specifier positions, and yet they are sensitive to edge effects (see 4a),<sup>5</sup> and the same can be stated about dimensional APs/AdvPs, which are generated in specDegP (see 4b).

- (4) a. [DP[NumP [fewer (\*than last year)] [NP people]]] came to the party  
 b. Paul is a [more proud (\*of his wife)] man than Joseph.

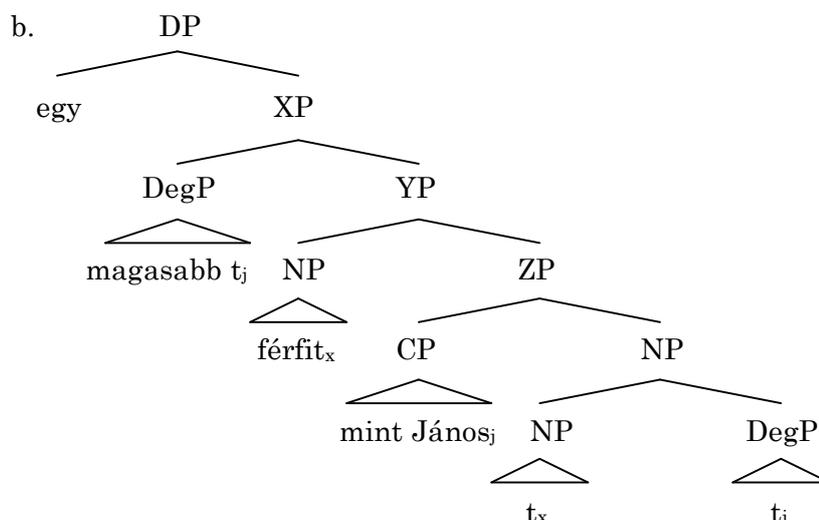
This chapter focuses on comparative extraposition and does not intend to handle those cases of edge effects in which it is not a phase-like, but a smaller constituent that intervenes between the modifier head and the modified head. That is, the edge effect constraint should be maintained as a filter as long as a better solution to constructions like (4b) emerges.

Before turning to phases, let me evaluate alternative approaches to comparative extraposition. For example, it could be hypothesized that various movement operations are capable of deriving the expected word order in narrow syntax, with one of them being remnant movement:

- (5) a. Láttam egy magasabb férfit, mint János.  
 I.saw a taller man-ACC than John  
 'I saw a taller man than John.'

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<sup>5</sup> According to Abney (1987: 184ff.), these quantifier phrases may be base-generated in specNP. On the basis of Zamparelli (2000), there are several functional projections inside the DP; still, these quantifiers are placed in specifier positions.

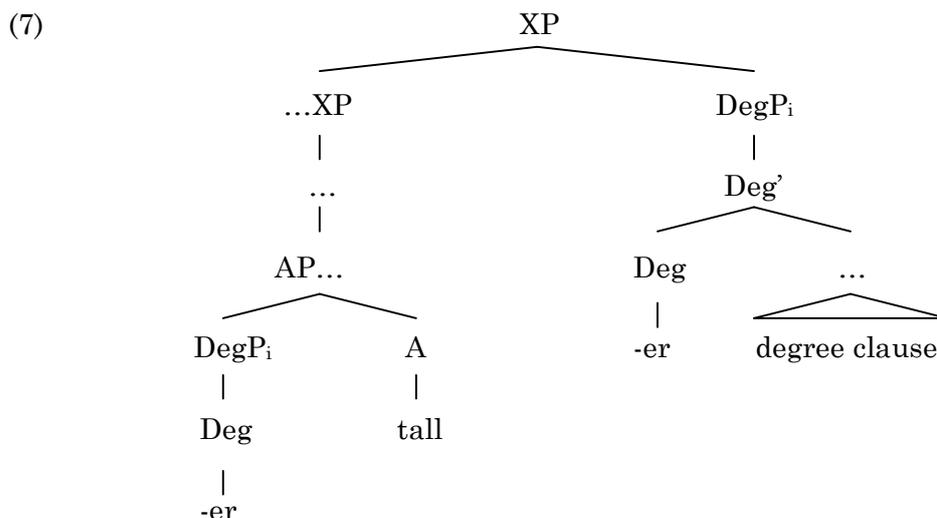


As can be seen, XP, YP and ZP are functional phrases, and each head  $X^0$ ,  $Y^0$  and  $Z^0$  are equipped with strong features triggering the movement of the *mint*-CP, the NP and the DegP respectively. First, the *mint*-CP is purported to move out of the degree expression, followed by the movement of the NP, and finally the degree expression containing the trace of the *mint*-CP is moved to a higher functional specifier position. However, there are three major problems concerning this analysis. First, it is a challenge to empirically prove that these three movements are triggered. Second, degree expressions in attributive constructions are adjuncts, and as such they are supposed to be islands; therefore, moving the *mint*-CP out of the degree expression seems to be highly problematic. Third, prenominal attributive degree expressions must be base-generated here postnominally, since they would be in a left branch position otherwise, and it is known that extraction out of a left branch XP is likewise prohibited (see Huang 1982 for further discussion):

(6) [DP [NP [DegP][NP]]]

Therefore, a remnant movement analysis of comparative extraposition seems to be unlikely.

Furthermore, Bhatt & Pancheva (2004) propose an alternative approach to rightward movement in comparatives, in which the degree head moves out of a left-adjoined degree expression, and it moves into a position that follows the modified head; the *than*-XP enters the construction at this point via countercyclic late merger, as the complement of the degree head. This can be seen in the following diagram:



(Bhatt and Pancheva 2004, ex. 19)

As can be seen, *-er* is base-generated as a modifier within an attributive AP in Bhatt and Pancheva's (2004) system; later it moves to the right, out of the attributive (left-branch) AP adjunct, and is adjoined to XP that contains the AP countercyclically; at this point it takes a *than*-XP as its complement.

However, there are many discrepancies between this analysis and present-day minimalist assumptions. First of all, it includes rightward movement, which cannot be triggered syntactically, mainly due to its direction. Second, it violates the Condition on Extraction Domain (cf. Huang 1982), as this instance of syntactic rightward movement extracts a constituent (i.e., the head) of a left-adjoined modifier and right-adjoins it to the construction at some level, which also makes such an analysis highly doubtful.

### 5.3 Phases and cyclic prosodic transfer mechanisms

In order to avoid the three problems of Haider's approach mentioned earlier, I use mechanisms introduced by Phase Theory and cyclic spell-out. The definition of a phase can be formulated as follows:

(8) **Phases**

Derived syntactic objects, which are transferred to the interfaces of syntax; such transfers are cyclic/compositional mappings for the phonetic and semantic interfaces.

(Chomsky 2005: 9)

The next question is which syntactic elements, XPs can be considered phases. According to Chomsky, phases can be CPs, v\*Ps and DPs (2005: 10). The highest maximal projection of the left periphery, as designed by Rizzi (1997), is equivalent to the CP here (Chomsky 2005: 10). v\* is a functional head equipped with full argument structure (*ibid*). Finally, DPs might be considered phases due to their resemblance to CPs (*ibid*), which has been described in the literature (Szabolcsi 1996; see also Chomsky 1970, Abney 1987; further evidence for DP's clause-like behaviour can be found in Vangsnes 1999, Zamparelli 2000, Svenonius 2004 and Hiraiwa 2005). It is still an ill-understood phenomenon under what circumstances DPs can be considered full-fledged phases; for example, a DP including a possessive construction with the Saxon genitive 's may resemble the subject-predicate relation detected in clauses, whereas a DP consisting of a sole pronominal (e.g., *him* or *it*) which is even unstressed in the clause may not easily be understood as a propositional projection.

Still, the importance of phases can be captured in the fact that once a phase is fully built, a syntactic derivation transfers it to the LF and PF interfaces; after being transferred, only the left periphery of the phase will be available for further syntactic operations, the rest of the phase will become opaque. This is manifested by the Phase Impenetrability Condition (cf. Nissenbaum 2000, Chomsky 2001: 14, 2004, Svenonius 2004):

(9) ***Phase Impenetrability Condition***<sup>6</sup>

The domain of the phase head H is not accessible to operations at the next highest strong phase ZP; only H and its edge are accessible to such operations.

(Chomsky 2001, 2004)

However, it may be asked which section of the already derived structure is transferred. It is a relatively standard view that only the domain (i.e., the complement) of the phase head is spelt out, since the left periphery remains active for further syntactic mechanisms as an escape hatch; this has the premise that the phase head and its domain are spelt out separately (Richards 2007). However, a number of phenomena indicate that this may not exactly be so. First, it is a must that the left periphery of the maximal phase be transferred to the interfaces along with its own domain, since the elements in that part of the construction would never reach the interfaces otherwise:

(10) [CP When<sub>w</sub> do<sub>x</sub> [TP you<sub>y</sub> t<sub>x</sub> [vP t<sub>w</sub> t<sub>y</sub> eat<sub>v</sub> [VP breakfast t<sub>v</sub> t<sub>w</sub>]]]]?

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<sup>6</sup> This is one of the two versions of the Phase Impenetrability Condition: in Chomsky (2000), the domain of a given phase became inaccessible for syntactic operations once that phase was completed; on the other hand, the domain gets opaque only when the next phase head is merged into the construction in Chomsky (2001, 2004).

As can be seen, if it were true that a phase head and its specifier are transferred together with the domain of the forthcoming phase, because of the absence of any phases on the top of the CP in (10), the left periphery of the CP could never be transferred to the interfaces. That is why it is a common assumption that even if the domain of transfer determines that the left periphery is an escape hatch for further syntactic operations, it is reasonable that the edge of the highest phase is transferred at the same time as its domain.

Furthermore, Fuß (2007) argues that complementizer agreement is a postsyntactic operation, which may cut across the domains of Spell-Out, as defined in Richards (2007) and Chomsky (2001, 2004):

- (11) a.ob-st            du    noch Minga   kumm-st            (*Bavarian*)  
           whether-2SG you    to    Munich come-2SG  
           ‘... whether you come to Munich’  
       b.ob-ts            ihr    noch Minga   kumm-ts            (*Bavarian*)  
           whether-2PL you-pl to    Munich come-2PL  
           ‘... whether you(pl) come to Munich’  
       (Fuß 2007, ex. 8)

Fuß (2007) shows that complementizer agreement is a PF mechanism, which involves the copying of the agreement marking on  $T^0$  onto  $C^0$ . That it is a postsyntactic operation is supported by the fact that it requires adjacency of  $C^0$  and the subject, and an intervening adjunct could block complementizer agreement (*ibid*). However, such a PF-mechanism would cut across the domains transferred to the interfaces, which could be eliminated by purporting that the domain of a phase and the left edge are transferred at the same time.<sup>7</sup>

Also, Chomsky (2001, 2004) based his selection of phase-compatible categories (i.e., CPs,  $v^*$ Ps and perhaps DPs can be phases) on the assumption that these projections can be associated with a propositional structure from a semantic perspective, and they may also function as separate domains at PF. However, as pointed out by Surányi (2008) and Abels (2003), it seems to be

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<sup>7</sup> In fact, Fuß (2007) opts for an alternative solution, in which the edge of a phase is spelt out together with the domain of the next phase, but later, at PF, the domains are realigned so that the domain and the edge of a phase constitute a PF-domain. This is manifested in the following rule:

- (i)    *The domain of phonological operations*  
       Operations of the phonological component may access a single Spell-Out domain  $\Sigma_n$  and the right edge of the following Spell-Out domain  $\Sigma_{n+1}$ .  
       (Fuß 2007, ex. 25)

The problem with this proposal is that it requires the phonological component to reshuffle the cyclically transferred sets of information, which clearly involves analysis. However, syntactic or semantic analysis is not the responsibility of PF.

paradoxical that the structure that is cyclically transferred to the interfaces is different from these propositional XPs in Chomsky's (2001, 2004) system (see also Richards 2007). In fact, that is why Surányi (2008) suggests that the edge of a phase should be refined as follows:

- (12) The edge is the set of elements bearing some [uF] that are Merged to the phase head.  
(Surányi 2008, ex. 9)

In this way, only specifiers with unvalued uninterpretable features are to remain active in the edge of a phase, while the rest can be transferred to the interfaces. Accordingly, the inelegant theoretical bifurcation of phases into Spell-Out domains and propositional projections that are different from each other could come to an end and be got rid of. Since *mint*-CPs in attributive comparatives do not have XPs with unvalued uninterpretable features in the highest specifiers, it can be concluded that *mint*-CPs are both propositional projections and Spell-Out domains.

Turning back to structure building processes, based on the definition of phases, it is clear that transfers occur cyclically. For example, once a phase is fully built, it is transferred to the interfaces, and when PF receives a phase, the constituent is linearized, and the mechanisms which require the visibility of the syntactic structure are carried out (e.g., prosody, stress assignment etc.; cf. Selkirk 1984, Chen 1990). By building phases in a bottom-up fashion, it is expected that the transfer of each phase is followed by that of another one. This means that the earlier a phase is spelt out, the later it appears in the final order of constituents at PF, and will follow the phases spelt out later<sup>8</sup>.

In most of the works on Phase Theory, a phase is either the highest maximal projection in the clause (i.e., a CP, above which nothing is generated), or it is a CP or v\*P (and perhaps DP) generated as a complement/argument (Chomsky 2001, 2004, 2005, Svenonius 2004, etc.). For example, subject DPs generated inside the v\*P phases may be considered phases on their own, but once they are moved into specTP, they cease to operate as such. The question might arise what is behind this phenomenon; that is, it may be asked what determines whether a phase-compatible constituent (CP or v\*P) will behave like an actual phase. In order to answer this question, it needs to be investigated how certain elements are merged or built into the construction.

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<sup>8</sup> At first sight, the assumption that syntactic structures are built in a bottom-up fashion may sound counter-intuitive to some speakers, as the direction of constituents in actual speech production might not be considered to follow this method. Nevertheless, the way Merge operations work and the direction of syntactic movements (i.e., leftward movements into higher positions) ensure that structure is built bottom-up, towards the highest maximal projection.

As a matter of fact, two such operations exist: set merge and pair merge, and the difference between them can be deduced by looking at the definitions below:

- (13) a. SET MERGE builds syntactic objects, where one of the elements counts as the head and the other as its argument.  
 b. PAIR MERGE constructs an ordered pair of elements, where the adjunct does not saturate the argument grid of the head of the constituent it adjoins to or change its properties.  
 (Matos 2007: 4; cf. Chomsky 2001, 2004)

It can clearly be seen in the definitions of set merge and pair merge that the former builds specifier, head and complement constituents into the construction when they first appear, whereas pair merge is responsible for the merge of adjuncts. This difference plays a crucial role in the derivation, as – on the basis of the order of merge operations – this is what makes it possible that adjoined elements are merged into a phase-sized maximal projection at the moment when that phase is ready to be spelt out (Chomsky 2005: 13). In other words, although phases are built cyclically, as far as the order of derivational mechanisms inside a phase is concerned, adjuncts will enter the derivation when the already built segment of the structure is waiting for Spell-Out. That is why there is no time for adjuncts to be spelt out separately, even if they are phase-compatible maximal projections. As a result, adjuncts are not considered phases on their own from the perspective of transfer mechanisms. In fact, this is not surprising, if one adopts Lebeaux's (1988, 1991) assumption that adjuncts are merged late (or countercyclically): late merger means that the adjunct has been derived fully by the time it is merged into the construction, which is thought to occur just before the derivational cycle is ready to be shipped to the interfaces. This is supported by the following example as well:

- (14) I gave the [NP girl [CP who knows Peter]] my key to the door.

It can be noticed that the relative clause CP in (14) is spelt out together with the element it is adjoined to, regardless of being a phase-compatible constituent.

The set merge versus pair merge distinction is evidently valid with respect to external merge (EM), when the element merged into the construction is not part of the element it is merged with (cf. Chomsky 2005: 7). Naturally, external merge takes place when a given element enters the derivation for the first time, regardless of being an argument or an adjunct. On the other hand, internal merge (IM; *ibid.*) takes an element already generated in the structure and re-merges it or its copy into a different position. The question is how transfer mechanisms view phase-compatible constituents once they have been (re-)merged

into the construction by internal merge. This problem can clearly be captured in the appearance and movement of subject DPs. It is assumed that once a constituent has entered into the construction by set merge, further operations that merge the same element into higher (specifier) positions deprive the moved constituent of its phase-like properties. This is the reason why subject DPs are spelt out together with the CP they are contained within and not as separate phases, which makes them similar to the relative clause in (14) in this respect. The following examples show the above assumption:

- (15) a. [CP [TP I<sub>i</sub> [<sub>v\*P</sub> t<sub>i</sub> said [CP [TP they<sub>x</sub> have [<sub>v\*P</sub> t<sub>x</sub> [<sub>vP</sub> arrived<sub>y</sub> [<sub>VP</sub> t<sub>x</sub> t<sub>y</sub>]]]]]]]]].  
 b. [<sub>Phase-4</sub> I [<sub>Phase-3</sub> said [<sub>Phase-2</sub> they have [<sub>Phase-1</sub> arrived]].  
 c. \*I said have they arrived.

In (15a), the subject of the subordinate clause is base-generated as the internal argument of the predicate; in order to move it out of the lowest phase, it needs to be moved to the left periphery of that phase in order to satisfy the Phase Impenetrability Condition; then it is moved into specTP. (15b) shows in which phase each element ends up during the derivation, prior to its Spell-Out. On the basis of (15c), the subject of *arrive* cannot be considered a separate phase on its own, since – in a bottom-up method – it would be spelt out prior to the transfer of Phase-2 (i.e., the subordinate CP), and hence it would follow the aspectual auxiliary, which is illicit.

In sum, it can be claimed that the premise of this analysis is that only those phase-compatible constituents (i.e., CP, v\*P) are transferred to the interfaces that are merged into the construction by external set merge. For example, CPs in a left-branch argument position present a peculiar behaviour regarding Spell-Out and Transfer mechanisms:

- (16) a. The President announced on the radio that the troops have been withdrawn from Basra.  
 b. ?/\*The President announced that the troops have been withdrawn from Basra on the radio.  
 c. That the troops have been withdrawn from Basra has been announced by the President on the radio.

Assuming that *on the radio* is not focussed or is not prominent, (16b) is not acceptable, since the CP argument of *announce* is in specVP; it has been merged into that position by external set merge, thus it should be transferred to the interfaces earlier than the rest of the v\*P. However, as has been argued, if it is transferred earlier than the v\*P containing *announce*, it is also linearized earlier; thus, as forthcoming cycles are linearized, they will be placed in front it.



construction attracts (i) an XP in the left periphery of the phase into its specifier position, (ii) the head of the phase via head-movement, or (iii) the whole phase into its specifier position<sup>10</sup> for feature checking, hence inducing overt movement and internal merge (*ibid*). The next phase is a DP, and its constituents are spelt out, with the exception of the CP *mint Pihe*, which has already been transferred. It is important to mention here that the syntactic derivation cannot order the phonological component to rank the phases already spelt-out: their order is strictly determined by transfer mechanisms. The transfer of the DP is followed by that of the v\*P, sending the elements *ma láttam* to the interfaces.

In sum, it can be claimed that the CP-extraposition phenomenon in head-initial phrases does not include syntactic rightward movement. The solution lies in the fact that the transfer mechanisms involved in the derivation of a clause may alter the final word order, inasmuch as constituents spelt out first will evidently follow those spelt out later.

## 5.5 The lack of extraposition in head-final phrases

On the basis of Haider's (2000: 4; 2003) edge effect constraint, it is expected that there is no extraposition in head-final degree expressions. In order to provide an adequate explanation for such a difference, it must be investigated what kind of syntactic differences can be detected between functionally extended head-final and head-initial APs or AdvPs.

If the only difference is that in the case of a head-initial DegP, the comparative complement follows, whereas in the case of head-final DegP, it precedes the degree head, this does not seem to modify the derivational schema outlined in the previous section. Therefore, a more restricted syntactic background is taken as the foundation of the theory. According to Kayne, the universal order of the elements in a phrase is: specifier-head-complement (1994: 35). In this respect, SOV order would also be impossible, unless the complement base-generated as a post-head constituent raises into the specifier position of a functional phrase preceding the head (*ibid*; Koster 1999: 32ff.). This sounds fully compatible with the requirement of strong feature checking.

In addition, it must also be taken into account that in certain languages traditionally claimed to be using head-final VPs (e.g., Dutch or German) there is an extra functional layer on the top of the comparative degree expression, which is responsible for the agreement between the AP/AdvP and the modified element

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<sup>10</sup> Moving phases as maximal projections that are already opaque is not an uncommon phenomenon; the only requirement is that no syntactic operation be executed inside the phase, while it is moved as a whole. For example, in German the EPP feature of T<sup>0</sup> can be checked by moving the vP, which is already spelt out by then, into specTP. For discussion, see Richards & Biberauer (2005) and Biberauer & Roberts (2006).

(Corver 1997b: 327ff.). In other words, there is an AgrP on the top, the existence of which can empirically be proven by the following examples:

- (19) a. een dur-*e* fiets (Dutch)  
 an expensive-INFL bike  
 ‘an expensive bike’
- b. Deze fiets is duur. (Dutch)  
 this bicycle is expensive  
 ‘This bicycle is expensive.’
- c. ein kostspielig-*es* Fahrrad (German)  
 an expensive-INFL bicycle  
 ‘an expensive bike’
- d. Dieses Fahrrad ist kostspielig. (German)  
 this bicycle is expensive  
 ‘This bicycle is expensive.’

In (19), absolute adjectives can be seen. According to Corver (1997b: 327), the inflection morpheme *-e* in Dutch attributive DegPs is obligatory, which supports the existence of AgrP on this level; the same phenomenon can be noticed in the German examples as well. Corver also proves that this AgrP is head-final (*ibid*: 344ff.). However, according to Kayne’s (1994) universal order of constituents, the head-finality of the AgrP can be guaranteed only if the DegP is generated within the complement of Agr, and then moved to specAgrP:

- (20) [AgrP [DegP [AP ] [Deg<sup>0</sup> CP/DP]]<sub>i</sub> [Agr’ Agr [... t<sub>i</sub>]]]

In the representation above, the comparative complement – along with the rest of the functionally extended degree expression – is base generated as a complement in a position following the Agr head. Later, in order to derive the head-final AgrP, the whole degree expression – along with the comparative complement – is moved into the specifier position of AgrP.<sup>11</sup>

Nevertheless, in connection with this instance of complement-to-specifier movement, it may be asked what triggers overt movement here. Strong Edge Features (EF) mentioned by Chomsky (2005) may appear as the trigger of overt movement, which are responsible for the obligatory overt agreement between the

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<sup>11</sup> This certainly does not mean that AP-NP agreement strictly co-occurs with head-finality, as there is such agreement in Spanish head-initial phrases, too (e.g., *famosas*<sub>PLUR-FEM</sub> *ciudades*<sub>PLUR-FEM</sub> ‘famous cities’). However, according to Zagana (2002: 238), agreement in Spanish is sublexical, it is syntactically inert, and therefore it is invisible for syntactic processes. In this respect, it may be argued that the Spanish equivalent of the Agr head in (20) is not equipped with a strong feature, and therefore no movement could derive a head-final order.

adjective and the modified head. Still, it must also be kept in mind that such features can be found on phase heads (*ibid*), and movements to other positions (e.g., specTP) can be triggered by features derivative of those found on phase heads (*ibid*)<sup>12</sup>. If the presence of phase heads is necessary to place strong features into the construction, the question is whether a phase-compatible maximal projection can be found on the top of the degree expression. However, even if this were the case, the phase would still not be transferred before the Spell-Out of the modified head, and it still would not follow the modified head in the final word order, as the degree expression in attributive constructions is merged into the structure by pair merge. In other words, even if a degree expression had a phase-compatible XP as its highest maximal projection, it would still be transferred to the interfaces together with the modified head.

Let us have a look at the derivation of the following example:

- (21) Er hat es [viel weniger oft als ich (dachte)] geprobt. (*German*)  
 he AUXthat much less often than I thought rehearsed  
 ‘He rehearsed it much less often than I thought.’
- (22) a. syntax: [CP als ich dachte] *transfer of CP*  
 PF: als ich dachte
- b. syntax: [AgrP[viel weniger oft [als ich dachte]] ... [viel weniger oft [*opaque*]]  
 PF: als ich dachte
- c. syntax: [<sub>v</sub>\*P er [es [AgrP[viel weniger oft [als ich dachte]] ...  
 [viel weniger oft [*opaque*]] geprobt]] *transfer of v\*P*  
 PF: er es viel weniger oft als ich dachte viel weniger  
 oft geprobt als ich dachte
- d. syntax: [CP er<sub>i</sub> hat [<sub>v</sub>\*P t<sub>i</sub> [*opaque*]]] *transfer of CP*  
 PF: er hat er es viel weniger oft als ich dachte viel  
 weniger oft geprobt als ich dachte
- e. PF: er hat ~~er~~ es viel weniger oft als ich dachte *copy & delete*  
~~viel weniger oft geprobt als ich dachte~~
- f. Er hat es viel weniger oft als ich dachte geprobt. *final outcome*

<sup>12</sup> It may be problematic to determine which strong feature triggers the movement of the whole degree expression to specAgrP exactly. Chomsky (2001, 2004) regarded EPP as a potential strong feature, which was subsequently changed to EF (2005). Still, due to the theoretical doubts, this question will have to be answered by future research.

It can be seen in the derivation that the comparative complement CP is transferred first. This is followed by the transfer of the next phase (v\*P). After the whole degree expression – including the comparative complement CP already spelt out – undergoes movement to specAgrP,<sup>13</sup> the CP reaches another phase level (v\*P), and the syntactic derivation – together with the elements of the upper phase – transfers the CP to the phonological component again. Therefore, the second phase (v\*P) includes two copies of the degree expression: the higher one in specAgrP and the lower one where it was base-generated. As the copy-and-delete nature of movement requires that the highest copy receive phonological interpretation, the lower copy is deleted at PF (Bobaljik 2002, Chomsky 2005: 12). It must be kept in mind that it is the lower copy of the degree expression in which the comparative complement has been spelt out, whereas the higher copy of the degree expression includes a copy of the comparative complement as well. Due to the copy-and-delete nature of movement, only the higher copy of the CP will actually be pronounced, similarly to that of *viel weniger oft*. As already mentioned, the degree expression is not regarded as a phase on its own, as it is merged into the construction by pair merge, being an adjunct of the VP.

Hence, the movement of the degree expression (i.e., QP, including the comparative complement) to specAgrP provides adequate explanation for the difference between head-initial and head-final degree expressions with respect to extraposition.

## 5.6 The edge effect constraint in the light of cyclic transfer

It was suggested in section 5.2 that the edge effect constraint should be maintained for cases where the element intervening between the modifier head and the modified head is not as big as a phase. However, in the light of Phase Theory, certain modifications of the constraint are possible.

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<sup>13</sup> This movement, similarly to that of DP subjects already mentioned, is not peculiar in any way, as it is possible to spell out a constituent more than once. This is exemplified below:

(i) [CP<sub>3</sub> [CP<sub>2</sub> When she asked [CP<sub>1</sub> what he was doing]]<sub>i</sub> [CP<sub>3</sub> he [vP ran away t<sub>i</sub>].

It can be seen that CP<sub>2</sub> is generated as an adjoined modifier inside the vP, and then it is moved to the left periphery and is adjoined to CP<sub>3</sub>. However, CP<sub>1</sub> is a complement contained within CP<sub>2</sub>. This means that CP<sub>1</sub> must have been transferred to the interfaces earlier than CP<sub>2</sub> due to cyclic Spell-Out. Still, after CP<sub>2</sub> is moved leftward, a copy of CP<sub>1</sub> is also created in the landing site of CP<sub>2</sub>. As a result, even though CP<sub>1</sub> is a phase-compatible maximal projection in a complement position, when it is spelt out for the second time (after movement), it is transferred to the interfaces when CP<sub>2</sub> is, and because the latter is merged into the construction by pair merge after being moved, it is spelt out together with CP<sub>3</sub>. As CP<sub>1</sub> has two copies, the higher copy will actually be pronounced, and the other one will be deleted at PF (Bobaljik 2002, Chomsky 2005: 12).

First of all, if edge effect violations can be obviated by extraposition induced by cyclic transfer mechanisms, which has noticeable word order results only after linearization at PF due to the order of the derivational processes, the edge effect constraint cannot be syntactic in nature; in fact, it is supposed to be operative at PF<sup>14</sup>.

Second, on the basis of Kayne (1994: 35), head-final phrases can be accounted for by generating the complement of the head as a post-head complement and moving it into a functional specifier position. This movement deprives the phase-like features of moved constituents, as the complement is pronounced in a position preceding its head. This explains the lack of edge effects in head-final phrases, as different phase boundaries and different stress patterns exist in them due to pair merge.

Accordingly, the constituents filtered out by the edge effect constraint are (i) phonologically prominent, (ii) they are complements of a pre-head modifier, and (iii) they can be found in the same phonological phrase as the modifier head and the modified head. By providing a phase-based approach to the extraposition in comparatives, it is explained why an extraposed comparative complement can survive, as it is transferred to the interfaces earlier, hence it is not part of the phonological phrase that includes the modifier head and the modified head.

Furthermore, a phase-based approach also explains why complements smaller than a phase cannot avoid the edge effect constraint. Let us examine the example below:

- (23) a. \*an afraid [<sub>PP</sub> of snakes] girl  
 b. \*an afraid girl [<sub>PP</sub> of snakes]

In (23a), the PP complement of *of snakes* is not a phase, and that is why it is in the same phonological phrase that includes the modifier head and the modified head as well, which contradicts the edge effect constraint. On the other hand, (23b) is ungrammatical because (i) there is no syntactically motivated rightward movement to take care of the PP, and (ii) the *afraid of snakes* sequence is a left-adjoined modifier inside an NP, and nothing can be extracted out of an adjunct by syntactic movement (*Condition on Extraction Domain*, Huang 1982: 505; *Adjunct Island Condition*, Johnson 2002: 1). That is why (23b) cannot be derived by syntactic operations without violating the Condition on Extraction Domain.

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<sup>14</sup> I cannot answer the question which rules of prosody or metrical phonology are violated in edge effect violations. It is possible that the solution may be found in a model based on Liberman & Prince (1977). For example, there may be a grid clash between the complement of the modifier, which can be a phonological phrase on its own, and the modified head. It could also be interesting to investigate whether the prominence of the modifier equipped with a complement is in conflict with the weak-strong binary metrical tree, and hence the modifier would be more prominent than the modified head. Nevertheless, this will have to be answered by future research.

## 5.7 DP-extraposition in phrasal comparatives

As has been mentioned, certain languages can manifest the standard value of comparison with an inherently case-marked DP. As DPs can turn to be phonological phrases at PF, edge effects are expected to be detectable in such constructions as well. In fact, this prediction is borne out, as can be seen in the examples below:

- (24) a. \*Láttam egy magas-abb Jánosnál férfit. (Hungarian)  
 I.saw a tall-er John-ADE man-ACC  
 ‘I saw a man taller than John.’  
 b. Láttam egy magas-abb férfit Jánosnál. (Hungarian)  
 I.saw a tall-er man-ACC John-ADE  
 ‘I saw a man taller than John.’

The DP in Adessive case (*Jánosnál* – ‘than John’) represents the standard value in both cases; still, in (24a) it immediately follows the degree head, which hosts the comparative marker *-(a)bb* – ‘-er’, whereas in (24b) it appears at the end of the clause.

In accordance with Svenonius (2004), Hiraiwa (2005) and Chomsky (2005: 10), DPs are sometimes considered to be phase-compatible constituents. As *Jánosnál* is the complement of the degree head in (24a-b), there is no reason to believe why it would not act as a phase. Building the construction in a bottom-up fashion, the first phase ready for Spell-Out is this DP; therefore, it follows the rest of the elements, which belong to later cycles in the final word order.

Still, a number of my native informants reported to me that (24b) is grammatical, but it still sounds stilted, and the most natural version of this example is the one below:

- (25) Láttam egy Jánosnál magas-abb férfit. (Hungarian)  
 I.saw a John-ADE tall-er man-ACC  
 ‘I saw a man taller than John.’

The question is whether it can be purported that this movement is an instance of DP-internal topicalization. Let us have a look at the following set of Hungarian examples:

- (26) a. Láttam [DP egy Pihénél szerintem sokkal ügyesebb kutyát].  
 I.saw a Fluffy-ADE in.my.opinion much more.talented dog-ACC  
 b. Láttam [DP egy Pihénél szerintem ügyesebb, gyors kutyát].  
 I.saw a Fluffy-ADE in.my.opinion more.talentedfast dog-ACC

- c. \*Láttam [D<sub>PEgy</sub> Pihénél szerintem gyors, ügyesebb kutyát].  
 I.saw a Fluffy-ADE in.my.opinion fast more.talented dog-ACC  
 ‘I saw a dog such that I think that it was much more talented than Fluffy.’

As can be seen, the comparative complement precedes the adverbial *szerintem* (*in my opinion*) in all of the examples above, which could indicate that it has moved out of the functionally extended degree expression into a topic position internal to the DP (see Giusti 1996, Ihsane and Puskás 2001, Aboh 2004 and Szendrői 2010 for further discussion on DP-internal topics). Nevertheless, one of the problems concerning this approach is that this would be a Left Branch Condition violation (cf. Corver 1990), as attributive comparatives are optional modifiers adjoined to NP. The other problem can be seen in (26c): if both *Pihénél* and *szerintem* are DP-internal topics, there should not be any problems concerning the presence of an extra attributive modifier (*gyors*, meaning *fast*), as attributes can be adjoined to the modified XP recursively, thus the Coordinate Structure Constraint (Ross 1967) cannot filter it out. However, this is not the case: the presence of another attribute bleeds the construction, which suggests that both *Pihénél* and *szerintem* are inside the functionally extended degree expression, with *szerintem* adjoined to QP:

- (27) a. [DP egy [NP[FP Pihénéli szerintem sokkal DegP ügyesebb t<sub>i</sub>][NP kutya]]  
 b. [FP Pihénéli [FP[AdvP szerintem][FP[QP sokkal [DegP ügyesebb t<sub>i</sub>]]]]<sup>15</sup>

However, if *Pihénél* is inside the degree expression, one may wonder where it is and what triggers its movement. I adopt É. Kiss’ (2003:97, 2008: 458) treatment of such elements, which is exemplified below:

- (28) egy [nálam [(csak) két évvel [fiatalabb]]] rokon  
 a me-ADE only two year-INS younger relative  
 ‘a relative only two years younger than me’  
 (É. Kiss 2008, ex. 48b)

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<sup>15</sup> The reason why *szerintem* is thought to be adjoined to the top functional projection of the degree expression, FP (see Chapter 2 and 3), is that it cannot appear between a measure phrase and the adjective:

- (i) \*két méter szerintem magas  
 two metre according.to.me tall  
 (ii) [FP két méter [QP [AdvP szerintem][QP [DegP magas]]

As can be seen, since measure phrases are in specFP, *szerintem* is obviously adjoined to FP, not QP.

É. Kiss (2008: 458) argues that *nálam*, the (pronominal) DP-standard is proposed to an internal topic position within the AP, which is equivalent to the functionally extended degree expression in this study.

## 5.8 Summary

The aim of this chapter was to provide an adequate explanation of rightward movement in attributive comparatives. The explanation was based on tools provided by Phase Theory as well as prosodic transfer mechanisms.

In head-initial phrases, the phase-sized comparative complement is extraposed, because it is spelt out earlier than the remaining constituents of the degree expression. As a result, the earlier a syntactic object is spelt out, the later it will be pronounced in the final word order.

In head-final phrases, the final position of the comparative complement is affected by the existence of a functional phrase (AgrP) on the top of the degree expression, and the whole degree expression (including a copy of the comparative complement) is moved into the specifier of this phrase, thus a higher copy is created. The lack of extraposition is determined by the existence of the AgrP, which is head-final inasmuch as it triggers the movement of the degree expression into its specifier.

The explanation of extraposition in phrasal comparatives is based on the same grounds as in the case of clausal comparative complements, as both CPs and DPs are phase-compatible constituents.

# Chapter Six

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## Comparative correlatives in Hungarian

Since comparative correlatives tend to include a gradable (dimensional) predicate, the basic syntactic structure thereof is based on the structure of functionally extended degree expressions. I aim at presenting the structural similarities between comparatives – as discussed in the preceding chapters – and Hungarian comparative correlatives, since the latter may support the validity of the proposal put forward in this study.<sup>1</sup>

This chapter provides an up-to-date analysis of comparative correlatives in Hungarian by determining the two major types thereof and investigating the differences between them. In fact, the analysis of comparative correlatives will show that the general proposal concerning the structure of comparative constructions is valid in the case of comparative correlatives as well; also, the peculiarities of comparative correlatives as well as the differences between their two types (concerning, for example, Case assignment or extraction phenomena) can be traced back to the structural characteristics of comparatives.

The constructions under scrutiny – similarly to their French, Italian and Spanish counterparts – are either symmetric or asymmetric: in the case of the latter, the main clause and the subordinate clause are both introduced by relative pronouns, whereas this is not exactly so in the case of the former.

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<sup>1</sup> This chapter is based on Kántor (2008c).

The investigation reveals which elements or what kind of combinations of certain elements may appear specifically in comparative correlatives, where the operators introducing these constructions are base generated, why they precede the Adjective Phrase or Adverb Phrase providing the semantic dimension of comparison in each constructions, and under what circumstances they are assigned inherent case (instrumental case in asymmetric comparative correlatives, adessive in symmetric ones). It is also explained where comparative correlative operators or degree expressions containing them move, and what these movements are triggered by.

## 6.1 Symmetric and asymmetric comparative correlatives

To start with, similarly to their Italian and Spanish counterparts, Hungarian comparative correlatives also have two types. These can be differentiated in Italian and Spanish on the basis of the presence or absence of a degree modifier-like constituent at the beginning of the matrix and subordinate correlative clause pairs; for example, *quanto-tanto* in Italian, or *cuanto-tanto* in Spanish have the same function as *annyi(val/ra)-amennyi(vel/re)* in Hungarian. Adopting Abeillé *et al.*'s (2006: 7ff.) terminology, the comparative correlatives that include a constituent functioning as a degree modifier follow an asymmetric pattern, whereas those that lack such an element follow a symmetric pattern. These types are exemplified below:

- (1) a. Minél gyorsabban hajtok, *symmetric*  
 what<sub>WH-ADE</sub> faster I.drive  
 annál korábban érek le Szegedre.  
 that<sub>DEM-ADE</sub> earlier I.arrive VM Szeged-SUBL  
 'The faster I drive, the earlier I arrive in Szeged.'
- b. Amennyivel gyorsabb a Suzuki, *asymmetric*  
 REL-how.much-INS faster the Suzuki  
 annyival több benzint eszik.  
 REL-that.much-INS more gasoline-ACC it.eats  
 'The faster the Suzuki is, the more gasoline it consumes.'

The names of these two types reflect their behaviour of the relevant clauses, since symmetric comparative correlative constructions in Italian and Spanish require the correlative clauses to display symmetric properties with regard to mood and operator movements, whereas this is not so in the case of asymmetric comparative correlatives (*ibid.*). This distinction can also be noticed in the following Hungarian pair of examples:

- (2) a. Fontos, hogy *symmetric*  
 important that  
 minél több könyved {legyen / van},  
 what<sub>WH-ADE</sub> more book-POSS.2/SG be-3.SG-SUBJ be-3.SG-PRES-IND  
 annál többet {tudj / \*tudsz}.  
 that<sub>DEM-ADE</sub> more-ACC you.know-SUBJ you.know-IND  
 ‘It’s important that the more books you have, the more you know.’
- b. Fontos, hogy *asymmetric*  
 important that  
 amennyivel több könyved {\*legyen / van},  
 REL-how.much-INS more book-POSS.2/SG be-3.SG-SUBJ be-3.SG-PRES-IND  
 annyival többet {tudj / \*tudsz}.  
 REL-that.much-INS more-ACC you.know-SUBJ you.know-IND  
 ‘It’s important that the more books you have, the more you know.’

As can be seen, the matrix adjectival predicate (*fontos – important*) in (2a) requires subjunctive mood in the subordinate clause (*tudj – know-2.SG-SUBJ*), which acts as the main clause of the correlative construction (cf. den Dikken 2005: 510); however, the correlative subordinate clause (introduced by *minél – what<sub>WH-ADE</sub>*, embedded in the correlative main clause) can also “inherit” the subjunctive mood present in the correlative main clause (*legyen – be-3.SG-SUBJ* and *van-be-3.SG-PRES-IND*); therefore the two correlative clauses can display symmetric behaviour. On the other hand, the predicate of the correlative subordinate clause that is introduced by *amennyivel (REL-how.much-INS)* in (2b) must obligatorily be indicative, which indicates that the subjunctive mood of the correlative main clause cannot be inherited by the predicate of the correlative subclause. In sum, it sounds reasonable to adopt the technical terms *symmetric* and *asymmetric* in the case of Hungarian comparative correlatives.

## 6.2 Data

I suggest we start with asymmetric comparative correlatives. As has been mentioned, the clause introduced by *amennyi(re/vel)*, a relative pronoun meaning *how much/many* with possible inherent Case-marking, is the correlative subordinate clause, which is embedded in the correlative main clause; on the other hand, the correlative main clause includes *annyi(ra/val)*, a demonstrative pronoun meaning *that much/many* with possible inherent Case-marking. This is shown below:

- (3) [[Amennyivel több pénzem van Péternél]  
 REL-how.much-INS more money-POSS.2/SG is Peter-ADE  
 annyival gazdagabb vagyok nála].  
 REL-that.much-INS richer am he-ADE  
 ‘The greater the degree d is such that my sum of money exceeds Peter’s by  
 d, the greater the degree d’ is such that I am richer than him by d’.

It may also seem to be important that this construction can syntactically manifest comparison as well as equation. The difference between these two uses is that the pronouns receive instrumental Case in the case of comparatives (DP-*val*; see (3) above), whereas they are in sublative Case in the case of equation (DP-*ra*; see (4) below):

- (4) [[Amennyire magas az apa]  
 REL-how.much-SUBL tall the father  
 annyira magas a fia].  
 REL-that.much-SUBL tall the son-POSS.3/SG  
 ‘The father is as tall as his son.’

As has been mentioned, instrumental and sublative inherent Case-marking is typical of degree modifiers in comparative and absolute degree expressions respectively; assuming that inherent Case-marking is predictable in line with Woolford (2006), it sounds reasonable to assume that the pronouns *amennyi{vel/re}* and *annyi{val/ra}* are indeed base-generated in the position of degree modifiers, in specQP. Since degree modifiers are incompatible with overt standard values (i.e., measure phrases) in absolute degree expressions (as was argued in Chapter 3), *amennyire* and *annyira* are also expected to be so, unlike *amennyivel* and *annyival* in (3); in fact, this is exactly what we can find in Hungarian:

- (5) \*Amennyire 2 méter magas az apa,  
 REL-how.much-SUBL 2 metre tall the father  
 annyira magas a fia.  
 REL-that.much-SUBL tall the son-POSS.3/SG  
 ‘\*The father is 2 metres as tall as his son.’

Turning to symmetric comparative correlatives, it can be noticed that the clause introduced by *minél* (*what<sub>WH-ADE</sub>*) is the comparative correlative subordinate clause, while the correlative main clause contains *annál*, a demonstrative pronoun meaning *that<sub>DEM</sub>* in adessive Case. In fact, this type resembles its asymmetric counterpart, since both correlative clauses contain

some pronoun. However, *minél* in the subclause is peculiar, inasmuch as morphologically it seems to be not a relative pronoun but a *wh*-pronoun (its relative counterpart is *aminél*). This can be seen in the examples below:

- (6) a. [[Minél több pénzem van]  
 what<sub>WH-ADE</sub> more money-POSS.2/SG is  
 annál gazdagabb vagyok].  
 that<sub>DEM-ADE</sub> richer I.am  
 ‘The more money I have, the richer I am.’
- b. \*Aminél több pénzem van,  
 REL-what-ADE more money-POSS.2/SG is  
 annál gazdagabb vagyok.  
 that<sub>DEM-ADE</sub> richer I.am  
 ‘The more money I have, the richer I am.’ (*intended meaning*)

Similarly to asymmetric examples, symmetric comparative correlatives can also contain a constituent overtly representing the standard value, either as a DP (phrasal comparative) or a CP (clausal comparative):

- (7) a. Minél gyorsabban úszol a jelenlegi bajnoknál,  
 what<sub>WH-ADE</sub> faster you.swim the current champion-ADE  
 annál jobb eséllyel indulhatsz .  
 that<sub>DEM-ADE</sub> better chance-INS you.may.start  
 a következő bajnokságon  
 the next championship-SUP  
 ‘The greater the degree d is such that you swim faster than the current champion by degree d, the better chances you will have during the forthcoming championship.’
- b. Minél gyorsabban úszol,  
 what<sub>WH-ADE</sub> faster you.swim  
 mint amennyire gyorsan a jelenlegi bajnok úszik,  
 than OP fast the current championswims  
 annál jobb eséllyel indulhatsz .  
 that<sub>DEM-ADE</sub> better chance-INS you.may.start  
 a következő bajnokságon  
 the next championship-SUP  
 ‘The greater the degree d is such that you swim faster than the current champion by degree d, the better chances you will have during the forthcoming championship.’

- c. Minél gyorsabban úszol,  
 what<sub>WH-ADE</sub> faster you.swim  
 annál jobb eséllyel indulhatsz  
 that<sub>DEM-ADE</sub> better chance-INS you.may.start  
*a jelenlegibajnoknál legközelebb.*  
 the current champion-ade next.time  
 ‘The faster you swim, the better chances you’ll have  
 next time compared to the current champion.’
- d. Minél gyorsabban úszol,  
 what<sub>WH-ADE</sub> faster you.swim  
 annál jobb eséllyel indulhatsz legközelebb,  
 that<sub>DEM-ADE</sub> better chance-INS you.may.startnext.time  
*mint a jelenlegi bajnok.*  
 than the current champion.  
 ‘The faster you swim, the better chances you’ll have next time compared  
 to the current champion.’

Before investigating the differences between the two main types of comparative correlatives in Hungarian, I would like to discuss to what extent the examples under scrutiny can really be regarded as correlative in nature. Based on Lipták (2005, 2008), the key correlative properties of Hungarian left peripheral relative clauses (LPRCs) are the following:

- (8) ***Correlative properties of Hungarian LPRCs***
- (i) Hungarian LPRCs behave both internally and externally as free relatives, i.e., they do not modify an external head.
  - (ii) LPRCs are matched with an associate in the main clause, with which they entertain a non-local relationship. The correlative pronominal has to be a demonstrative item or phrase.
  - (iii) LPRCs denote a unique/maximal individual that has the property denoted by the relative clause.
  - (iv) LPRCs can contain multiple instances of relative pronouns that are matched with multiple associates in the main clause.
- (Lipták 2008: 410)

As for property (i), even though the head of free relatives is usually an empty pronominal element in Hungarian (cf. Kenesei 1992a: 510), the pronoun is always overt in comparative correlatives. Still, the subordinate clause is considered to be a free relative, since its head can never be anything else but the demonstrative pronouns *annyi(val/ra)* in asymmetric constructions and *annál* in symmetric ones. In other words, the correlative subordinate clause can never modify an external head on its own (Lipták 2008: 410).

Property (ii) is naturally part of comparative correlatives in Hungarian, since the overt presence of the matrix counterpart of the subordinate correlative pronouns is always obligatory; moreover, their relationship does not have to be local, since there may appear an intervening topic between them:

- (9) *Amennyivel több almát szedünk,*  
 REL-how.many-INS more apple-ACC we.pick  
 majd Péternek \*(*annyival*) többet kell megmosnia.  
 later Peter-DAT REL-that-many-INS more-ACC must VM.rinse  
 ‘The more apples we pick, the more Peter will have to rinse.’

Property (iii) is also a natural ingredient of comparative correlatives, since the subordinate clause represents a unique maximal degree (or standard value), which can be mapped onto the scale determined by the gradable (dimensional) predicate, and thus it is an indispensable factor of comparison.

And finally, property (iv) is exemplified below:

- (10) *Aki minél több répát eszik,*  
 REL-who what<sub>WH</sub>-ADE more carrot-ACC eats  
*az annál ügyesebben fog füttyülni.*  
 that<sub>DEM</sub> that<sub>DEM</sub>-ADE more.talented<sub>ADV</sub> will whistle  
 ‘The more carrots one eats, the better one whistles.’

In sum, comparative correlatives in Hungarian can indeed be regarded as genuine correlative constructions, since all the properties of correlatives described by Lipták (2005, 2008) can be found in them. The structure of correlatives can be seen below:

- (11) a. [[<sub>CorCP</sub> RelXP ] [<sub>TopP</sub> DemXP [<sub>TopP</sub> YP [<sub>FocP</sub> ZP V<sup>0</sup> [<sub>VP</sub> ... ]]]]]  
 b. [[<sub>CorCP</sub> RelXP ] [<sub>TopP</sub> YP [<sub>TopP</sub> DemXP [<sub>FocP</sub> ZP V<sup>0</sup> [<sub>VP</sub> ... ]]]]]  
 c. [[<sub>CorCP</sub> RelXP ] [<sub>TopP</sub> YP [<sub>FocP</sub> DEMXP V<sup>0</sup> [<sub>VP</sub> ... ]]]]]  
 (Lipták 2005: 10)

As can be seen, the correlative subordinate clause (CorCP) containing the relative pronoun (RelXP) is left-adjoined to the matrix clause, while the demonstrative pronoun in the matrix clause (DemXP) – as the counterpart of the correlative subclause – can appear in a topic position (either close to the correlative subclause, as in (11a), or further away from it, as in (11b)), or in specFocP as a focussed constituent, as in (11c) above (Lipták 2005: 11). Since the order of the subordinate clause and the matrix clause can be reversed without any change in meaning (i.e., the correlative subclause can be right-adjoined to

the matrix clause, too), I will only concentrate on the position of the correlative pronoun in the matrix clause, whether it really has to obligatorily be in a topic or focus position.

The forthcoming two sections are devoted to the differences between the two types of Hungarian comparative correlatives and the causes behind them.

### 6.3 The position of comparative correlative pronouns

To start with, the question is where the pronouns introducing comparative correlatives are base-generated and what happens to them within the functionally extended degree expression. I suppose that they are all generated within the degree expression, which is supported by the fact that they are in complementary distribution with certain natural constituents of degree expressions. For example, no degree modifier can appear in either of the comparative correlative clauses apart from the comparative correlative pronouns themselves:

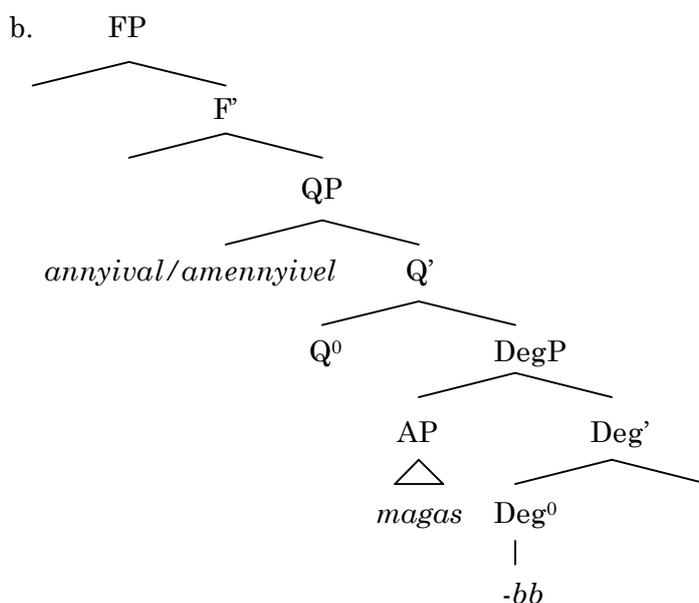
- (12) a. *Amennyivel* (\**sokkal* / \**hússzal*) több almát szedünk,  
 REL-how.many-INS much-INS 20-INS more apple-ACC we.pick  
*annyival* (\**sokkal* / \**hússzal*) többet kell majd  
 REL-that.many-INS much-INS 20-INS more-ACC must later  
*Péternek* megmosnia.  
 Peter-DAT VM.rinse
- b. *Minél* (\**sokkal* / \**hússzal*) több almát szedünk,  
 what<sub>WH</sub>-ADE much-INS 20-INS more apple-ACC we.pick  
*annál* (\**sokkal* / \**hússzal*) többet kell majd  
 that<sub>DEM</sub>-ADE much-INS 20-INS more-ACC must later  
*Péternek* megmosnia.  
 Peter-DAT VM.rinse
- ‘The more apples we pick, the more Peter will have to rinse.’

It is straightforward that the correlative pronouns equipped with instrumental Case (*amennyivel* and *annyival*) in asymmetric constructions block the appearance of any other degree modifier, since they would compete for the same Case position. In other words, as it has been argued that specQP is an inherent Case position in comparative degree expressions, and the Case assigned to the constituent there is instrumental in Hungarian, it is reasonable that these pronouns are also base-generated in specQP:

(13) Generating *annyival* and *amennyivel*

a. Péter	amennyivel	magasabb	Jancsinál,
Peter	REL-how.much-INS	taller	Johnny-ADE
Jancsi	annyival	magasabb	Annánál.
Johnny	REL-that.much-INS	shorter	Anna-ADE

‘Peter is taller than Johnny, and Johnny is taller than Anna, and the difference between Peter’s height and Johnny’s height is the same as the difference between Johnny’s height and Anna’s height.’



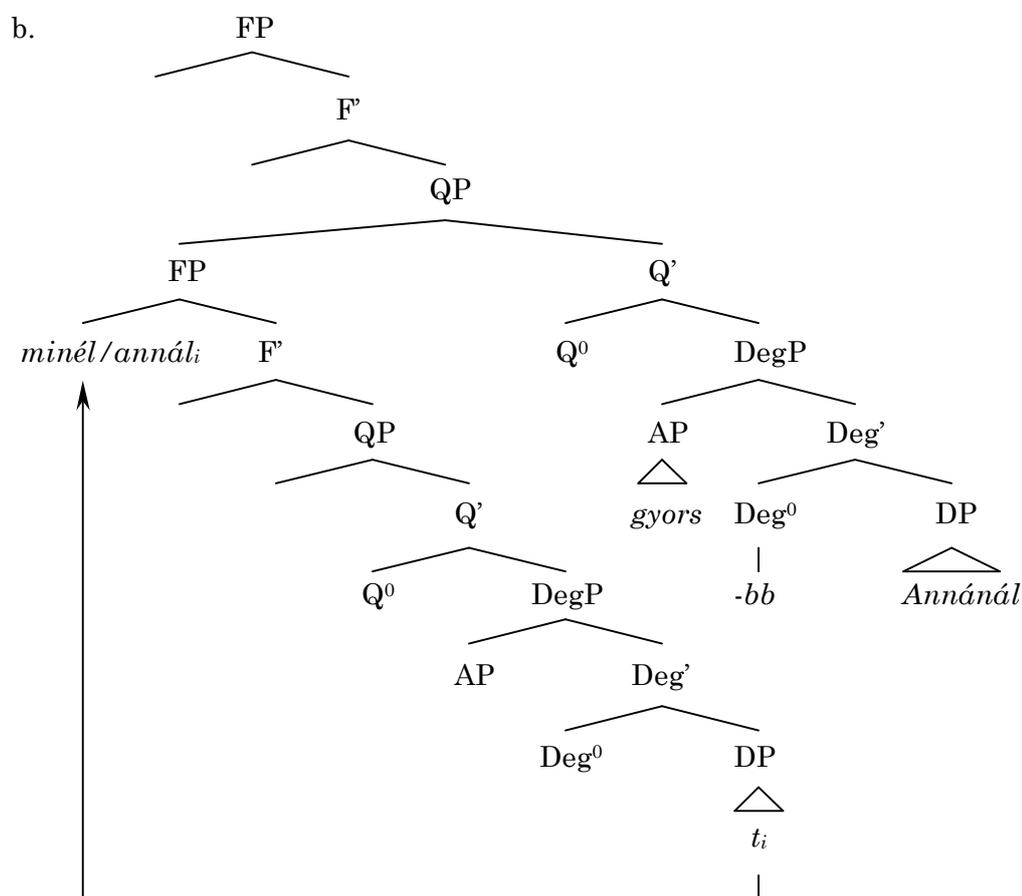
As a matter of fact, one may expect that a closer look at the inherent Case assignment of the correlative pronouns in symmetric comparative correlatives may be just as helpful. *Minél* and *annál* are assigned adessive Case, which is the Case of phrasal comparative complements of the Degree head in Hungarian. If it is accepted that the correlative pronouns *minél* and *annál* are also assigned adessive Case in the complement position of a Deg<sup>0</sup>, this naturally implicates that they are also generated in that position, since it is an argument position (hosting the standard value of comparison), and inherent Case assignment is supposed to work in a fashion parallel with theta role assignment.

The question is why the presence of comparative complements (either as DPs or CPs) does not prevent correlative pronouns from being assigned adessive Case, which could be seen in (7) above. If it is assumed that the complement of Deg<sup>0</sup> is already taken, the explanation may involve another degree expression, in which the correlative pronoun may be base-generated. The question is where this extra degree expression can be found.

Recall that adjectival degree modifiers (ADMs) are degree expressions on their own, even if they are base-generated in specQP (see Chapter 3). It was also

argued in Chapter 3 that ADMs in specQP can also be comparative. What this means is that there is an extra degree expression containing a DegP, whose complement position can host the correlative pronoun, and where they can be assigned adessive Case. After Case assignment, since the correlative operators are always the initial constituents in comparative correlatives, I suggest that they move to the highest possible specifier position available for them, which is specFP. This movement is very similar to Predicate Inversion of measure phrases (see Chapter 3; cf. Corver 2009). The whole idea is exemplified below:

- (14) a. Péter minél gyorsabb Annánál, annál jobb.  
 Peter what<sub>WH-ADE</sub> faster Anna-ADE that<sub>DEM-ADE</sub> better  
 'The greater the extent is by which Peter is faster than Anna, the better.'



within the degree modifier (in specQP) and subsequently moved to specFP; this is supported by the fact that *inkább* (in  $Q^0$ , as described earlier) follows *minél*:

- (15) Péter minél inkább levert, annál inkább zsémbes.  
 Peter what<sub>WH-ADE</sub> rather depressed that<sub>DEM-ADE</sub> rather grouchy  
 ‘The more depressed Peter is, the more grouchy he gets.’

In fact, these positions can be filled in other constructions as well, as can be seen below:

- (16) [QP[QP[QP sokkal] inkább mint valaha] fontos]<sup>2</sup>  
 much-INS rather than ever important  
 az emberiség számára az áram.  
 the humanity for the electricity  
 ‘Electricity is much more important for humanity than ever.’  
 (Kántor 2007, ex. 15)

As can be seen, the degree modifier *sokkal* is in the specQP of the degree expression that contains *inkább*, which in turn is in the specQP of the degree expression that contains *fontos*. In other words, *sokkal* modifies the degree associated with *inkább*, and [*sokkal inkább mint valaha*] modifies the degree associated with *fontos*. Still, [*mint valaha*] represents the standard value associated with *inkább*. However, if either *minél* or *annál* appears in the construction, both *sokkal* and [*mint valaha*] become illegitimate; this is shown below:

- (17) (\**Sokkal*) {minél / annál} (\**sokkal*) inkább (\**mint valaha*)  
 much-INS what<sub>WH-ADE</sub> that<sub>DEM-ADE</sub> much-INS rather than ever  
 fontos az emberiség számára az áram,...  
 important the humanity for the electricity

Since *inkább* is generated inside the degree modifier (in fact, in  $Q^0$ , as was argued in Chapter 3), it can be found only in symmetric comparative correlatives, since the pronouns in asymmetric comparative correlatives substitute the whole degree modifier in specQP (see (13) above).

In sum, every comparative correlative pronoun is generated inside the degree expression of the relevant clause. The main difference between the two types of comparative correlatives can be captured in that (i) the correlative pronouns in asymmetric comparative correlatives are generated in specQP, whereas (ii) their counterparts in symmetric ones are generated in the

<sup>2</sup> FP layers are not marked here for the sake of simplicity.

complement position of  $\text{Deg}^0$  within the functionally extended degree expression functioning as a degree modifier in  $\text{specQP}$ , then the pronoun moves to  $\text{specFP}$ , still within the degree modifier. It may be important that *inkább* (*rather*) introduces an extra (open, non-finite) scale to the computation, whose degrees range from false to true values, thus making it possible to compare degrees – associated with different individuals – that are not mapped onto the same scale:

- (18) Péter inkábsikeres, mint gazdag.  
 Peter rather successful than rich  
 ‘Peter is successful, rather than rich.’

On the other hand, I suppose that the degrees mapped onto different scales (i.e., the degree to which Peter is successful compared to a contextually determined average degree of success and the degree to which Peter is rich compared to a contextually determined average degree of richness) are subsequently mapped onto a common scale associated with *inkább*, otherwise the two degrees could not be interpreted. Still, I do not venture an analysis here, since a third scale would simply complicate interpretation issues, and I am convinced that this is a primarily semantic problem, as the syntactic derivation seems to be capable of deriving the structure of (15) and (18). From now on, I will concentrate on comparative correlatives whose clauses include identical gradable predicates. In fact, the appearance of *inkább* has been used to show that there exists a position within the functionally extended degree expression where comparative correlative pronouns in symmetric constructions can be assigned adessive Case.

## 6.4 Movement in Hungarian comparative correlatives

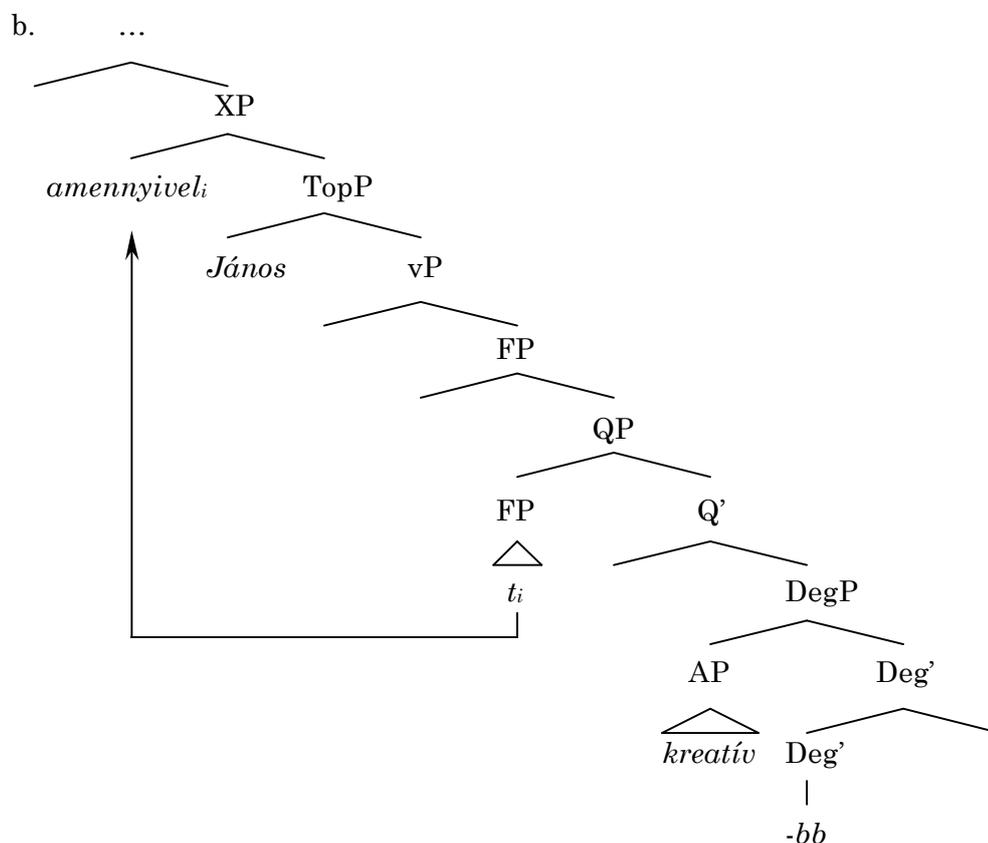
In the present section, I would like to investigate which constituents may move out of the degree expression, what the conditions of these transformations are, and when the whole degree expression moves. Later, I will discuss what features may trigger these movements and what the landing sites are.

**6.4.1 The constituents undergoing movement.** Let us start with asymmetric comparative correlatives. *Amennyivel* and *annyival* tend to be able to appear at the beginning of their respective clauses, and the other constituents within the degree expression do not necessarily move along with them. This can be seen below:

- (19) a. Munka közben amennyivel János kreatívabb, *predicative*  
 work during REL-how.much-INS John more.creative  
 Péter annyival kitartóbb.  
 Peter REL-how.much-INS enduring  
 ‘The degree by which John is more creative at work is the same as the  
 degree by which Peter is more enduring at work.’
- b. \*Amennyivel az igazgató *attributive*  
 REL-how.much-INS the director  
 szorgalmasabb munkatársat vett fel,  
 more.diligent colleague-ACC hired VM  
 annyival neki könnyebb lesz  
 REL-that.much-INS he-DAT easier will.be  
 betanítani a munkára.  
 train-INF the job-SUBL  
 ‘The more diligent the colleague is that is hired by the director, the  
 easier it will be for the director to train him for the job.’ (*intended*)
- c. Az igazgató amennyivel szorgalmasabb *attributive*  
 the director REL-how.much-INS more.diligent  
 munkatársat vett fel,  
 colleague-ACC hired VM  
 neki annyival könnyebb lesz  
 he-DAT REL-that.much-INS easier will.be  
 betanítani a munkára.  
 train-INF the job-SUBL  
 ‘The more diligent the colleague is that is hired by the director, the  
 easier it will be for the director to train him for the job.’

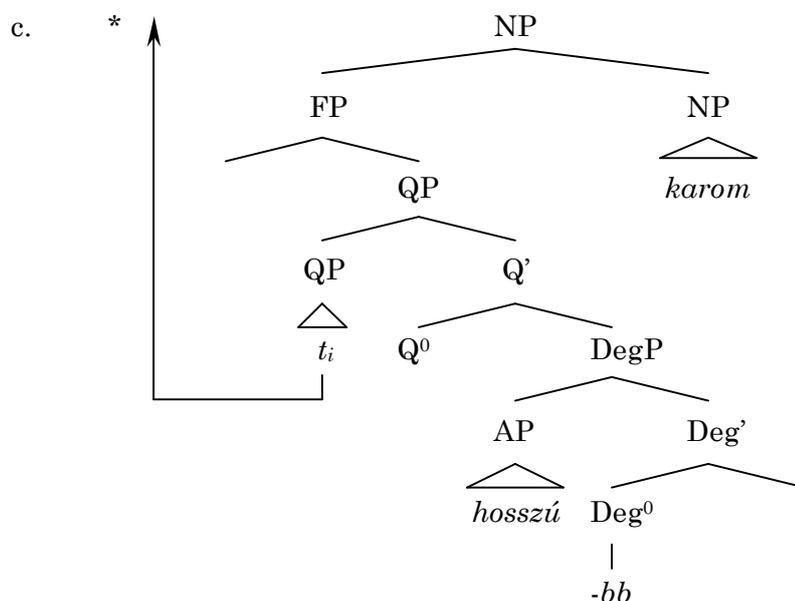
It can be seen in the predicative example in (19a) that the topicalized subject (*János*) precedes the degree predicate; however, the correlative pronoun (*amennyivel*) precedes the subject, which means that it must have moved out of the degree expression. Still, in attributive examples (19b-c), the construction becomes ungrammatical, if the correlative pronoun moves on its own. This can be explained by the fact that the degree expression is a left-adjoined modifier in the attributive examples above, and adjuncts are islands (CED, Condition on Extraction Domain, Huang 1982: 505; Adjunct Island Condition, Johnson 2002: 1), thus the movement of the correlative pronoun out of the degree expression is blocked. The difference between the two constructions is illustrated by the following diagrams:

- (20) a. Munka közben[amennyivel János kreatívabb], ...  
 work during REL-how.much-INS John more.creative



As can be seen, CED is not violated here; however, the following diagram shows that this is not the case in attributive comparatives:

- (21) a. Amennyivel hosszabb karom nőtt Zoliénál,  
 REL-how.much-INS longer my.arm grew Zoli's-ADE  
 Zolinak annyival hosszabb a haja az enyémmél.  
 Zoli-DAT REL-that.much-INS longer the his.hair the mine-ADE  
 'My arms grew longer than Zoli's arms by degree d, and Zoli's hair is longer than my hair by degree d.'  
 b. \*Amennyivel nőtt hosszabb karom ...



This diagram shows why CED is violated: the whole degree expression is left-adjoined to the NP, while the correlative pronoun is generated in the specifier of the QP within the degree expression.

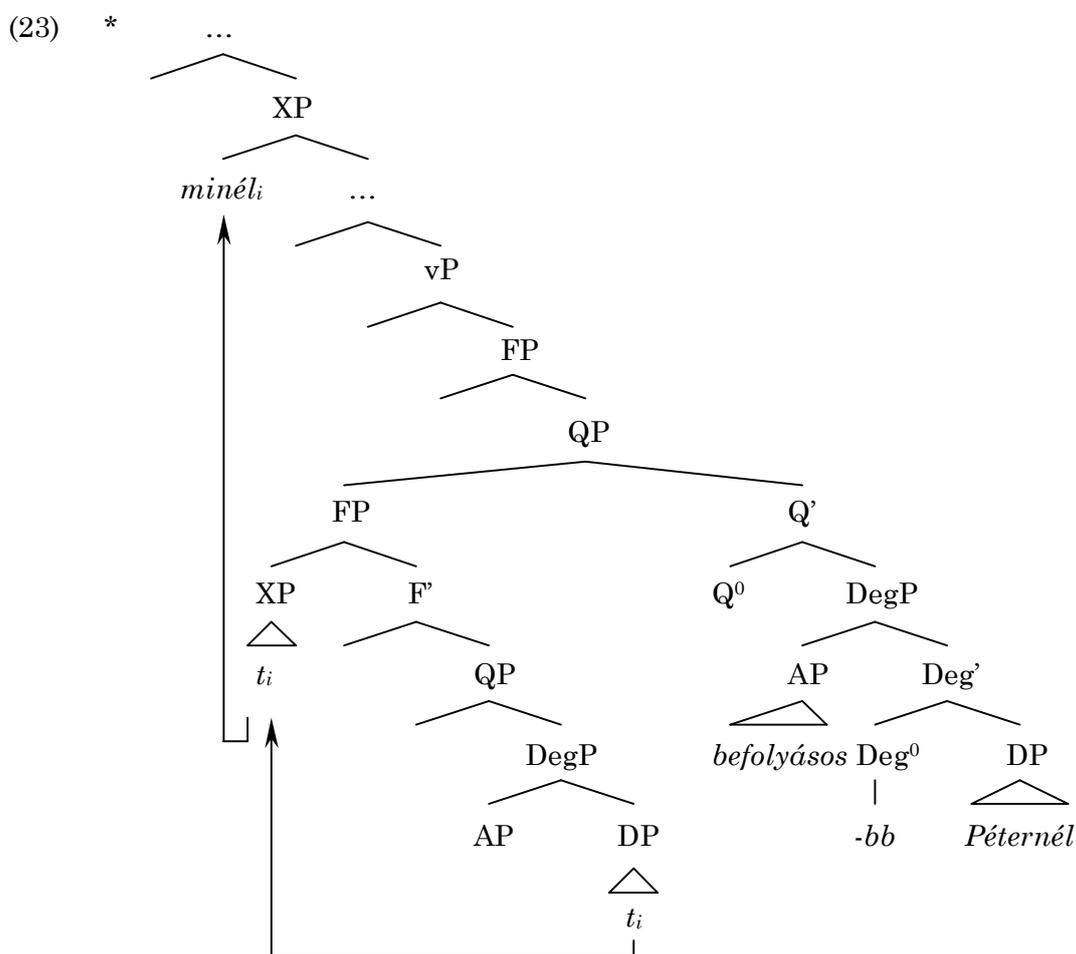
The correlative pronoun may be preceded by other constituents (e.g., topics) in the correlative clause; I will return to this problem later, when the landing sites are discussed.

Let us turn to symmetric comparative correlatives now by looking at the following examples:

- (22) a. *Minél befolyásosabb János Péternél,*  
 what<sub>WH-ADE</sub> more.influential John Peter-ADE  
*Péter annál engedelmesebb.*  
 Peter that<sub>DEM-ADE</sub> more.obedient  
 ‘The more influential John is compared to Peter, the more obedient Peter will be.’
- b. \**Minél János befolyásosabb Péternél, annál Péter engedelmesebb.*
- c. *Fickó minél erősebb kutya lesz,*  
 Butch what<sub>WH-ADE</sub> stronger dog will.be  
*Pihe annál engedelmesebb lesz.*  
 Fluffy that<sub>DEM-ADE</sub> more.obedient will.be  
 ‘The stronger a dog Butch becomes, the more obedient Fluffy will become.’
- d. \**Minél Fickó erősebb kutya lesz, annál Pihe engedelmesebb lesz.*

In fact, extracting *minél* out of the degree expression in the attributive example is impossible, similarly to what was seen in (18b), since it would violate CED.

However, extracting the correlative pronoun in predicative constructions is likewise illegitimate in symmetric comparative correlatives, as can be seen in (22). However, this can also be explained in terms of left branch extractions, since – similarly to other examples violating CED – movement out of left-branch constituents is not grammatical; that is, in order to derive the examples in (22b) and (22d), one would have to extract the correlative pronoun out of the degree expression generated in the specifier position of QP (functioning as a degree modifier). This can be seen in the diagram below, which illustrates the derivation of (22b), and displays the violation of the Left Branch Condition (LBC; cf. Corver 1990, Kennedy and Merchant 1997).



In sum, the correlative pronoun cannot move out of the degree expression in symmetric comparative correlatives.

Moving on, let us have a look at the examples below, in which the whole degree expression can move to the front of the clause:

- (24) a. [Minél erősebb] ma Héraklész,  
 what<sub>WH-ADE</sub> stronger today Heracles  
 annál jobban fél tőle Hádész.  
 that<sub>DEM-ADE</sub> better is.afraid he-ABL Hades  
 ‘The stronger Heracles is today, the more Hades is afraid of him.’
- b. [Minél inasabb kacsát] lősz,  
 what<sub>WH-ADE</sub> more.sinewy duck-ACC you.shoot  
 annál nehezebben készíthető el.  
 that<sub>DEM-ADE</sub> more.difficult<sub>ADV</sub> can.be.prepared VM  
 ‘The more sinewy the duck is that you shoot, the more difficult it will be to prepare it.’
- c. [Amennyivel gyorsabban] elmosogatok,  
 REL-how.much-INS faster VM.do.the.washing.up  
 [annyival hosszabb ideig] olvashatok.  
 REL-that.much-INS longer time-TERM I.can.read  
 ‘The faster I do the washing up, the longer I can read.’

In fact, the whole degree expression can undergo fronting in asymmetric as well as symmetric comparative correlatives. The examples above make one think that the correlative pronoun must somehow be allowed to move to the beginning of the clause, either on its own (e.g., in the case of asymmetric comparative correlatives containing a predicative degree expression) or by pied-piping the rest of the degree expression. Pied-piping obligatorily occurs whenever the correlative pronoun is embedded in a constituent from which extraction is barred (by CED or LBC).

Furthermore, that the movement of correlative pronouns is obligatory is supported by the examples below:

- (25) a. \*Héraklész tegnap volt minél erősebb,  
 Heracles yesterday was what<sub>WH-ade</sub> stronger  
 Hádész félt tőle annál jobban.  
 Hades was.afraid he-ABL that<sub>DEM-ade</sub> better  
 ‘The stronger Heracles was yesterday, the more Hades was afraid of him.’ (*intended meaning*)
- b. \*Mosogatok amennyivel gyorsabban,  
 I.do.the.washing.up REL-how.much-INS faster  
 olvashatok annyival hosszabb ideig.  
 I.can.read REL-that.much-INS longer time-TERM  
 ‘The faster I do the washing up, the longer I can read.’ (*intended*)

As can be seen, if the correlative pronoun remains *in situ*, the construction is illegitimate.

**6.4.2 Triggers and landing sites.** The question is what triggers the movements described in the previous section, and which positions serve as landing sites for these operations. Apart from the asymmetric–symmetric distinction, on the basis of the gradable predicate, comparative correlatives can further be divided into the following subcategories:

- (26) 1.the gradable (dimensional) predicate is an adjective.  
 2.the gradable (dimensional) predicate is a positive adverb.  
 3.the gradable (dimensional) predicate is a negative adverb.

I suggest that the second and the third groups should be treated separately, since (i) positive predicate adverbials can be adjoined to vP and its higher functional projections (AspP, FocP), and they may optionally move away from that position, whereas (ii) negative adverbs are inherently focus-marked (É. Kiss 2006: 445ff.; see also *default focus*: cf. Surányi 2002).

In those cases where the correlative pronoun or the constituent containing the correlative pronoun can be followed by a topic, the focus feature can be excluded as a trigger of movement; probably this happens in asymmetric comparative correlative subordinate clauses; i.e., in clauses containing *amennyivel*:

- (27) a. Péter amennyivel Jánosnál a versenyen *pred.*  
 Peter REL-how.much-INS John-ADEthe race-SUP  
 gyorsabb lesz,  
 faster will.be  
 annyival fáradtabb lesz az esti partin.  
 REL-that.much-INS more.tired will.be the evening party-SUP  
 ‘The faster Peter will be in the race compared to John, the more tired he will be during the party this evening.’
- b. Az interneten amennyivel drágább könyvet *attr.*  
 the internet-SUP REL-how.much-INS more.expensive book-ACC  
 Péter megrendel,  
 Peter orders  
 annyival kevesebb pénz marad a számláján.  
 REL-that.much-INS less money remains the account-POSS-SUP  
 ‘The more expensive the books are that Peter orders on the internet, the less money remains on his account.’

- c. Péter amennyivel jobban a munkahelyén kinézett,  
 Peter REL-how.much-INS better<sub>ADV</sub> the workplace-SUP VM.looked  
 annyival ügyetlenebb volt.  
 REL-that.much-INS clumsier was  
 ‘The better Peter looked at his workplace, the clumsier he was.’

As has been mentioned, *amennyivel* is a relative pronoun morphologically, and it was argued in Chapter 4 that relative operators in Hungarian move to the specifier position of the lower CP in the left periphery. Since topics can appear between the two complementizer positions as well as between the lower CP and DistPs, the following example does not present a problem:

- (28) Sándornál amennyivel Péter magasabb,  
 Alex-ADE REL-how.much-INS Peter taller  
 annyival fürgébb.  
 REL-that.much-INS quicker  
 ‘The taller Peter is compared to Alex, the quicker he is.’

As can be seen, the correlative pronoun is preceded by *Sándornál*, the phrasal comparative complement, while it is followed by the subject, *Péter*; in fact, both are topics. (28) presents a predicative example, with the correlative pronoun moving to the lower specCP. Nevertheless, the question is whether *amennyivel* always moves to this position. Let us have a look at the following example:

- (29) Amennyivel Péter ’jobban nézett ki,  
 REL-how.much-INS Peter better<sub>ADV</sub> looked VM  
 annyival tapasztalatlanabb volt.  
 REL-that.much-INS more.inexperienced was  
 ‘The better Peter looked, the more inexperienced he was.’

What is really conspicuous in this example is that the non-neutral verb-verb modifier order is indicative of focussing, while the adverb receives main stress. This means that the correlative pronoun must have moved out of the degree expression into the lower specCP before the degree expression – containing the adverb – moves to specFocP. This is supported by the fact that there can be a topic between the correlative pronoun and the adverb, even if there is a negative adverb in the construction, which is obligatorily focussed (cf. É. Kiss 2006):

- (30) Amennyivel Péter ROSSZABBUL nézett ki,  
 REL-how.much-INS Peter worse<sub>ADV</sub> looked VM  
 annyival tapasztaltabb volt.  
 REL-that.much-INS experienced was  
 ‘The worse Peter looked, the more experienced he was.’

As can be seen, *Péter* (as the subject of the clause) is a topic between the correlative operator in the lower specCP and the negative adverb in specFocP.

In fact, *jobban* and *rosszabbul* in (29) and (30) can be considered obligatory adverbials (or adverbial complements, quasi-arguments), thus the extraction of the correlative pronoun is not a problem here. Whenever the landing site is the specifier of the lower CP, I suggest that this operation is triggered by the feature that generally attracts relative operators into this position: [+rel]. However, there are cases in which the landing site is a different position:

- (31) Péter is AMENNYIVEL ROSSZABBUL nézett ki,  
 Peter also REL-how.much-INS worse<sub>ADV</sub> looked VM  
 annyival tapasztaltabb volt.  
 REL-that.much-INS inexperienced was  
 ‘It is true of Peter, too, that the worse he looked, the more experienced he was.’

As can be seen, the distributive *is (also)* phrase (*Péter is – Peter also*) is followed by both the relative operator and the negative adverb, which suggests that the whole degree expression, including the correlative pronoun and the adverb, moves to specFocP. Accordingly, the landing site of the movement of *amennyivel* is not the specifier of the lower CP; instead, the constituent that it is contained within can be focussed. It seems as though either of the possibilities can be viable, and the choice between them is optional; this is supported by the following example, too:

- (32) Péter is AMENNYIVEL DRÁGÁBB KÖNYVET  
 Peter also REL-how.much-INS more.expensive book-ACC  
 rendel meg az interneten,  
 orders VM the internet-SUP  
 annyival kevesebb pénz marad a számláján.  
 REL-that.much-INS less money remains the account-POSS-SUP  
 ‘The more expensive the books are that Peter orders on the internet, the less money remains on his account.’

The difference between (32) and (27b) can be captured in that the degree expression can be focussed, even if it does not contain a negative adverb. Still, if it is focussed, the correlative pronoun does not have to move to the specifier of the lower CP. From a descriptive point of view, checking [+foc] seems to overwrite the checking of [+rel]. In fact, it is still valid that the constituent containing *amennyivel* obligatorily moves out of the minimal predicate (vP), and it always precedes the verb, due to the checking of [+foc] or [+rel]. However, the degree expression containing a positive adverb can also guarantee the preverbal appearance of the correlative pronoun, since such adverbs are adjoined to the predicate:

- (33) Péter is amennyivel jobban megoldotta a feladatot,  
 Peter also REL-how.much-INS better<sub>ADV</sub> VM.solved the exercise-ACC  
 annyival jobb jegyet kapott.  
 REL-that.much.INS better mark got  
 ‘It is true of Peter, too, that the better he did the exercise, the better mark he got.’

What this means is that the movement of the correlative pronoun is not obligatory, if the degree expression containing an adverb functions as a predicate adverbial.

The phenomena related to *amennyivel* that have been detected so far can be summarized as follows:

- (34) 1.a. *Amennyivel* can move to the specifier of the lower CP on its own, if the degree expression is predicative (see 27a);  
 b. Because of CED, it may move to the specifier of the lower CP only if the whole degree expression moves along with it, if the degree expression is attributive (see 27b);  
 c. The comparative degree expression – containing the correlative pronoun – can also be focussed (see 32).  
 2. If the degree expression contains a positive adverb, there is no obligatory movement (see 33); however, the correlative pronoun (see 29) or the whole degree expression (see 27c) can optionally move to the specifier of the lower CP.  
 3. If the degree expression contains a negative adverb, the correlative pronoun either moves to the specifier of the lower CP (if it is not ruled out by CED; see 30) before the degree expression is focussed, or the whole degree expression is focussed, including the correlative pronoun (see 31).

Now let us turn to the main clause of asymmetric comparative correlatives. The movement of *annyival* or the constituent containing it is not necessary, as can be seen below:

- (35) a. Kereshetek annyival fiatalabb embereket,  
 I.can.search REL-that.much-INS younger people-ACC  
 amennyivel Péter idősebb Jánosnál.  
 REL.how.much-INS Peter older John-ADE  
 ‘I can search for people who are younger by degree d such that Peter is older than John by degree d.’
- b. Megoldhatta Zsuzsi annyival jobban a feladatot,  
 VM.could.solve Susie REL-that.much-INS better<sub>ADV</sub> the exercise-ACC  
 amennyivel jobban János.  
 REL-how.much-INS better<sub>ADV</sub> John  
 ‘Susie could do the exercise better by degree d such that John could do the exercise worse by degree d.’

As can be seen, Lipták’s (2005: 11) constraint regarding the obligatory topicalization or focalization of the demonstrative correlative pronoun in the correlative matrix clause is not valid in comparative correlatives.

In fact, the difference between (35a) and (35b) is that [*annyival fiatalabb embereket*] in (35a) is an argument of the verb, whereas [*annyival jobban*] is a right-adjoined, optional modifier of the predicate (cf. É. Kiss 2006). Still, it is straightforward that the matrix correlative pronoun *annyival* is in a postverbal position; therefore, it may be concluded that there is no obligatory movement here. Nevertheless, there is one exception: degree expressions containing negative adverbs are naturally focussed, and the moved constituent also contains the correlative pronoun:

- (36) Amennyivel rosszabbul oldotta meg Zsuzsi a feladatot,  
 REL-how.much-INS worse<sub>ADV</sub> solved VM Susie the exercise-ACC  
 Péter is ANNYIVAL ROSSZABBULoldotta meg/\*megoldotta.  
 Peter also REL-that.much-INS worse<sub>ADV</sub> solved VM VM.solved  
 ‘Susie did the exercise worse by degree d such that Peter also did the exercise worse by d.’

Now let us turn to the pronoun in the subordinate clause of symmetric comparative correlatives by looking at the following examples:

- (37) a. \*Minél gyorsabb autót Péter is kiválasztott,  
 what<sub>WH-ADE</sub> faster car-ACC Peter also VM.chose  
 annál jobb eredményt ért el.  
 that<sub>DEM-ADE</sub> better result-ACC achieved VM  
 b. \*Péter is kiválasztott minél gyorsabb autót, annál jobb eredményt ért el.  
 c. Péter is MINÉL GYORSABBAUTÓT választott ki, annál jobb eredményt ért el.  
 ‘It is true of Peter, too, that the faster car he chose, the better results he achieved.’

The two ungrammatical examples indicate that the constituent containing *minél* cannot precede the element in specDistP (i.e., it cannot be a topic) and it cannot follow the verb (i.e., it must move out of its base position). Based on (37c), the degree expression containing *minél* moves into a position that is between distributive quantifiers and the verb, and it gets main stress: these all suggest that it is focussed. This view is even supported by the fact that nothing else can be focussed in any comparative correlative subclause containing *minél*:

- (38) \*Péter minél gyorsabb autót TEGNAP választott ki,  
 Peter what<sub>WH-ADE</sub> faster car-ACC yesterday chose VM  
 annál jobb eredményt ért el.  
 that<sub>DEM-ADE</sub> better result-ACC achieved VM  
 ‘It is true of Peter, too, that the faster car he chose yesterday, the better results he achieved.’

In order to test symmetric comparative correlatives containing predicative degree expressions, let us have a look at the following examples:

- (39) a. Péter is MINÉL GYORSABB akart lenni,  
 Peter also what<sub>WH-ADE</sub> faster wanted be-INF  
 annál rosszabb eredményt ért el.  
 that<sub>DEM-ADE</sub> worse result-ACC achieved VM  
 ‘The faster Peter wanted to be, the worse the results were that he achieved.’  
 b. \*Minél gyorsabb Péter is akart lenni, annál rosszabb eredményt ért el.  
 c. \*Péter is akart lenni minél gyorsabb, annál rosszabb eredményt ért el.  
 d. \*Péter is akart minél gyorsabb lenni, annál rosszabb eredményt ért el.

As can be seen, the constituent containing *minél* cannot move higher than DistP, and it cannot follow the finite verb; that is, it moves to the specFocP preceding the finite verb.

The question is whether this operation is obligatory in the cases where the degree expression contains an adverb instead of an adjective. In the case of a

positive adverb, the whole degree expression may remain *in situ*, adjoined to the predicate, thus there is a neutral verb modifier-verb order; however, it may optionally be focussed, too:

- (40) Péter is minél korábban {ér be / beér} a célba,  
 Peter also what<sub>WH-ADE</sub> earlier reaches<sub>VM</sub> VM.reaches the line-ILL  
 annál boldogabb lesz a felesége.  
 that<sub>DEM-ADE</sub> happier will.be the wife-POSS  
 ‘It is true of Peter, too, that the earlier he crosses the line, the happier his wife will be.’

On the contrary, a degree expression containing a negative adverb must obligatorily be focussed (É. Kiss 2006):

- (41) Péter is minél lassabban {ér be / \*beér} a célba,  
 Peter also what<sub>WH-ADE</sub> slower<sub>ADV</sub> reaches<sub>VM</sub> VM.reaches the line-ILL  
 annál csalódottabb lesz a felesége.  
 that<sub>DEM-ADE</sub> more.disappointed will.be the wife-POSS  
 ‘It is true of Peter, too, that the later he crosses the line, the more disappointed his wife will be.’

In sum, it can be concluded that the correlative pronoun in symmetric comparative correlative subordinate clauses always moves to specFocP, except when the gradable predicate is a positive VP-adverb. This movement can be triggered by the inherent [+foc] feature of the negative adverb; however, the question is what happens when the gradable predicate is an adjective. One may purport that – based on its morphological properties – *minél* is a *wh*-pronoun (as has been indicated in the glosses), which would explain the obligatory focalization, since *wh*-pronouns are inherently focus-marked in interrogative clauses (cf. É. Kiss 2002). However, this hypothesis is weakened by the fact that there is no obligatory focus movement, if the gradable predicate in the degree expression is a positive VP-adverb (see 40): the [+foc] feature of the operator could be checked only optionally. I have to leave this problem to be solved by future research.

Turning to the last pronoun under scrutiny, *annál* in symmetric comparative correlative subordinate clauses cannot be extracted out of the degree predicate either, as was argued in connection with (23):

- (42) a. Mari minél szebb,  
 Mary what<sub>WH-ADE</sub> prettier  
 a házban mindenki annál irigyebb.  
 the house-INE everyone that<sub>DEM-ADE</sub> envious  
 'The prettier Mary is, the more envious everyone in the house is.'
- b. \*Mari minél szebb, annál a házban mindenki irigyebb.  
 c. \*Mari minél szebb, a házban annál mindenki irigyebb.  
 d. \*Mari minél szebb, a házban annál mindenki irigyebb.  
 e. Mari minél szebb, annál irigyebb a házban 'mindenki.'<sup>3</sup>

As far as the syntactic position of the degree expression containing *annál* is concerned, what is true of its subordinate counterpart seems to apply here as well: it moves to a functional projection that follows DistP, but precedes the finite verb, and it receives main stress; that is, it is focussed:

- (43) a. Péter is ANNÁL GYORSABB AUTÓT választott ki,  
 Peter also that<sub>DEM-ADE</sub> faster car-ACC chose VM  
 minél több pénze volt.  
 what<sub>WH-ADE</sub> more money-POSS was  
 'It is true of Peter, too, that the more money he had, the faster car he chose.'
- b. Péter is ANNÁL GYORSABB akart lenni,  
 Peter also that<sub>DEM-ADE</sub> faster wanted be-INF  
 minél kipihentebb volt.  
 what<sub>WH-ADE</sub> more.relaxed was  
 'It is true of Peter, too, that the more relaxed he was, the faster he wanted to be.'

Accordingly, it cannot precede topics, it cannot surface between two topics, or between a topic and DistP, and it cannot appear postverbally. In fact, it can emerge at the beginning of the correlative main clause only if there are no topics or distributive elements in it. These are shown by the examples below:

- (44) a. ANNÁL GYORSABB akart lenni 'Péter is,  
 that<sub>DEM-ADE</sub> faster wanted be-INF Peter also  
 minél kipihentebb volt.  
 what<sub>WH-ADE</sub> more.relaxed was  
 'It is true of Peter, too, that the more relaxed he was, the faster he wanted to be.'

<sup>3</sup> A stressed universal quantifier or also-phrase is analyzed as if it had moved to specDistP (É. Kiss 2002: 119ff.).

- b. \*Annál gyorsabb a versenyen Péter is akart lenni, minél kipihentebb volt.  
 c. \*A versenyen annál gyorsabb Péter is akart lenni, minél kipihentebb volt.  
 d. \*Péter is akart lenni annál gyorsabb, minél kipihentebb volt.  
 e. \*Péter is akart annál gyorsabb lenni, minél kipihentebb volt.

Furthermore, it is also straightforward that the degree expression containing *annál* is in complementary distribution with other focussed constituents:

- (45) \*Péter annál gyorsabb A VERSENYEN akart lenni,  
 Peter that<sub>DEM-ADE</sub> faster the race-SUP wanted be-INF  
 minél kipihentebb volt.  
 what<sub>WH-ADE</sub> more-relaxed was  
 ‘The more relaxed Peter was, the faster he wanted to be ON THE RACE.’  
 (*intended*)

As for the degree expressions containing adverbs, the same conclusions can be drawn: those with positive adverbs can be adjoined to the predicate and can also be focussed, whereas those containing negative adverbs are obligatorily focussed:

- (46) a. Péter annál gyorsabban {ér be / beér} a célba,  
 Peter that<sub>DEM-ADE</sub> faster<sub>ADV</sub> reaches VM VM.reaches the line-ILL  
 minél kipihentebb.  
 what<sub>WH-ADE</sub> more.relaxed  
 ‘The more relaxed Peter is, the earlier he crosses the line.’  
 b. Péter annál lassabban {ér be /\*beér} a célba,  
 Peter that<sub>DEM-ADE</sub> slower<sub>ADV</sub> reaches VM VM.reaches the line-ILL  
 minél fáradtabb.  
 what<sub>WH-ADE</sub> more.tired  
 ‘The more tired Peter is, the later he crosses the line.’

The movements of the constituents that contain comparative correlative pronouns are summarized in the following chart:

(47) *The movement of (constituents containing) comparative correlative pronouns*

Type/pronoun	<i>amennyivel</i>	<i>annyival</i>	<i>minél</i>	<i>annál</i>
adjectival gradable predicate	obligatory: lower specCP or focus	movement optional	obligatory: focus	obligatory: focus
positive adverb as gradable predicate	movement optional	movement optional	movement optional	movement optional
negative adverb as gradable predicate	obligatory: focus, or the pronoun moves to lower specCP	obligatory: focus	obligatory: focus	obligatory: focus

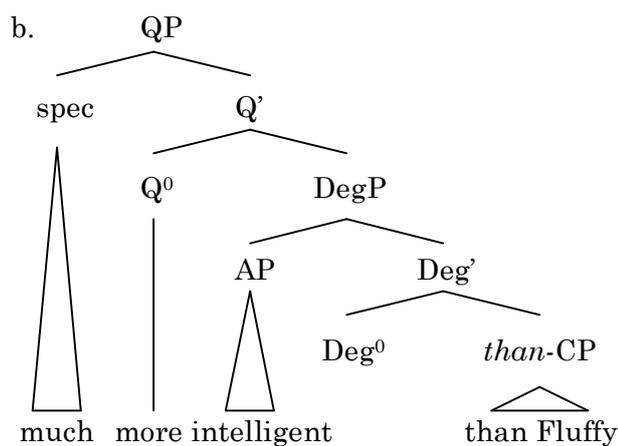
# Chapter Seven

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## Conclusion

The core problem considered in this dissertation was that of the syntax of comparison. I proposed that the structure of comparatives is the following:

- (1) a. Butch is [<sub>QP</sub> much much+er<sub>i</sub> [<sub>DegP</sub> intelligent t<sub>i</sub> [<sub>CP</sub> than Fluffy]]].



I argued in Chapter 2 that there is a semantic motivation to believe that the constituent representing the standard value is base-generated as the complement of Deg<sup>0</sup>; this is supported by Case phenomena in Hungarian and Russian. The

gradable predicate, which is responsible for determining the dimension of comparison, is in the specifier position of DegP. This may seem to be problematic from the perspective of the formation of synthetic comparatives; however, assuming that the affixal properties of affixes are distributed into morphosyntactic AFFIX and morphophonological /affix/ features (cf. Ackema and Neeleman 2000), once the degree morpheme has moved from Deg<sup>0</sup> to Q<sup>0</sup>, the Morphological Merger is capable of obviating such problems. That there is a QP on the top of the DegP is supported by *much*-support phenomena; Q<sup>0</sup> may host the dummy quantifier *much*, while degree modifiers in comparative degree expressions are located in specQP; in fact, specQP is also an inherent Case position in Hungarian, similarly to that of the standard value.

Since degree modifiers are logical predicates predicating over degrees, it sounds reasonable to assume that a constituent representing a degree may be predicated over by only one degree modifier in order to satisfy the Theta Criterion. It was shown in Chapter 3 that multiple degree modification consists of degree modifiers multiply embedded within each other's functionally extended maximal projections.

As for absolute constructions, I assumed that there is a fundamental parallelism regarding the syntactic structure of absolute degree expressions and that of comparatives. In fact, I adopted Corver's (2009) approach to measure phrases in absolute constructions: measure phrases are explicit designators of the standard value, thus they are generated in the complement position of Deg<sup>0</sup>, and are subsequently moved to the specifier position of a functional phrase: FP. When the standard value is not represented by a measure phrase, the head of this projection, F<sup>0</sup> may host determiner-like degree items, such as *this*, *that*, *how*, *too* etc.

Chapter 4 mostly tackled the internal structure of comparative complements; in fact, the two main issues discussed were comparative operator movement and deletion in comparatives. Comparative operator movement is typical of clausal comparative complements, and it was shown that even Subcomparatives involve such an operation (contra Corver 1990, 1993b). Hungarian examples were particularly helpful, since comparative operators in Hungarian can always be overt, and Hungarian clausal comparative complements never involve obligatory deletion; that is, the processes and mechanisms that are typical of this construction can easily be detected. In fact, Hungarian comparative complement clauses are thought to have a split left periphery, whose lower specCP may serve as a landing site for comparative operator movement. I also argued that the asymmetry between phrasal and clausal comparatives from the perspective of extraction phenomena – as presented by Hankamer (1973) – is only illusory, since clausal comparatives are extraction islands, and the only way of obviating such an island constraint violation is via sluicing, which ultimately makes the clausal comparative

complement seem to consist of a sole constituent, as if it were phrasal. Furthermore, I argued in connection with elliptical comparatives in Hungarian that these constructions do not need coordination to account for deletion, since the primary mechanism that elides given material in Hungarian comparatives is sluicing, and it was also argued that sluicing is operative in subordinate constructions as well. Finally, it was also described why the finite verb and the rest of the constituents following it tend to be deleted, if the comparative operator – which is far from them, in the left periphery once it has undergone movement – is covert in Hungarian and Bulgarian.

Chapter 5 provided a phase-based account of obligatory rightward movement in comparatives. The solution was based on the fact that comparative complements are phase-compatible constituents, and as such they are transferred to the interfaces and linearized before the rest of the degree expression is, which arrives later in the course of the derivation, together with the forthcoming cycle.

Chapter 6 provided an insight into comparative correlatives in Hungarian. In fact, these constructions have turned out to be valuable for the present research, since a number of their properties can be traced back to their underlying structure, which was argued to be identical to that of comparatives, presented in (1).

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