





Julia Bacskai-Atkari

The syntax of comparative constructions



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# **The syntax of comparative constructions**

**Operators, ellipsis phenomena  
and functional left peripheries**

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# Abbreviations

|      |               |        |             |
|------|---------------|--------|-------------|
| ABL  | ablative      | INE    | inessive    |
| ACC  | accusative    | INF    | infinitive  |
| ADE  | adessive      | MASC   | masculine   |
| AFF  | affix         | NEUT   | neuter      |
| COM  | comitative    | PASS   | passive     |
| COND | conditional   | PL     | plural      |
| DAT  | dative        | POSS   | possessive  |
| DEL  | delative      | POSSIB | possibility |
| DEM  | demonstrative | PRT    | particle    |
| ELA  | elative       | PST    | past        |
| FEM  | feminine      | PTCP   | participle  |
| FIN  | finalis       | SG     | singular    |
| FUT  | future        | SUB    | sublative   |
| GEN  | genitive      | SUBJ   | subjunctive |
| ILL  | illative      | SUP    | superessive |
| IMP  | imperative    | TRANS  | translative |



# Chapter One

## Introduction

The core problem to be dealt with in this dissertation is the syntax of comparatives, that is, the structure of sentences that express comparison. As far as the notion of syntactic structure is concerned, I will basically adopt a minimalist framework (cf. for instance Chomsky 2001, 2004, 2005) and, in line with the principles of mainstream generative grammar, I assume that the derivation of structures is constrained by economy and hence the number of structural layers, derivational steps and additional mechanisms is as small as possible. This means that although I will largely be concentrating on various functional layers and mechanisms that can be associated with these layers, I will keep them to a minimum and will not venture to introduce new ones unless there seems to be ample reason to do so.

Regarding the focus on comparative structures in particular, even though comparatives seem to be a very specific domain of research within syntax, the derivation of their structure raises questions that are of far more general interest and hence providing meaningful answers to these questions may also have a bearing on our understanding of syntactic mechanisms, such as the functional left periphery of clauses, clause-typing, or various ellipsis processes.

It is very probably this diversity of problems that led to a significant interest towards comparatives in generative frameworks already in the 1970s, most notably in Bresnan (1973, 1975), to be followed by various analyses with more or less shared concerns: for example, Corver (1993, 1997), Izvorski (1995), Lechner (1999, 2004), Kennedy (1997, 1999, 2002), Kennedy and Merchant (1997, 2000), and more recently Reglero (2006). I will be strongly relying on these previous findings and especially the various questions raised by them: although I admit that many questions have been answered by previous accounts, there are many others that have remained unresolved and have not received an adequate explanation that would hold in cross-linguistic terms as well and that would follow from general principles of the grammar rather than applying construction-specific mechanisms. The aim of this

dissertation is to provide such an analysis and to enable a better understanding of comparative clause formation.

In the following, I will briefly provide an overview of the structure of comparatives, to be followed by the concise outline of the problems to be dealt with in my dissertation.

### **1.1. The structure of comparatives**

In any human language, there are various means of expressing comparison between entities (or properties), and structures traditionally referred to as comparatives constitute only a subset of these possibilities. Consider the following examples:

- (1) a. Mary was indeed furious when she saw that you had broken her vase. But you should have seen her mother!
- b. Mary is tall but Susan is very tall.
- c. Mary is faster than Susan.

In (1a), comparison is only implied: the first sentence makes it explicit that Mary was furious to a certain degree but the second sentence contains no explicit reference to such a degree, yet it implies that the degree to which Mary's mother was furious exceeds the degree to which Mary was furious. In (1b), both the degree to which Mary is tall and the degree to which Susan is tall are explicitly referred to: without any further specification, it is understood that on a scale of height, the degree to which Mary is tall is greater than what is contextually taken to be average and that the degree to which Susan is tall is considerably greater than the average. Hence the degrees of tallness are explicitly referred to, even if they remain vague; however, the comparison between the two degrees is not made explicit, but the relation of the two degrees can be inferred. Finally, (1c) exhibits a true comparative structure, which expresses that the degree to which Mary is fast exceeds the degree to which Susan is fast.

The present dissertation aims at analysing syntactic comparative constructions, that is, the type represented by (1c) above. The sentence in (1c) shows the most important elements of comparative constructions: in this case, the degrees of speed of two entities are compared. The reference value of comparison is expressed by *faster* in the matrix clause (*Mary is faster*) and it consists of a gradable predicate (*fast*) and a comparative degree marker (*-er*). The standard value of comparison (that is, to which something else is compared) is expressed by the subordinate clause (*than Susan*) and is introduced by the complementiser *than*, which also serves as the standard marker.

There are some important remarks to be made here. In (1c), the comparative degree marker is a bound morpheme that is attached to the gradable predicate; however, this is not an available option for all adjectives in English and very often the periphrastic structure is used, when the *-er* is present in the form of *more*:

(2) Mary is more pretentious than Susan.

Languages differ in terms of whether they allow both kinds of comparative degree marking and some languages (such as German) allow only the morphological way of comparative adjective formation, while others (such as Italian) have the periphrastic way by default.

Second, in (1c) the standard value of comparison is introduced by the complementiser *than* and the string *than Susan* is a clause. This is explicitly shown by examples that contain a finite verb as well:

(3) Mary is faster than Susan is.

Since the clause can be recovered, comparatives formed with *than* are invariably clausal. However, languages also differ with respect to the distribution of whether they have clausal comparison and/or phrasal comparison. For instance, Hungarian has both clausal comparatives, introduced by *mint* ‘than/as’ and phrasal comparatives, where the standard value is expressed by an inherently Case-marked DP:

- (4) Mari magasabb Zsuzsánál.  
 Mary taller Susan-ADE  
 ‘Mary is taller than Susan.’

In this case, the DP *Zsuzsánál* is inherently marked for adessive Case and hence there is no clause that could be recovered. As my primary concern in this dissertation is the structure of comparative subclauses, I will not be dealing with instances of phrasal comparison more than necessary: that is, I will briefly include them in the discussion when the arguments of the degree morpheme are considered and will relate them to subordinate clauses in this respect but apart from this, they fall outside the scope of the present investigation.

It is also important to mention that degree constructions denote a larger set of structures than comparatives, and that comparatives themselves fall into two major categories: ones expressing equality, as shown in (5a), and ones expressing inequality, as in (5b) and (5c):

- (5) a. Mary is as diligent as Susan.  
 b. Mary is more diligent than Susan.  
 c. Mary is less diligent than Susan.

In (5a), the degree to which Mary is diligent is the same as the degree to which Susan is diligent; by contrast, in (5b) and (5c) the degrees are different, such that the degree to which Mary is diligent is higher in (5b) and lower in (5c). As can be seen, the comparative subclause is introduced by *as* in (5a) and by *than* in both (5b) and (5c). The present dissertation aims at providing an analysis for comparatives expressing inequality and more precisely for ones of the type given in (5b); nevertheless, the analysis pertains to all types and the slight differences that may occur will also be indicated but I will not venture to account for them here. The choice regarding (5b) is not arbitrary though as this is the type that encompasses all comparative-related issues to some extent and the relevant literature has also been concerned with this type mostly.

## 1.2. The problems to be discussed

To start with, Chapter 2 will discuss the structure of degree expressions, with the aim of providing a unified analysis that relates the structure of comparatives to that of other – absolute and superlative – degrees. Naturally, there arise a number of questions concerning the general structure of degree phrases, of which I will select only the ones that are relevant for the present dissertation. The importance of comparatives in this respect is that they tend to contain a number of elements overtly that clearly indicate the presence of various functional layers, presenting a challenge for previous analyses but at the same time indicating certain ways in which the syntactic structure of degree adjectives can best be captured.

One such problem is the presence of the degree morpheme itself, which becomes obvious in constructions like (6b):

- (6) a. Mary is **tall**.  
b. Mary is **taller** than John.

The contrast between (6a) and (6b) is that while it is the very same lexical adjective (*tall*) that appears in both cases, in (6b) there is an additional degree morpheme (*-er*). The fact that the degree marker is syntactically separate from the adjective is more clearly indicated by periphrastic comparatives such as (7):

- (7) Mary is **more intelligent** than John.

In (7), the comparative degree is marked by *more*; Chapter 2 will account for the difference and the relatedness of structures like (6b) and (7), showing that the same functional layers are present and the head element in the degree expression is *-er* in both cases.

Second, the relation between the comparative degree marker and the comparative subclause must also be explained as the type of the subclause seems to be defined by the comparative marker in the matrix clause:

- (8) a. Mary is **taller** [than John].  
 b. \*Mary is **taller** [as John].  
 c. \*Mary is **as tall** [than John].  
 d. Mary is **as tall** [as John].

As shown by the examples in (8), if the degree expression in the matrix clause contains the morpheme *-er*, then the subclause must be introduced by *than*; conversely, a degree expression with *as* in the matrix clause requires a subclause introduced by *as*. These selectional restrictions are obviously not dependent on the lexical adjective, which is invariably *tall*. I will show in Chapter 2 that the comparative subclause is one argument of the degree head, the other being the lexical AP itself; consequently, there are restrictions that hold between the degree head and the subclause but there are none that would hold between the AP and the subclause.

Even though my main concern is not the argument structure of adjectives, it has to be mentioned that adjectives may have arguments of their own:

- (9) Mary is proud [of her husband].

In cases like (9), the adjective (*proud*) takes a PP (*of her husband*) as its complement; this must also be accounted for, especially in relation to the subclauses indicated in (8), which are not directly introduced by the adjective itself but are nevertheless obligatory. Chapter 2 will argue that PP complements of adjectives are indeed complements of the adjective head but may appear in a right-dislocated position due to the nature of cyclic spellout to PF.

The structure adopted for degree expressions will be used when accounting for Comparative Deletion, which forms the core part of the dissertation and will be provided in Chapter 3. My aim here is to reduce the cross-linguistic differences attested in connection with Comparative Deletion to minimal differences in the relevant operators. I intend to show that Comparative Deletion does not have to be treated as a parameter distinguishing between languages; instead, I will adopt a feature-based account that is apt for handling language-internal variation as

well. I will argue that the difference is ultimately not between individual languages but rather between overt operators that do and covert operators that do not trigger Comparative Deletion. To my knowledge, this claim is radically new in the literature and hopefully it may account for several phenomena that have been unexplained so far.

The phenomenon of Comparative Deletion traditionally denotes the absence of an adjectival or nominal expression from the comparative subclause, as indicated in the following examples:

- (10) a. Ralph is more qualified than Jason is ~~**x-qualified**~~.  
b. Ralph has more qualifications than Jason has ~~**x-many qualifications**~~.  
c. Ralph has better qualifications than Jason has ~~**x-good qualifications**~~.

In the sentences above,  $x$  denotes a certain degree or quantity as to which a certain entity is qualified, good etc. This is an operator that has no phonological content. As can be seen, in (10a) an adjectival expression is deleted: this type is referred to as the predicative comparative as the quantified adjectival expression functions as a predicate in the subclause. By contrast, in both (10b) and (10c) a nominal expression is deleted; structures like (10b) are nominal comparatives, where a nominal expression bears quantification, while (10c) is an example of attributive comparatives, where the quantified adjectival expression is an attributive modifier within a nominal expression.

Therefore, one of the most important questions to be answered in connection with Comparative Deletion is how to account for the fact that different constituents seem to be deleted by Comparative Deletion. Moreover, this deletion process seems to be obligatory inasmuch as the presence of the quantified expressions in (10) would lead to ungrammatical constructions; hence a proper analysis of Comparative Deletion must also address the issue why this process seems to be obligatory. I will argue that the site of Comparative Deletion is not the one indicated in (10) but a left-peripheral, [Spec,CP] position: the reason why the strings indicated as deleted elements in (10) cannot be overt is that they

are lower copies of a moved constituent and hence are regularly eliminated.

The role of information structure underlying Comparative Deletion has to be taken into consideration as well. In subcomparative structures, an adjectival or nominal element may be left overt in the sub-clause; as opposed to the examples in (10), these elements are not logically identical to an antecedent in the matrix clause:

- (11) a. The table is longer than the desk is **wide**.  
 b. Ralph has more books than Jason has **manuscripts**.  
 c. Ralph wrote a longer book than Jason did a **manuscript**.

I will show in Chapter 3 that movement takes place even in these cases and hence the higher copy is regularly eliminated; the reason why the lower copies are realised overtly is that they are contrastive. My analysis hence will crucially differ from those (for example Kennedy 2002) that try to capture the surface dissimilarity between (10) and (11) on the basis of whether *wh*-movement takes place overtly, as in (10), or covertly, as in (11). I assume that syntactic movement triggered by a [+wh] or a [+rel] feature cannot be sensitive to the information structural properties of the lexical XP (AP/NP) that moves together with the operator for independent reasons (that is, the non-extractability of the operator from the functional projections containing these lexical elements).

Given that deletion at the [Spec,CP] position takes place if the operator is zero, it can be expected that visible operators can remain overt in this position. Though this option is not available in Standard English, some English dialects allow configurations such as (12) below (cf. Chomsky 1977):

- (12) % Ralph is more qualified than **what** Jason is.

Naturally, an analysis of Comparative Deletion must also address the question of how examples such as (12) relate to the ones given in (10) or (11); I will argue that all of these constructions involve the movement of the quantified expression and but the higher copy is not elided in (12) since the overtness requirement on left-peripheral elements is satisfied.

Apart from instances like (12), in some languages full degree expressions can be attested at the left periphery of the subclause: that is, the degree element is combined with a lexical AP or an NP (cf. Kenesei 1992a), as in the following examples from Hungarian:

- (13) a. Mari magasabb, mint **amilyen magas** Peti.  
 Mary taller than how tall Peter  
 ‘Mary is taller than Peter.’
- b. Marinak több macskája van, mint **ahány**  
 Mary-DAT more cat-POSS.3SG is than  
**macskája** Petinek van.  
 how.many cat-POSS.3SG Peter-DAT is  
 ‘Mary has more cats than Peter has.’
- c. Marinak nagyobb macskája van, mint **amilyen**  
 Mary-DAT bigger cat-POSS.3SG is than how  
**nagy macskája** Petinek van.  
 big cat-POSS.3SG Peter-DAT is  
 ‘Mary has a bigger cat than Peter has.’

As can be seen, Hungarian allows the overt presence of the degree elements, which again shows that Comparative Deletion must be subject to (parametric) variation. I will argue that this variation can be accounted for by the overtness requirement: Hungarian has overt operators while Standard English does not and hence the overt presence of lexical elements in a [Spec,CP] position is available in Hungarian.

Strongly related to this, the question arises to what extent the internal structure of the degree expression plays a role and whether individual operators exhibit different behaviour in this respect. In Standard English, as shown in (11a), the adjective that remains overt in the subclause is found in its base position without an overt operator. However, if the operator *what* is present, the adjective cannot be overt:

- (14) \*The table is longer than **what** the desk is **wide**.

I will argue that (14) is not possible because *what* is an operator that does not take a lexical AP. However, constructions involving the stranding of the adjective from the operator are not necessarily excluded. In Hungarian there are two comparative operators, *amilyen* ‘how’ and *amennyire* ‘how much’. The operator *amilyen* may appear together with the adjective, as in (13a) but it does not allow the stranding of the adjective:

- (15) \*Mari magasabb, mint **amilyen** Peti **magas**.  
 Mary taller than how Peter tall  
 ‘Mary is taller than Peter.’

On the other hand, Hungarian has another operator, *amennyire* ‘how much’, which allows both options for the adjective:

- (16) a. Mari magasabb, mint **amennyire** **magas** Peti.  
 Mary taller than how.much tall Peter  
 ‘Mary is taller than Peter.’  
 b. Mari magasabb, mint **amennyire** Peti **magas**.  
 Mary taller than how.much Peter tall  
 ‘Mary is taller than Peter.’

In addition, it has to be mentioned that Hungarian seems to require the presence of some operator if the adjective is overt (note, however, that it is allowed for the adjective and the operator to be non-overt at the same time):

- (17) a. Mari magasabb, mint **(\*magas)** Peti.  
 Mary taller than tall Peter  
 ‘Mary is taller than Peter.’  
 b. Mari magasabb, mint Peti **(\*magas)**.  
 Mary taller than Peter tall  
 ‘Mary is taller than Peter.’

I will show in Chapter 3 that Hungarian lacks a covert operator and that the difference between *amilyen* and *amennyire* is due to the fact that they occupy different positions in the extended degree expression, based

on the findings concerning the structure of degree expressions in Chapter 2. Hence my analysis of Comparative Deletion is based on the assumption that languages differ with respect to the presence/absence of the operator in a more intricate way than one that could be formulated on a +/- basis.

Following these lines of thought, Chapter 4 will address a special instance of Comparative Deletion, which is traditionally termed in the literature as Attributive Comparative Deletion. I will show that Attributive Comparative Deletion can only be understood as a descriptive term referring to a phenomenon that is a result of the interaction of more general syntactic processes and therefore there is no reason to postulate any special mechanism underlying Attributive Comparative Deletion in the grammar. By way of eliminating such a mechanism it is possible to achieve a unified analysis of all types of comparatives. Chapter 4 will also show that Attributive Comparative Deletion is not a universal phenomenon: its appearance in English can be conditioned by independent, more general rules and the absence of such restrictions may lead to the absence of Attributive Comparative Deletion in other languages.

Attributive Comparative Deletion refers to a peculiar phenomenon that involves the obligatory deletion of the quantified AP and the lexical verb from the comparative subclause, if the quantified AP functions as an attribute within a nominal expression:

- (18) a. Ralph bought a bigger cat than George did ~~buy~~ a ~~big~~ cat flap.  
b. Ralph bought a bigger cat than George ~~bought~~ a ~~big~~ cat flap.  
c. \*Ralph bought a bigger cat than George bought a ~~big~~ cat flap.  
d. \*Ralph bought a bigger cat than George bought a big cat flap.  
e. \*Ralph bought a bigger cat than George ~~bought~~ a big cat flap.  
f. \*Ralph bought a bigger cat than George did ~~buy~~ a big cat flap.

As can be seen, both the adjective (*big*) and the lexical verb (*buy*) have to be eliminated from the comparative subclause: this is possible either by eliminating the tensed lexical verb, as in (18b) or by deleting the lexical verb and leaving the tense-bearing auxiliary *do* intact, as in (18a).

Note that both the verb and the adjective have to be deleted, as indicated by the ungrammaticality of the sentences in (18c)–(18f).

The obligatory elimination of the adjective is not directly related to the fact that it is GIVEN; the overt presence of the attributive adjective is ungrammatical even if it is different from its matrix clausal counterpart:

- (19) a. \*Ralph bought a bigger cat than George ~~bought~~ a wide cat flap.  
 b. \*Ralph bought a bigger cat than George did ~~buy~~ a wide cat flap.

Hence it seems that the elimination of the adjective from the particular position is obligatory. On the other hand, note that the deletion of the lexical verb is required only if part of the DP is overt; if the entire DP is eliminated, the lexical verb can remain:

- (20) Ralph bought a bigger cat than George bought ~~a big cat~~.

There are a number of questions that arise in connection with these phenomena. First, it has to be explained why the adjective has to be deleted and cannot appear overtly even if it is contrastive. Second, one has to account for the fact that the deletion of the adjective happens alongside with the deletion of the lexical verb: this is especially interesting because in structures like (18a) and (18b) the verb and the lexical verb do not even seem to be adjacent.

In line with Kennedy and Merchant (2000), Chapter 4 will show that the quantified adjectival phrase moves to a left-peripheral position within the extended nominal expression and hence appears as the left-most element within that nominal expression, which results in its adjacency to the lexical verb at PF. I will argue that the unacceptability of the lexical AP in this position is due to the violation of the overttness requirement: this position within the nominal expression is essentially an operator position and hence lexical material is licensed to appear there only if the operator is visible, the condition of which is not met in the case of the comparative operator. The ellipsis mechanism effectively eliminating the AP is VP-ellipsis, which necessarily affects the lexical

verb; contrary to Kennedy and Merchant (2000), who claim that the rest of the nominal expression undergoes rightward movement, I will argue that the overtiness of the F-marked DP (*a cat flap*) in (18a) and (18b) is possible because ellipsis proceeds in a strict left to right fashion at PF and F-marked constituents may stop ellipsis.

In this way, Attributive Comparative Deletion will be sufficiently linked to Comparative Deletion as the deletion of the higher copy takes place even in cases like (18a) and (18b); furthermore, the PF-uninterpretability underlying both phenomena follows from the same kind of constraint, that is, the overtiness requirement. On the other hand, VP-ellipsis is not a construction-specific mechanism either and hence there is no reason to suppose a special process underlying Attributive Comparative Deletion.

The analysis of Attributive Comparative Deletion will also take cross-linguistic differences into consideration. For instance, in languages like Hungarian the full string may be visible in the subclass:

- (21) Rudolf nagyobb macskát vett, mint amilyen  
 Rudolph bigger cat-ACC bought.3SG than how  
 széles macskaajtót Miklós vett.  
 wide cat flap-ACC Mike bought.3SG  
 ‘Rudolph bought a bigger cat than Mike did a cat flap.’

I will show that the acceptability of (21) in Hungarian follows from the fact that the comparative operator is overt in Hungarian and hence there is no Comparative Deletion attested at all; on the other hand, the quantified adjective does not undergo movement to the left periphery within the nominal expression either.

On the other hand, there are languages, such as German, that do not permit Attributive Comparative Deletion, even if they have zero comparative operators:

- (22) \*Ralf hat eine größere Wohnung als  
 Ralph has a-ACC.FEM bigger-ACC.FEM flat than  
 Michael ein Haus.  
 Michael a-ACC.NEUT house  
 ‘Ralph has a bigger flat than Michael a house.

I will show that the unacceptability of (22) stems chiefly from the fact that the VP (as all vP layers) is head-final in German and hence VP-ellipsis is not attested; furthermore, the German nominal expression does not allow for the kind of inversion (that is, the movement of the quantified AP to a left-peripheral position) that can be observed in English. Hence my analysis for Attributive Comparative Deletion accounts for cross-linguistic variation, besides providing an explanation for the English data.

Apart from cross-linguistic and synchronic variation, my dissertation intends to address the issue of diachronic change as well. Chapter 5 will be devoted to the examination of Comparative Deletion from a diachronic perspective and will show how the changes in the status of comparative operators led to changes in whether Comparative Deletion is attested in a given language or not. This will be linked to the general structure of degree expressions, in that the difference between proform operators and the ones that take lexical APs (or NPs) also has a bearing on whether they could be reanalysed as complementiser heads, which means that while operators without a lexical XP can be grammaticalised, others cannot. This follows from the nature of the formal features associated with the various operator elements and as such will be argued to be present in other subordinate structures as well beside comparatives, conforming to the general mechanism of the relative cycle, as described by van Gelderen (2004, 2009). Though the main focus will be on Hungarian historical data, I will show that the analysis is well applicable to other languages as well, such as German and Italian, since the reanalysis and grammaticalisation processes that hold between operators and complementisers follow general principles of economy.

These mechanisms will allow for an adequate analysis of the change attested in Hungarian comparatives expressing inequality; while in Modern Hungarian the comparative subclause is invariably introduced by the complementiser *mint* ‘than’, in Old Hungarian the

complementiser was initially *hogy* ‘that’ and the subordinate clause also contained the negative element *nem* ‘not’:

- (23) Mert iob hog megfogdofuā algukmég  
 because better that PRT-catch-PTCP bless-SUBJ-3PL-PRT  
 vrat èlèuènèn **hog nè** mēghal’l’ōc  
 alive Lord-ACC that not PRT-die-SUBJ-1PL  
 ‘because it is better to bless the Lord if we are captured alive that  
 not (= than) to die’ (BécsiK. 25)

As will be shown, the change from the configuration in (23) into the Modern Hungarian ones, as for instance in (21), involved an intermediate step when both *hogy* and *mint* were present (and initially also the negative element *nem*):

- (24) az mentól alsobykban is tōb angyal uağon  
 the all-ABL lower-INE also more angel is  
**honnem mynth** az napnak feneben  
 that.not than the sun-DAT light-POSS.3SG-INE  
 ‘there are more angels in the basest one of them than in the sun’s  
 light’ (SándK. 1v)

Chapter 5 will argue that *mint* started to appear in configurations like (24) as a comparative operator but since it was a proform (similarly to English *what*) that did not occur together with lexical APs, it was later reanalysed as a C head. This first resulted in the co-presence of two complementiser heads in one left periphery and I will show that this is possible in several languages, including the *als wie* ‘than as’ combination in certain dialects of German.

In addition, I will show that complementiser combinations of the same type were quite frequent in Old and Middle Hungarian subordinate clauses and hence multiple complementisers were not restricted to appear in comparatives; the reason behind this is that some future complementisers started to grammaticalise from operators into C heads (by way of the relative cycle) later than others and hence they occupied different positions for a while. Since ultimately all complementisers

grammaticalised into higher C heads that mark the type of the clause and finite subordination at the same time, multiple complementisers disappeared from the language before Modern Hungarian; however, morphological combinations that were originally formed via head adjunction could grammaticalise into complex C heads and these are still prevalent in the language.

The reanalysis of *mint* into a comparative complementiser allowed for new operators to appear in this position: these appeared during the Middle Hungarian period (together with their interrogative counterparts) and they allowed for the co-presence of lexical projections; hence the possibility of structures such as (21) in Modern Hungarian.

Finally, apart from issues directly related to the structure of degree expressions and the functional left periphery of comparative subclauses, the present dissertation also aims at accounting for optional ellipsis processes that play a crucial role in the derivation of typical comparative subclauses. These issues will be discussed in Chapter 6.

In English predicative structures this involves the elimination of the copula from structures such as (25b), as opposed to the one given in (25a):

- (25) a. Ralph is more enthusiastic than Jason is.  
b. Ralph is more enthusiastic than Jason.

In nominal comparatives the lexical verb may be deleted:

- (26) a. Ralph bought more houses than Michael bought flats.  
b. Ralph bought more houses than Michael did flats.  
c. Ralph bought more houses than Michael did.  
d. Ralph bought more houses than Michael.

Verb deletion may result in a subclause without any verbal element, as in (26d) or the tense morpheme may be carried by the dummy auxiliary, as in (26b) and (26c). In addition, depending on whether the object contains a contrastive noun or not, the object nominal expression remains

overt, as in (26a) and (26b) or does not appear overtly, as in (26c) and (26d). A very similar pattern arises in attributive comparatives:

- (27) a. Ralph bought a bigger house than Michael did a flat.  
b. Ralph bought a bigger house than Michael did.  
c. Ralph bought a bigger house than Michael.

The main question here is whether the deletion of the lexical verb is merely the deletion of the verbal head or whether there is VP-ellipsis at hand; in the latter case, the possibility of having overt objects (or parts of objects) must be accounted for. Developing the analysis given in Chapter 4, in Chapter 6 I will argue that gapping is an instance of VP-ellipsis, which proceeds from a left-to-right fashion at PF and the starting point of it is an [E] feature on a functional *v* head, in line with Merchant (2001) – the endpoint of ellipsis is a contrastive phrase, if there is any. I will also show that since the [E] feature can be present on a C head as well, the derivation of comparative subclauses at PF may involve ellipsis starting from an [E] feature either on a C or a *v* head. Since the final string may be ambiguous, one of the central questions is whether a uniform kind of ellipsis mechanism may account for these ambiguities; this will be shown to be possible.

On the other hand, the fact that reduced comparative subclauses also exist in Hungarian raises yet another question, which is how languages with exclusively overt comparative operators may show the elimination of the entire degree expression, given that there is no Comparative Deletion in these languages. For instance, predicative comparatives in Hungarian show the following variation:

- (28) a. Mari magasabb volt, mint **amilyen** **magas** Péter  
 Mary taller was.3SG than how tall Peter  
**volt.**  
 was.3SG  
 ‘Mary was taller than Peter.’
- b. Mari magasabb volt, mint Péter.  
 Mary taller was.3SG than Peter  
 ‘Mary was taller than Peter.’

As can be seen, in (28a) the subclause contains all the elements overtly, while the degree expression and the verb are absent from (28b). The same phenomenon can be observed in nominal comparatives:

- (29) a. Mari több macskát vett, mint **ahány**  
 Mary more cat-ACC bought.3SG than how.many  
**macskát** Péter **vett.**  
 cat-ACC Peter bought.3SG  
 ‘Mary bought more cats than Peter did.’
- b. Mari több macskát vett, mint Péter.  
 Mary more cat-ACC bought.3SG than Peter  
 ‘Mary bought more cats than Peter did.’

Finally, the same is true for attributive comparatives:

- (30) a. Mari nagyobb macskát vett, mint **amilyen**  
 Mary bigger cat-ACC bought.3SG than how  
**nagy macskát** Péter **vett.**  
 big cat-ACC Peter bought.3SG  
 ‘Mary bought a bigger cat than Peter did.’
- b. Mari nagyobb macskát vett, mint Péter.  
 Mary bigger cat-ACC bought.3SG than Peter  
 ‘Mary bought a bigger cat than Peter did.’

In all of these cases it is true that the sentences of a given pair have the same meaning. The question is whether the deletion of the degree expression is independent from that of the verb or not. As I will show in Chapter 6, these are not two independent processes since the verb cannot be overt in the absence of an overt degree expression. I will argue that this is so because it is ungrammatical to have an operator in its base position in Hungarian but since there is no separate mechanism that would eliminate the degree expression, a more general ellipsis process has to apply, which is essentially VP-ellipsis. The ellipsis mechanism is fairly similar to the one attested in English and the differences will be linked to the slightly different internal structure of the functional layers in the verbal domain in the two languages. Otherwise ellipsis is carried out by an [E] feature on the leftmost functional verbal head in Hungarian too.

I will argue that the difference between English and Hungarian in terms of gapping effects is chiefly a result of the different prosody in the two languages: while the Intonational Phrase is right-headed in English, it is left-headed in Hungarian. Hence while contrastive elements are located at the right edge of the ellipsis domain in English, in Hungarian they are to the left of the functional head hosting the [E] feature or are themselves located in that head and consequently are not part of the ellipsis domain either. Chapter 6 will show that since there is strong directionality in terms of ellipsis, in that it proceeds in a strict left to right fashion, this kind of ellipsis works only in head-initial phrases since the ellipsis domain (the complement) has to follow the head hosting the [E] feature. This accounts for why German does not have VP-ellipsis in the way English has it: the German VP and all vP layers are head-final while in English all VP projections are head-initial. Cross-linguistic differences concerning optional ellipsis processes will thus also be reduced to more general properties that hold in individual languages and hence ellipsis processes are not construction-specific.



# Chapter Two

## The structure of degree expressions

In this chapter I aim at providing a unified analysis of degree expressions that relates the structure of comparatives to that of other – absolute and superlative – degrees. Naturally, there arise a number of questions concerning the general structure of degree phrases, of which I will select only the ones that are relevant for the present dissertation. Since my analysis is strongly built on the results of previous accounts, I will first give a short overview of the relevant literature, also showing the problematic points thereof that I intend to eliminate in my approach. Again, the literature concerning the syntax of degree expressions is far greater than the selected examples to be presented here but I will restrict myself to discussing those analyses that bear crucial significance on the understanding of comparatives.

### 2.1. Earlier accounts

The reason why comparatives are especially interesting to consider when it comes to the general structure of degree expressions is that comparative constructions contain a number of elements overtly that clearly indicate the presence of various functional layers, presenting a challenge for previous analyses.

The very first problem is the appearance of the degree morpheme itself. Consider:

- (1) a. Mary is **tall**.
- b. Mary is **taller** than John.

By comparing (1a) and (1b), it should be obvious that while it is the very same lexical adjective (*tall*) that appears in both cases, in (1b) there is an additional degree morpheme (that is, *-er*). The fact that the degree

marker is syntactically separate from the adjective is more clearly indicated by periphrastic comparatives such as (2):

- (2) Mary is **more intelligent** than John.

In (2), the comparative degree is marked by *more*; hence a sound analysis for the structure of degree expressions must also account for the difference and the relatedness of structures like (1b) and (2).

Moreover, the relation between the comparative degree marker and the comparative subclause must also be explained as the type of the subclause seems to be defined by the comparative marker in the matrix clause:

- (3) a. Mary is **taller** [than John].  
b. \*Mary is **taller** [as John].  
c. \*Mary is **as tall** [than John].  
d. Mary is **as tall** [as John].

As can be seen, if the degree expression in the matrix clause contains the morpheme *-er*, then the subclause must be introduced by *than*; conversely, a degree expression with *as* in the matrix clause requires a subclause introduced by *as*. These selectional restrictions are obviously not dependent on the lexical adjective, which is *tall* in all of the examples in (3).

Last but not least, adjectives may have arguments of their own. Consider:

- (4) Mary is proud [of her husband].

The adjective *proud* takes the PP as its complement; this must also be accounted for, especially in relation to the subclauses indicated in (3), which are not directly introduced by the adjective itself but are nevertheless obligatory.

### 2.1.1. *Much*-deletion – Bresnan (1973)

I will start the overview of previous accounts by Bresnan's landmark paper, which opened the discussion on comparative constructions by taking into account a large number of phenomena not even considered before. The most important contribution of Bresnan (1973) is probably the separation of the Deg and Q heads, which allows for an explanation of why certain degree-like elements behave differently; moreover, the role of *much* is also addressed, which is crucially important in the structure of comparatives as well.

One of the most important observations made by Bresnan (1973) is that *more* is a composite of *much* and the degree morpheme *-er*, hence in a way the comparative form of *much*. This is immediately shown by the paradigm of degree expressions. Consider the following examples (taken from Bresnan 1973: 277, exx. 4 and 5):

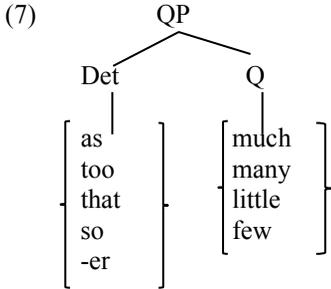
- (5) a. as / too / that / so **much** bread  
 b. as / too / that / so **little** bread  
 c. as / too / that / so **many** people  
 d. as / too / that / so **few** people

As can be seen, all degree elements (i.e. *as*, *too*, *that* and *so*) combine with either *much*, *little*, *many* or *few*. Likewise with *-er*, we find all the four forms as shown in (6), cf. Bresnan (1973: 277, exx. 4, 5 and 7):

- (6) a. -er **much** bread → **more** bread  
 b. -er **little** bread → **less** bread  
 c. -er **many** people → **more** people  
 d. -er **few** people → **fewer** people

Naturally, there have to be rules in the grammar that ensure the changes from combinations such as *-er much* into *more*: these are partly syntactic rules and partly rules of suppletion that belong to the level of morphology (Bresnan 1973: 279).

The structure of degree expressions can be drawn up as follows, according to Bresnan (1973: 277, ex. 6):



In Bresnan’s analysis, degree expressions like *as much* are QPs, though she admits that the label “is merely a temporary convenience” (Bresnan 1973: 277). The head of the QP is occupied by the elements *much*, *many*, *little* and *few*, while the degree elements – including the comparative *-er* – are determiners in the specifier position. Admittedly, the analysis has the advantage of ruling out certain impossible configurations such as *\*too more*: the Det position cannot be filled by *too* and *-er* at the same time (Bresnan 1973: 277), which would not be predicted by an analysis taking elements like *more* as atomic.

Let us now turn to the cases where degree elements are followed by a lexical adjective (or adverb) and not a noun. The paradigm given in (5) does not seem to hold there (see Bresnan 1973: 278, exx. 8 and 9):

- (8)
- a. Mary is **more** intelligent.
  - b. \*Mary is **so much** intelligent.
  - c. Mary speaks **more** cogently.
  - d. \*Mary speaks **so much** cogently.

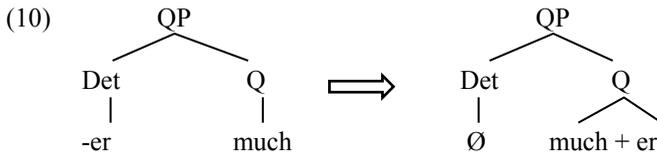
The data above show the following problem: apparently, it is not grammatical to have the sequence of a degree element (e.g. *so*) and *much* before an adjective or an adverb, as indicated by the ungrammaticality

of (8b) and (8d). However, *more* is acceptable in that position, as shown in (8a) and (8c): hence if one maintains the idea that *more* is in fact made up of *-er* and *much* in the same way as, for example, *so much* is constructed, then there are obviously conflicting requirements here.

Bresnan (1973: 278) mentions two logical possibilities that may account for this: either *more* does not derive from *-er* + *much* when preceding adjectives and adverbs, or it is deleted if it directly precedes an adjective or an adverb. Arguing for the latter, she provides an additional rule in the form of *Much*-deletion, formulated below (Bresnan 1973: 278, ex. 10):

- (9)  $\text{much} \rightarrow \emptyset / [\dots \_\_\_ \text{A}]_{\text{AP}}$   
 where A(P) = Adjective or Adverb (Phrase)

As has been already mentioned, the fact that *-er much* becomes *more* is not merely a morphological matter: the syntax accounts for the word order change from the initial *-er much* into *much -er*, and morphology substitutes this latter form with *more*. According to Bresnan (1973: 279, ex. 20), the syntactic derivation is the following:



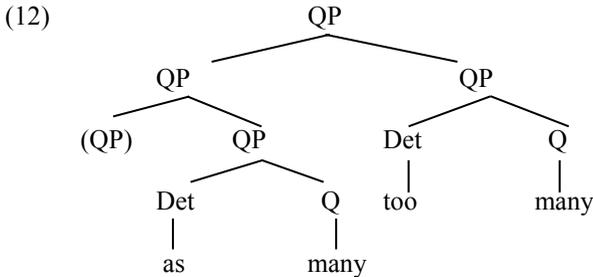
By way of cliticisation, *-er* is attached to *much*, ultimately resulting in *more*. The point is that *much* will not be adjacent to the adjective following the original string *-er much*: the item *-er* will act as an intervener and consequently the rule given in (9) does not – and could not – apply. This is straightforward in the case of analytic comparatives (such as *more intelligent*) but requires extra rules for accommodating morphological comparatives (such as *taller*). Bresnan (1973: 279) assumes that *taller* is in fact underlyingly *more tall*, and is derived by separate rules for simple comparatives: first, *much-er tall* becomes *much-er taller*, and subsequently *much-er* is deleted, leaving *taller* as the final result. As far

as the exact mechanism behind this is concerned, it is crucially missing from the analysis.

Turning back to the syntactic representation of degree expressions, (10) already shows that the core idea is to have *much* or *many* as a Q head, which takes a Det degree item into its specifier. If a degree expression is modified by another one, then this is achieved via adjunction. Consider the following example (Bresnan 1973: 290, ex. 132a):

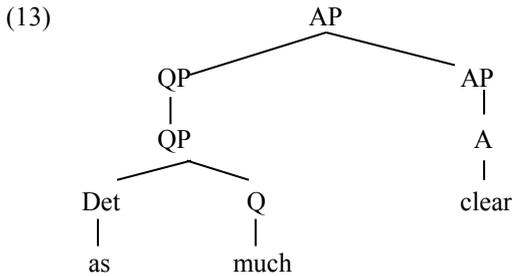
(11) I have **as many too many** marbles as you.

Here the degree expression *too many* is modified by *as many*: the latter is left-adjoined to the former in the following way (Bresnan 1973: 290, ex. 131):



As can be seen, a QP can be modified by another QP in a recursive way, i.e. additional QPs can be adjoined in the same way.

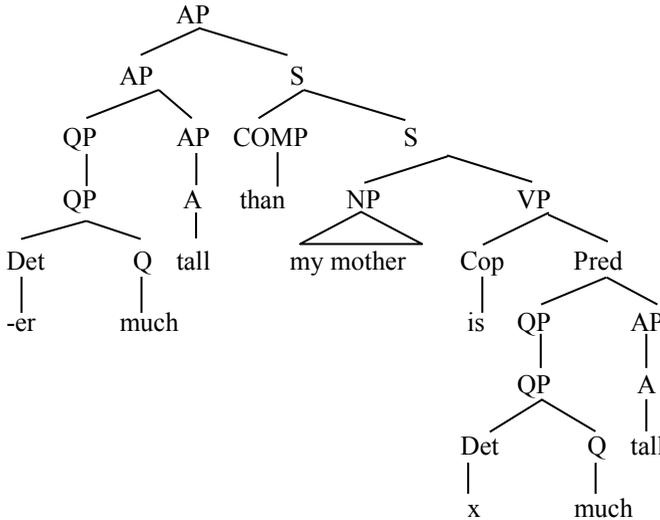
In case there is a lexical adjective – or adverb – as well, the QP is left-adjoined to it (Bresnan 1973: 294, ex. 147):



The representation in (13) shows the underlying structure: *much*-deletion will later eliminate *much*, which is here immediately followed by an adjective, ultimately giving the grammatical string *as clear* – the same would be true if the adjective had an adverbial modifier (e.g. *as much utterly stupid* → *as utterly stupid*, see Bresnan 1973: 294).

As for the comparative subclause, Bresnan (1973: 318–319) notes that it may originate in the Det (dominating the *-er* or the *as* head); however, how this is precisely achieved is not described. In the final structure, the comparative subclause ends in an extraposed position, as shown in (14) for the string *taller than my mother is tall*, cf. Bresnan (1973: 319, ex. 251):

(14)



As can be seen, the subclause is ultimately an adjunct to the entire AP, though it should be base-generated where the Det is located.

Though the analysis admittedly has advantages, it raises a number of problems as well. First of all, the structural representation can obviously not be maintained in a minimalist framework, especially as far as the Det is concerned: if elements like *-er* are indeed to be treated as heads and not as phrase-sized constituents, then they should not be located in a specifier. This immediately raises the question of where degree items are located with respect to the AP and the QP; that is, which projection dominates which. If the degree item is indeed a head, rather than a phrase, then it is highly unlikely that it would be dominated by the AP, unless extra movement processes are involved.

It is likewise problematic to relate QPs to each other by way of adjunction: it is true that QP modifiers are to a large extent recursive but there seem to hold certain restrictions that define their order: for instance, while *as many too many (marbles)* is grammatical, *\*too many as many (marbles)* is not.

Moreover, the very mechanism of *much*-deletion is highly questionable. It is credible that the formation of *more* before adjectives and

adverbs should not differ from how it is formed before nouns: however, by merely considering the logical possibilities, this leaves us two alternative options and not just one, as Bresnan (1973) would imply: *much*-deletion before adjectives and adverbs is one option, the other being *much*-insertion elsewhere. The former option has two main problems: first, it is not clear why *much* should be inserted even when it has neither the syntactic function of a dummy, nor does it bear any semantic role. Second, the rule of *much*-deletion is highly arbitrary (cf. also Corver 1997; Jackendoff 1977; Brame 1986) and does not follow from any more general constraint and is therefore a rather circuitous way of defining the morphological difference between adjectives that form their comparative degrees with *much* and those that do not.

Last but not least, the position of the comparative subclause also raises questions: on the one hand, it remains unexplained how it is base-generated under the Det node; on the other hand, the extraposition of the clause to the right is also dubious, primarily because it seems to be obligatory rightward movement, in addition to the fact that rightward movement in itself is problematic. As there is very little said about the position of the comparative subclause, it is not surprising that the issue is not discussed in relation to PP arguments of adjectives, which should also be accommodated in the structure.

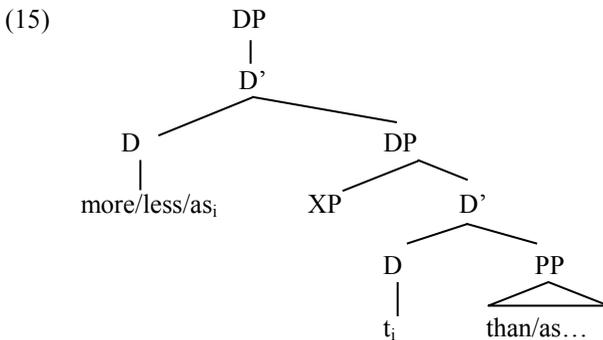
### 2.1.2. A DP-shell for comparatives – Izvorski (1995)

Let us now turn to the analysis of Izvorski (1995), which is markedly built on the semantics of comparative structures with respect to the formation of the syntactic structure. The importance of this study lies fundamentally in the fact that it aims at providing a unified syntactic representation for degree expressions, which will also play a crucial part in later analyses. By way of adopting a DP-shell analysis, Izvorski (1995) intends to provide a unified structure for predicative and nominal structures, which is desirable in the sense that the degree expression itself should not be different depending on whether it is a predicate or it is base-generated within a nominal expression.

According to Izvorski (1995: 107–118), the elements *more*, *less* and *as* are of the category Det, and they are heads of the DP they introduce: in this way, DPs have in fact two DP layers (hence the DP-shell),

in the same way as double object constructions have VP-shells, cf. Larson (1988). It has to be mentioned that the label D for degree items is fundamentally used as a convenient syntactic notation and is hence not intended to imply that all degree expressions would be nominal (Izvorski 1995: 111–119): they could also be of the category Deg, as for Abney (1987) or Corver (1990).

According to Izvorski (1995: 107–118, cf. especially ex. 23), the general structure of comparatives is the following:



The XP stands for the lexical projection – a bare AP or NP – in the structure; hence there is no syntactic difference between predicative (e.g. *more intelligent than...*) and nominal (e.g. *more cats than...*) comparatives, other than the category of the XP itself.

As Izvorski (1995: 109–119) points out, the analysis has the advantage of both directly relating the degree element – that is, *more*, *less* or *as* – to the comparative complement (here: the PP) and at the same time accounting for their discontinuity in the surface structure. Yet, this immediately raises the problem of distributional differences as degree expressions containing an AP and those containing an NP clearly do not behave in the same way syntactically. Izvorski (1995: 111–120) overcomes this by saying that D is underspecified for the relevant, that is, nominal or adjectival/adverbial features; hence it can take either of them into its (lower) specifier. Via specifier–head agreement, the XP in turn is responsible for specifying these features on the D head; finally, the

movement of the D to the upper D position causes the features to be present on the entire DP.

This analysis clearly eliminates some of the problems that I mentioned in connection with Bresnan (1973) – such as the treatment of Det as a specifier, the mechanism of *much*-deletion or the connection between the comparative subclause and the degree head. However, there arise new ones as well, in particular the treatment of *more* and *less* as atomic: besides the fact that there seems to be ample evidence for analysing *more* as *much* + *-er*, Izvorski's proposal crucially leaves the formation of simple morphological comparatives (e.g. *taller*) unexplained.

In addition, the way to overcome distributional differences is ad hoc and does not take into account that there might be differences in terms of modification too. As a matter of fact, the issue of modification is altogether missing from Izvorski's analysis (e.g. in examples such as (11) above). The same applies to the position of arguments, especially the PP arguments of adjectives.

Moreover, while the account in Izvorski (1995) is general enough in the sense that it covers (or intends to cover) the structure of both predicative and nominal comparatives, it fails to say anything about attributive comparatives (e.g. *a more intelligent dog than...*). The XP, as has been said, is either a bare AP or a bare NP and hence it is not clear how an NP containing an attribute could be accommodated in the structure, especially because in these cases the comparative degree is associated primarily with the lexical AP and not the entire NP, which becomes even more evident when considering attributive comparatives containing a morphological degree form (e.g. *a bigger dog than...*), where the degree morpheme *-er* is clearly marked on the adjective.

Last but not least, the treatment of the subclause is highly questionable: apart from the fact that Izvorski (1995) analyses it as a PP, an issue I intend to address later on, there seems to be a problem in terms of extraposition too. At the first sight, the kind of extraposition proposed by Bresnan (1973) seems to be fortunately eliminated from Izvorski (1995): it is the degree element that moves away from the subclause. However, it has to be noted that the position given in (15) cannot be the final one; consider:

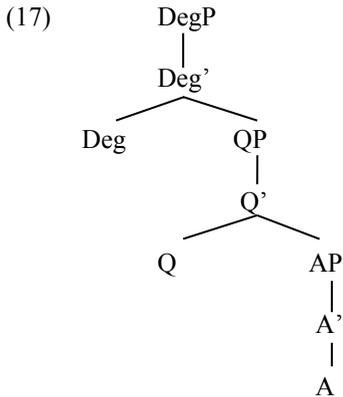
- (16) a. Brenda is **more enthusiastic** now [than she used to be].  
b. **More students** like Brenda' classes [than George's].

As can be seen, the bracketed comparative subclauses are separated by intervening material not only from the degree element *more* but also from the lexical AP (*enthusiastic*) or NP (*students*). Hence its final position cannot be within the degree expression, that is, the DP in Izvorski's analysis.

### 2.1.3. *Much*-support – Corver (1997)

Let us now turn to the analysis presented by Corver (1997), which is a landmark paper in terms of functional projections in the extended AP, primarily because it makes an important distinction between determiner-like and quantifier-like degree items in a more explicit way than Bresnan (1973) did. In addition, Corver (1997) adopts a functional head approach instead of a lexical head approach, which conforms to the general assumption that it is functional projections that dominate lexical ones and not vice versa. Last but not least, by claiming that the presence of *much* is due to insertion, Corver (1997) presents a theoretically more adequate treatment of *much* than the one given by Bresnan (1973), which included an extra deletion operation from the structures without a visible *much*.

Relying on Bresnan (1973), Corver (1997: 120–123) starts from the split degree hypothesis; that is, the idea that there should be a difference between quantifier-like degree items (QPs) and determiner-like degree items (DegPs). According to this, the general structure of degree expressions should be the following:



Contrary to Bresnan (1973), however, Corver (1997: 122–123) treats the items *more* and *less* as atomic, in the sense that they are claimed to be base-generated as such – similarly to *enough* or the dummy quantifier *much* – and not as results of syntactic derivation.

Note that the structure argued for by Bresnan (1973), as given in (13), is crucially different from the one shown in (17): the former is a lexical head approach, in that the entire degree expression is headed by the lexical A head, whereas the latter is a functional head approach, where the AP is dominated by functional layers in the degree expression.

There are reasons to believe that this is indeed the case. First, as pointed out by Corver (1997: 124–125), the syntactic derivation of morphological comparatives (e.g. *taller*) would be problematic if the bound *-er* morpheme were located in the specifier of the AP: in order to derive *taller*, either *-er* would have to move rightward or the adjective would have to move to its own specifier – in both cases, general constraints on movement would be violated. By contrast, under the functional head approach the adjective head can move up to the functional head *-er*. Note that this is a problem only if one assumes that the derivation of the final string *taller* from the underlying *-er tall* is carried out in syntax; as will be shown later on, this is not necessarily the case.

Second, the lexical head approach would face severe problems in connection with differences such as the one given in (18), cf. Corver (1997: 125, exx. 16c and 17c):

- (18) a. \***How<sub>i</sub>** do you think he is [<sub>t<sub>i</sub></sub> dependent on his sister]?  
 b. **How heavily<sub>i</sub>** do you think he is [<sub>t<sub>i</sub></sub> dependent on his sister]?

As can be seen, it is grammatical to extract a phrase such as *how heavily* from within the degree expression, while the extraction of *how* is banned. The difference could not be explained under the lexical head approach, where *how* and *how heavily* would both be phrase-sized specifiers (QPs) within an AP. In Corver's approach, however, only the latter qualifies as a phrase-sized constituent: *how* in itself is a functional head above the AP and therefore it is straightforward that it cannot move out on its own.

Third, Corver (1997: 125, ex. 18) also calls attention to an interesting extraction paradigm:

- (19) a. (?) **How many IQ-points<sub>i</sub>** is John [<sub>t<sub>i</sub></sub> less smart (than Bill)]?  
 b. \***How many IQ-points less<sub>i</sub>** is John [<sub>t<sub>i</sub></sub> smart (than Bill)]?  
 c. [**How many IQ-points less smart** (than Bill)] is John?

As pointed out by Corver (1997: 125–126), the lexical head approach would again have to face the problem of extracting phrases from a specifier position both in (19a) and (19b), though the latter case is clearly ungrammatical. The functional head approach can handle this too: in (19a), a degree expression (*how many IQ-points*) is moved out of a specifier position from within the degree expression headed by *less* – by contrast, (19b) exhibits movement of non-constituents, i.e. of a phrase-sized specifier and the functional head. Naturally, the movement of the entire degree expression headed by *less* is again grammatical.

Returning to the problem concerning the status of *much*, it has to be mentioned that Corver (1997: 123) makes a crucial distinction between the lexical quantifier *much* and the functional dummy quantifier *much*. An example of the first one is given below (based on Corver 1997: 121, ex. 5):

(20) She is **too much too tall**.

In this case, the element *much* is claimed to be located in a specifier position of the extended AP projection (Corver 1997: 123). By contrast, dummy *much* is a Q head in the extended AP and is found in examples such as (21) below, cf. Corver (1997: 123, ex. 11):

(21) John is fond of Sue. Maybe **too much so**.

The appearance of dummy *much* is, according to Corver (1997: 123), due to last resort insertion as the adjective in these cases does not move up to the Q head position. In other words, syntax crucially derives the structure without *much* and insertion happens only if necessary: this is exactly the opposite of what Bresnan (1973) claimed; that is, that the syntactic derivation by default contains *much* and a later rule may delete it. As was mentioned at the end of section 2.1.1, the possibility of inserting dummy *much* is in fact logically plausible, even though Bresnan (1973) does not take it into consideration. Hence in a way Corver (1997) seems to answer one of the most compelling questions that arise in connection with the analysis given by Bresnan (1973).

Moreover, Corver (1997: 126–128) provides evidence for the existence of the QP-layer, which was only rather intuitively proposed by Bresnan (1973). Consider the following examples (Corver 1997: 126, exx. 20a and 21a):

(22) a. John seems *fond of Mary*, and Bill seems *so* too.

b. John is *fond of Mary*. Bill seems [much less *so*].

Both cases are instances of *so*-pronominalisation: *so* replaces the entire AP *fond of Mary* – hence, as Corver (1997: 126) argues, not merely the adjective *fond* and not the entire degree expression either, as indicated by the fact that in (22b) *so* appears in a degree expression headed by *less*. This could still be accommodated in a system using only a DegP above the AP; but consider the following data (Corver 1997: 127, exx. 23a and 24a):

- (23) a. John is *fond of Mary*. \*Maybe he is [too *so*].  
 b. John is *fond of Mary*. Maybe he is [too **much so**].

As can be seen, the string *too so* is not grammatical: *much* has to be inserted into the structure. This can be handled relatively well if one supposes a structure like (17), where the Deg head would be *too*, the Q head *much* and the element *so* would occupy the position of the AP, cf. Corver (1997: 127–128).

Contrary to Bresnan (1973), Corver (1997: 128–129) argues that the Q head position is underlyingly empty and the insertion of *much* is only a last resort option: the insertion of *much* in all cases would violate general principles of economy. In this way, *much*-support is similar to *do*-support in the extended verbal domain, as described by Chomsky (1991); cf. Corver (1997: 129).

As for the position of modifiers, Corver (1997: 154–161) argues that they are located in the specifier position of the QP. Consider:

- (24) [<sub>QP</sub> extremely *e* [<sub>AP</sub> poisonous]]

Under this approach, modifiers such as *extremely* are located in the [Spec, QP]; the Q head is empty. By contrast, though modifiers like *well* or *far* are likewise located in [Spec, QP], they attract the adjective head to move up to the Q head, cf. Corver (1997: 160):

- (25) [<sub>QP</sub> far different<sub>i</sub> [<sub>AP</sub> t<sub>i</sub> from the others]]

This is supposed to be so because Corver (1997: 160), in line with Larson (1987), assumes that the morpheme *-ly* is a case-marking element and that the AP needs to be assigned Case. Hence while in (24) the morpheme *-ly* can assign Case to the AP in situ, in (25) there is no *-ly* morpheme and the AP can get Case only via movement to the specifier of the QP.

Although Corver's analysis is in many respects attractive, it still raises certain problems. The most evident one is perhaps the treatment of modifiers: it is not clear why the AP should be assigned Case at all, and how case assignment can be linked to the *-ly* morpheme. More

importantly, the distinction between elements like *far* and ones like *extremely* is not as simple as it may seem on the basis of Corver (1997). Consider:

- (26) a. \*Mary is **far tall**.  
 b. Mary is **far taller** (than Agatha).  
 c. Mary is **very/extremely tall**.  
 d. \*Mary is **very/extremely taller** (than Agatha).

The data above show that the modifiers *far* and *extremely* do not appear in the same constructions: while *extremely* appears regularly with the absolute degree (e.g. *tall*) – and therefore patterns with *very* –, *far* normally occurs when the degree expression is comparative (e.g. *taller*). Hence the exceptional case is actually the one that Corver (1997) uses for his analysis, namely the possibility of *far different*; I will return to the question of why *different* patterns with comparative degree expressions rather than absolute ones later but the basic claim will be that *different* is inherently comparative.

In any respect, there seems to be a crucial distinction among modifiers in terms of which degree they co-occur with. This difference remains unobserved and hence unexplained by Corver (1997). On the other hand, the fact that modifiers cannot be classified on the basis of whether they have the *-ly* ending or not is reinforced by the example of *very*, which behaves like *extremely* but could hardly be treated as a *-ly* adverb.

Furthermore, there is also a structural problem to be mentioned in connection with the status of modifiers in the analysis of Corver (1997). As shown in (24) and (25), the modifiers in question are located in the specifier of the QP, which – on the basis of the structure given in (17) – correctly predicts that these elements have to precede the AP and, if applicable, dummy *much*. However, the same structure in (17) would require Deg heads to precede these modifiers, which is clearly not the case, as shown by *far taller* in (26b) and by *far more intelligent* in (27):

- (27) Mary is **far more intelligent** than Agatha.

These data explicitly show that the structure of degree expressions cannot be the one given in (17) or at least additional mechanisms would have to be taken into consideration.

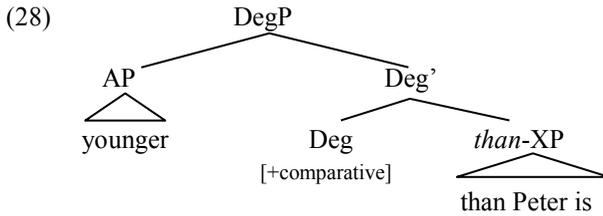
Apart from the problem of how modifiers are treated by Corver (1997), there is also an additional question that is not even addressed: the position of the comparative subclause itself, with respect to the matrix clausal degree expression and – possibly – arguments of adjectives. Assuming that the subclause is closely related to the Deg head, it is not clear how it ultimately appears in a clause-final position and how it is base-generated next to the Deg head in the first place: the specifier of the DegP seems to be a possible position but as Corver (1997) himself does not mention this possibility, I will refrain from speculating about it here.

#### **2.1.4. The QP–DegP analysis – Lechner (1999, 2004)**

Before turning to my proposal, let me briefly discuss the analysis provided by Lechner (2004), a revised version of Lechner (1999), which answers some of the questions that emerged in connection with the previous accounts mentioned here and which provides important insights concerning the actual relations between the various functional projections. This study is important first and foremost because it reconsiders the syntactic relationship between the AP and the Deg head, such that it reflects the semantics of the Deg head much better than in previous analyses.

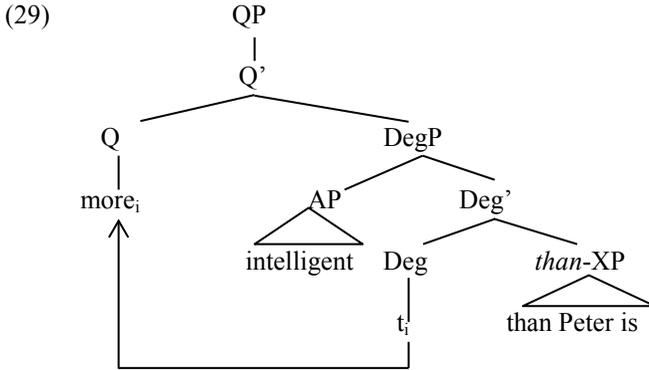
Lechner (2004: 22) partially adopts the functional AP-hypothesis; that is, that the AP is embedded under a functional projection, the DegP, cf. Abney (1987), Bresnan (1973), Corver (1990, 1993, 1997), or Kennedy (1999). However, Lechner (2004: 22–23) assigns a different structure to the DegP, in that he proposes that the AP is base-generated in the specifier position of the DegP and not as a complement, in this respect recalling the proposal made by Izvorski (1995). At the same time the complement position serves to accommodate the comparative subclause.

The structure – using the DegP in a string such as *Mary is younger than Peter is* – is shown below (cf. Lechner 2004: 22, ex. 45):



An advantage of assuming that the AP is in the specifier of the DegP is that in this way they can enter into a specifier–head relationship, and the [+comparative] Deg head can check off the features of the AP. Note that Lechner (2004: 23) claims that comparative morphology is base-generated directly on the A head, and hence a string like *younger* cannot be syntactically decomposed into *young* and the degree morpheme *-er*, contrary to Bresnan (1973), but in line with Izvorski (1995) and Corver (1997). As a matter of fact, Lechner (2004: 23) assumes that *-er* morphology in fact manifests a reflex of feature checking: this, however, selectively surfaces only on certain A heads, namely ones that are monosyllabic or bisyllabic. Hence in the case of periphrastic forms (e.g. *more intelligent*), the feature is claimed to be spelt out on Deg, resulting in the string *more* + A.

This raises a rather compelling question in connection with periphrastic structures, namely that if the comparative feature is spelt out on Deg in the form of *more*, then, according to the representation in (28), the string should actually be A + *more*, e.g. *\*intelligent more*, which is clearly not the case. Lechner (2004) leaves it unexplained how the grammatical order is derived; however, Lechner (1999: 25) originally proposed that in periphrastic comparatives the DegP is embedded under a QP. Hence for a string like *more intelligent than Peter is*, the structure in (28) should be modified in the following way:



As can be seen, if there is a QP layer above DegP, *more* can move up to the Q head position, thus resulting in the grammatical word order.

One advantage of the analysis given in (28), as Lechner (2004: 23) argues, is “the dissociation of the surface position of *-er* from the location of its interpretation”. The problem of not separating these becomes obvious when considering the *unhappier* Bracketing Paradox, as described by Beard (1991), Pesetsky (1985) and Sproat (1992). This paradox lies in the observation that *unhappier* seems to be subject to two conflicting requirements. On the one hand, morpho-phonological rules would assign the following bracketing to the string (cf. Lechner 2004: 23, ex. 47a):

(30) [un [happier]]

The reason behind this is that *-er* may only be attached to an A head that maximally consists of two syllables, hence it must be attached prior to *un-*. However, this seems to produce the interpretation ‘not happier’ instead of ‘more unhappy’. On the other hand, in order to derive the correct interpretation, the bracketing should be the one given in (31), cf. Lechner (2004: 23, ex. 47b):

(31) [[unhappy] er]

Note that in this case the morpho-phonological rules mentioned in connection with (30) are violated.

In order to overcome this problem, Lechner (2004: 23) proposes that the correct bracketing is the one in (30), but the interpretation of *-er* is not directly associated with its base position: it is a manifest of feature-checking, which involves the entire AP (*unhappy*).

With respect to the location of adjectival arguments, Lechner (2004: 26) makes use of some German data exhibiting such constructions to provide additional evidence for the structure he attributes to nominal comparatives. According to his analysis, the PP argument of an adjective is a complement of the adjectival head and it may be subject to right dislocation. Consider (cf. Lechner 2004: 26, ex. 51):

- (32) a. weil Hans [PP auf seinen Hund] stolz ist  
 since Hans of his-ACC.MASC dog proud is  
 ‘since Hans is proud of his dog’
- b. weil Hans stolz ist [PP auf seinen Hund]  
 since Hans proud is of his-ACC.MASC dog  
 ‘since Hans is proud of his dog’

According to Lechner (2004: 26), the underlying order is the one indicated in (32a), building on the assumption that the AP is head-final; for such views, cf. for instance Haider and Rosengren (1998).<sup>1</sup> Consequently, (32b) is claimed to exhibit right dislocation of the PP argument. However, if the AP is an attribute in a nominal expression, dislocation is not possible (Lechner 2004: 26, ex. 54):

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<sup>1</sup> As will be discussed later on, taking such a stance is highly problematic not only in terms of maintaining a universal directionality of headedness (cf. Kayne 1994) but also because there seems to be ample evidence that the German AP is in fact head-initial.

- (33) a. weil Hans eine [PP auf ihren Hund]  
 since Hans a-ACC.FEM of her-ACC.MASC dog  
 Frau getroffen hat stolze  
 proud-ACC.FEM woman met has  
 ‘since Hans met a woman proud of her dog’
- b. \*weil Hans eine stolze Frau  
 since Hans a-ACC.FEM proud-ACC.FEM woman  
 getroffen hat [PP auf ihren Hund]  
 met has of her-ACC.MASC dog  
 ‘since Hans met a woman proud of her dog’

As can be seen, the extraposition of the PP is ungrammatical; this leads Lechner (2004: 27) to conclude that extraposition is not permitted from a DegP that is an attribute within a nominal expression. The same is not true for the comparative subclause, which can seemingly be extraposed – Lechner (1999, 2004) introduces a special mechanism for it, by way of which the (original) comparative subclause ends in a position so that it is coordinated with the (original) matrix clause. Since this is clearly a kind of syntactic process that would go against standard minimalist assumptions and also a problematic proposal inasmuch as comparatives can hardly be considered coordinated structures (cf. Bacskai-Atkari 2010a), I will not present this part of Lechner’s analysis here.

Even if one disregards the problems that the movement of the comparative subclause raises, there arise further ones in connection with the analysis given by Lechner (1999, 2004). First of all, the treatment of *more* is highly disputable as it does not take into consideration that it is built up of *much* and the degree morpheme. It is therefore also not straightforward how strings like *as many (books)* should be analysed, where *as many* obviously cannot be considered as atomic.

Second, the status of the QP is not clear either: though on the basis of Lechner (1999) it ought to be generated in periphrastic structures, neither Lechner (1999) nor Lechner (2004) assumes its presence in morphological comparatives, which hence seem to contain merely DegP projections. On the one hand, this is a problem for a unified analysis of degree expressions as the maximal projections would be different, i.e.

either a QP or a DegP, without even implying any syntactic difference. More importantly, the absence of a QP layer leaves the question of where modifiers are located unanswered.

Last but not least, the treatment of PP arguments is far from being uncontroversial, especially because Lechner (2004) takes it for granted that the AP is head-final and hence the PP underlyingly precedes the A head. The opposing view is quite substantially present in the literature; cf. for instance Webelhuth (1992). However, there are serious problems with Lechner's examples as well in the sense that the data as such are misleading. Consider:

- (34) a. [<sub>PP</sub> Auf seinen Hund] sollte Hans  
of his-ACC.MASC dog should-COND.3SG Hans  
stolz sein.  
proud be  
'Hans should be proud of his dog.'
- b. % [<sub>PP</sub> Auf seinen Hund] stolz  
of his-ACC.MASC dog proud  
sollte Hans sein.  
should-COND.3SG Hans be  
'Hans should be proud of his dog.'
- c. Stolz [<sub>PP</sub> auf seinen Hund] sollte  
proud of his-ACC.MASC dog should-COND.3SG  
Hans sein.  
Hans be  
'Hans should be proud of his dog.'

The data above show the possible movement patterns of APs containing PP complements in main clauses. The most usual order is the one in (34a), where only the PP complement moves to a position preceding the verb *sollte*. However, it is also possible to move the entire degree expression: in that case, the natural order is A + PP, as shown in (34c), and the adjective *stolz* 'proud' is stressed. If the PP precedes the A head, as

in (34b), grammaticality seriously decreases<sup>2</sup> – contradicting the claim made by Lechner (2004: 26), according to which it should be the exact opposite.

The apparent contradiction between the data in (32) and (34) can be explained if we take into consideration some basic facts about German clause structure. In simple terms, in subclauses we find the underlying word order SOV, the VP (and the IP) being head-final (Haider 1993: 34), whereas in main clauses the inflected verb moves to the topmost C head (cf. Fanselow 2004: 30, based on Den Besten 1989; Richter and Sailer 1998: 133–134). The moved verb comes second in the clause; hence it tolerates only one constituent before it. This condition is satisfied in the case of (34c), where the A head precedes the PP complement; however, in (34b) the word order is either the result of moving two constituents before the verb or of the PP complement moving into a position above the AP, which is tolerated normally only if the AP is contained within a nominal expression, as in (33b).

I will return to the question of why degree expressions in predicative and in attributive structures should differ – for now, suffice it to say that the core problem concerning the data provided by Lechner (2004) is that they only seemingly support his claim, but the desired word orders are merely due to the fact that he uses subclauses.

Apart from the examples given in (34), the possibility of intervening modifiers also indicates that the order PP + A head cannot be the underlying one. Consider:

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<sup>2</sup> The acceptability of (34b) seems to show some inter-speaker variance: while some speakers find (34b) acceptable with stress on the adjective *stolz* ‘proud’, others find (34b) severely degraded even in this case. Nevertheless, this does not change that the analysis of Lechner (2004) would predict the opposite pattern.

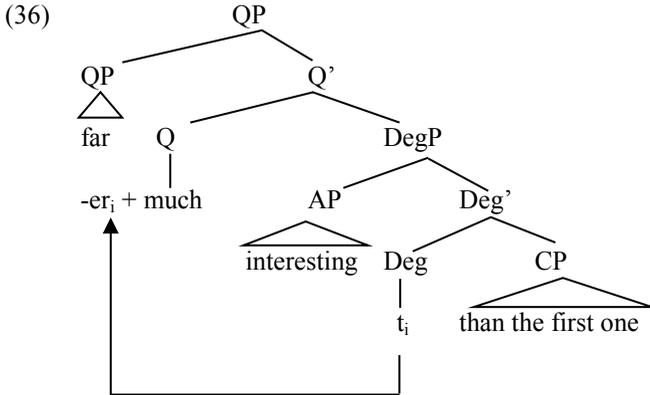
- (35) a. Lisa ist (wirklich) stolz [PP auf ihren  
 Liz is really proud of her-ACC.MASC  
 Mann].  
 husband  
 ‘Liz is (really) proud of her husband.’
- b. Lisa ist [PP auf ihren Mann]  
 Liz is of her-ACC.MASC husband  
 (wirklich) stolz.  
 really proud  
 ‘Liz is (really) proud of her husband.’

In (35a), the adjective *stolz* takes a PP complement and may optionally be modified by an adverb such as *wirklich* ‘really’. In (35b), the adjective and the PP complement appear in the reverse order; since the adverb *wirklich* can intervene between the two, it is obviously not the underlying order. This again raises the question of where modifiers could be located in the analysis provided by Lechner (2004), indicating that his structural representation is far from being complete.

## 2.2. Towards the analysis

In the following, I am going to present my analysis, which may provide a better explanation for the problems mentioned in connection with the previous accounts. First of all, let us consider the basic structure of degree expressions; note that since the present dissertation is centred on the syntax of comparatives, I will chiefly be concentrating on the comparative degree – however, the absolute and superlative constructions will also be shown to fit into the kind of representation I am pursuing.

In general, I adopt the proposal of Lechner (2004) that the AP and the CP are arguments of the degree head. The AP and the CP establish a predicative relationship within the DegP, which is in this respect similar to den Dikken’s Relator Phrase (RP) regarding its function, cf. den Dikken (2006). Consider the following representation for a string such as *far more interesting than the first one*:



As can be seen, there are two major layers that constitute a degree expression: the DegP and the QP. Since arguments for the DegP and the QP have already been put forward in the literature, as described in the previous section, I will mention only additional arguments that support the analysis given in (36).

First of all, let us consider the DegP. The Deg head imposes selectional restrictions on its complement: in absolute constructions – in English – it can be expressed by a PP headed by *for*, in comparatives it is a CP headed by *than* and in superlatives it is a PP headed by *of*:

- (37) a. Mary is tall [<sub>PP</sub> *for a schoolgirl*].  
 b. Mary is taller [<sub>CP</sub> *than her classmates*].  
 c. Mary is the tallest [<sub>PP</sub> *of the girls*].

The structure is invariably the one given in (36); in absolute constructions like (37a), the Deg head takes a PP complement (*for a schoolgirl*) and the Deg head itself is a zero; in superlatives like (37c), the Deg head takes a PP complement (*of the girls*) and is filled by *-est*.

It is important to note that selectional restrictions concern the relevant degree features rather than the syntactic category of the complements. For instance, a superlative degree morpheme selects for a complement with a superlative feature – since the P head *of* may be

equipped with this feature it is an *of*-PP that ultimately appears as the superlative complement. However, there are languages that allow the realisation of one degree complement by categorically different elements. Consider the following data from Italian:

- (38) a. Raulo è più alto [CP che Alessandro].  
 Ralph is more tall-MASC that Alexander  
 ‘Ralph is taller than Alexander.’
- b. Raulo è più alto [PP di Alessandro].  
 Ralph is more tall-MASC of Alexander  
 ‘Ralph is taller than Alexander.’

As can be seen, in Italian the comparative complement can either be a clause introduced by *che* ‘that’ or a PP headed by *di* ‘of’; in both cases, the comparative degree head is *più* ‘more’. In Hungarian, there is a choice between a CP and a DP with inherent (Adeessive) case:

- (39) a. Lujza magasabb volt, [CP mint Mari].  
 Louise taller was.3SG than Mary  
 ‘Louise was taller than Mary.’
- b. Lujza magasabb volt [DP Marinál].  
 Louise taller was.3SG Mary-ADE  
 ‘Louise was taller than Mary.’

In both constructions, the DegP is headed by the morpheme *-bb* ‘-er’. Apparently, Russian displays the same kind of variation<sup>3</sup>:

- (40) a. Ona vyše [NP svoix odnoklassnikov].  
 she taller her.GEN.PL classmates.GEN  
 ‘She is taller than her classmates.’
- b. Ona vyše [CP čem eë odnoklassniki].  
 she taller than her classmates  
 ‘She is taller than her classmates.’

<sup>3</sup> For her indispensable help with the Russian data, I owe many thanks to Maria Shkapa.

In the matrix clause, the degree expression is *vyše* ‘taller’, which contains the comparative morpheme *-eje* ‘-er’; the comparative complement is either a CP or a nominal expression marked for the Genitive case.

In Russian, adjectives can regularly appear both in morphological and periphrastic constructions; however, with periphrastic comparatives only the clausal comparative complement is allowed:

- (41) a. \*Ona    boleje    vysokaja    [<sub>NP</sub>    svoix  
           she        more     tall.FEM        her.GEN.PL  
                   odnoklassnikov].  
                   classmates.GEN  
                   ‘She is taller than her classmates.’
- b. Ona    boleje    vysokaja    [<sub>CP</sub>    čem    eë    odnoklassniki].  
           she        more     tall.FEM        than    her    classmates  
                   ‘She is taller than her classmates.’

As should be obvious, the ungrammaticality of (41a) cannot be the result of the mere fact that the degree expression is comparative since in that case (40a) should also be ruled out. There are two crucial differences between the degree expressions in (40) and the ones in (41): the degree head itself, which is *-eje* in (40) and *boleje* in (41), and the form of the adjective, that is, while *vyše* is not inflected for gender, *vysokaja* is. This latter difference has the prediction that – since attributes have to agree with their nouns in gender in Russian – morphological comparative degree expressions will never be attributes and, consequently, the inherently case-marked NP comparative complement will not appear in attributive comparatives either. This prediction is in fact borne out.

On the other hand, it should be obvious that the Deg head imposes restrictions on both its specifier and its complement: it selects for complements headed by certain elements and it agrees with the AP, which may be manifest in diverse features; for instance, it may select exclusively for APs that are in a predicative form. I will address this issue later on; for the time being, suffice it to say that the way the degree head imposes restrictions on its arguments suggests that features independent from the degree property are also involved.

Returning now to the examples given in (37), it is worth mentioning that although the DegP proposed here does bear some resemblance to the Relator Phrase of den Dikken (2006), the treatment of the PP in (37a) highlights a crucial difference from his analysis. Den Dikken (2006: 63) claims that in structures such as *big for a butterfly*, the AP *big* is located in the specifier position of an RP, the DP *a butterfly* is the complement and the R head itself is *for* – using the DegP analysis, this would translate *for* as a Deg head. By contrast, I propose that the complement position of the Deg head is occupied by the PP *for a butterfly*, which of course leaves the Deg headed by a zero relator, that is, the absolute degree morpheme. The advantage is that this way the complement may act as one constituent, irrespectively of whether it is a PP (like *for a butterfly*) or a CP (like *than the first one*). Separating the CP from its complementiser head *than* would clearly be problematic; the same is true for the PP, which may actually be moved on its own, as shown in (42a), in the same way as the PP argument in superlatives, as in (42b):

- (42) a. [<sub>PP</sub> For an adult], he is tiny.  
 b. [<sub>PP</sub> Of all the girls], she is the most beautiful.

Of course, there are further restrictions on which phrases may actually undergo movement; that is, while the fact that a given string may undergo movement on its own seems indicative of that string being a phrase, it is not true that all phrases may undergo movement. This largely has to do with whether the complements of the Deg head are phrasal (i.e. smaller than a clause) or clausal. As for English, the PP complements in absolute and superlative constructions may move, while the CP in comparatives cannot. In Hungarian, there are two types of comparative complements: CPs and case-marked DPs; while CPs cannot move out, case-marked DPs can:<sup>4</sup>

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<sup>4</sup> Note that the difference indicated in (43) is truly a result of a difference in the syntactic categories and is independent from the fact that (43a) contains ellipsis: the non-elided counterpart of (43a) would equally be ungrammatical. Consider:

- (i) \* [<sub>CP</sub> Mint Péter volt], magasabb voltam *t*.  
 than Peter was.3SG taller was-1SG  
 ‘I was taller than Peter.’

- (43) a. \*[<sub>CP</sub> Mint Péter]<sub>i</sub> magasabb voltam *t<sub>i</sub>*.  
           than Peter taller was-1SG  
           ‘I was taller than Peter.’
- b. [<sub>DP</sub> Péternél]<sub>i</sub> magasabb voltam *t<sub>i</sub>*.  
           Peter-DAT taller was-1SG  
           ‘I was taller than Peter.’

Since both (43a) and (43b) are comparative structures, it should be obvious that the difference with respect to extraposition is the result of having different syntactic categories, and not of having different degrees.

Returning now to the structure in (36), it can be seen that the AP moves up to the specifier of the DegP in order to agree with the degree head. One argument in favour of such an agreement is that in this way certain illicit configurations may be ruled out. Consider:

- (44) a. \*Liz is more pregnant than Mary.  
        b. \*This instalment is more impossible than the previous one.

The ill-formedness of the constructions in (44) stems from the comparative use of *pregnant* and *impossible*: *pregnant* and *impossible* are non-gradable adjectives<sup>5</sup> and hence cannot agree with a comparative degree head.<sup>6</sup>

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On the other hand, languages that tolerate the fronting of a clausal comparative complement do so even if the subclause contains ellipsis; consider the following example from German:

- (ii) [<sub>CP</sub> Als Peter] war ich größer.  
           than Peter was.1SG I taller  
           ‘I was taller than Peter.’

<sup>5</sup> It is worth mentioning that some speakers accept structures like (44a) in a metaphoric sense, e.g. meaning that Liz is 7 months pregnant while Mary is only 3 months pregnant. In these cases *pregnant* counts as a gradable adjective and has the syntactic and semantic properties thereof; that is, it can agree with a Deg head and the DegP layer can be projected.

<sup>6</sup> Note that apart from the fact that these adjectives are non-gradable and hence are compatible only with the absolute degree, they do not tolerate degree modifiers either, e.g.

Another case where there is clearly agreement involved between the AP and the Deg head is Icelandic. In Icelandic, as in other Scandinavian languages, the adjective has to agree in gender with the noun it qualifies both when the adjective is a predicate and when it is an attribute. In addition, in Icelandic there is gender agreement between the AP and the Deg head, as demonstrated by the following examples:

- (45) a. *rik-ur*  
rich-MASC  
'rich'
- b. *rik-ast-ur*  
rich-SUPERLATIVE.MASC-MASC  
'richest'
- c. \**rik-ust-ur*  
rich-SUPERLATIVE.FEM-MASC  
'richest'

In (45a), the adjective *rik* 'rich' takes a masculine ending *-ur*, forming the absolute adjective *rikur*. In (45b), in order to form the superlative, the superlative masculine morpheme *-ast* is added to the stem *rik*, and is followed by the regular masculine ending *-ur*, resulting in the final form *rikastur*. The reason why *rikustur* in (45c) is ungrammatical is that it contains the superlative feminine morphemes *-ust* instead of the masculine one. Hence in Icelandic there is not only agreement between the full QP and the noun but also within the DegP. Note that in other Scandinavian languages, such as Danish, there is agreement only between the QP and the noun; however, the Danish comparative morpheme will invariably remain *-(e)re*, irrespectively of gender.

Let us now examine the QP layer, which is invariably present on top of a degree expression. In (36), it is headed by *much*, and the specifier may accommodate a QP modifier such as *far*; the QP is obviously necessary for accommodating both of these elements, as was argued for in the previous section. I also adopt the view expressed by Corver (1997) that *much* is present in periphrastic structures in a similar way as

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\*very pregnant, \*quite impossible. This is in line with the claim that the Deg head has to agree both with the AP and with QP modifiers, if any.

other dummy elements (e.g. *do*) enter the derivation, hence there is no need to stipulate any additional process such as *much*-deletion.

Hence periphrastic comparatives and superlatives are formed in the way given in (36): that is, the Deg head *-e/-est* moves up to the Q head filled by *much* and the merge of *much* and *-er/-est* gives *more/most* (cf. Bresnan 1973; Corver 1997; Beck 2011; Kántor 2008a). Note that head adjunction results in the order *-er much* (or *-est much*) in syntax, due to Kayne's Linear Correspondence Axiom (Kayne 1994), cf. also the Mirror Principle of Baker (1985, 1988). It is the result of morphological merge at the PF interface that the *-er/-est* is attached to *much* following it.

This becomes even more important in the case of morphological comparatives, where there is no *much*. Here the Deg head *-er / -est* is still moved to a zero Q head in syntax and the degree morpheme undergoes morphological merge with the AP at PF, as argued for by Kántor (2010: 45–51). This is reinforced by the existence of irregular (suppletive) forms, such as *better*, which is formed from merging *-er* with *good*: this form obviously cannot be the result of simple syntactic merge of the two elements. Moreover, as Kántor (2010: 49–51) argues, the variation in possible forms in the case of complex adjectives can only be explained by attributing the mechanism to PF: for instance, an adjective like *good-looking* may have its comparative form either as *better-looking* or as *more good-looking*, the former being a clear indication of the fact that the *-er* is not attached to the AP (*good-looking*) in syntax but to the adjective itself in PF.<sup>7</sup>

Last but not least, the QP modifier is located in the specifier because it has to agree with the Q head (which is here *much*). As was mentioned in connection with the analysis given by Corver (1997), there are selectional restrictions as to which modifier can appear together with which degree. Recall:

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<sup>7</sup> Note that it is the idiosyncratic property of (compound) adjectives whether they count as morphologically transparent or not. Whereas morphologically transparent ones (e.g. *well-paid* or *long-lasting*) tend to have both forms (e.g. *better-paid* and *more well-paid*, or *longer-lasting* and *more long-lasting*), the ones that are not transparent (e.g. *easy-going* or *hard-working*) can only be formed with *more* (e.g. *more easy-going* and not *\*easier-going*, or *more hard-working* but not *\*harder-working*).

- (46) a. Mary is **very tall** / **\*far tall**.  
 b. Mary is **\*very taller** / **far taller**.

As can be seen, the QP *very* can appear in absolute constructions but not in comparatives; by contrast, *far* is compatible with the comparative degree but not with the absolute. Due to this, the QP modifiers are clearly not adjuncts – hence the analysis based on specifier–head agreement can explain the restrictions better than one treating them as adjuncts, as done for instance in Bresnan (1973) and Corver (1997).

Since the possibility of certain modifiers is merely dependent on the relevant degree features (and not on e.g. the presence or the absence of the ending *-ly*, as was proposed by Corver 1997), it is not inexplicable that strings such as *far different* should exist, even though there is no overt *-er* morpheme present. Since, as was mentioned before, *far* normally co-occurs with the comparative degree, the way to overcome this problem is to say that the adjective *different* inherently expresses comparison and therefore may be equipped with an inherent [+compr] feature, which agrees with a comparative Deg head. In fact, this is supported by the fact that in certain (American) dialects degree expressions with *different* typically take a *than*-clause instead of a PP:

- (47) University life is **different** than I expected.

It is therefore preferable to analyse the relationship between QP modifiers and degree expressions as one determined by agreement between the modifier and the degree head moving to Q, rather than one depending on the *-ly* morpheme.

The analysis presented so far also has the advantage of treating morphological and periphrastic comparatives in a unified way, by assuming that the appearance of *much* in periphrastic comparatives is due to regular dummy insertion and not the lack of a stipulated deletion rule. The two remaining questions are hence the role of the DegP other than marking the degree itself and how it may account for phenomena related to PP arguments of adjectives, and the mechanisms behind the extraposition of the comparative subclause.

### 2.3. Predicative and attributive adjectives

One important question regarding the analysis presented above is how it can account for the differences between predicative and attributive adjectives. There are adjectives that are inherently predicative; consider:

- (48) a. The girl was **afraid**.  
 b. \*I saw an **afraid** girl.

As can be seen, the adjective *afraid*, which is inherently predicative, can appear as a sentential predicate, as in (48a), but cannot be an attribute within a nominal expression, as demonstrated by the ungrammaticality of (48b). Similar adjectives include *alive*, *asleep* or *ill* in English.

On the other hand, there are inherently non-predicative adjectives too, such as *main*:

- (49) a. \*The reason is **main**.  
 b. That is the **main** reason.

Contrary to *afraid*, the adjective *main* cannot function as a sentential predicate, as shown in (49a) but may be an attribute, as in (49b). It is interesting to note that most attributive-only adjectives are also non-gradable, e.g. *main*, *northern*, *mere*, *previous* or *utter*. However, this is by no means a necessity, as demonstrated by the following examples:

- (50) a. It is a **more recent** theory than the traditional transmission model.  
 b. As he drinks, he gets into a **more drunken** state.

In fact, gradability and the choice between predicative and attributive uses are two independent properties which allow for six logical combinations: gradability is clearly binary and independently from this, adjectives may be predicative-only, attributive-only and may allow for both. This is represented with examples in (51) below:

(51)

|                     | <b>predicative-<br/>only</b> | <b>attributive-<br/>only</b> | <b>both</b>     |
|---------------------|------------------------------|------------------------------|-----------------|
| <b>gradable</b>     | <i>afraid</i>                | <i>drunken</i>               | <i>tall</i>     |
| <b>non-gradable</b> | <i>alive</i>                 | <i>main</i>                  | <i>pregnant</i> |

This strongly suggests that apart from that fact that a Deg head may appear only with a gradable adjective, there are also further features to be considered.

It has to be mentioned that there are considerable cross-linguistic differences as to which adjectives qualify as predicative-only or attributive-only: in Russian, for instance, all the adjectives mentioned above can be both predicative and attributive. Consider:

- (52) a. Eto **glavnyj** vokzal.  
 this main railway station  
 ‘This is the main railway station.’
- b. Eto vokzal **glavnyj**.  
 this railway station main  
 ‘This railway station is the main one.’

As can be seen, the adjective *glavnyj* ‘main’ can appear both as a predicate and as an attribute, contrary to English *main*. This shows that though there are general syntactic and semantic properties that play a crucial role in determining whether a given adjective can be predicative and/or attributive, there are also cross-linguistic differences and also idiosyncrasies of individual lexical items.<sup>8</sup>

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<sup>8</sup> The fact that there are idiosyncratic properties to be considered as well is indicated by the existence of synonyms that behave differently, in spite of there being no differences in their morphological structure; such a pair is *ill* and *sick* in English: while *sick* may act both as a predicate and as an attribute, *ill* is licensed only in a predicative position. Apart from such unpredictable properties, however, there are of course certain semantic and syntactic

I propose that the difference between predicative-only and attributive-only can be formalised with the help of formal features that are independent from gradability.<sup>9</sup> First, let us consider the following examples:

- (53) a. Mary is pregnant.  
b. Mary is a pregnant woman.  
c. Mary is tall.  
d. Mary is a tall woman.

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properties that make restrictions predictable. As pointed out by Kenesei (to appear), relational adjectives tend not to occur in attributive positions (cf. Bally 1944, McNally and Boleda 2004 or Fradin 2007; among others) and this has an interesting morphosyntactic correlation in Hungarian, where the denominal adjective-forming suffix *-i* produces relational adjectives – hence, as can be expected, adjectives formed with this suffix tend not to be allowed in attributive positions. Still, though most relational adjectives are attributive-only, there are ones that can function as predicates, e.g. *English*. Another semantic class that is known to be attributive-only is that of evaluative adjectives such as *damned*. My aim here is not to examine these issues in detail and hence I will not elaborate on them any further; however, it is important to bear in mind that there are several factors that determine whether a given adjective is predicative or attributive, including both semantic and syntactic features and cross-linguistic differences.

<sup>9</sup> Since the aim of the present discussion is to provide an adequate analysis for the structure of degree expressions, I do not venture into a detailed examination of a feature-based categorisation of adjectives and will only restrict myself to a basic distinction between predicative and non-predicative adjectives, which should suffice for the purpose of analysing degree expressions. As extensively discussed by Fradin (2007), there are several criteria that have to be considered when examining the distribution of adjectives – including both the syntactic position that these adjectives can take as well as gradability and whether the adjective is denominal; these factors also interact with one another. Moreover, Fradin (2007) also points out that – at least in languages that allow or even prefer postnominal modification, e.g. French – the distinction between a prenominal and a postnominal adjectival modifier is also crucial; again, this is a problem I am not going to address, especially because the postnominal appearance of adjectives in the languages under scrutiny is rather due to the presence of a reduced relative clause and not to true rightward attachment of the QP modifier. Last but not least, I am not going to deal with the issue of category shift, i.e. when an adjective can be assigned two different feature matrices depending on the noun it modifies, e.g. *osseux* ‘bony’ is gradable in constructions such as *visage osseux* ‘bony face’ but not in ones such as *tuberculose osseuse* ‘bone tuberculosis’, see Fradin (2007: 84–85).

The respective semantic representations of the clauses in (53) are given in (54) below:

- (54) a. PREGNANT(Mary)  
 b.  $\exists x[\text{GIRL}(x) \& \text{PREGNANT}(x)]$   
 c.  $\exists d[\text{TALL}(\text{Mary}, d)]$   
 d.  $\exists x[\text{GIRL}(x) \& \exists d[\text{TALL}(x, d)]]$

As can be seen, the difference between non-gradable adjectives such as *pregnant* in (54a) and (54b) and gradable adjectives such as *tall* on (54c) and (54d) is that the former simply denote sets that entities are either part of or not, while gradable adjectives denote an ordered set of entities along the degrees of an implied scale (cf. Kennedy and McNally 2005; Cresswell 1976; Heim 2000; Kennedy 1999). A gradable adjective that is equipped with a relevant syntactic feature, call it [+deg], contains information in its semantics with respect to a degree variable that will quantify over it; this is translated into syntax in such a way that the [+deg] feature must be checked against a Deg head. Non-gradable adjectives, on the other hand, are [-deg] and hence cannot enter an agreement relationship with a Deg head; consequently, these adjectives are not supposed to be located within a DegP (and hence a QP).

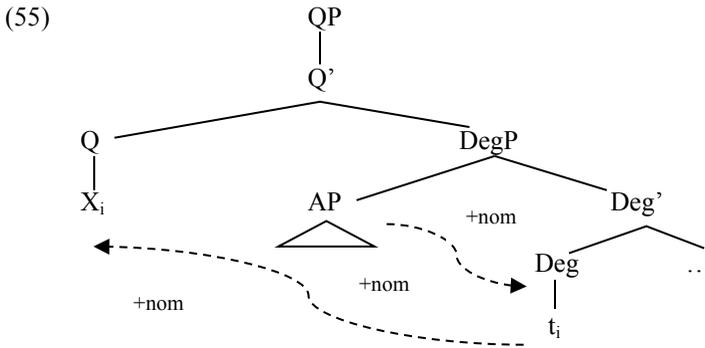
On the other hand, there is a distinction between predicative and attributive adjectives: the latter do not take an individual but a variable ( $x$ ), which is in turn taken by another predicate, both predicates being in the scope of the existential quantifier. Syntactically, this difference should be the presence of a feature that can be checked off against a noun, call it [+nom]. Attributive-only adjectives are inherently [+nom] and if they do not appear in an attributive position, this feature cannot be checked off by agreement. By contrast, predicative-only adjectives are inherently [-nom] and hence if they appear as attributes, there is a feature mismatch with the noun head, which causes ungrammaticality.

Adjectives that can be both predicates and attributes allow for both [+nom] and [-nom]; this may be manifest in distinct forms between the two uses; that is, in certain languages (such as German) there are inflected forms in the attributive position that overtly show agreement, while this is not so in predicative uses. Since non-gradable adjectives

can also be both [+nom] and [-nom], it should be clear that the choice is primarily not encoded in the Deg head but rather on the AP itself: in the case of APs without a DegP projection, this syntactic information cannot be introduced elsewhere.

Naturally, in the case of gradable adjectives these features percolate up within the QP. First, the [ $\pm$ nom] feature of the AP percolates up to the DegP via specifier–head agreement (cf. Yoon 2001; Ortiz de Urbina 1993; Horvath 1997). Second, the movement of the Deg head to the Q head assures the percolation of the feature to the Q head. Hence a [+nom] QP can and must enter into a further agreement relationship with a nominal head.

Feature percolation is summarised in the diagram below:



Predicative QPs can function as predicates in the clause or as postnominal modifiers and the Deg head is equipped with a [-nom] feature. Attributive QPs, by contrast, are modifiers of NPs and hence the Deg head is equipped with a [+nom] feature.

In the cases I have looked at so far it was invariably the AP that defined the [ $\pm$ nom] nature of the degree expression, the Deg head itself being underspecified for this feature. However, it is possible that certain Deg heads are inherently [+nom] or [-nom]. This is the case of the Russian comparative head *-eje* as given in (40), which appears exclusively as a predicate: it takes a [-nom] AP in its specifier, uninflected for gender, and hence can never appear as an attribute. On the other hand, superlative constructions seem to be universally attributive-only

(cf. Matushansky 2008, based on Heim 1999) and hence it is justifiable that superlative Deg heads are inherently [+nom].<sup>10</sup>

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<sup>10</sup> I do not wish to elaborate on the syntax and the semantics of superlatives here and to present an account for why superlatives are inherently [+nom] in particular. Note, however, that the obligatory presence of the definite article in superlatives is due to the presence of a nominal projection and is not required by the QP itself:

(i) This hypothesis is **\*(the) best**.

As indicated, the definite article *the* cannot be left out without affecting the grammaticality of the clause; still, there is no overt noun required. This is not the case for absolute and comparative adjectives such as (ii) and (iii):

(ii) This hypothesis is **the good \*(one)**.

(iii) This hypothesis is **the better \*(one)**.

In these cases, there has to be either an overt lexical noun or at least the proform *one*, otherwise the structure is ungrammatical. By contrast, in simple predicative structures the article is absent and so is the noun (or *one*):

(iv) This hypothesis is **good**.

(v) This hypothesis is **better**.

Such constructions are not available for superlatives, however:

(vi) **\*This hypothesis is best**.

Note also that different languages may behave differently with respect to the obligatory overtness of the noun head; in Hungarian, for instance, there is no such requirement at-tested. Consider:

(vii) Ez az elmélet **a jó**.  
this the theory the good  
'This theory is the good one.'

(viii) Ez az elmélet **a jobb**.  
this the theory the better  
'This theory is the better one.'

(ix) Ez az elmélet **a legjobb**.  
this the theory the best  
'This theory is the best one.'

As can be seen, all the cases in (vii)–(ix) involve the sequence of an overt definite article and an adjective but there is no phonologically visible noun head. I will not wish to examine why this option is available for the absolute and the comparative degrees in Hungarian but not in English. What is important to note here is that in the absence of a nominal projection the superlative is not possible in Hungarian either:

One of the obvious advantages of this analysis is that it provides a unified approach that covers both predicative and attributive structures: recall that this was precisely one of the chief concerns expressed by Izvorski (1995); however, her analysis was shown to be problematic for several reasons. Contrary to her assumptions, I claim that the inner syntactic structure of degree expressions is the same in both cases, but the features determining whether the entire QP may function as a predicate or an attribute are indeed QP-internal.

## 2.4. Arguments of adjectives

Providing a formal account for the differences between predicative and attributive adjectives becomes especially important when considering arguments of adjectives. Recall that certain adjectives are known to have arguments of their own:

- (56) a. Liz is proud [<sub>PP</sub> of her husband].  
 b. Mary is afraid [<sub>PP</sub> of snakes].

In the examples above, the adjectives *proud* and *afraid* take the bracketed PPs as their arguments. However, adjectives with PP complements are not allowed in the attributive position:

- 
- (x) Ez az elmélet jó.  
 this the theory good  
 ‘This theory is good.’
- (xi) Ez az elmélet jobb.  
 this the theory better  
 ‘This theory is better.’
- (xii) \*Ez az elmélet legjobb.  
 this the theory best  
 ‘This theory is the best.’

In structures such as (x)–(xii), there is no covert noun head and the QP functions as a predicate in the clause; this is possible with the absolute and the comparative degree, as in (x) and (xi), respectively, but since the superlative degree is licensed only if there is a noun head in the structure, (xii) is not grammatical.

- (57) a. \*Liz is a proud [<sub>PP</sub> of her husband] woman.  
 b. Liz is a proud woman.  
 c. Liz is a woman proud [<sub>PP</sub> of her husband].

As demonstrated by the data above, the appearance of *proud* with its PP complement is ungrammatical in the attributive position, as shown in (57a) – despite the fact that *proud* could otherwise appear in this position, as shown in (57b). It is of course possible to have the adjective together with its PP argument in a postnominal position, as in (57c).

The same pattern can be observed in the case of inherently predicative-only adjectives:

- (58) a. \*Mary is an afraid [<sub>PP</sub> of snakes] girl.  
 b. Mary is a girl afraid [<sub>PP</sub> of snakes].

The ungrammaticality of (58a) is predictable since the appearance of the adjective *afraid* in an attributive position would be ungrammatical anyway; again, the postnominal position leads to an acceptable construction, as in (58b). Hence it seems that the ungrammaticality of (58a) is truly due to a positional problem.

The explanation for this relies on the observation that PPs are invariably [–nom] in English. This is straightforward as they cannot be attributes. Consider:

- (59) a. The ladder is [<sub>PP</sub> behind the house].  
 b. \*The [<sub>PP</sub> behind the house] ladder is green.  
 c. The ladder [<sub>PP</sub> behind the house] is green.

As can be seen, the PP *behind the house* can naturally appear in a predicative position but is excluded as the attribute of the noun *ladder*, as shown in (59b). However, it is grammatical for the PP to appear postnominally, as in (59c).

One apparent counterexample is the case of *inside*, which can appear as an attribute:

- (60) a. The robbery was an inside job.  
 b. He was keen to get an inside look.

However, *inside* in these cases is an adjective and not a preposition, as demonstrated by the possibility of comparative and superlative forms:

- (61) a. The trip gave us a more inside look at the area.  
 b. The guide promised to give us the most inside look at the area

The question arises whether PPs could function as attributes at all. Interestingly, Hungarian postpositional phrases seem to allow this. Consider:

- (62) a. A létra [pp a ház mögött] van.  
 the ladder the house behind is.  
 ‘The ladder is behind the house.’  
 b. \*A [pp ház mögött] létra zöld.  
 the house behind ladder green  
 ‘The ladder behind the house is green.’

In (62a), the PP *a ház mögött* ‘behind the house’, headed by the postposition *mögött* ‘behind’, is in a predicative position. By contrast, in (62b) it appears as an attribute within the nominal expression, and the result is ungrammatical. The only possibility for the PP to appear in an attributive position is when it is embedded in a phrase headed by the suffix *-i*:<sup>11</sup>

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<sup>11</sup> Note that the suffix *-i* is attached to the entire PP, not only to the P head. As pointed out by Kenesei (1995: 163), the *-i* suffix derives an AP from the PP but the attachment of this suffix to a bare P head would be ungrammatical:

- (i) \*a mögött-i létra  
 the behind-AFF ladder  
 ‘the ladder behind’

The reason for this is that the P head must have a complement and cannot stand on its own; if the *-i* suffix were attached to the P head directly, however, then the string *mögötti* would be an adjective as such and should be allowed to appear as a modifier. Since this is not the case, it should be clear that the suffix *-i* is attached to the entire PP.

- (63) A [XP [PP ház mögött] -i] létra zöld.  
 the house behind AFF ladder green  
 ‘The ladder behind the house is green.’

I will not venture to examine the exact status of the suffix *-i* here; suffice it to say that PPs in themselves cannot function as attributes in Hungarian either. In any case, the point is that in English there is no construction such as (63) available for PPs either and hence PPs in English are never attributive in nature.

The positional problem regarding attributive APs taking PP complements is also indicated by German word order differences (cf. Haider 1983: 202), as was partly discussed in connection with Lechner (1999, 2004). Consider:

- (64) a. Lisa ist (wirklich) stolz [PP auf ihren  
Liz is really proud of her-ACC.MASC  
Mann].  
husband  
'Liz is (really) proud of her husband.'
- b. Lisa ist [PP auf ihren Mann] (wirklich)  
Liz is of her-ACC.MASC husband really  
stolz.  
proud  
'Liz is (really) proud of her husband.'
- c. Die [PP auf ihren Mann] stolze  
the-FEM of her-ACC.MASC husband proud-FEM  
Frau ist Lisa.  
woman is Liz  
'The woman proud of her husband is Liz.'
- d. \*Die stolze [PP auf ihren Mann]  
the-FEM proud-FEM of her-ACC.MASC husband  
Frau ist Lisa.  
woman is Liz  
'The woman proud of her husband is Liz.'

In (64a), the adjective *stolz* 'proud' takes a PP complement and may optionally be modified by an adverb such as *wirklich* 'really'. In (64b), the adjective and the PP complement appear in the reverse order; recall that since the adverb *wirklich* can intervene between the two, it is obviously not the underlying order. This is crucial because while in predicative structures both orders converge, in the case of attributive adjectives only the inverse order, i.e. where the PP has moved to the left, is grammatical, as in (64c), and the adjective taking its PP complement in its base position leads to ungrammaticality, as in (64d).

The reason behind all this is that head-complement agreement between the adjective and its PP complement rules out a feature

mismatch between the head and the PP. This has two important predictions. First, inherently [+nom] adjectives do not take PP complements. Second, adjectives that otherwise allow both for [+nom] and [-nom] may take a PP complement, but if the QP functions as an attribute, the PP has to escape from this position prior to PF transfer. This is possible in German, where the PP can be moved to the left; hence the lower copy (the complement of the adjective head) can be deleted. In English, by contrast, there is no such movement available; as a consequence, PPs cannot be taken by attributive adjectives.

The fact that the behaviour of PP arguments is directly linked to the structure of degree expressions by way of applying the same features renders an optimal explanation for the interrelated phenomena considered here.

## 2.5. Phases and deletion

It seems that PP arguments, while not available as complements of adjectives in attributive constructions, may appear together with adjectives in predicative positions without causing further problems for the analysis. However, this is not exactly the case as the PP complement is apparently not adjacent to the adjective head:

- (65) a. Liz is proud enough [<sub>PP</sub> of her husband].  
 b. \*Liz is proud [<sub>PP</sub> of her husband] enough.

Although the PP *of her husband* is clearly the argument of the adjective *proud*, it is ungrammatical for it to remain adjacent to the head, as shown by (65b): the only grammatical configuration is the one shown in (65a), where *enough* seems to intervene between the two. Note that the same would be true for a Deg head such as the *-er*:

- (66) Liz is prouder [<sub>PP</sub> of her husband] than Mary is.

In this case, the adjective *prouder*, which moves up to the specifier of the DegP, is again not adjacent to its original complement PP.

Though it may be tempting to analyse constructions like (65a) as the results of rightward movement of the PP, the phenomenon can actually be explained by phase theory. Phases, as is known, are derived syntactic objects, which are transferred to the interfaces as such (Chomsky 2005: 9). Hence phases may be spelt out separately. However, there are two important rules to be observed here. First, the phases spelt out the earliest will appear last in the PF order; second, phases that are already spelt out become opaque, that is, invisible for syntax (Chomsky 2001, 2004, 2005; Nissenbaum 2000; Svenonius 2004; Kántor 2008a).

To illustrate this, let us take the example of the CP complement in comparatives, as described by Kántor (2008a: 106–109). Consider:

- (67) a. \*I saw a taller [<sub>CP</sub> than John] man.  
 b. I saw a taller man [<sub>CP</sub> than John].  
 c. I saw [<sub>DP</sub> a [<sub>QP</sub> taller [<sub>CP</sub> *opaque*]] man] [<sub>CP</sub> than John].

In (67a), the CP appears adjacent to *taller*, hence in its base position as a complement within the QP modifying the NP *man*. The result is, however, ungrammatical: the well-formed configuration is shown in (67b), where the CP appears as the rightmost element. PF ordering is shown in (67c): the CP *than John*, as a phase, is spelt out first: hence its rightmost position in the linear structure. Since it is spelt out, it will appear as opaque in the syntactic structure in its base position (and will of course not be overt at PF either).

There are two observations to be made here. First, the order of spell-out is not completely independent from the order of merge: if a phase-sized XP is merged into the structure earlier than a phase-sized YP, and if the XP can be spelt out earlier than YP is merged, then XP will naturally be spelt out earlier than YP. Second, any XP can be spelt out only if it has checked off its uninterpretable features. This is crucially important when dealing with cross-linguistic data. In Hungarian, for instance, relative clauses are embedded within a DP, headed by a matrix pronominal element that is responsible for introducing the relative clause into the structure (cf. É. Kiss 2002: 243–248). It is a possible configuration that the CP is spelt out earlier but the DP, which can for

instance be a focus, has features to be checked and hence cannot be spelt out.<sup>12</sup> Consider:

- (68) [DP Azt [CP *opaque*]] felejtst el, [CP amiről  
that.DEM-ACC forget-IMP.2SG off what-DEL  
beszéltünk]!  
talked-1PL  
‘Forget what we talked about!’

Since the pronoun *azt* is focussed but the subclause itself is not, they will naturally appear as disjoint elements in the linear structure. However, if the subclause is interpreted as a topic as well, it may move together with the rest of the DP (example from É. Kiss 2002: 244, ex. 40a):

- (69) [DP Azt, [CP amiről beszéltünk,]]  
that.DEM-ACC what-DEL talked-1PL  
felejtst el!  
forget-IMP.2SG off  
‘Forget what we talked about!’

I will not examine here the conditions on why and how subordinate CPs may not appear sentence-finally, as it would require a separate and thorough investigation on its own, especially because in several languages, such as Japanese, Korean Chinese and Turkish, there are pre-nominal relative clauses to be found, cf. Larson and Takahashi (2007).

Turning back to the seemingly extraposed PPs in structures like (65), the explanation relies on the assumption that PPs can be considered phases too (Lee-Schoenfeld 2007; Drummond et al. 2010; Gallego 2010; Fowlie 2010); consequently, they can be spelt out separately. Therefore, what happens in the case of (65) is the following:

- (70) Liz is proud [<sub>PP</sub> *opaque*] enough [<sub>PP</sub> of her husband].

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<sup>12</sup> Note that in this case the CP still has to be spelt out separately and cannot appear together with the DP in the focus position: this is because of the prohibition on focusing CPs, as opposed to topicalisation; see Kenesei (1994: 330–332).

The PP *of her husband*, being a phase, is spelt out first and it appears as the last element in the PF ordering; at the same time it becomes opaque in its base position in the syntax.

It has to be stressed that this does not happen in an unrestricted way: the PP can be spelt out only if its features are checked off. As should be obvious, [-nom] features cannot be present in an attributive construction, hence a structure like (71) is ruled out:

(71) \*Liz is a proud woman [<sub>PP</sub> of her husband].

From this it follows that separate spell-out is not an escape hatch for ungrammatical configurations to converge but is very strictly rule-governed.

A further restriction concerns ordering: the first spelt out phase appears last. This predicts that the order of a comparative subclause and a PP argument of an adjective is fixed:

- (72) a. Liz is prouder [<sub>PP</sub> of her husband] [<sub>CP</sub> than Mary is].  
 b. \*Liz is prouder [<sub>CP</sub> than Mary is] [<sub>PP</sub> of her husband].

Only the order in which the CP appears last converges: this is so because the CP is merged into the construction earlier than the PP, and hence the CP has to be spelt out first.

This again shows that though the ordering of various elements largely depends on the order of PF transfers, PF ordering is ultimately defined by syntax. The present analysis is fairly advantageous to previous ones that either did not consider the difference between the base and the surface position of the comparative subclause, or did so by applying some kind of rightward movement. On the other hand, the seeming extraposition of comparative subclauses and PP arguments of adjectives can be handled in a similar way, without assuming that they would have the same or even similar positions in the syntax.

# Chapter Three

## Comparative Deletion

The aim of this chapter is to provide an account for Comparative Deletion and to reduce the cross-linguistic differences attested in connection with it to minimal feature differences in the relevant operators. On the one hand, the advantage of the proposal lies in the fact that Comparative Deletion does not have to be treated as a parameter distinguishing between languages that have it and ones that do not. On the other hand, the feature-based account is apt for handling language-internal variation as well, since the difference is ultimately not between individual languages but rather between operators that do or do not trigger Comparative Deletion. In order to see in what way my claim is radically new, I will first review some of the most important analyses concerning Comparative Deletion, also showing the problems that arise in connection with them and that can be fully eliminated using the feature-based approach proposed here.

### 3.1. Earlier accounts

The phenomenon of Comparative Deletion (CD) traditionally denotes the absence of an adjectival or nominal expression form the comparative subclause. Consider the following examples:

- (1) a. Ralph is more qualified than Jason is ~~x-qualified~~.
- b. Ralph has more qualifications than Jason has ~~x-many qualifications~~.
- c. Ralph has better qualifications than Jason has ~~x-good qualifications~~.

In all of the examples above,  $x$  denotes a certain degree or quantity as to which a certain entity is qualified, good etc. (that is, the standard value). This is an operator that has no phonological content (cf., for example,

Chomsky 1977). As can be seen, in (1a) an adjectival expression is deleted: this type is referred to as the predicative comparative as the quantified adjectival expression functions as a predicate in the subclause. By contrast, in both (1b) and (1c) a nominal expression is deleted; structures like (1b) are nominal comparatives, where a nominal expression bears quantification, while (1c) is an example of attributive comparatives, where the quantified adjectival expression is an attributive modifier within a nominal expression.

Therefore, one of the most important questions to be answered in connection with Comparative Deletion is how the fact that different constituents seem to be deleted by CD can be accounted for. Moreover, this deletion process seems to be obligatory inasmuch as the presence of the quantified expressions in (1) would lead to ungrammatical constructions; hence a proper analysis of CD must also address the issue why it seems to be obligatory.

Second, the role of information structure underlying CD has to be taken into consideration as well. In subcomparative structures, an adjectival or nominal element may be left overt in the subclause; as opposed to the examples in (1), these elements are not logically identical to an antecedent in the matrix clause:

- (2)
- a. The table is longer than the desk is **wide**.
  - b. Ralph has more books than Jason has **manuscripts**.
  - c. Ralph wrote a longer book than Jason did a **manuscript**.

The main question is of course whether such examples are to be treated as being exempt from CD or whether CD still applies in these cases.

Strongly connected to this, the exact site of CD has to be investigated, for which there are two main candidates: the base position of the quantified element, and an operator position in the left periphery of the subclause. Interestingly, the operator can in certain cases be visible even in English (cf. Chomsky 1977):

- (3) % Ralph is more qualified than **what** Jason is.

This raises the question of how examples such as (3) relate to the ones given in (1) in terms of CD; more specifically, whether constructions like (1) also involve the movement of the quantified expression and, on the other hand, whether CD takes place in (3) as well.

Moreover, apart from instances like (3), in some languages full degree expressions – i.e. when the degree element is combined with a lexical AP or an NP – can be attested at the left periphery of the sub-clause (cf. Kenesei 1992a). The following examples are from Hungarian:

- (4) a. Mari magasabb, mint **amilyen magas** Peti.  
 Mary taller than how tall Peter  
 ‘Mary is taller than Peter.’
- b. Marinak több macskája van, mint **ahány**  
 Mary-DAT more cat-POSS.3SG is than how.many  
**macskája** Petinek van.  
 cat-POSS.3SG Peter-DAT is  
 ‘Mary has more cats than Peter has.’
- c. Marinak nagyobb macskája van, mint **amilyen**  
 Mary-DAT bigger cat-POSS.3SG is than how  
**nagy macskája** Petinek van.  
 big cat-POSS.3SG Peter-DAT is  
 ‘Mary has a bigger cat than Peter has.’

As can be seen, Hungarian allows the overt presence of the degree elements, which shows that Comparative Deletion must be subject to parametric variation. The question is how this variation can be accounted for; that is, what licenses the overt presence of these elements in Hungarian but not in English. Conversely, a satisfactory answer to this question should also explain what underlies Comparative Deletion in English (and other languages that behave in the same way as English).

Strongly related to this, the question arises to what extent the internal structure of the degree expression plays a role and whether there is any difference among the individual operators. In Standard English, as

shown in (2a), the adjective that remains overt in the subclause is found in its base position without an overt operator. However, if the operator *what* is present, the adjective cannot be overt:

- (5) \*The table is longer than **what** the desk is **wide**.

This is, however, not necessarily so: in Hungarian, for instance, the operator *amilyen* ‘how’ may appear together with the adjective, as in (4a), though the adjective may not be stranded:

- (6) \*Mari magasabb, mint **amilyen** Peti **magas**.  
 Mary taller than how Peter tall  
 ‘Mary is taller than Peter.’

On the other hand, Hungarian has another operator, *amennyire* ‘how much’, which allows both options for the adjective<sup>13</sup>:

- (7) a. Mari magasabb, mint **amennyire** **magas** Peti.  
 Mary taller than how.much tall Peter  
 ‘Mary is taller than Peter.’  
 b. Mari magasabb, mint **amennyire** Peti **magas**.  
 Mary taller than how.much Peter tall  
 ‘Mary is taller than Peter.’

In addition, it has to be noted that Hungarian seems to require the presence of some operator if the adjective is overt (note, however, that it is allowed for the adjective and the operator to be non-overt at the same time):

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<sup>13</sup> Note that though the behaviour of *amennyire* may at first sight suggest that it is a VP-modifier, it will be shown later on that such a claim could not be maintained and that *amennyire* is hence an operator within the extended degree expression.

- (8) a. Mari magasabb, mint (**\*magas**) Peti.  
 Mary taller than tall Peter  
 ‘Mary is taller than Peter.’
- b. Mari magasabb, mint Peti (**\*magas**).  
 Mary taller than Peter tall  
 ‘Mary is taller than Peter.’

Hence a sound analysis of Comparative Deletion must also take into account that languages differ with respect to the presence/absence of the operator in a more intricate way than one that could be formulated on a +/- basis.

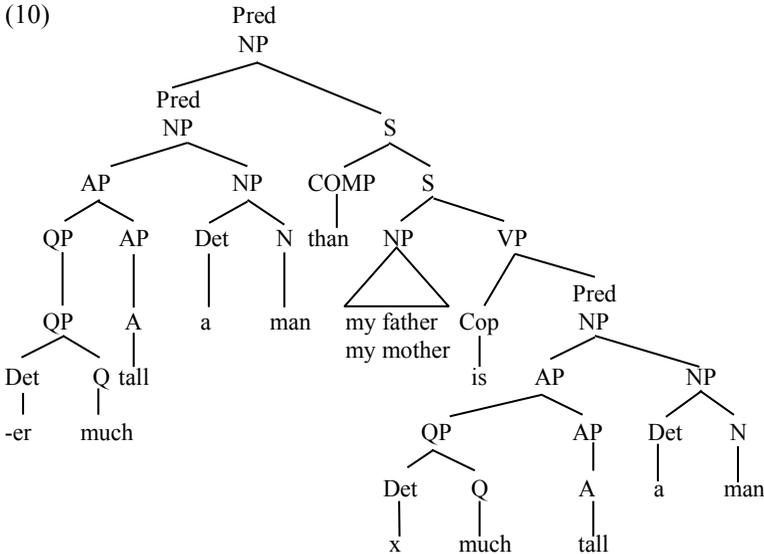
In the following, I am going to present three approaches to Comparative Deletion. The first one is that of Bresnan (1973), which can be regarded as the first description and analysis of CD as such. Second, I am going to present the relatively recent proposal made by Lechner (1999, 2004), which is interesting especially because it takes a deletion in situ approach, which is not typical regarding the literature on CD. Finally, I am going to deal with the analysis of Kennedy (2002), which adopts the more traditional view of *wh*-movement in comparative subclauses, hence strongly relying on the literature since Bresnan (1973) and at the same time approaching the question of Comparative Deletion in a more formalistic way than previous proposals.

### 3.1.1. Comparative Deletion and identity – Bresnan (1973)

Bresnan (1973: 316) takes it a basic assumption that something in the comparative subclause “is always deleted under ‘identity with’ (nondistinctness from) the head”. This operation is referred to as Comparative Deletion (Bresnan 1973: 317). Consider first the following examples (Bresnan 1973: 316, ex. 242):

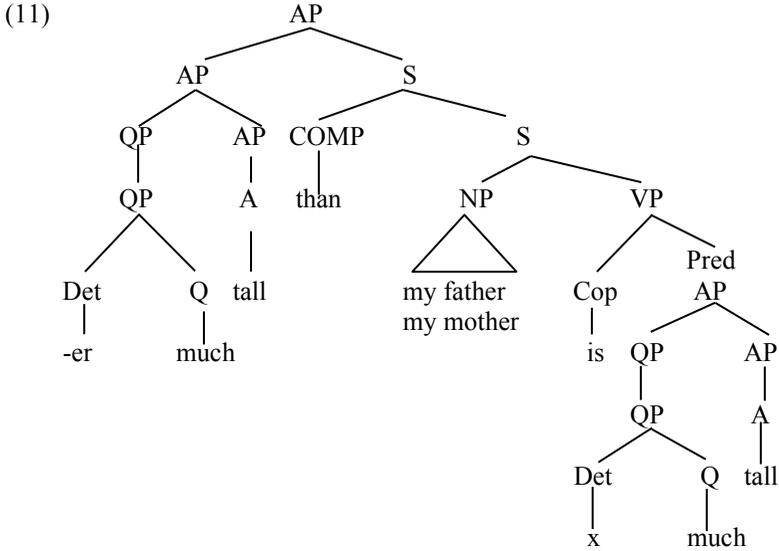
- (9) a. I’ve never seen a man **taller** than my father.  
 b. I’ve never seen **a taller man** than my father.  
 c. I’ve never seen a man **taller** than my mother.  
 d. I’ve never seen **a taller man** than my mother.

In both (9b) and (9d) the quantified nominal expression in the matrix clause is *a taller man*, which has a parallel in the subclause; the analysis by Bresnan (1973: 317, ex. 245) is as follows:



Disregarding now the apparent word order problems (e.g. how the string *-er much tall a man* ultimately gives the surface string *a taller man*), the primary importance of this for Bresnan (1973) is that this explains while (9b) is unproblematic while (9d) is semantically awkward: the reconstructed (underlying) structure of the subclause contains the predicate *an x-much tall man* as a predicate, which is fully acceptable with a subject such as *my father* but is normally unavailable for a subject such as *my mother* since there is a gender mismatch in the latter case.

As for Comparative Deletion itself, what happens in a structure like (10) is that CD eliminates the predicate in the subclause, which in this case is an NP. By contrast, in structures such as (9a) and (9c) above, Bresnan (1973: 319, ex. 251) suggests that we have the following structure:



As can be seen, in this case the degree expression in the subclause is a predicate on its own; consequently, the sentences in (9a) and (9c) are both felicitous because there is no gender mismatch in either case.

What happens in both (10) and (11) is that the predicate of the subclause is deleted under identity with its matrix clausal antecedent: crucially, this identity holds in terms of syntactic structure as well. Disregarding now the problem of how CD exactly deletes this material, the point of the argument is that deleted material must be recoverable, and it seems that the most straightforward way of recovering elided material is that a structurally identical string is reconstructed. This is crucially important when trying to account for certain mismatches. Consider the following examples (cf. Bresnan 1973: 320, ex. 254):

- (12) a. John wants to find **a better solution** than Christine did.  
 b. John wants to find **a better solution** than Christine's.

In this case, both constructions are grammatical: the elided element in the subclause is the nominal expression *an x-much good solution*, which

may occur both as the object of the verb, as in (12a), and as the predicate, as in (12b); cf. Bresnan (1973: 319–320). These cases correspond to the representation given in (10). By contrast, if the elided element has an antecedent that is not a nominal modifier, a construction like (12a) is ruled out:

- (13) a. \*John wants to find a solution **better** than Christine did.  
 b. John wants to find a solution **better** than Christine's.

As pointed out by Bresnan (1973: 320), the problem with (13a) is that the head of the comparative is an AP; that is, the degree expression in the matrix clause (*better*) is not an attribute but a predicate. Hence the structure corresponds to the one in (11) and the degree expression in the subclause should also be a complement of the verb as such, which is ruled out in (13a): the AP cannot be the object of the verb.

Such differences also hold if the degree expression is a verbal modifier (Bresnan 1973: 320, ex. 256):

- (14) a. Jack eats caviar **more** than he eats mush.  
 b. Jack eats **more caviar** than he eats mush.  
 c. Jack eats caviar **more** than he sleeps.  
 d. \*Jack eats **more caviar** than he sleeps.

As indicated, in the case of (14a) and (14c), the degree expression is *more*, which is a VP-modifier and as such is available in both constructions. By contrast, in (14b) and (14d) the degree expression is *more caviar*, which can have a corresponding element in the subclause in the former (i.e. *x-much mush*) but not in the latter: in (14d) there is no (re-constructed) nominal element in the subclause in which a degree element could appear as an attribute.

Similar examples could be cited but the basic assumption made by Bresnan (1973) should be clear now: Comparative Deletion eliminates something from the subclause that is in some way identical to its matrix clausal antecedent; this element may be a predicate AP, as in (10) and (13), a predicate NP, as in (11) and (12), the degree expression

within a predicate NP, as in (14b), or a verbal modifier, as in (14a) and (14c).

Furthermore, there are instances where only part of a predicate AP is deleted, as in the following example (Bresnan 1973: 322, ex. 262):

(15) The table is **longer** than the door is **wide**.

According to Bresnan (1973: 322–324), the clause given in (15) should have the structure given in (11): the predicate AP in the subclause is then *x-much wide*, and deletion affects the QP modifier *x-much* but leaves the adjective itself (*wide*) intact.

Although the observations made by Bresnan (1973) on the phenomenon of Comparative Deletion are crucially important, it has to be stressed that they can be regarded as a description of certain problems rather than the analysis thereof. First of all, it is left entirely unexplained what the mechanism of Comparative Deletion actually is: Bresnan (1973) convincingly shows that – in order to get the right interpretations – they have to be present in the structure at some point in the derivation but that they later also have to be eliminated, in order to produce grammatical configurations. However, it is not clear why these elements cannot remain overt in the first place.

Second, Bresnan (1973) does not elaborate on how exactly the deletion process is carried out: it seems that the elements in question are elided in their base position (though the subclause itself is claimed to be extraposed) but how the mechanism of Comparative Deletion can detect what the deletion site in each case is remains unaddressed. At this point, it seems that CD is assigned considerable power in the sense that it has the ability to actually decide how much of structure must and may be elided. Again, this is undesirable because it leads to circularity, i.e. we know what CD has to elide on the basis of the data but then the data are claimed to be such precisely because CD applies in such a way. Therefore, instead of having a mechanism that can potentially elide anything it would be desirable to have a well-defined rule or rather rules interacting with each other, which would operate in a more restricted way. In addition, a minimalist account should also clearly state which operations take place in overt syntax and which belong to PF.

Third, if one were to adopt that CD takes place in the base position of the arguments, the question arises how to account for constructions that clearly involve *wh*-movement even in English and to what extent evidence for *wh*-movement in any comparative subclause can be disregarded when trying to provide an explanation for CD. Strongly connected to this, the last problem with Bresnan (1973) is that it does not take cross-linguistic data in consideration: if CD is taken to be an obligatory operation, this very definition of CD proves to be untenable when facing cross-linguistic data that clearly contradict the assumption that CD would always be obligatory in the way it seems to be in English.

### 3.1.2. Comparative Deletion and coordination – Lechner (1999, 2004)

As formulated by Lechner (2004: 9), the view concerning Comparative Deletion in the generative literature since Bresnan (1973, 1975, 1977) has been that CD is “an obligatory operation which removes the gradable property from the *comparative complement* (*than*-XP), accounting for the observation that comparatives in English and in related languages characteristically contain a gap which cannot be lexically filled.”

Lechner (2004: 9) considers CD to be an instance of syntactic ellipsis and tries to account for it by way of the AP-Raising Hypothesis, contrary to Lerner and Pinkal (1992, 1995) and Kennedy (1997, 1999), who fundamentally build on the assumption that the ellipsis site is recovered at the semantic component. The chief argument against a fully semantics-based analysis stems from the fact that if CD is an LF operation, then “the principles which operate only on syntactic representations (overt syntax or LF)” should be “blind to the content of CD” (Lechner 2004: 14).

Lechner (2004: 14–21) presents two major arguments in favour of treating CD as a process operating in syntax: disjoint reference effects and ATB extraction. Examining first the issue of disjoint reference effects, let us consider the following examples containing the adjective *proud* (Lechner 2004: 14, ex.20):

- (16) a. Mary is prouder of John than Bill is \_\_\_ of Sally.  
 (\_\_\_ = x-proud)
- b. Mary is prouder of John than Bill is \_\_\_ .  
 (\_\_\_ = x-proud of John)

As can be seen, the adjective *proud* may take a PP complement and deletion may affect either the adjective head alone or the adjective and the PP together (Lechner 2004: 14). As argued for by Lechner (2004: 15–16), based on similar analyses in coordination such as Jayaseelan (1990), Johnson (1997) and Lasnik (1995), in both cases it is CD that eliminates the AP: the difference stems from the fact that in (16a) the PP moves out of the AP and hence is not affected by deletion.

The importance of this becomes straightforward when considering examples such as (17) below (Lechner 2004: 16, ex. 24):

- (17) \*Mary is prouder of John<sub>i</sub> than he<sub>i</sub> is \_\_\_ .  
 (\_\_\_ = x-proud of John<sub>i</sub>)

As argued for by Lechner (2004: 16), this example “lacks a reading in which *John* and *he* are construed as coreferential, attesting to a Principle C violation.” As pointed out by Lechner (2004: 16), given that “Principle C is operative in syntax, the object PP accordingly has to be present at least by LF”; furthermore, “since the object PP is part of the CD-site, one is led to the conclusion that the CD-site (...) has been restored already during the syntactic computation, i.e. prior to semantics.”

In the light of this, consider the following example (Lechner 2004: 16, ex. 25):

- (18) Mary is prouder of John<sub>i</sub> than he<sub>i</sub> believes that I am \_\_\_ .  
 (\_\_\_ = x-proud of John<sub>i</sub>)

In this case the Principle C effect is obviated; what happens is that “Binding Theory treats the name inside the CD-site (...) as a pronoun, and not as an R-expression” (Lechner 2004: 16). Hence “reconstruction into the CD-site for Principle C is subject to *Vehicle Change* (in the sense of Fiengo and May 1994) from R-expressions to pronouns” (Lechner 2004: 16). As pointed out by Lechner (2004: 16, ex. 26), a

similar difference between (17) and (18) can be observed in coordination too:

- (19) a. \*Mary is proud of John<sub>i</sub> and he<sub>i</sub> is \_\_\_ , too.  
 (\_\_\_ = proud of John<sub>i</sub>)
- b. Mary is proud of John<sub>i</sub> and he<sub>i</sub> believes that I am \_\_\_ , too.  
 (\_\_\_ = proud of John<sub>i</sub>)

Since *Vehicle Change* implies that there is material present in the syntax before LF, and since there is a strong resemblance to the kind of ellipsis observed in coordination, which is treated as syntactic deletion, there is reason to believe that CD is indeed an instance of syntactic deletion too.

On the other hand, comparatives seem to allow ATB extraction, in structures such as (20) below (Lechner 2004: 19, ex. 35):

- (20) a person **who**<sub>i</sub> Mary is [more proud of **t**<sub>i</sub>] than Peter is \_\_\_  
 (\_\_\_ = x-proud of **t**<sub>i</sub>)

As Lechner (2004: 19) notes, this might at first sight resemble parasitic gap constructions, such as (21), cf. Lechner (2004: 19, ex. 36):

- (21) **a book**<sub>i</sub> which you filed **t**<sub>i</sub> [before reading **t**<sub>i</sub>]

There is, however, a crucial difference between parasitic gap constructions and comparatives in that the former but not the latter tolerate asymmetric extraction out of the matrix clause (Lechner 2004: 19). Consider the following example (Lechner 2004: 19, ex. 37):

- (22) **a book**<sub>i</sub> which you filed **t**<sub>i</sub> [before reading the newspaper]

However, the same is not available in comparatives (cf. Lechner 2004: 19, ex. 38):

- (23) a. \*a person **who**<sub>i</sub> Mary is [more proud of **t**<sub>i</sub>] than Peter is \_\_\_ of John<sub>k</sub>  
 (\_\_\_ = x-proud of **t**<sub>k</sub>)  
 b. \*a person **who**<sub>i</sub> Mary is [more proud of John] than Peter is \_\_\_  
 (\_\_\_ = x-proud of **t**<sub>i</sub>)

In this respect, comparatives seem to resemble coordination; consider the following examples (Lechner 2004: 19, exx. 39–40):

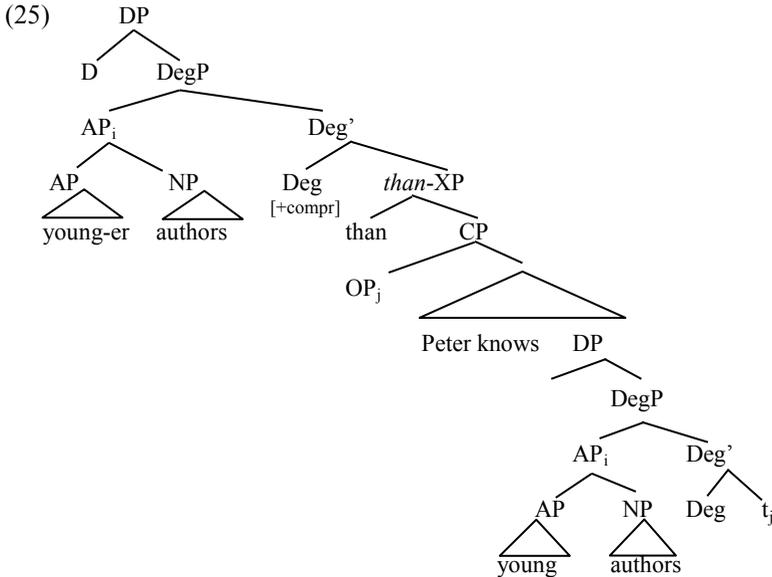
- (24) a. a person **who**<sub>i</sub> [<sub>IP</sub> Mary is proud **t**<sub>i</sub>] of and [<sub>IP</sub> Peter is proud of **t**<sub>i</sub>]  
 b. \*a person **who**<sub>i</sub> [<sub>IP</sub> Mary is proud **t**<sub>i</sub>] of and [<sub>IP</sub> Peter is proud of John]  
 c. \*a person **who**<sub>i</sub> [<sub>IP</sub> Mary is proud John] of and [<sub>IP</sub> Peter is proud of **t**<sub>i</sub>]

In line with previous proposals (cf. Pinkham 1982; Napoli 1983; McCawley 1988; Moltmann 1992; Corver 1993), Lechner (2004), as well as Lechner (1999), builds his analysis on the apparent parallelism between coordination and comparative structures. What is relevant for us here is that in structures such as (24), extraction out of only one of the conjuncts, as in (24b) and (24c), is prohibited by the Coordinate Structure Constraint (CSC), which is syntactic in nature (Lechner 2004: 19–20). Hence if there is a similar phenomenon observed in comparatives, as in (23), then it is presumably also due to syntactic constraints. Furthermore, since these constraints have to apply to the degree expression in the subclause, the degree expression itself must be present in the syntactic derivation. It logically follows that Comparative Deletion involves some kind of syntactic deletion and is not merely an LF constraint (Lechner 2004: 21).

Lechner (2004: 38–50) proposes that Comparative Deletion is in fact AP-raising, which involves the overt movement of the AP in the subclause (located in the [<sub>Spec</sub>,DegP] position) to the matrix clause (likewise to the [<sub>Spec</sub>,DegP] position). In the case of nominal or attributive comparatives, the NP and the AP are treated as a single constituent

undergoing the same movement, i.e. to the exclusion of the Deg head itself.

Hence for a string such as *Mary knows younger authors than Peter knows*, the representation would be as follows (Lechner 2004: 41, ex. 90):



As can be seen in (25), AP-Raising constitutes the upward movement of the AP in the subclause to the matrix clause, from a [Spec, DegP] position into another [Spec, DegP] position (Lechner 2004: 40–41). This kind of movement is supposed to leave a semantically interpretable copy in its base position (i.e. in the subclause) and hence both copies are claimed to be visible at LF (Lechner 2004: 42–43). The chief difference between the two DegP projections is that while the one in the matrix clause is equipped with a [+comparative] feature, the one in the subclause is not; consequently, only the higher DegP is interpreted as [+comparative], cf. Lechner (2004: 41). Note that the movement of the

comparative operator to the [Spec,CP] position happens independently from AP-Raising (Lechner 2004: 41).

In other words, by separating the identity that holds between the two APs and the non-identity that is maintained between the two DegPs, the analysis aims at accounting for one of the most compelling issues in terms of comparatives; that is, how far identity is required to hold between the two degree expressions. Since the two Deg heads are clearly distinct from each other, there is nothing to require identity between them. However, as far as the APs are concerned, movement by definition ensures that these have to be identical since they are two copies of one and the same syntactic object. Movement itself is motivated by the presence of the [+compr] feature on the Deg head in the matrix clause: this feature is claimed to be uninterpretable on this Deg head and can be checked off by moving an AP to the specifier of the DegP.

Although certain points in the analysis may seem to be advantageous, there are a number of rather serious problems that are raised by it. First, it builds on a strong identity between the two APs and is therefore unable to account for subcomparative structures; that is, where the AP in the matrix clause differs from the one in the subclause, as in (2). One might suppose that in these cases there is an AP base-generated in the matrix clause and hence the [+compr] feature of the Deg head can be checked off without the movement of the subclausal AP. In turn, the AP in the subclause would remain overt as it would not qualify as a lower copy. However, this also raises the question of why base-generation is not an available option even if the two APs are identical, especially as the fact that both copies are to be interpreted by LF at the same time seems to require an extra condition anyway; moreover, base-generation would in fact be more economical than movement. Strongly related to this, the syntactic motivation behind AP-Raising is unclear in itself.

Second, the analysis of degree expressions and of DPs containing degree expressions is problematic in itself, as should be clear from the discussion in Chapter 2. I will return to the issue of how degree expressions are located within the DP in Chapter 4; for the time being, suffice it to say that treating the NP as part of the AP is at least counterintuitive as the sequence of an AP and an NP is rather treated as a nominal expression by syntax. More importantly, however, the representation in (25) fails to account for cases when the D head itself is filled by a

determiner (e.g. *a younger author than Peter knows*): according to Lechner (2004), it is only the AP (containing the NP) that moves out, which bears two implications. On the one hand, the D head in the matrix clause should contain a base-generated determiner, which again raises the question of why there is no base-generation available for the entire AP. On the other hand, the D head in the matrix clause should be deleted by some stipulated deletion process targeting only this D head, which is obviously rather problematic. Alternatively, one may stipulate that the D head cannot be filled in the subclause but this idea is again refuted by subcomparative structures (e.g. in structures like *Mary wrote a longer poem than Peter did a play*).

Third, the analysis clearly fails to account for cases where Comparative Deletion does not seem to be obligatory, cf. the examples in (4) from Hungarian. In these cases the AP in the subclause does remain overt even if it is identical to its counterpart in the matrix clause: this would be ruled out by Lechner (2004), who would predict that the elimination of the lower AP happens regularly.

Moreover, there is a problem yet more serious, which is the separation of AP-movement from operator movement, at least in the form proposed by Lechner (2004). While in Standard English the separation of the zero operator from the AP may seem to be unproblematic, in languages such as Hungarian it is obvious that the operator can and in some cases must move together with the AP, provided that the AP is overtly present in the structure, cf. the examples in (4), (6), (7) and (8). This not only indicates that the structure of degree expressions adopted by Lechner (2004) is fundamentally flawed but also that there is no separate AP-Raising as such: the AP either moves together with the operator (that is, as part of the entire QP, or as part of the entire DP containing such a QP), or it may stay in its base position.

This latter distinction points to a further gap in the theory presented by Lechner (2004), namely that comparative operators seem to differ with respect to whether they tolerate or require overt APs and whether these APs may then be stranded or not. Since all of the problems enumerated here are crucial in terms of identifying what Comparative Deletion is – especially in cross-linguistic terms –, it should be clear that Lechner (2004) fails to provide a sound explanation for Comparative Deletion, and hence an alternative should be sought.

### 3.1.3. Comparative Deletion and movement – Kennedy (2002)

Before turning to the discussion of my analysis for Comparative Deletion, let us briefly discuss one more proposal, namely that of Kennedy (2002), which is crucially important in that it acknowledges that there is movement in comparative subclauses and builds the explanation on this fundamental assumption.

The core part of the analysis relies on the distinction between Comparative Deletion structures and Comparative Subdeletion structures (Kennedy 2002: 553–554). The crucial difference between the two is that while in the case of Comparative Subdeletion “an amount or degree term must be omitted from the constituent that provides the point of comparison with the morphologically marked phrase in the matrix clause”, in Comparative Deletion “the lexical content must be omitted from the compared constituent as well” (Kennedy 2002: 554).

Note, however, that even if the compared constituent is logically identical to its counterpart in the matrix clause, it may remain overt if it bears contrastive focus (Kennedy 2002: 555). Consider the following example (Kennedy 2002: 555, ex. 5a, quoting Chomsky 1977, ex. 247):

- (26) A: This desk is **higher** than that one is **wide**.  
B: What is more, this desk is **higher** than that one is **HIGH**.

As noted by Kennedy (2002: 555), “most analyses of comparatives in English have hypothesized that CSD structures are basic, and that the omission of additional material in CD can be derived from general principles of redundancy reduction” (cf. for example Lees 1961). In other words, such views assume that Comparative Deletion and Comparative Subdeletion have different syntactic derivations, in that the former but not the latter involves a deletion process. Contrary to this, Kennedy (2002: 555–556) proposes that both structures involve the movement of the compared constituent to the lower [Spec,CP] position: however, while in CD structures this movement is overt, in CSD it is claimed to be covert. Consequently, the two types are essentially identical at LF but differ at PF; that is, there is deletion taking place in the case of CD (Kennedy 2002: 556).

Evidence for there being movement in both structures comes from the fact that both constructions are ill-formed when the gap is within an extraction island (Kennedy 2002: 557–558, based on Ross 1967, Huddleston 1967, Chomsky 1977 and Postal 1998). This is indeed attested in various types of extraction islands (complex NP islands, *Wh*-islands, adjunct islands and sentential subjects); consider the following examples involving complex NP islands (Kennedy 2002: 558, ex. 9):

- (27) a. \*Michael has more scoring titles than Dennis is a guy who has.  
 b. \*Michael has more scoring titles than Dennis is a guy who has tattoos.

In both cases there is a complex NP in the comparative subclause (*a guy who has* and *a guy who has tattoos*); the sentences are ungrammatical precisely because movement of a degree expression takes place from within these complex NPs.

Apart from sensitivity to islands, both CD and CSD constructions show crossover effects (Kennedy 2002: 558–559) and as far as the interpretation of these structures is concerned, they have the same type of truth conditions (Kennedy 2002: 559). Admittedly, there are some differences as well; most importantly, there seems to be a problem with extracting the DegP on its own in subcomparatives (Kennedy 2002: 563–564). Consider the following examples (Kennedy 2002: 564, ex. 32):

- (28) a. Michael has more scoring titles than [<sub>CP</sub> *Op* Dennis has [<sub>DP</sub> ~~*Op*~~ tattoos]].  
 b. The shapes are longer than [<sub>CP</sub> *Op* they are [<sub>DegP</sub> ~~*Op*~~ thick]].

As can be seen, the operator moves out on its own and the lower copy gets deleted; this is problematic, however, if the operator has actual phonological content, as then we clearly have violations of the Left Branch Constraint (in the sense of Ross 1967), as pointed out by Kennedy (2002: 564). Consider (Kennedy 2002: 564, ex. 33):

- (29) a. \*How many does Dennis have [<sub>DP</sub> ~~how many~~ tattoos]]?  
 b. \* [<sub>CP</sub> How were the shapes [<sub>DegP</sub> ~~how~~ thick]]?

The conclusion drawn by Kennedy (2002: 570) is that both CD and CSD “are the same in their basic syntactic properties” – that is, both “involve the same functional vocabulary and are subject to the same syntactic operations” but they “differ in the level of representation at which these operations apply.” Hence while the two types “have structurally identical LF representations” they have “structurally distinct PF representations” (Kennedy 2002: 571).

As shown by Kennedy (2002: 571–574), CD and CSD structures have essentially the same semantics, in addition to syntactic similarities (see above); “the comparative clause is interpreted as a description of a maximal amount, and supplies the standard of comparison for the comparative morpheme” (Kennedy 2002: 574). In either case, the compared constituent has to move at LF (or before) “because the quantificational force of the comparative clause (the maximality operator) is introduced by the degree morphology on the compared constituent, not by a higher operator” and hence “to generate the right interpretation of the comparative clause (...) the compared constituent must take scope over the rest of the clause” (Kennedy 2002: 574–575).

Note that in both types of comparatives it is the entire compared constituent that is claimed to move; as pointed out by Kennedy (2002: 581–582), partial movement would in certain cases lead to Left Branch Constraint violations. Consider the following examples (Kennedy 2002: 581, ex. 79):

- (30) a. Michael has more scoring titles than Dennis has (**tattoos**).  
 b. Michael’s hands are wider than your feet are (**long**).

As can be seen, it is grammatical to have a DP or an AP in the comparative subclause without an overt degree marker, which may lead one to the conclusion that in such cases the degree operator moves out on its own. However, comparatives then should have an analogous structure to the questions in (31), which are ungrammatical (Kennedy 2002: 581, ex. 80):

- (31) a. \***How many** does Dennis have **tattoos**?  
 b. \***How (much)** are your feet **long**?

Instead, the claim made by Kennedy (2002) is that (sub)comparatives are analogous to the structures in (32), cf. Kennedy (2002: 581, ex. 81):

- (32) a. **How many tattoos** does Dennis have?  
 b. **How long** are your feet?

The claim that in subcomparatives the entire compared constituent moves implies for Kennedy (2002) that this movement is covert since the overt copy of the compared constituent remains in its base position.

Essentially, Kennedy (2002: 582–583) claims that in the case of CD, i.e. when the compared constituent is identical to its counterpart in the matrix clause, both movement and deletion take place, whereas in CSD neither deletion nor movement happens. In his analysis, this is formulated in an optimality theoretic approach, in that deletion is claimed to be favourable while overt movement is not, and deletion is preferred over avoiding overt movement (Kennedy 2002: 583). Since I do not adopt the framework of optimality theory, I do not wish to provide the further details of his analysis here.

Instead, let me point out some problems that, despite the merits of the analysis given by Kennedy (2002), make it necessary to continue investigating the issues in question. First of all, while it is obvious that movement takes place in both Comparative Deletion and Comparative Subdeletion structures, it is not straightforward how the syntax should decide on which degree expressions in the subclause have to move before spell-out and which cannot: taking identity as such into account would require semantic interpretation but movement, at least in the case of Comparative Deletion, takes place before that. Moreover, identity is not a satisfactory criterion in itself: as demonstrated by the grammaticality of examples like (26), the degree expression may remain overt even if it is identical to its matrix clausal counterpart.

This leads to the second problem, which is the following: while it is true that recoverability is a prerequisite for material to be deleted, it is certainly not true that recoverable material falls under obligatory

deletion. Such a stance would be untenable in general but is also immediately refuted by languages such as Hungarian, where there is no obligatory Comparative Deletion to be observed. In other words, while Kennedy (2002: 554) notes that the requirement on the obligatory nature of Comparative Deletion “is important, as it distinguishes CD from other deletion operations in English, such as ellipsis, which is optional”, his analysis clearly does not account for cross-linguistic variation.

Third, the distinction between Comparative Deletion and Comparative Subdeletion on the basis of whether they contain overt or covert movement is highly questionable too. As demonstrated by languages lacking CD, such as Hungarian, the degree expression in the subclause moves up in both types of constructions to a [Spec,CP] position<sup>14</sup>:

- (33) a. Mari magasabb, mint **amilyen magas** Peti.  
 Mary taller than how tall Peter  
 ‘Mary is taller than Peter.’
- b. Az asztal hosszabb, mint **amilyen széles** az iroda.  
 the table longer than how wide the office  
 ‘The table is longer than the office is wide.’

On the other hand, in languages such as English, it is invariably the lower copy that remains overt, even if it happens to be identical to its matrix clausal counterpart, cf. (26). Hence the chief distinction at hand seems to be one that holds between languages and not one that can be observed between the two constructions.

Fourth, the analysis presented by Kennedy (2002) does not consider examples such as (3), which show that overt material – though without a lexical AP or an NP – may be overt in English as well: the overtness of *what* hence contradicts both the assumption that movement to [Spec,CP] necessarily involves deletion and the implied claim that only contrasted degree expressions may remain overt in the subclause.

In sum, it seems that the analysis provided by Kennedy (2002) does not take into consideration a number of phenomena that would be

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<sup>14</sup> Note that I assume that there are two CP-layers in Hungarian, the higher headed by complementisers and the specifier of the lower one hosts relative operators, cf. Kántor (2008c), Bacskai-Atkari (2010b).

important for gaining a better understanding of how Comparative Deletion works – and, most importantly, it is not explained why it should take place at all when it does.

### 3.2. Constraints on deletion

In order to provide an account for Comparative Deletion, let me first briefly summarise the most important issues concerning deletion mechanisms in general. One such general constraint is that of GIVENness. Roughly speaking, elements can be GIVEN or focus-marked (F-marked), cf. Selkirk (1996, 2005); Schwarzschild (1999); Merchant (2001); Büring (2006). Consider the following pair of examples:

- (34) a. Ralph was reading a novel and Peter ~~was reading~~ an epic.  
 b. \*Ralph was reading a novel and Peter ~~was writing~~ an epic.

The sentence in (34a) is grammatical: the elided verb in the second conjunct is *read*, which is GIVEN, and hence can be deleted. As opposed to this, in (34b) *write* is F-marked as *read* in the matrix clause is not a salient antecedent for it: consequently, it is ungrammatical to elide it. This is fundamentally a recoverability condition on deletion: a constituent  $\alpha$  can be deleted iff  $\alpha$  is e-GIVEN (Merchant 2001: 38), hence  $\alpha$  must have a salient antecedent in the discourse.

It is worth mentioning that optional deletion processes may save a given construction from ungrammaticality. This is true for sluicing, which, as shown by the grammaticality of (35a), is optional:

- (35) a. They want to hire someone who speaks a Slavic language, but I don't remember who they want to hire.  
 b. They want to hire someone who speaks a Slavic language, but I don't remember who ~~they want to hire~~.

Sluicing, as can be seen in (35b), deletes after a *wh*-pronoun (*who*) that has moved to the [Spec,CP] position, which in this case has moved from within the elided subclause (see Merchant 2001; Lipták and van

Craenenbroeck 2006). Since (35a) is grammatical and in (35b) sluicing takes place regularly, the two are fundamentally equivalent to each other.

The situation is different when the underlying structure is ungrammatical. The following examples contain island violations (based on Merchant 2001: 114, ex. 15):

- (36) a. \*They want to hire someone who speaks a Slavic language, but I don't remember which they want to hire someone [who speaks].
- b. They want to hire someone who speaks a Slavic language, but I don't remember which ~~they want to hire someone [who speaks]~~.

In both cases, *which* moves up from within the bracketed subclause (*who speaks*), which is a *wh*-island violation. In (36a) the sentence is therefore not grammatical, while in (36b), where sluicing takes place, the result is fully grammatical. Obviously, sluicing in this case does not only delete the subclause responsible for ungrammaticality but a larger chunk since sluicing by definition can only delete after a *wh*-expression located in a [Spec,CP] position. Since in this case the fully overt construction is ill-formed, but sluicing deleted precisely the part causing ill-formedness at PF, only the sentence containing deletion will converge out of the two options. Hence it can be said that optional deletion processes are able to save structures from ungrammaticality, without having to suppose that these processes would be obligatory. This conclusion will be important later when considering certain deletion mechanisms.

It is also worth mentioning that in the exact mechanism of sluicing referred to above, deletion itself takes place at PF; however, deletion is licensed by an [E] feature inserted in syntax, cf. Merchant (2001). The significance of this is partly that optional deletion processes can be handled in the syntax: while the insertion of an [E] feature requiring deletion is optional in the syntactic component, the presence or the absence of the feature contains unequivocal information for PF in terms of whether deletion should take place. This is because while the prohibition of deleting F-marked elements is fundamentally an axiom, GIVEN elements are not necessarily deleted, hence GIVENness in itself is not

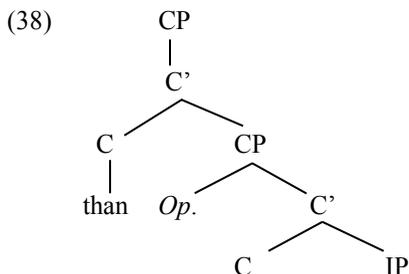
unequivocal information for PF – in turn, PF is responsible for the linear structure and does not produce syntactic and/or semantic features.

### 3.3. Towards an analysis of Comparative Deletion

Recall that, descriptively, Comparative Deletion (CD) is a process which eliminates the QP or the quantified DP from the subclause, if it is logically identical with its antecedent in the matrix clause (Bacsikai-Atkari 2010b, 2012c) in examples such as (1), repeated here for the sake of convenience as (37):

- (37) a. Ralph is more qualified than Jason is ~~x-qualified~~.  
 b. Ralph has more qualifications than Jason has ~~x-many qualifications~~.  
 c. Ralph has better qualifications than Jason has ~~x-good qualifications~~.

As should be clear from the discussion above, comparative subclauses exhibit regular operator movement (cf. Chomsky 1977; Kennedy 2002) to a [Spec,CP] position. This is illustrated schematically in (38):



As for the structure of the left periphery, I follow the analysis of Rizzi (1997: 297; 1999: 1; 2004: 237–238), according to which there are two CP projections:

(39) [CP [TopP\* [FocP [TopP\* [CP]]]]]

As can be seen, multiple TopPs and a FocP may optionally appear between the two CP projections; however, this is irrelevant for the present analysis and hence I will not include it in the representations. Furthermore, Rizzi (1997; 1999; 2004) attributes different functions to the two CPs: the higher C head is responsible for the “illocutionary” Force of the clause, while the lower is for Finiteness.

The term “illocutionary Force” is fundamentally used to cover categories such as declarative, interrogative, relative, comparative etc.; however, it is terminologically unfortunate to involve the concept of illocution since the kind of illocution discussed by Rizzi has little to do with how Austin (1962) and Searle (1969) introduced the term, the sentence types in question not being performative. In addition, the distinction between Force and Finiteness is problematic too because, though the position of a given C head (that is, whether it is a lower or a higher one) is relatively easy to determine, it is hard to decide what function a given C head is responsible for exactly: in most cases a C head is unarguably associated with certain Forces and one Finiteness, hence seemingly responsible for both functions. As I would not like to discuss these issues here, I will henceforth not mark the Force/Finiteness distinction either.

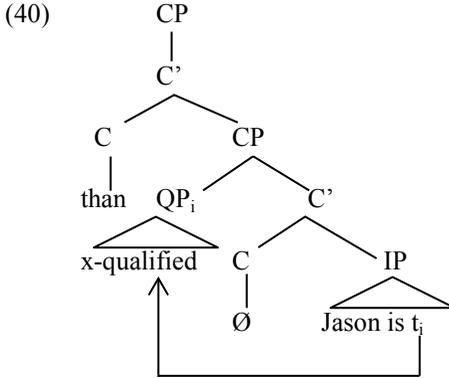
### 3.3.1. Predicative vs. attributive and nominal structures

Turning back to the representation given in (38), the complementiser head of the comparative subclause (*than*) occupies the higher C position, while the comparative operator (*Op.*) moves to the specifier of the lower CP.

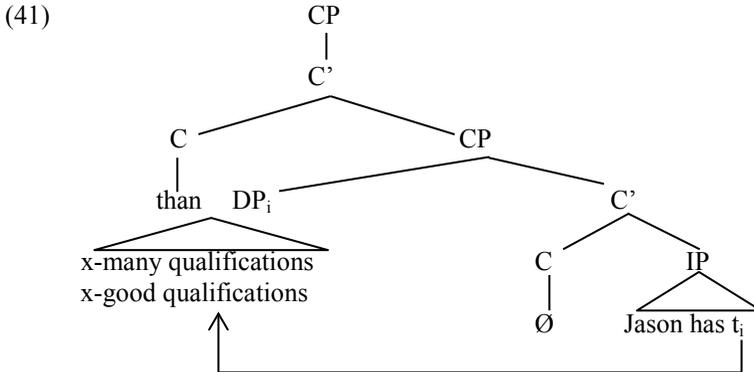
Predicative structures, such as (37a), are fairly easy to analyse in terms of operator movement: the QP containing the AP is headed by a phonologically empty operator (*x*) and hence the entire QP moves up to the specifier of the CP, where it is deleted. By contrast, in attributive and nominal structures – such as (37b) and (37c), respectively – the QP is an adjunct within the DP (Kennedy and Merchant 2000; Kántor 2008;) and thus the entire DP moves up and gets deleted: this is because the QP cannot be extracted from the DP due to the DP-island constraint (cf.

Kayne 1983; Ross 1986; Izvorski 1995: 217; Grebenyova 2004; Bošković 2005; Kántor 2008: 148–149).

Movement in predicative structures is represented below, using the subclause in (37a):



In attributive and nominal structures the following takes place, based on the examples given in (37b) and (37c):



All this can be derived from more general rules and is hence not specific for comparative subclauses as similar phenomena can be observed in

other constructions containing operators (cf. Kennedy and Merchant 1997: 7):

- (42) a. **\*How** is Ralph **qualified**?  
 b. **How qualified** is Ralph?  
 c. **\*How big** did Ralph see **cats**?  
 d. **How big cats** did Ralph see?  
 e. **\*How many** did Ralph see **cats**?  
 f. **How many cats** did Ralph see?

As can be seen, the QP *how qualified* and the DP *how big cats* or *how many cats* can also be moved only as such: neither the Q head from the QP, nor the QP from the DP may be extracted. I will return to the issue later, also casting light upon how it varies cross-linguistically. At this point, suffice it to say that in cases such as (42a) and (42b) above, the Q head cannot be extracted because then it would have to occupy a phrase position in the lower [Spec,CP] as a head. On the other hand, as I will show later on, in some languages the quantifier may also be realised as a QP modifier within the QP heading the adjective in question and hence it can in such cases be extracted, cf. Kántor (2008b). Similarly, extraction of the QP out of the DP is highly dependent on the parametric settings of a given language: thus while English, Bulgarian or Greek prohibit it, it is allowed in Polish or Czech (Kennedy and Merchant 2000); these questions will be addressed in Chapter 4 in detail.

Turning back to comparative subclauses in English, it is important to investigate the issue of copies. In our case there are only two copies to consider: the lower one in the base position of the QP or the DP and the higher one in the lower [Spec,CP], as a result of movement. The higher copy, as has already been seen, is deleted by CD; note that this is independent from whether the AP or NP is identical to the one in the matrix clause. The lower copy is regularly deleted by PF (cf. Bobaljik 2002; Chomsky 2005; Bošković and Nunes 2007: 44–48), which is possible because the QP or DP in question is e-GIVEN. The deletion processes taking place in (37) are shown in (43):

- (43) a. Ralph is more qualified [<sub>CP</sub> than [<sub>CP</sub> ~~{<sub>QP</sub> x qualified}~~] Jason is ~~{<sub>QP</sub> x qualified}~~]].
- b. Ralph has more qualifications [<sub>CP</sub> than [<sub>CP</sub> ~~{<sub>DP</sub> x many qualifications}~~] Jason has ~~{<sub>DP</sub> x many qualifications}~~]].
- c. Ralph has better qualifications [<sub>CP</sub> than [<sub>CP</sub> ~~{<sub>DP</sub> x good qualifications}~~] Jason has ~~{<sub>DP</sub> x good qualifications}~~]].

As should be obvious from what has been said above, it is CD taking place in all structures, hence there is no difference between predicative and attributive/nominal constructions – the fact that the entire DP has to be eliminated in the latter is due to different constraints.

One obvious advantage of this approach is that it accounts for the deletion of QPs and DPs without having to resort to extra mechanisms: Comparative Deletion takes place in the lower [Spec,CP] position and it deletes any material that is there – in turn, differences in terms of what phrases are found there arise simply out of movement constraints. I will return to the issue of why Comparative Deletion has to take place at all later, also accounting for the differences found between languages and varieties. At this point, suffice it to say that a movement analysis claiming that it is the entire QP or DP that moves – and not only the operator – can successfully account for the elimination of both copies by assuming that CD obligatorily takes place in the lower [Spec,CP], eliding the higher copy, and that lower copies are regularly deleted at PF. Though it is a prerequisite that deleted material has to be e-GIVEN, the fact that obligatory deletion takes place is not directly linked to these elements being recoverable, contrary to Kennedy (2002): rather, it is associated with a syntactic position where it happens independently of whether the material there is e-GIVEN or not.

### 3.3.2. Comparative Subdeletion

The case of Comparative Subdeletion, as found in subcomparatives, may at first sight seem to be a counterexample for what has been established for Comparative Deletion. In these – predicative – structures, as was mentioned at the beginning of this chapter, the QP in the subclause remains overt:

(44) The table is longer than the desk is **wide**.

However, even in such cases CD takes place regularly in the [Spec,CP] position: if CD did not occur, then the higher copy should remain (cf. Bacsikai-Atkari 2010b). On the other hand, the lower copy cannot be eliminated since it is F-marked as it contrasts with the AP (*long*) in the matrix clause. As pointed out by Bošković and Nunes (2007: 48), lower copies may remain overt if the pronunciation of the higher copy would make the derivation crash at PF. As a result, the following happens in (44):

(45) The table is longer [<sub>CP</sub> than [<sub>CP</sub> ~~[<sub>QP</sub> *x-wide*]<sub>F</sub>] the desk is [<sub>QP</sub> *x-wide*]<sub>F</sub>]].~~

As can be seen, the higher copy of the QP is deleted by CD exactly the same way as in (43a) and the two clauses differ in fact only with respect to whether the lower copy remains – however, this difference can be derived from recoverability. This all indicates that subcomparatives are not exceptional in terms of CD and hence there is no separate Comparative Subdeletion process.

This way the relation between Comparative Deletion and Comparative Subdeletion can be easily handled, without having to resort to distinguishing the two on the basis of whether they include overt or covert movement, as was seen in connection with Kennedy (2002). Again, the role of information structure is not directly related to Comparative Deletion itself: CD is treated as a mechanical process eliminating material from the lower [Spec,CP] position and the fact that the lower copy of the QP can remain overt is due to F-marking.

Note that being F-marked is not identical to not being e-GIVEN; it is rather intended to express some kind of contrast. For instance, the QP *x-wide* in (45) is in contrast with the QP *longer* of the matrix clause. Also, this QP appears in a clause-final position, which is the canonical position for foci and/or contrasted elements in English, cf. Selkirk (1984, 1986), Nespor and Vogel (1986), McCarthy and Prince (1993). This QP expresses the main contrast involved in comparison and it follows logically that it appears in a position where it can bear main sentential stress.

As far as the overt lower copy of an e-GIVEN AP is concerned, it is usually ungrammatical because it should regularly be eliminated as a lower copy and it should not appear in a contrastive position. However, if there is a context in which it can be interpreted as an element that is contrasted even though it is GIVEN, it may remain overt, see also (26). The difference is illustrated in (46) below:

- (46) a. ??/\*The table is longer than the desk is **long**.  
 b. A: The table is longer than the desk is wide.  
 B: No, the table is longer than the desk is **LONG**.

In both cases the subclause contains an overt lower copy of the QP that is identical to the one in the matrix clause. However, in (46a) it should have been eliminated as there is no additional instruction for PF to preserve the lower copy – by contrast, (46b) is grammatical because the QP in question is contrasted: this contrast holds not with the QP in the matrix clause but with the one in the preceding sentence.

Hence it can be concluded that subdeletion constructions also include Comparative Deletion in the regular way and the fact that the lower copy remains overt stems from constraints independent from the mechanism of CD.

### 3.4. On Hungarian operators

In order to understand the mechanism of Comparative Deletion, let us first consider a language where it does not operate: in Hungarian, as has been mentioned, the quantified AP may remain overt, i.e. both the comparative operator and the lexical AP can be visible in the [Spec,CP] position. However, there are differences between the operators in this respect.

The canonical comparative operator is *amilyen* ‘how’, which is shown in (47):

- (47) a. Mari magasabb, mint **amilyen** **magas** Péter volt.  
 Mary taller than how tall Peter was.3SG  
 ‘Mary is taller than Peter was.’
- b. \*Mari magasabb, mint **amilyen** Péter volt  
 Mary taller than how Peter was.3SG  
**magas.**  
 tall  
 ‘Mary is taller than Peter was.’

As can be seen, the operator *amilyen* is inseparable from the lexical AP (*magas* ‘tall’): it is grammatical to have them both overtly in the lower [Spec,CP] position, as in (47a) but the AP cannot be stranded and left behind in its base position, as in (47b).

By contrast, Hungarian also has the operator *amennyire* ‘how much’: this can otherwise modify VPs but it may also modify APs e.g. in comparatives, though there is some variation among speakers with respect to the availability of this operator as an AP modifier.<sup>15</sup> Still, if it

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<sup>15</sup> There are reasons to believe that the operator *amennyire* ‘how much’ in structures like (48) is indeed base-generated within the degree expression and is not therefore a VP-modifier. First, if it were a VP-modifying operator, then it could not move together with the lexical AP to the lower [Spec,CP] position, as, for instance, in (48a) because then they would not form one constituent. Second, if an adverb modifies the verb, then the verb must be overt, whereas if the structure is simply predicative, then the present-tense 3rd singular copula is not overt:

- (i) Mari jól \*(van).  
 Mary well is  
 ‘Mary is well.’
- (ii) Mari fáradt (\*van).  
 Mary tired is  
 ‘Mary is tired.’

As far as comparatives containing *amennyire* are concerned, the copula *van* is not permitted to appear overtly in structure like (iii):

- (iii) Mari magasabb, mint amennyire Péter (\*van) magas.  
 Mary taller than how.much Peter is tall  
 ‘Mary is taller than Peter.’

appears in comparatives, it behaves differently from *amilyen*, as shown by (48):

- (48) a. Mari magasabb, mint **amennyire magas** Péter volt.  
 Mary taller than how.much tall Peter was.3SG  
 ‘Mary is taller than Peter was.’
- b. Mari magasabb, mint **amennyire** Péter volt  
 Mary taller than how.much Peter was.3SG  
**magas.**  
 tall  
 ‘Mary is taller than Peter was.’

Unlike *amilyen*, *amennyire* may appear both together with the lexical AP in [Spec,CP], as in (48a) and it may also allow the stranding of the AP, as in (48b). Hence *amennyire* is separable from the lexical AP.

Before turning to the further examination of the difference between *amilyen* and *amennyire*, note that Hungarian has no zero comparative operators and hence constructions like (49) are ungrammatical:

- (49) a. \*Mari magasabb, mint **magas** Péter volt.  
 Mary taller than tall Peter was.3SG  
 ‘Mary is taller than Peter was.’
- b. \*Mari magasabb, mint Péter volt **magas.**  
 Mary taller than Peter was.3SG tall  
 ‘Mary is taller than Peter was.’

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If *amennyire* modified the verb, then the presence of *van* ‘is’ would be required, which is not the case and hence *amennyire* cannot be a VP-modifying adverb in comparative sub-clauses.

As shown above, it is not possible to have an overt AP without an overt operator (i.e. one with actual phonological content) either in the [Spec,CP] or in its base position.

It has to be stressed that the differences between *amilyen* and *amennyire*, as well as the impossibility of zero operators, are not dependent on whether the AP is e-GIVEN or F-marked. The operator *amilyen* cannot be separated from F-marked APs either:

- (50) a. Az asztal hosszabb, mint **amilyen széles** az iroda.  
 the desk longer than how wide the office  
 ‘The desk is longer than the office is wide.’
- b. \*Az asztal hosszabb, mint **amilyen** az iroda **széles**.  
 the desk longer than how the office wide  
 ‘The desk is longer than the office is wide.’

By contrast, *amennyire* tolerates both positions of the AP:<sup>16</sup>

- (51) a. Az asztal hosszabb, mint **amennyire széles** az iroda.  
 the desk longer than how.much wide the office  
 ‘The desk is longer than the office is wide.’
- b. Az asztal hosszabb, mint **amennyire** az iroda **széles**.  
 the desk longer than how.much the office wide  
 ‘The desk is longer than the office is wide.’

Finally, just as in (49), zero operators are not allowed with F-marked APs either:

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<sup>16</sup> Though the sentences marked as grammatical are all indeed grammatical, it must be mentioned that the degrees of acceptability may show individual differences and there are structures that are clearly preferable. I will return to this question later on in the last section.

- (52) a. \*Az asztal hosszabb, mint **széles** az iroda.  
 the desk longer than wide the office  
 ‘The desk is longer than the office is wide.’
- b. \*Az asztal hosszabb, mint az iroda **széles**.  
 the desk longer than the office wide  
 ‘The desk is longer than the office is wide.’

The data shown in this section clearly demonstrate that Hungarian has no Comparative Deletion. In addition, there seem to be two types of operators. On the one hand, *amilyen* is an operator that must move together with the AP: in this case, the higher copy of the entire degree expression is overt in the [Spec,CP] position and the lower copy of the entire degree expression is deleted regularly. On the other hand, the operator *amennyire* can move out on its own; it is by no means obligatory for it to do so, and if it does not, then it behaves exactly the same way as *amilyen*. However, if it moves out on its own, then the higher copy of *amennyire* appears overtly in the [Spec,CP] position but without any AP there – in turn, the lower copy of *amennyire* is deleted regularly and the AP remains overt in situ.

The difference between the two types of operators is also attested in interrogative operators. The operator *milyen* ‘how’ does not allow the stranding of the AP:

- (53) a. **Milyen magas** volt Péter?  
 how tall was.3SG Peter  
 ‘How tall was Peter?’
- b. \***Milyen** volt Péter **magas**?  
 how was.3SG Peter tall  
 ‘How tall was Peter?’

By contrast, the operator *mennyire* ‘how much’ may be separated from the AP:<sup>17</sup>

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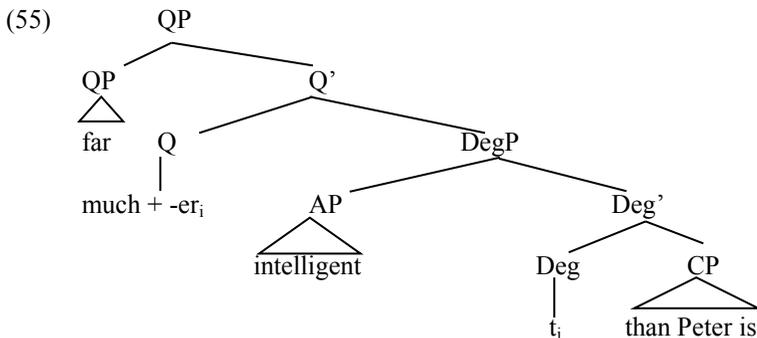
<sup>17</sup> Again, *mennyire* ‘how much’ is a degree element in the degree expression just as its relative counterpart *amennyire* ‘how much’ for exactly the same reasons.

- (54) a. **Mennyire** magas volt Péter?  
 how.much tall was.3SG Peter  
 ‘How tall was Peter?’
- b. **Mennyire** volt Péter **magas**?  
 how.much was.3SG Peter tall  
 ‘How tall was Peter?’

As can be seen, the interrogative operators *milyen* and *mennyire* have exactly the same distributions as their relative operator counterparts, *amilyen* and *amennyire*, respectively. Since the difference seems to hold systematically, it presumably has to do with structural differences between the two types of operators.

### 3.5. The structure of degree expressions revisited

In Chapter 2, I proposed a unified analysis for the structure of degree expressions, concentrating primarily on the degree expression in the matrix clause of comparatives expressing inequality. Recall that for a string like *far more intelligent than Peter is*, the following representation was established:

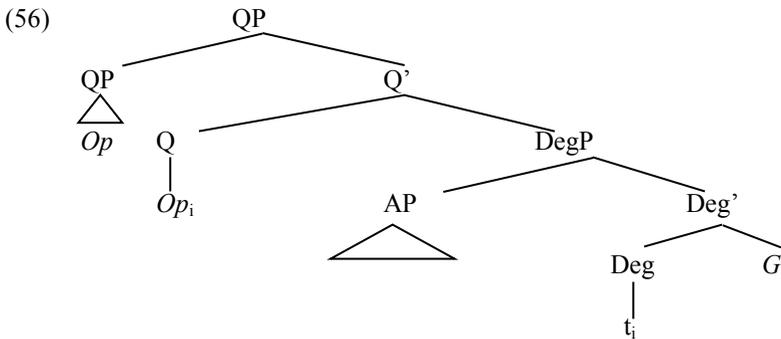


Since this was and is intended to be a unified analysis for degree expressions, I claim that the same structure is present in subclausal QPs too.

This has two main aspects: the difference between operators that cannot be extracted and ones that can, and the availability of operators as proforms standing for the entire degree expression.

### 3.5.1. Operator positions

First of all, let us examine the general structure underlying degree expressions. This is shown in (56), showing also the possible positions for operators (*Op*):



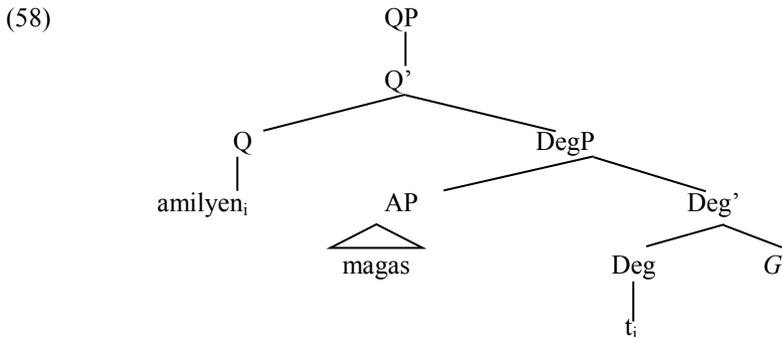
Recall that the DegP is headed by the degree head, which takes two arguments and which projects a QP layer. The arguments of the degree head are the lexical AP itself (cf. Lechner 2004) and the Grade argument (*G*), which expresses the standard value (cf. Lechner 2004). In matrix clausal degree expressions it is typically the subordinate clause itself but it may also remain covert if it is recoverable from the context. Consider:

- (57) A: Mary is as tall as Peter.  
 B: No, she is taller.

In (57), the Grade argument of *taller* remains implicit as it is recoverable from the previous utterance. As far as the Grade argument of subclausal degree expressions is concerned, it is also implicit but it relates the degree in question to a certain point on a scale.

The QP layer, as was seen in Chapter 2, is projected above the DegP and the Deg head moves up to Q: the Q head itself is one of the possible positions for comparative operators. The specifier of the QP may host other QP modifiers; this is the other position that comparative operators may occupy. Note that these positions are operator positions inasmuch as they may host operators; however, it is not necessary for them to be filled by operators – for instance, in matrix clausal QPs such as (55) they obviously contain non-operator elements.

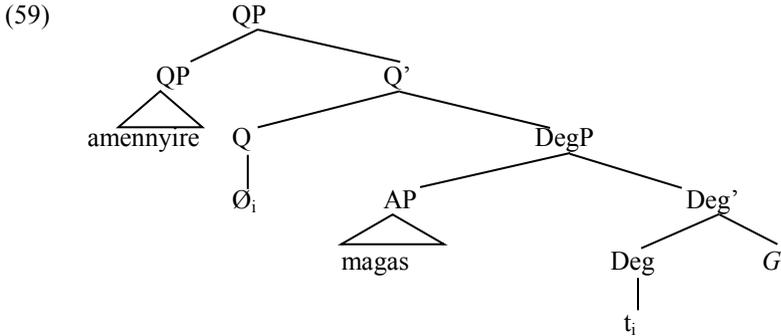
Accordingly, the degree expression in the subclass has a structure conforming to the one given in (56); *amilyen* is a Deg head and hence it ultimately occupies the Q position:



By contrast, *amennyire* is a QP modifier:<sup>18</sup>

<sup>18</sup> Note that this applies to cases where the operator *amennyire* is used together with an adjective. Interestingly, if it modifies an adverb, then it seems to be a Deg head, hence conforming to the structure in (58):

- (i) Mari jobban tudja a verset, mint amennyire jól Péter tudja  
 Mary better knows the poem-ACC than how.much well Peter knows  
 a verset.  
 the poem-ACC  
 ‘Mary knows the poem better than Peter does.’



Note that due to economy principles, *amilyen* and *amennyire* cannot be co-present: this is a constraint similar to the Doubly Filled Complementiser Filter as it essentially rules out the overt co-presence of a head and a phrase in its specifier with the same features, in this case [+rel] and [+compr], standing for relative and comparative, respectively.

The structural difference between *amilyen* and *amennyire* accounts for their different behaviour. While *amennyire* is a QP modifier that hence may be extracted out of the entire degree expression on its own, *amilyen* is the head of that degree expression itself and therefore it cannot be extracted and naturally cannot move to the [Spec,CP] position (a phrase position) as a single head.

- 
- (ii) \*Mari jobban tudja a verset, mint amennyire Péter tudja  
 Mary better knows the poem-ACC than how.much Peter knows  
 jól a verset.  
 well the poem-ACC  
 ‘Mary knows the poem better than Peter does.’

As can be seen, in these cases *amennyire* has to move together with the adverb, just as was seen for *amilyen* ‘how’ with adjectives, which suggests that *amennyire* has been grammaticalised into a Deg head with adverbs. Since the main focus here is not to provide an account for this difference, I will not venture to analyse this issue any further.

### 3.5.2. Proforms

Given the structural difference between individual operators described above, it is expected that there should arise further asymmetries as well. This is indeed the case, as will be shown in connection with proforms. So far I have been dealing with degree expressions containing a lexical AP. However, this is not always necessary; for instance, *amilyen* ‘how’ may appear without a lexical AP:

- (60) Mari magasabb, mint **amilyen** Péter volt.  
 Mary taller than how Peter was.3SG  
 ‘Mary is taller than Peter was.’

This is in line with the representation given in (58) for *amilyen*: as a Deg head it may not require an overt AP to be present in the structure but may stand for the entire degree expression overtly.

The expectation is that *amennyire* ‘how much’ should behave differently in this respect since the QP modifier then should be attached to a QP that has no phonological content. This is indeed the case, as demonstrated by the ungrammaticality of (61):

- (61) \*Mari magasabb, mint **amennyire** Péter volt.  
 Mary taller than how.much Peter was.3SG  
 ‘Mary is taller than Peter was.’

As can be seen, *amennyire* is not allowed to appear as a comparative operator on its own: the reason behind this is that, conforming to the representation given in (59), *amennyire* is a QP modifier that should be attached to a QP with some phonological content – since the co-presence of Q heads and QP modifiers is ruled out, the only way would be to have an overt lexical AP, which is not the case in (61).<sup>19</sup>

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<sup>19</sup> As was mentioned earlier on, *amennyire* ‘how much’ seems to behave as a Deg head with adverbs but not with adjectives. If this is indeed so, then the expectation is that *amennyire* should be able to function as a proform with adverbs. Consider:

### 3.6. Operators in English

Having established all this, let us now return to English comparative operators. Altogether, there are three candidates: the zero, *how* and *what*.

Let us start with *what*, which is invariably a proform Deg head that prohibits the co-presence of an overt AP. This is demonstrated by (62):

- (62) a. ? Mary is taller than **what** Peter is.  
 b. \*Mary is taller than **what** Peter is **tall**.  
 c. \*Mary is taller than **what tall** Peter is.  
 d. \*The desk is longer than **what** the office is **wide**.  
 e. \*The desk is longer than **what wide** the office is.

As shown by (62a), the operator *what* may appear in the [Spec,CP] position; it is slightly marked and its acceptance is highly dialect-dependent; that is, while it is perfectly acceptable in certain dialects and/or for certain speakers, it is usually marked. Still, while it is possible to appear on its own, it is not allowed to co-occur with a lexical AP, either together with it, as in (62c) and (62e), or stranding it, as in (62b) and (62d). The fact that it can appear on its own as a proform indicates that it is a Deg head; in addition, it is such that it prohibits the presence of an overt AP – since the AP is ultimately in the specifier of the Deg head, this restriction can easily be accommodated into the proposed structure.

- 
- (i) Mari jobban tudja a verset, mint amennyire Péter tudja a  
 Mary better knows the poem-ACC than how.much Peter knows the  
 verset.  
 poem-ACC  
 ‘Mary knows the poem better than Peter does.’

The grammaticality of (i) above shows that this is indeed so and hence there is a difference that hold between *amennyire* as an adjectival modifier and *amennyire* as an adverb modifier.

Note that *what* exhibits similar behaviour in interrogatives too:

- (63) a. \***What tall** is Peter?  
b. \***What** is Peter **tall**?

As can be seen, *what* cannot co-occur with a lexical AP, irrespectively of whether it appears together with that AP, as in (63a), or the AP is stranded, as in (63b). Of course, the fact that *what* cannot co-occur with an AP means that *what* is not available in subcomparative constructions since there the lexical AP cannot remain implicit.

Turning now to *how*, it must be noted that *how* as a comparative operator is available only for some speakers: for them, it is a Deg head that requires the co-presence of an overt AP. Consider:

- (64) a. <sup>OK/</sup>\*Mary is taller than **how tall** Peter is.  
b. \*Mary is taller than **how** Peter is **tall**.  
c. \*Mary is taller than **how** Peter is.  
d. <sup>OK/</sup>\*The desk is longer than **how wide** the office is.  
e. \*The desk is longer than **how** the office is **wide**.

The only acceptable configurations with *how* as a comparative operator are given in (64a) and (64d); as indicated these are completely well-formed for some speakers while for others they are ungrammatical. However, constructions such as (64b) and (64e), where the AP is stranded, are ungrammatical even for those who would accept (64a) and (64d), which indicates that *how* is a Deg head that cannot be extracted out of the degree expression. Unlike *what*, *how* is a Deg head that requires the presence of an overt AP, as indicated by the ungrammaticality of (64c).

Note that whether a given Deg head may combine with a lexical AP is independent from whether the AP is e-GIVEN or not: Deg heads that may or must take APs take them in either case, while ones that cannot do not take APs at all.

Last but not least, let us turn to the zero comparative operator, which is acceptable for all English speakers. This is a Deg head that cannot move out on its own. Observe the following contrast:

- (65) a. ??/\*Mary is taller than Peter is **tall**.  
b. The desk is longer than the office is **wide**.

If the zero were a QP modifier, then it should be able to move out to the [Spec,CP] on its own and (65a) should be acceptable, just as (65b); however, (65a) is clearly unacceptable to an extent that cannot be attributed merely to the redundancy of the AP. On the other hand, the fact that the zero can co-occur with a lexical AP in cases such as (65b) implies that in canonical Comparative Deletion constructions, where an e-GIVEN AP is eliminated, there is indeed deletion at hand: as has been said, the Deg head imposes restrictions on the presence or the absence of any AP irrespectively of whether that AP is e-GIVEN or not.

### 3.7. Operators cross-linguistically

From the discussion above it should be clear that comparative operators may differ from each other in two respects: overtness and extractability. Since these criteria are independent from each other, this leaves one with four logical possibilities for comparative operators, which are summarised in (66):

(66)

|                    | <b>overt</b> | <b>covert</b> |
|--------------------|--------------|---------------|
| <b>Deg head</b>    |              |               |
| <b>QP modifier</b> |              |               |

The operators I have dealt with so far – i.e. the ones in English and Hungarian – can be grouped according to (67):

(67)

|                    | <b>overt</b>  | <b>covert</b>  |
|--------------------|---|----------------|
| <b>Deg head</b>    | <i>how</i> (English)<br><i>what</i> (English)<br><i>amilyen</i> (Hungarian) | zero (English) |
| <b>QP modifier</b> | <i>amennyire</i> (Hungarian)  |                |

The question is of course how operators from other languages fit into this scheme: more precisely, whether there are other overt QP modifier operators and whether there are covert QP modifier operators at all.

Let us first examine the case of Czech.<sup>20</sup> Czech has the operator *jak* ‘how’ that may appear in interrogative clauses:

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<sup>20</sup> For his indispensable help with the Czech data, I owe many thanks to Radek Šimík.

- (68) a. **Jak vysoký** je Karel?  
 how tall is Karel  
 ‘How tall is Karel?’
- b. **Jak** je Karel **vysoký**?  
 how is Karel tall  
 ‘How tall is Karel?’

As shown, *jak* can appear together with the AP, as in (68a) but the AP may also be stranded, as in (68b). This shows that *jak* is a QP modifier.<sup>21</sup> The expectation is that the same can be observed in comparative subclauses. This is indeed the case. Observe:

- (69) a. <sup>??</sup>Marie je vyšší, než **jak vysoký** je Karel.  
 Marie is taller than how tall is Karel  
 ‘Marie is taller than Karel.’
- b. <sup>?</sup>Marie je vyšší, než **jak** je **vysoký** Karel.  
 Marie is taller than how is tall Karel  
 ‘Marie is taller than Karel.’
- c. <sup>??</sup>Ten stůl je delší, než **jak široká** je ta  
 that desk is longer than how wide is that  
 kancelář.  
 office  
 ‘The desk is longer than the office is wide.’
- d. Ten stůl je delší, než **jak** je ta kancelář  
 that desk is longer than how is that office  
**široká.**  
 wide  
 ‘The desk is longer than the office is wide.’

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<sup>21</sup> Again, note that if *jak* ‘how’ were a VP-modifier and hence base-generated independently from the AP, then (68a) should not be possible because the AP would not undergo *wh*-movement in itself.

The slight markedness of the examples above stems from two factors: positional preferences (i.e. it is more preferable for the AP to be stranded than to move together with the operator as high as the [Spec,CP] position) and redundancy in the case of an e-GIVEN AP. I will return to the positional preferences later; what is important here is that these are all possible structures, indicating that *jak* behaves in the same way as in interrogatives, in that it may be separated from the lexical AP.

On the other hand, Czech does not have a zero comparative operator. Consider:

- (70) a. \*Marie je vyšší, než **vyšoký** je Karel.  
 Marie is taller than tall is Karel  
 ‘Marie is taller than Karel.’
- b. \*Marie je vyšší, než je **vyšoký** Karel.  
 Marie is taller than is tall Karel  
 ‘Marie is taller than Karel.’
- c. \*Ten stůl je delší, než **široká** je ta kancelář.  
 that desk is longer than wide is that office  
 ‘The desk is longer than the office is wide.’
- d. \*Ten stůl je delší, než je ta kancelář **široká**.  
 that desk is longer than is that office wide  
 ‘The desk is longer than the office is wide.’

Hence the comparative operator is invariably an overt QP modifier in Czech.

Let us now turn to Dutch,<sup>22</sup> where the interrogative operator *hoe* ‘how’ is non-separable from the AP:

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<sup>22</sup> I owe many thanks to Jos Tellings for all his help with the Dutch data.

- (71) a. **Hoe groot** is Jan?  
how tall is John  
'How tall is John?'
- b. \***Hoe** is Jan **groot**?  
how is John tall  
'How tall is John?'

Since *hoe* does not allow the stranding of the AP, as demonstrated by (71b), it can be concluded that it is a Deg head. Accordingly, *hoe* as a relative operator is also a Deg head (for speakers who find *hoe* acceptable as a comparative operator):<sup>23</sup>

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<sup>23</sup> Note that the acceptability of *hoe* 'how' in comparatives varies among dialects and speakers, similarly to what was attested for *how* in English. I conducted a short online survey in August–September 2013 with 70 native participants (many thanks go to Laura Bos and Marlies Kluck for their help in distributing the survey), in which informants were asked to rate sentences on a scale from 1 (bad) to 5 (good). The sentence given in (72a) here was accepted as fully grammatical (5) by 16% of the participants, while the sentence given in (72c) by 27%. This shows that even if *hoe* as a comparative operator is not acceptable for all speakers, its acceptability is still significant. Since my aim here is not to investigate comparatives in Dutch but rather to give a cross-linguistic survey, I will not venture to analyse and describe the results of the online survey here.

- (72) a. <sup>OK/</sup>\*Maria is groter dan **hoe groot** Jan is.  
 Mary is taller than how tall John is  
 ‘Mary is taller than John.’
- b. \*Maria is groter dan **hoe** Jan **groot** is.  
 Mary is taller than how John tall is  
 ‘Mary is taller than John.’
- c. <sup>OK/</sup>\*De tafel is langer dan **hoe breed** het  
 the table is longer than how wide the.NEUT  
 kantoor is.  
 office is  
 ‘The table is longer than the office is wide.’
- d. \*De tafel is langer dan **hoe** het kantoor  
 the table is longer than how the.NEUT office  
**breed** is.  
 wide is  
 ‘The table is longer than the office is wide.’

In addition, it is worth mentioning that *hoe* cannot be a proform:

- (73) \*Maria is groter dan **hoe** Jan is.  
 Mary is taller than how John is  
 ‘Mary is taller than John.’

Hence *hoe* behaves in the same way as *how* does in English (at least for the speakers who accept it as a comparative operator).

In addition to *hoe*, Dutch also has a covert comparative operator; this, however, behaves differently from the zero operator observed in English.<sup>24</sup> Consider:

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<sup>24</sup> Again, there is considerable variation among speakers but (74a) was judged by 10% to be fully acceptable (5) and by 21% to be acceptable (4) in the online survey mentioned before. On the other hand, (74b) was fully acceptable (5) for 81% and acceptable (4) for 11%.

- (74) a. ? Maria is groter dan Jan **groot** is.  
 Mary is taller than John tall is  
 ‘Mary is taller than John.’
- b. De tafel is langer dan het kantoor **breed** is  
 the table is longer than the.NEUT office wide is  
 ‘The table is longer than the office is wide.’

If Dutch had no zero operator then the sentences in (74) would be ungrammatical, as in Hungarian, cf. (49) and (52). On the other hand, if the Dutch zero operator were a Deg head like the one in English, then (74a) should be ungrammatical, which is not the case: though marked because of redundancy, (74a) is still acceptable, in contrast to (65a). This leaves only one option: namely that the zero operator in Dutch is a QP modifier. Of course, this also means that the AP may in principle move together with the operator to [Spec,CP] – in this case, just like in English, it is deleted by Comparative Deletion.

The same is true for the zero operator in German. Observe:

- (75) a. ? Maria ist größer als Johann **groß** ist.  
 Mary is taller than John tall is  
 ‘Mary is taller than John.’
- b. Der Tisch ist länger als das Büro **breit**  
 the.MASC table is longer than the.NEUT office wide  
 ist.  
 is  
 ‘The table is longer than the office is wide.’

Again, the markedness of (75a) is due to redundancy, as opposed to (65a) in English – hence the AP is indeed available in a stranded position in German.

Note that the other logically possible candidate for the comparative operator in German is not available as an operator in comparative subclauses; the interrogative operator *wie* ‘how’ is a Deg head:

- (76) a. **Wie groß** ist Johann?  
 how tall is John  
 ‘How tall is John?’
- b. \***Wie** ist Johann **groß**?  
 how is John tall  
 ‘How tall is John?’

This suggests that *wie* should appear together in the [Spec,CP] position in comparatives – however, this is not the case:

- (77) a. \*Maria ist größer als **wie groß** Johann ist.  
 Mary is taller than how tall John is  
 ‘Mary is taller than John.’
- b. \*Der Tisch ist länger als **wie breit** das  
 the.MASC table is longer than how wide the.NEUT  
 Büro ist.  
 office is  
 ‘The table is longer than the office is wide.’

The data indicate that *wie* is not a comparative operator in German; I will return to the issue of *wie* in comparatives in Chapter 5 – for the time being, suffice it to say that German has only a zero QP modifier operator.

The same asymmetry can be observed in Italian too. Consider:

- (78) a. **Quanto alta** è Maria?  
 how tall-FEM is Mary  
 ‘How tall is Mary?’
- b. \***Quanto** è Maria **alta**?  
 how is Mary tall-FEM  
 ‘How tall is Mary?’

As can be seen, *quanto* ‘how’ is also a Deg head and the AP cannot be stranded. However, the grammatical interrogative configuration in (78a) has no matching counterpart in the comparative subclause:

- (79) a. Maria è più alta di **quanto** Giovanni  
 Mary is more tall-FEM of how John  
 sia **alto**.  
 be.SUBJ.3SG tall-MASC  
 ‘Mary is taller than John.’
- b. \*Maria è più alta di **quanto alto**  
 Mary is more tall-FEM of how tall-MASC  
 Giovanni sia.  
 John be.SUBJ.3SG  
 ‘Mary is taller than John.’
- c. La tavola è più lunga di **quanto**  
 the.FEM table is more long-FEM of how  
 l’ufficio sia **largo**.  
 the.office be.SUBJ.3SG wide-MASC  
 ‘The table is longer than the desk is wide.’
- d. \*La tavola è più lunga di **quanto**  
 the-FEM table is more long-FEM of how  
**largo** l’ufficio sia.  
 wide-MASC the.office be.SUBJ.3SG  
 ‘The table is longer than the desk is wide.’

Again, the issue of Italian comparatives will be revisited briefly in Chapter 5; what is important here is that *quanto* cannot be interpreted here as a Deg head, otherwise (79b) and (79d) should be grammatical and (79a) and (79c) would be ruled out. In other words, *quanto* is not the comparative operator. On the other hand, the grammaticality of (79a) and (79c), showing APs in their base positions, indicates that the degree expressions containing these APs have a QP modifier zero operator.

Naturally, several other languages could be examined in this respect; however, the point here is not to provide a fully-fledged comparative analysis of several languages but rather to show how overtness and

extractability interact. This allows for an update in the representation shown in (67):

(80)

|                    | <b>overt</b>  | <b>covert</b>                                   |
|--------------------|---|---|
| <b>Deg head</b>    | <i>how</i> (English)<br><i>what</i> (English)<br><i>amilyen</i> (Hungarian)<br><i>hoe</i> (Dutch) | zero (English)                                  |
| <b>QP modifier</b> | <i>amennyire</i> (Hungarian)<br><i>jak</i> (Czech)  | zero (Dutch)<br>zero (German)<br>zero (Italian) |

As shown, there are indeed covert QP modifier operators and other types are also more widely attested. In addition, it has to be stressed that a given language may have several operators and these do not necessarily fall into the same slot.<sup>25</sup>

<sup>25</sup> While co-presence of an overt and a covert operator in a given language seems to be a straightforward option, the case of Hungarian with two overt operators seems to be special. The availability of these operators is also due to the fact that Hungarian developed a rich system of operators in Late Old Hungarian and Early Middle Hungarian and hence there are several degree operators (cf. G. Varga 1992: 525; Bačkai-Atkari 2011, 2013b). This means that there are distinct operators for diverse functions but grammaticalisation pro-

### 3.8. The overttness requirement

Observing the chart in (80), the answer to Comparative Deletion is quite straightforward. Comparative Deletion, that is, the obligatory elimination of the quantified expression in the [Spec,CP] position, is always attested if the comparative operator is a covert Deg head (i.e. in English) and it may take place if the comparative operator is a covert QP modifier, provided that the lexical AP moves up together with the operator (e.g. in Dutch). That is, Comparative Deletion takes place if (and only

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cesses may affect this system, such as VP-adverbs may grammaticalise into QP modifiers within degree expressions, and quantifiers may grammaticalise into degree heads (which seems to be a common process, as noted by Amaral 2013, based on Doetjes 2008) – and finally, degree operators may also grammaticalise into C heads in comparative subclauses (but naturally not in interrogatives), as will be shown in Chapter 5. Still, the question arises whether Hungarian is unique in having both an overt Deg head operator and an overt QP modifier operator in interrogative and relative structures. Interestingly, Estonian exhibits a similar distinction between *kui* ‘how’ and *kuivõrd* ‘how much’ in interrogatives (I owe many thanks to Nele Salveste for the data). Consider the following examples:

- (i) **Kui pikk** on Peter?  
how tall is Peter  
‘How tall is Peter?’
- (ii) \***Kui** on Peter **pikk**?  
how is Peter tall  
‘How tall is Peter?’
- (iii) **Kuivõrd pikk** on Peter?  
how.much tall is Peter  
‘How tall is Peter?’
- (iv) **Kuivõrd** on Peter **pikk**?  
how.much is Peter tall  
‘How tall is Peter?’

As can be seen, the operator *kui* is not separable from the lexical AP while the operator *kuivõrd* is, demonstrating essentially the same difference that holds between Hungarian *milyen* ‘how’ and *mennyire* ‘how much’. The same difference cannot be traced in comparative subclauses, presumably due to different grammaticalisation processes. Since the investigation of this issue would lead further than necessary here, I will leave this question open; what is important for us is that the availability of a Deg head operator and a QP modifier operator in degree expressions is attested in languages other than Hungarian too.

if) there is a covert operator taking a lexical AP in the relevant [Spec,CP] position.

Essentially, then, Comparative Deletion takes place because otherwise an overt requirement would be violated. This overt requirement states that a phonologically visible lexical XP may appear in an operator position only if it appears together with a phonologically visible operator.

Let us elaborate on this in more detail. A QP or a DP containing a QP qualifies as [+rel] if there is a relative operator that either heads the QP or percolates this feature up to the DP. Phrases equipped with a [+rel] feature must move up to the [Spec,CP] position because of their [EDGE] feature: unlike, for instance, [+wh], there is no relative-in-situ (at least in the languages under scrutiny). However, in a [+rel] position only material that is overtly marked as [+rel] may appear overtly: in the case of a zero comparative operator, this condition is clearly not satisfied.<sup>26</sup>

The overt realisation of lower copies does not have to face this problem, hence the grammaticality of subcomparatives in English. On the other hand, if the operator is overt, irrespectively of whether it has a lexical phrase alongside with it, there is no deletion taking place. Similarly, if there is a zero operator that moves on its own, there is no need for deletion: all material in the [Spec,CP] is already covert.

The proposal, based on cross-linguistic data, is hence strongly built on the formal characteristics of comparative operators and hence does not try to link Comparative Deletion directly to the information structural properties of the AP. In other words, defining CD as an operation eliminating the GIVEN AP would be fundamentally flawed as CD is essentially about the properties of the operator.

There are basically three independent factors here that interact with each other. First, it is the overtness of the operator that defines

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<sup>26</sup> Note that, as far as the CP-domain is concerned, the overtness requirement is hence meant to capture the impossibility of lexical material without operators in CPs that are indeed [+rel]. German is known to have V2 in main clauses and this is generally attributed to the fact that the verb moves up to a C head and a phrase-sized constituent (most typically the subject) moves to the specifier of the same CP (cf. Fanselow 2004). In these cases the presence of lexical phrases is allowed without an overt (relative) operator but this is so because these CPs are not [+rel] and the overtness condition simply does not apply to them.

whether Comparative Deletion is required to take place in [Spec,CP]. Second, it is the position of the operator in the degree expression that decides whether the AP is separable or not. Third, it is the information structural properties that define the preferred position of the AP. I will return to the last criterion in section 3.9; for now, let us concentrate on the properties of operators.

As was seen, there is considerable variation with respect to the acceptability of operators as comparative operators. In English, for instance, *what* and *how* are only marginally or dialectally acceptable, while the zero operator is fully grammatical. Naturally, any such candidate has to qualify as a degree element – either interpreted as the Deg head of the entire degree expression or as a QP modifier –, otherwise it cannot be interpreted as a comparative operator. This may show variation: while for some speakers *what* cannot be a Deg head, for others it is acceptable as such too.

In addition, a comparative operator is equipped with comparative and relative features, i.e. [+compr] and [+rel]. The separation of [±compr] and [±rel] is justified: a feature matrix of these two binary features gives four logical possibilities, all of which are attested. Consider the following chart showing examples from English:

(81)

|          | [+rel]                                | [-rel]                       |
|----------|---------------------------------------|------------------------------|
| [+compr] | zero<br>% <i>what</i><br>% <i>how</i> | <i>-er</i>                   |
| [-compr] | <i>which</i>                          | -∅ absolute<br>degree marker |

The acceptability of individual elements as comparative operators fundamentally depends on whether they are equipped with both a [+rel] and a [+compr] feature. This may vary depending on the dialect and/or the speakers, hence the differences attested between dialects and individual speakers.

### 3.9. The role of information structure

Last but not least, let us briefly revisit the issue of information structure as attested in comparative clause formation. As has been established, Comparative Deletion is not the same as the elimination of a GIVEN AP. It is nevertheless true that once CD takes place in the relevant [Spec,CP] position, the lower copy of an e-GIVEN AP is preferably eliminated: that is, unless there is some contrast expressed by this AP, it undergoes deletion regularly as a lower copy, as in (65a), repeated here as (82):

(82) ??/\*Mary is taller than Peter is **tall**.

On the other hand, if there is no Comparative Deletion applying, then the APs may remain overt irrespectively of their information structural status.

What can be expected, though, is that certain positional differences between e-GIVEN and F-marked APs may arise: more precisely, contrastive elements are expected to prefer contrast positions, while non-contrastive elements are presumably more likely to appear in neutral positions.

Naturally, the question makes sense only in the case of separable operators, i.e. QP modifiers. If the operator is a Deg head, then there is no choice in the positions for an overt AP: if the operator itself is overt, such as *how* in certain English dialects or *amilyen* in Hungarian, then it is invariably the higher copy that is realised – if the operator is zero, as in standard English, then it is always the lower copy of the AP that is realised, the higher one being regularly deleted by CD. However, if the operator is separable, then it is expected that GIVEN APs will typically appear in neutral positions and F-marked APs will appear in stress positions.

Let us first have a look at Czech, where the operator *jak* ‘how’ is a separable QP modifier. If it is combined with an e-GIVEN AP, then the following pattern arises:

- (83) a. <sup>??</sup>Marie je vyšší, než **jak vysoký** je Karel.  
 Marie is taller than how tall is Karel  
 ‘Marie is taller than Karel.’
- b. <sup>?</sup>Marie je vyšší, než **jak** je **vysoký** Karel.  
 Marie is taller than how is tall Karel  
 ‘Marie is taller than Karel.’
- c. #Marie je vyšší, než **jak** je Karel **vysoký**.  
 Marie is taller than how is Karel tall  
 ‘Marie is taller than Karel.’

The differences in the acceptability of these examples can be explained via considering the basic information structural properties of Czech clauses (Radek Šimík, p.c.). The most preferable position for a GIVEN AP is the one in (83b), where it is in a position for GIVEN elements; this

is even preferable to the [Spec,CP] position, which is by definition not reserved for either GIVEN or F-marked elements. Finally, (83c) is infelicitous because the AP appears in the canonical contrast position, i.e. clause-finally – however, in (83c) the AP does not carry contrast at all, the main contrast is expressed by the DP *Karel*, which should appear clause-finally, as in (83a) and (83b).

Turning now to F-marked APs, the opposite pattern is attested:

- (84) a. <sup>??</sup>Ten stůl je delší, než **jak široká** je ta  
 that desk is longer than how wide is that  
 kancelář.  
 office

‘The desk is longer than the office is wide.’

- b. #Ten stůl je delší, než **jak je široká** ta  
 that desk is longer than wide is wide that  
 kancelář.  
 office

‘The desk is longer than the office is wide.’

- c. Ten stůl je delší, než **jak je ta kancelář**  
 that desk is longer than wide is that office  
**široká.**  
 wide

‘The desk is longer than the office is wide.’

Again, the [Spec,CP] position, which is not specified in terms of informational structural content, is less preferred than the most natural one, which is the clause-final position, hence the canonical contrast position, as shown in (84c). Just as could be expected, the appearance of the F-marked AP in a position maintained for neutral elements is infelicitous, see (84b): since the main contrast is expressed by this AP, it should appear clause-finally so that it could bear sentential stress.

Similarly to Czech, Hungarian also shows a predictable correlation between the information structural properties of the APs and their preferred positions; obviously, this is attested only in the case of

*amennyire* ‘how much’, which is a QP modifier. Consider the following examples:

- (85) a. Mari magasabb, mint **amennyire magas** Péter  
 Mary taller than how.much tall Peter  
 volt.  
 was.3SG  
 ‘Mary is taller than Peter was.’
- b. #Mari magasabb, mint **amennyire** Péter **magas**  
 Mary taller than how.much Peter tall  
 volt.  
 was.3SG  
 ‘Mary is taller than Peter was.’
- c. ??Mari magasabb, mint **amennyire** Péter volt  
 Mary taller than how.much Peter was.3SG  
**magas.**  
 tall  
 ‘Mary is taller than Peter was.’

As shown, GIVEN APs are preferably located in the [Spec,CP] position, as in (85a): note that this is an unmarked position in the sense that it is not reserved either for GIVEN or F-marked elements; less typically they can appear clause-finally but this position would prefer either total de-accenting or secondary focus, hence the slight markedness of (85c) – still, as this particular position is not a contrast position either, (85c) is possible. However, (85b) is infelicitous because *magas* ‘tall’ is located in the preverbal position, which is the canonical contrast position where focussed elements move (cf. Bródy 1990, 1995; É. Kiss 2002).

On the other hand, the following pattern can be established for F-marked APs:

- (86) a. <sup>?</sup>A macska kövérebb, mint **amennyire széles** a  
 the cat fatter than how.much wide the  
 macskaajtó volt.  
 cat flap was.3SG  
 ‘The cat is fatter than the cat flap was wide.’
- b. A macska kövérebb, mint **amennyire** a  
 the cat fatter than how.much the  
 macskaajtó **széles** volt.  
 cat flap wide was.3SG  
 ‘The cat is fatter than the cat flap was wide.’
- c. <sup>?</sup>A macska kövérebb, mint **amennyire** a  
 the cat fatter than how.much the  
 macskaajtó volt **széles**.  
 cat flap was.3SG wide  
 ‘The cat is fatter than the cat flap was wide.’

The most preferred position is exactly the preverbal contrast position in (86b) and the other two possibilities are less preferred, see (86a) and (86c); this is so because the main contrast is expressed by the AP itself and therefore it should appear in the focus position.<sup>27</sup> Note that while

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<sup>27</sup> Again, it has to be stressed that individual judgements may differ but for the vast majority of speakers (85b) was perfectly acceptable while the other two options were both marked, though to different degrees. It seems that once the contrastive AP is stranded then it should appear in the preverbal position, as it expresses the main contrast involved in the comparison. Since this places a requirement on the AP to appear in the preverbal position but does not affect the position of the other elements, it should be possible to reverse the positions of the AP *széles* ‘wide’ and the DP *a macskaajtó* ‘the cat flap’ in (86a), which is indeed the case:

- (i) A macska kövérebb, mint **amennyire széles** volt a macskaajtó.  
 the cat fatter than how.much wide was.3SG the cat flap  
 ‘The cat is fatter than the cat flap was wide.’

In this case, the contrastive AP is in the focus position and since the postverbal position is available both for GIVEN and F-marked elements, the contrastive DP *a macskaajtó* can appear there.

there is a canonical contrast position, there is no canonical non-contrast position, as opposed to Czech: hence the asymmetry between the patterns in (85) and (86), in that an F-marked AP is not infelicitous even in the less preferred positions, as opposed to what was attested in Czech.

The reason why there are altogether three available positions for APs in a Hungarian comparative subclause is due to that fact that the QP undergoes cyclic movement: first from within the VP to the edge of the FP, and subsequently from the FP to the lower [Spec,CP]. Hence the AP can be stranded either in its base position or in the FP, in addition to being able to move up as high as the [Spec,CP].

I will not venture to examine the issue of positional differences here since this is not my primary concern and would go far beyond the scope of the present investigation. What is important now is that though the information structural properties of the lexical AP obviously play a crucial role in the formation of the comparative subclause, they do not have a bearing on whether Comparative Deletion happens or not. Comparative Deletion is a phenomenon that is linked to a specific syntactic position and is predictable from the formal properties of the comparative operator.



# Chapter Four

## Attributive Comparative Deletion

This chapter aims at providing an adequate explanation for the phenomenon of Attributive Comparative Deletion, as attested in English, by way of relating it to the regular mechanism of Comparative Deletion described in the previous chapter. I will show that Attributive Comparative Deletion can only be understood as a descriptive term referring to a phenomenon that is a result of the interaction of more general syntactic processes; in other words, there is no reason to postulate any special mechanism underlying Attributive Comparative Deletion in the grammar. Eliminating such a mechanism will allow one to achieve a unified analysis of all types of comparatives. On the other hand, Attributive Comparative Deletion is not a universal phenomenon: I will show that its appearance in English can be conditioned by independent, more general rules and that the absence of such restrictions may lead to the absence of Attributive Comparative Deletion in other languages. Again, I will first review some of the existing analyses for the phenomenon, partly because in certain respects I will strongly rely on them and partly because the advantages of my proposal can best be understood when measured against these ones.

### 4.1. Earlier accounts

Attributive Comparative Deletion is a peculiar phenomenon that involves the obligatory deletion of the quantified AP and the lexical verb from the comparative subclause, if the quantified AP functions as an attribute within a nominal expression. Consider the following examples:

- (1) a. Ralph bought a bigger cat than George did ~~buy~~ a ~~big~~ cat flap.  
 b. Ralph bought a bigger cat than George ~~bought~~ a ~~big~~ cat flap.  
 c. \*Ralph bought a bigger cat than George bought a ~~big~~ cat flap.  
 d. \*Ralph bought a bigger cat than George bought a big cat flap.  
 e. \*Ralph bought a bigger cat than George ~~bought~~ a big cat flap.  
 f. \*Ralph bought a bigger cat than George did ~~buy~~ a big cat flap.

As can be seen, both the adjective (*big*) and the lexical verb (*buy*) have to be eliminated from the comparative subclause; this is possible either by eliminating the tensed lexical verb, as in (1b) or by deleting the lexical verb and leaving the auxiliary *do* bearing the tense morpheme intact, as in (1a). Note that both the verb and the adjective have to be deleted, as indicated by the ungrammaticality of (1c)–(1f).

Furthermore, the obligatory elimination of the adjective is not merely due to the fact that it is GIVEN; the overt presence of the attributive adjective is ungrammatical even if it is different from its matrix clausal counterpart:

- (2) a. \*Ralph bought a bigger cat than George ~~bought~~ a wide cat flap.  
 b. \*Ralph bought a bigger cat than George did ~~buy~~ a wide cat flap.

Hence it seems that the elimination of the adjective from that particular position is obligatory.

On the other hand, note that the deletion of the lexical verb is required only if part of the DP is overt; in case the entire DP is eliminated, the lexical verb can stay:

- (3) Ralph bought a bigger cat than George bought a ~~big~~ cat.

There are a number of questions that arise in connection with these phenomena. First, it has to be explained why the adjective has to be

deleted and cannot appear overtly even if it is contrastive. Second, one has to account for the fact that the deletion of the adjective happens alongside with the deletion of the lexical verb: apart from answering the question why this should be so, the issue of how this can be carried out also has to be addressed since in structures like (1a) and (1b) the verb and the lexical verb do not seem to be adjacent. In other words, though the strong interrelatedness of the elimination of both these elements suggests that they are deleted by one and the same process, their apparently distinct positions also raise the possibility of there being two separate processes at hand – if so, one has to explain why and how these are interrelated.

In addition, the relation of Attributive Comparative Deletion to ordinary Comparative Deletion also has to be addressed; the fact that in structures such as (1a) and (1b) it is the lower copy that may remain overt suggests that CD takes place regularly in these structures too – if so, however, one has to account for the differences attested in the extent to which lower copies may remain overt.

Furthermore, the analysis of Attributive Comparative Deletion also has to take cross-linguistic differences into consideration. For instance, in languages like Hungarian the full structure may be visible in the subclause:

- (4) Rudolf nagyobb macskát vett, mint amilyen  
 Rudolph bigger cat-ACC bought.3SG than how  
 széles macskaajtót Miklós vett.  
 wide cat flap-ACC Mike bought.3SG  
 ‘Rudolph bought a bigger cat than Mike did a cat flap.’

On the other hand, languages such as German do not permit Attributive Comparative Deletion:

- (5) \*Ralf hat eine größere Wohnung als  
 Ralph has a-ACC.FEM bigger-ACC.FEM flat than  
 Michael ein Haus.  
 Michael a-ACC.NEUT house  
 ‘Ralph has a bigger flat than Michael a house.’

Hence a sound analysis for Attributive Comparative Deletion should account for cross-linguistic variation, besides providing an adequate explanation for the English data.

In what follows I will briefly review two analyses concerning Attributive Comparative Deletion. The first one is that of Kennedy and Merchant (2000), who provided the most detailed description of the phenomenon in English, also successfully explaining a number of related issues and not the least making the occurrence of Attributive Comparative Deletion partially predictable in cross-linguistic terms. Second, I will also review the article by Reglero (2006), which makes use of the analysis by Kennedy and Merchant (2000) by extending it to Spanish, thus providing important insights into cross-linguistic variation in this respect.

#### 4.1.1. Attributive modification – Kennedy and Merchant (2000)

Starting from the observation made by Pinkham (1982, 1985), Kennedy and Merchant (2000: 91–92) point out that Attributive Comparative Deletion proves to be a challenge to deletion analyses for Comparative Deletion since “in comparatives involving attributive adjectives, CD cannot target just the corresponding AP in the comparative clause.” Consider the following example (Kennedy and Merchant 2000: 92, ex. 7a):

- (6) \*Pico wrote a more interesting novel than Brio wrote a \_\_\_ play.

As Kennedy and Merchant (2000: 92) argue, any analysis treating Comparative Deletion as an unbounded deletion process targeting left-branch constituents (cf. Bresnan 1975) would face a serious problem here, in that attributive APs are canonical left-branch constituents and yet they cannot be deleted in constructions such as (6). In other words, such an analysis would predict (6) to be grammatical, which is clearly not the case.

One of the fundamental claims made by Kennedy and Merchant (2000: 103) is that the derivation of ill-formed attributive CD constructions contains left-branch extraction in the same way it happens in main clause *wh*-questions. Hence the following examples are essentially ruled

out for the same reason (Kennedy and Merchant 2000: 103, exx. 25 and 26):

- (7) a. \*Erik drives a more expensive car than Polly drives a **motorcycle**.  
b. \***How expensive** does Polly drive a **motorcycle**?

In both cases, a DegP is claimed to move out to a [Spec,CP] position from within the DP; this DegP is phonologically null in comparative subclauses such as in (7a), see Kennedy and Merchant (2000: 102–103).

The prediction is that languages that allow left-branch extraction in questions like (7b) should also allow constructions such as (7a), whereas languages that do not should have them. This prediction is born out: Polish and Czech allow constructions like (7a) and (7b) alike, while Bulgarian and Greek do not (Kennedy and Merchant 2000: 104–109).<sup>28</sup> Consider the following examples from Polish (Kennedy and Merchant 2000: 104, exx. 29 and 31a):

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<sup>28</sup> Note that the unavailability of Left-Branch Extraction in Greek (and Polish) is true for the constructions discussed here and does not necessarily have to hold for other structures. As far as Greek is concerned, it is known that Greek does allow certain Left-Branch extractions, cf. Uriagereka (2006: 281), based on Corver (1992) and Horrocks and Stavrou (1987). On the relation between the article and the availability of extraction in Greek, see also Bošković (2005, 2012).

- (8) a. **Jak długą sztukę** napisał Paweł?  
 how long play wrote Paweł  
 ‘How long a play did Paweł write?’
- b. **Jak długą** napisał Paweł **sztukę**?  
 how long wrote Paweł play  
 ‘How long a play did Paweł write?’
- c. Jan napisał dłuższy list, niż Paweł napisał  
 Jan wrote longer letter than Paweł wrote  
**sztukę.**  
 play  
 ‘Jan wrote a longer letter than Paweł wrote a play.’

As can be seen, Polish allows both the extraction of the entire nominal expression, as in (8a), or the extraction of the DegP attribute from within that nominal expression, as in (8b); the availability of (8b) predicts that (8c) should be grammatical, which is indeed the case (Kennedy and Merchant 2000: 104).

By contrast, consider the following data from Greek (Kennedy and Merchant 2000: 106–107, exx. 35 and 37a):

- (9) a. **Poso megalo aftokinito** agorase o Petros?  
 how big car bought the Petros  
 ‘How big a car did Petros buy?’
- b. \***Poso megalo** agorase o Petros ena **aftokinito**?  
 how big bought the Petros a car  
 ‘How big a car did Petros buy?’
- c. \*O Petros agorase ena megalitero aftokinito  
 the Petros bought a bigger car  
 apoti o Giannis agorase **ena dzip.**  
 than.what the Giannis bought a jeep  
 ‘Petros bought a bigger car than Giannis did a jeep.’

Unlike in Polish, the extraction of the DegP out of a nominal expression is not allowed, as demonstrated by the ungrammaticality of (9b): only movement together with the rest of the DP is allowed, as in (9a). The fact that (9c) should be ungrammatical is predictable from the ungrammaticality of (9b).

Another prediction is that the elimination of the lexical verb or of the noun in constructions like (9c) should result in grammatical configurations, just as in the case of English. This is again fulfilled, as shown by the following Greek data (Kennedy and Merchant 2000: 108, ex. 39):

- (10) a. O Petros agorase ena megalitero aftokinito  
 the Petros bought a bigger car  
 apoti agorase o Giannis.  
 than+what bought the Giannis  
 ‘Petros bought a bigger car than Giannis bought.’
- b. O Petros agorase ena megalitero aftokinito  
 the Petros bought a bigger car  
 apoti o Giannis.  
 than+what the Giannis  
 ‘Petros bought a bigger car than Giannis did.’
- c. O Petros agorase ena megalitero aftokinito  
 the Petros bought a bigger car  
 apoti o Giannis \_\_\_ ena dzip.  
 than+what the Giannis a jeep  
 ‘Petros bought a bigger car than Giannis did.’

In (10a) the entire nominal expression containing the DegP is removed from the subclause, while in (10b) the finite verb is also eliminated; in turn, in (10c) only the finite verb is absent. Most importantly, all of these constructions are grammatical and the same observation holds for Bulgarian (Kennedy and Merchant 2000: 108–109).

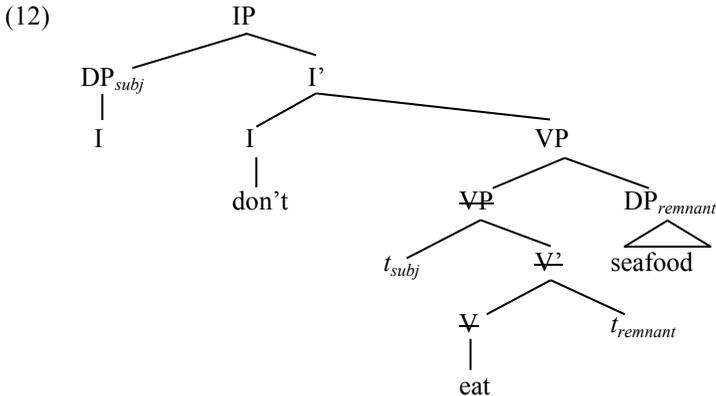
What follows from all this is that constructions like (6) are ruled out because they violate the Left Branch Constraint (Kennedy and Merchant 2000: 110). As pointed out by Kennedy and Merchant (2000:

109–116), the Left Branch Constraint is essentially a PF constraint: the acceptability of the elliptical counterparts of constructions like (6) show that (6) cannot be ruled out by LF.

Essentially, Kennedy and Merchant (2000) claim that the operation responsible for ellipsis is VP-deletion. First of all, they adopt the view that pseudogapping is in fact an instance of VP-deletion, such that there is some additional mechanism that saves the remnant (Kennedy and Merchant 2000: 121, based on Kuno 1981). Consider the following example for pseudogapping (Kennedy and Merchant 2000: 121, ex. 60a):

(11) I eat pizza, but I don't seafood.

In this case, there is a DP remnant (*seafood*) in the second conjunct; Kennedy and Merchant (2000: 121–122) adopt the view formulated by Jayaseelan (1990) and Johnson (1997) that the DP moves out of its base position within the VP and is right-adjoined to the VP-node. Hence the structure of the string *but I don't seafood* should be as follows (Kennedy and Merchant 2000: 122, ex. 61):<sup>29</sup>



<sup>29</sup> Note that Kennedy and Merchant (2000) treat *don't* as a single inflection head and do not postulate a separate NegP; this may be a problem in itself but since it has no bearing on the analysis, I will not attempt to provide an alternative to this later on either.

The same is claimed to take place in attributive comparatives; however, note that if the DP is moved to the right, then the degree expression moves alongside with it, hence it could not be deleted (cf. Kennedy and Merchant 2000: 122–124).

In order to overcome this problem, Kennedy and Merchant (2000: 124–130) propose a revised analysis for the syntax of attributive modification. As argued for by Kennedy and Merchant (2000: 124), certain DegPs<sup>30</sup> modifying nominal expressions end up in an inverted position. Consider the following examples (Kennedy and Merchant 2000: 124, exx. 65a and 66a, and 66c):

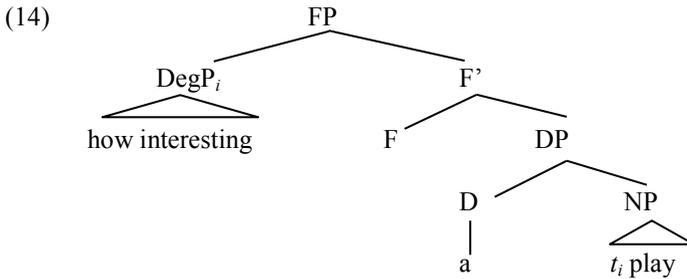
- (13) a. [**How interesting a play**] did Brio write?  
b. I ate [**too big a piece**].  
c. Bob didn't write [**as detailed a proposal**] as Sheila did.

As noted by Kennedy and Merchant (2000: 129–130), based on Bresnan (1973), there is considerable variation as to which degree expressions must, can and cannot undergo this inversion. Nevertheless, the point here is that if the DegP does move up to a position within the nominal expression, then the uninterpretable [+wh] feature of the DegP – which is involved in Left Branch Constraint effects – is transferred to some functional head in the nominal projection (Kennedy and Merchant 2000: 124).

The functional projection of this head is claimed to be right above the DP layer, and is referred to as FP by Kennedy and Merchant (2000: 124–125). The structure of the string *how interesting a play*, then, is as follows (cf. Kennedy and Merchant 2000: 125, ex. 67):

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<sup>30</sup> Note that Kennedy and Merchant (2000) treat the bracketed constituents in (13) as DegPs throughout their paper; nevertheless, based on the analysis given in Chapter 2, they should rather be treated as QPs.



As can be seen, the DegP moves up to the [Spec,FP] position from within the NP, thus producing an inverted word order.

There are arguments in favour of such an analysis. First, in certain dialects the F position may be overtly filled by *of* (Kennedy and Merchant 2000: 125–126; cf. also Bolinger 1972, Abney 1987, Bowers 1987). Consider (Kennedy and Merchant 2000: 125–126, exx. 68a, 69a and 69c):

- (15) a. **[How long of a novel]** did Brio write?  
 b. I ate **[too big of a piece]**.  
 c. Bob didn't write **[as detailed of a proposal]** as Sheila did.

Second, there are certain ambiguities that can be explained only by accepting that the DegP may move to a [Spec,FP] position. This is demonstrated by the following set of examples (Kennedy and Merchant 2000: 127, ex. 70):

- (16) a. I have written a successful play, but you have \_\_\_ a novel.  
 b. I have written a successful play, but you have written a novel.  
 c. I have written a successful play, but you have written a successful novel.

The sentence in (16a) is ambiguous between the two readings paraphrased in (16b) and (16c), cf. Kennedy and Merchant (2000: 127). As far as the one in (16b) is concerned, it is completely unsurprising: under

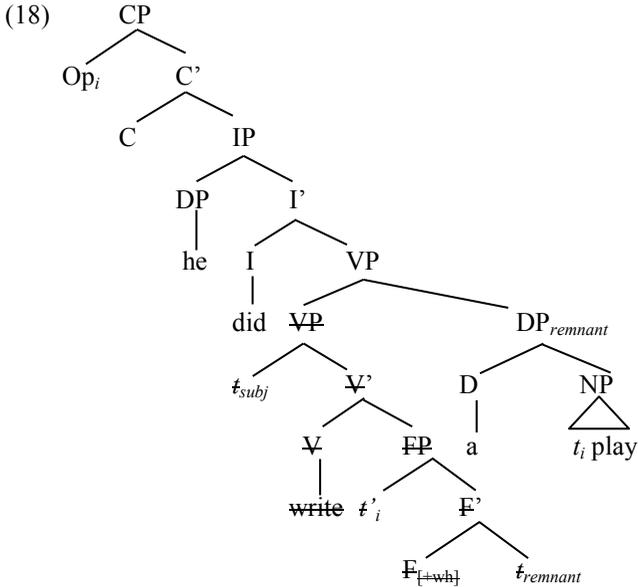
the analysis proposed by Kennedy and Merchant (2000), what happens here is that “the remnant DP is removed from VP, and the VP is deleted” (Kennedy and Merchant 2000: 128). By contrast, the reading given in (16c) is unexpected inasmuch as deletion “appears to be ‘reaching inside’ the remnant DP to delete the attributive modifier along with VP” (Kennedy and Merchant 2000: 128). The way to overcome this apparent problem is to adopt the representation in (14) for structures like (16a): in that case, the VP and the attributive modifier are adjacent at PF – according to Kennedy and Merchant (2000: 129–130), the DP moves out of the FP, hence leaving the DegP in [Spec,FP] behind within the VP that counts as the extraction site.

Essentially, the same is claimed to happen in the case of attributive comparative structures (Kennedy and Merchant 2000: 130–134). The reason why the F head has to be eliminated is that English lacks a [+wh] F head in the lexicon, as opposed to a [+wh] D head, which does exist (Kennedy and Merchant 2000: 130). Hence the [+wh] feature is uninterpretable on the F head at PF; however, if deletion takes place, then it also eliminates this feature (Kennedy and Merchant 2000: 131). On the other hand, since the DP may scramble out of the FP, the DP itself is not affected by deletion (Kennedy and Merchant 2000: 131).

For an illustration for the analysis, consider the following example (Kennedy and Merchant 2000: 131, ex. 77):

(17) Pico wrote a more interesting novel than he did a play.

The processes taking place in (17) are summarised in (18), cf. Kennedy and Merchant (2000: 132, ex. 78):



As can be seen, the DP moves rightwards and is adjoined to the VP node; in turn, the lower VP node is deleted, alongside with the FP within it.

The analysis has its advantages, especially as far as the syntax of attributive modification is concerned, and also because verb gapping is treated as an instance of VP-deletion and not as a special process. In this respect, Kennedy and Merchant (2000) strongly rely on the results of Kuno (1981), Sag (1976), Levin (1986), Miller (1992), Jayaseelan (1990), Lasnik (1995) and Johnson (1997); but cf. also Coppock (2001) and Johnson (2004) for more recent analyses.

However, there are two main problems that arise in connection with the general mechanism of VP-ellipsis. First, the rightward movement of the DP is unmotivated; moreover, rightward movement – within a minimalist framework – is questionable in itself. Second, if VP-ellipsis targets a VP-constituent, it remains also unexplained what mechanism may select only the lower VP node.

In addition to these, there are two further problems concerning the application of this framework to attributive comparative structures. On the one hand, the DP moves from within the FP; however, there is no example in any analogous structure for the DP to move out – to the right – from its own functional extension generated this way: a sequence such as *\*how big did you see a cat* is not grammatical either. On the other hand, the movement of the operator as indicated in (18) is not valid, chiefly because there is no instance in English in other structures for the QP containing the operator to move out from within the FP – hence the sequence *\*how big did you see a cat* is obviously not grammatical if we do not suppose the DP to be moving to the right either. At the same time, it would be a rather ad hoc assumption to say that the QP containing the operator would be phonologically empty in attributive structures: as was shown in Chapter 3, in predicative structures the QP contains a phonologically visible AP and there is no reason for supposing that there would be a difference in the internal structure of the QP between predicative and attributive structures.

In sum, though the syntax of attributive modification proposed by Kennedy and Merchant (2000) accounts for both why the AP has to be deleted and how it can be adjacent to the lexical verb, the mechanism of VP-deletion has to be revised. Furthermore, their analysis does not link Attributive Comparative Deletion to a more general theory on Comparative Deletion. This would be crucially important especially because the higher copy seems to be deleted in attributive structures as well, hence the deletion taking place at the base-generation site has to be linked to the deletion of lower copies – in turn, the overt presence of a remnant DP also has to be linked to a more general theory on why and how lower copies may be phonologically realised.

Last but not least, though Kennedy and Merchant (2000) provide a cross-linguistic investigation as far as the extractability of the degree modifier from the DP is concerned, they still do not address the issue of further cross-linguistic variation; that is, cases when the absence of Attributive Comparative Deletion effects cannot be directly linked to the possibility of extracting attributive modifiers.

#### 4.1.2. Gapping in Spanish – Reglero (2006)

Building strongly on the findings of Kennedy and Merchant (2000), Reglero (2006) investigates the formation of Spanish subcomparative constructions, showing that Spanish does not allow nominal subcomparatives in the way English does. The importance of this study lies chiefly in that it provides further cross-linguistic insights into the possible mechanisms behind Attributive Comparative Deletion and in that it examines cases of nominal comparatives: this issue was neglected by Kennedy and Merchant (2000), who concentrated exclusively on attributive structures.

As Reglero (2006: 67) points out, the term Comparative Subdeletion was used by Bresnan (1972) to refer to constructions such as (19), cf. Reglero (2006: 67, ex. 1):

(19) Mary read more books than John read magazines.

For the derivation of (19), Reglero (2006: 68, ex. 4) adopts the following:

(20) Mary read more books than *Op<sub>i</sub>* John read [*t<sub>i</sub>* many] magazines.

As opposed to English, Spanish does not allow constructions like (19); consider the following example (Reglero 2006: 68, ex. 7):

(21) \**María leyó más libros que Juan leyó revistas.*  
 Mary read more books than John read magazines  
 ‘Mary read more books than John read magazines.’

Relying on the observation of Price (1990), however, Reglero (2006: 68) notes that constructions like (21) become fully grammatical if the verb is deleted from the subclause. Consider (Reglero 2006: 68, ex. 8):

(22) *María leyó más libros que Juan revistas.*  
 Mary read more books than John magazines  
 ‘Mary read more books than John read magazines.’

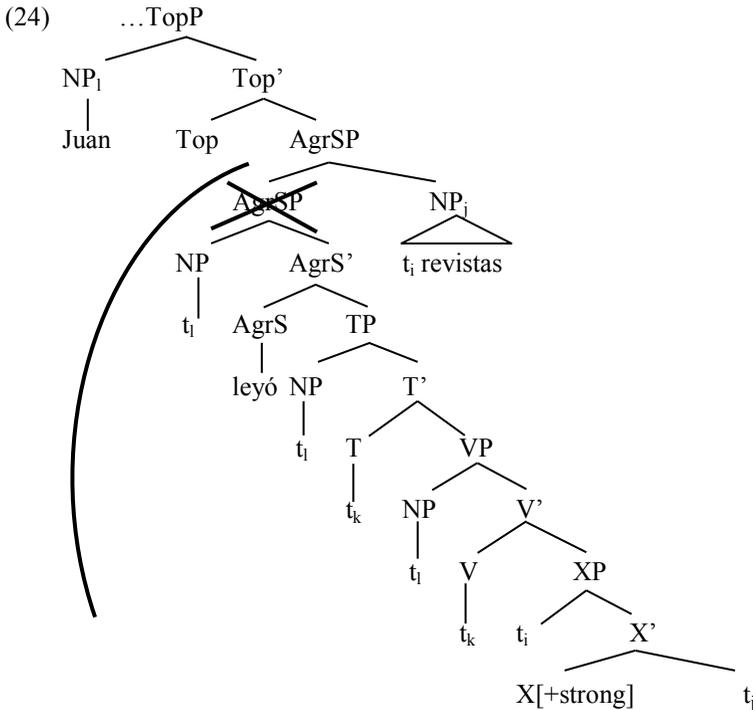
Reglero (2006: 68) refers to this kind of structure as the “Obligatory Gapping” strategy; this applies even if the verb in the subclause is different from the one in the matrix clause, as shown by the ungrammaticality of (23), cf. Reglero (2006: 69, ex. 11):

- (23) \*María leyó más libros que Juan compró  
Mary read more books than John read  
revistas.  
magazines  
‘Mary read more books than John read magazines.’

This explicitly shows that the verb has to be deleted regardless of whether it is redundant or not, hence there is some other requirement at work here (Reglero 2006: 69).

As noted by Reglero (2006: 69), the chief difference from ordinary gapping is that the deletion of the verb in constructions like (22) is obligatory. Based on the analyses provided by Lasnik (1995) and Kennedy and Merchant (2000) for English, Reglero (2006: 69–70) proposes that the object *revistas* contains a strong feature “that needs to be checked either by movement, or by PF deletion of the strong feature in PF.”

The derivation of the subclause in (22) is given in (24), see Reglero (2006: 70, ex. 14):



There is reason to believe that subjects move up as high as the topic projection in Spanish comparative subclauses (cf. Reglero 70–72). If so, then it is possible to delete the  $\text{AgrSP}$  without affecting the subject.

Essentially, the proposal made by Reglero (2006) is similar to what Kennedy and Merchant (2000) claimed in connection with English; however, there is also an important difference in that in Spanish it is an  $\text{AgrSP}$  that is deleted, whereas in English there is  $\text{VP}$ -ellipsis. As for English, it was shown that though the lexical verb must be eliminated, an auxiliary or modal that is located higher (e.g. *do*) may remain overt. This is not the case in Spanish (Reglero 2006: 73, ex. 25):

- (25) \*María puede leer más libros que Juan puede  
Mary can read more books that John can  
revistas.  
magazines

‘Mary can read more books than John can magazines.’

This shows that the projection affected by deletion is indeed larger than the VP. The reason for deletion is, just as was proposed by Kennedy and Merchant (2000), that an uninterpretable feature must be eliminated, which is present on the XP in (24) because the degree expression moves up to its specifier in the same way it does to the FP in Kennedy and Merchant (2000), cf. Reglero (2006: 73–74).

As for the rightward movement of the object NP *revistas* in (24), Reglero (2006: 75–77) claims that it undergoes Heavy NP Shift (HNPS) and is adjoined relatively high in the structure because in Spanish objects moving out quantified phrases (e.g. in the case of floating quantifiers) land high. This ensures that when the lower AgrSP node is deleted, not only the subject in [Spec,TP] but also the object adjoined to the AgrSP escapes deletion.

Again, there are a number of problems that arise with this proposal, most of which have already been mentioned in connection with Kennedy and Merchant (2000). In particular, the rightward movement of the nominal expression is not motivated enough and it is not plausible that it would be an instance of HNPS since the nominal expression in question is not (necessarily) heavy at all. Besides this, the deletion mechanism is again problematic since it is not clear how the lower but not the higher AgrSP node is selected.

Moreover, it is not quite clear why this particular deletion has to take place in Spanish but not in English; in addition, the difference between attributive and nominal structures in English in this respect is not addressed either, though this would be fairly important in understanding the reasons behind Attributive Comparative Deletion.

## 4.2. Verb deletion – an alternative approach

In the following, based on Bacskai-Atkari (2012a, 2013c), I will present an analysis for Attributive Comparative Deletion, as found in English, by adopting the structure given by Kennedy and Merchant (2000) for the syntax of attributive modification and by proposing a different approach to VP-ellipsis from the one found in Kennedy and Merchant (2000) and in Reglero (2006).

The starting point of the argumentation is the assumption – presented in detail in Chapter 3 – that if deletion takes place at PF, then it cannot affect F-marked material. This is highlighted by Reich (2007: 472–473) as a rule constraining verb deletion and, with respect to VP-ellipsis, he basically implies that if the object is F-marked, then the F-markedness of this object in itself may withstand deletion. Consider the following examples:

- (26) a. Ralph likes cats and Mike [<sub>VP</sub> likes [<sub>DP</sub> dogs]<sub>F</sub>].  
 b. Ralph likes cats and Mike [~~<sub>VP</sub> likes~~ [<sub>DP</sub> dogs]<sub>F</sub>].  
 c. \*Ralph likes cats and Mike [~~<sub>VP</sub> likes~~ [~~<sub>DP</sub> dogs~~]<sub>F</sub>].

The full structure is shown in (26a). In case deletion takes place, as in (26b), the following happens: the V head (*likes*) is deleted but the F-marked DP (*dogs*) remains overt. Should the DP be eliminated too – which would no longer be gapping but stripping –, then the sentence would not be grammatical since the F-marked DP could not be recovered from the context, as shown in (26c).

Following this, it can still be maintained that Verb Gapping is an instance of VP-ellipsis: deletion targets the GIVEN VP, within which there is an F-marked DP. Since deletion operations proceed in a left-to-right fashion at PF – which is why it is the copies on the left edge that remain from a movement chain, cf. Bošković and Nunes (2007) –, when the PF mechanism working this way arrives at this DP, it stops.

This is further reinforced by the fact that when there is no F-marked DP, then there is nothing to prevent the elimination of the DP:

- (27) a. Ralph likes cats and Mike [<sub>VP</sub> likes [<sub>DP</sub> cats]].  
 b. \*Ralph likes cats and Mike [<sub>VP</sub> ~~likes~~ [<sub>DP</sub> cats]].  
 c. Ralph likes cats and Mike [<sub>VP</sub> ~~likes~~ [<sub>DP</sub> ~~cats~~]] too.

Taking the sentence in (27a), where the DP (*cats*) is not F-marked, it can be seen that in case VP-ellipsis happens, then only the entire VP can be deleted, as in (27c) – the elimination of the single V head, as in (27b), is not sufficient. If Verb Gapping existed as a separate mechanism targeting the V head as such, then (27b) should be grammatical. On the other hand, the phenomenon can be explained well with the mechanism of VP-ellipsis described above: as there is no F-marked DP within the VP, deletion will naturally affect the DP too. Note that the reason why (27c) contains *too* is precisely because it is a stripping construction: without the presence of *too*, coordination would be interpreted as holding between the two DPs *cats* and *Mike* and hence not containing ellipsis. I will not try to explain here why this should be so as it would go far beyond the scope of the present investigation; for a more elaborate discussion, see Vicente (2010).

Similarly, it is also VP-deletion that takes place in attributive comparatives such that the F-marked constituent is the DP, not the FP. In order to provide an analysis for the derivation of clauses showing Attributive Comparative Deletion, consider the following examples:

- (28) a. \*Ralph bought a bigger cat than Mike [<sub>VP</sub> bought [<sub>FP</sub> *x-big* [<sub>DP</sub> a cat flap]<sub>F</sub>]].  
 b. \*Ralph bought a bigger cat than Mike [<sub>VP</sub> ~~bought~~ [<sub>FP</sub> *x-big* [<sub>DP</sub> a cat flap]<sub>F</sub>]].  
 c. Ralph bought a bigger cat than Mike [<sub>VP</sub> ~~bought~~ [<sub>FP</sub> ~~*x-big*~~ [<sub>DP</sub> a cat flap]<sub>F</sub>]].  
 d. \*Ralph bought a bigger cat than Mike [<sub>VP</sub> ~~bought~~ [<sub>FP</sub> ~~*x-big*~~ [<sub>DP</sub> ~~a cat flap~~]<sub>F</sub>]].

The sentence containing the full structure overtly in (28a) is ungrammatical because the QP (*x-big*) in the subclause should be deleted. The reason why (28b) is not grammatical either is that VP-ellipsis affects

only the V head though the FP, which is GIVEN, cannot stop deletion at this point. The only grammatical sentence is (28c), in which VP-ellipsis is stopped by the first F-marked projection, i.e. the DP (*a cat flap*). The sentence in (28d) is again ungrammatical since the F-marked DP is also deleted.

VP-ellipsis is thus an optional process that may save the construction from ungrammaticality; in this respect it is similar to sluicing (cf. the relevant discussion presented in Chapter 3), hence the phenomenon is not unique.

### 4.3. The lack of Attributive Comparative Deletion

One of the most important questions concerning the analysis above is whether it can be maintained when tested against cross-linguistic data. The chief claim is that Attributive Comparative Deletion is not a separate mechanism in itself but the surface realisation of two more general processes: Comparative Deletion and VP-ellipsis. Hence the prediction is that in languages where either of the two processes is missing, Attributive Comparative Deletion will not be attested. In what follows, I will briefly examine two languages in this respect, Hungarian and German, which were both claimed in the introduction of the present chapter to lack Attributive Comparative Deletion constructions.

The fundamental difference between English and Hungarian lies in the fact that the former but not the latter exhibits Comparative Deletion. Recall that in English both copies of the degree expression are eliminated from the subclause by default:

- (29) a. Mary is taller than [~~x tall~~] George was [~~x tall~~].  
 b. Mary bought bigger cats than [~~x big cats~~] George saw [~~x big cats~~].

As was argued for in Chapter 3, the reason behind this is that there is an overtness requirement on the operator in the [Spec,CP] position, such that an overt AP (or NP) is not licensed if the operator is phonologically zero. Since, however, the syntactic features are checked off for the

movement chain, the lower copy of the QP (or the nominal expression containing that QP) can be regularly deleted and may remain overt only in case it is contrastive.

However, this is clearly not the case in Hungarian, which has overt operators and hence the higher copy can remain overt:

- (30) a. Mari magasabb, mint amilyen magas Gyuri  
 Mary taller than how tall George  
 volt.  
 was.3SG  
 ‘Mary is taller than George was.’
- b. Mari nagyobb macskákat vett, mint amilyen  
 Mary bigger cats-ACC bought.3SG than how  
 nagy macskákat Gyuri látott.  
 big cats-ACC George saw.3SG  
 ‘Mary bought bigger cats than George saw.’

As was discussed in Chapter 3, the QP (*amilyen magas* ‘how tall’) and the quantified DP (*amilyen nagy macskákat* ‘how big cats’) may remain overt in the subclause even if they are logically identical with their counterparts in the matrix clause.<sup>31</sup> Moreover, these elements are overt in the [Spec,CP] position and not in their base position, as in Hungarian there is clearly no Comparative Deletion, which would eliminate these constituents.

Thus the expectation is that since the higher copy of the QP or the quantified DP in the subclause is not obligatorily deleted and so the lower copy can be regularly deleted, there will be no Attributive

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<sup>31</sup> Note that Hungarian lacks Comparative Deletion since it lacks a zero comparative operator and hence the possibility of having overt material in the lower [Spec,CP] position means that whenever movement takes place, then the higher copy of the QP or the quantified DP will be overt. As will be discussed in Chapter 6, it is possible for these phrases to be absent altogether but then they are deleted via sluicing and hence together with the finite verb. In structures like (30), where the verb in the subclause is different from the one in the matrix clause, the deletion of the verb is not possible and hence the overt presence of the QP or the quantified DP is required.

Comparative Deletion attested in Hungarian. This prediction is in fact borne out by the data, exemplified in (4), repeated here as (31):

- (31) Rudolf nagyobb macskát vett, mint amilyen  
 Rudolph bigger cat-ACC bought.3SG than how  
 széles macskaajtót Miklós vett.  
 wide doghouse-ACC Mike bought.3SG  
 ‘Rudolph bought a bigger cat than Mike did a cat flap.’

The full DP *amilyen széles macskaajtót* ‘how big a cat flap’ is overtly located in [Spec,CP] as CD does not eliminate it; therefore the lower copy can regularly be deleted without any part of it remaining. It can thus be concluded that Hungarian does not have Attributive Comparative Deletion because it does not have Comparative Deletion at all.

As was seen in Chapter 3, in German Comparative Deletion is not attested in the way it is in English. Consider:

- (32) a. ?Maria ist größer als Johann **groß** ist.  
 Mary is taller than John tall is  
 ‘Mary is taller than John.’
- b. Der Tisch ist länger als das Büro  
 the.MASC table is longer than the.NEUT office  
**breit** ist.  
 wide is  
 ‘The table is longer than the office is wide.’

As shown by the acceptability of (32b), German is similar to English in that it allows subcomparatives in predicative structures. However, German is also different from Hungarian in that the movement of the entire degree expression to the [Spec,CP] position would result in Comparative Deletion in the same way as it applies in English since the comparative operator is zero in both cases, resulting in a violation of the overtness requirement. On the other hand, the possibility of moving the operator on its own in predicative structures is an option not available in English, hence the acceptability of structures like (32a). In other words, if there is

a copy to be realised overtly in German, then it is the lower one just as in English.

However, the operator cannot be extracted on its own if the QP is a modifier within a DP and since the quantified DP cannot occur overtly in the [Spec,CP] position, this may suggest that German actually has Attributive Comparative Deletion in the same way as it is attested in English. This is not the case, as shown by (33):

- (33) a. \*Ralf hat eine größere Wohnung als  
 Ralph has a-ACC.FEM bigger-ACC.FEM flat than  
 Michael ein Haus.  
 Michael a-ACC.NEUT house  
 ‘Ralph has a bigger flat than Michael a house.’
- b. \*Ralf kauft schnellere Hunde als Michael  
 Ralph buys faster-PL dogs than Michael  
 Katzen.  
 cats  
 ‘Ralph buys faster dogs than the cats that Michael buys.’

The sentences in (33) are not grammatical though the QP is eliminated from the subclause. Since this deletion is VP-ellipsis in English, the root of the problem with (33) may be related to VP-ellipsis in German: German is known to lack VP-deletion in the way English has it (Winkler 2005: 120–124; Merchant 2004: 671). Moreover, the German comparative subclause is verb-final, just as any other subclause in German: this is also attested by (32); hence a prenominal modifier and a verb could not be deleted together, even though the QP is located at the left edge of the plural nominal expression in (33b).

However, the chief problem is that German does not require the deletion of the QP in the lower copy in the way English does. The following construction is fully grammatical:

- (34) Ralf hat eine größere Wohnung als  
 Ralph has a-ACC.FEM bigger-ACC.FEM flat than  
 Michael ein geräumiges Haus hat.  
 Michael a-ACC.NEUT spacious-ACC.NEUT house has  
 ‘Ralph has a bigger flat than Michael a house.’

As can be seen, the QP *geräumiges* ‘spacious’ can remain overt as part of the DP in the lower copy of that DP; note also that this QP is not inverted, i.e. not moved to a [Spec,FP] position: this should be clear from the fact that it appears between the indefinite article *ein* ‘a’ and the noun head *Haus* ‘house’. I will return to the question of inverted and non-inverted QP modifiers in section 4.5; for the time being, suffice it to say that the lower copy of the entire DP can remain in a German comparative subclause just as the entire copy of a QP can in predicative structures. That is, in structures like (34) it is the entire DP that moves up to the [Spec,CP] position since the QP cannot be extracted out on its own. The higher copy is eliminated by Comparative Deletion just as in English because the overttness requirement on the operator is not met. However, the entire lower copy can remain overt in German, unlike in English and this is linked to the fact that German does not display the kind of inversion English does.

#### 4.4. The overttness requirement revisited

The analysis so far captures important cross-linguistic differences and is fully able to relate the phenomenon of Attributive Comparative Deletion to whether and how Comparative Deletion is attested in the language. In other words, Attributive Comparative Deletion is a phenomenon that results from Comparative Deletion and VP-ellipsis. The way VP-ellipsis is available in a given language is naturally subject to more general rules and, as was shown in Chapter 3, so is Comparative Deletion, in that it is reducible to an overttness requirement that holds on elements moving to a [Spec,CP] position.

Hence Attributive Comparative Deletion is not attested in cases when the higher copy of the quantified expression can be overtly

realised in the [Spec,CP] position, that is, when there is a phonologically visible operator. Problems seem to arise when it is the lower copy that should be pronounced. This is true for languages such as English, where the operator is a Deg head and cannot be extracted in predicative structures either but it also holds for languages like German, where the QP modifier operator could be extracted from a single QP but not from within a DP, as that would be a case of violating the Left Branch Condition. However, as was pointed out by Kennedy and Merchant (2000), in languages where the QP can be extracted from the nominal expression, such as Polish or Czech, Attributive Comparative Deletion does not arise.

In other words, Attributive Comparative Deletion arises when there is an inverted QP that moves to the [Spec,FP] position in the extended nominal expression. As was shown by Kennedy and Merchant (2000), it is precisely this QP that is ungrammatical; however, the question why this should be so is not addressed by them. In what follows I am going to argue that this is due to an overttness requirement on the operator element and that this overttness requirement is essentially the same as the one that underlies Comparative Deletion.

As was shown by Kennedy and Merchant (2000: 124–130), certain quantified expressions undergo upward movement within the nominal expression, landing in the specifier position of a functional projection (FP) above the DP layer.<sup>32</sup> Recall:

- (35) a. [<sub>FP</sub> [<sub>QP</sub> **How interesting**]<sub>i</sub> [<sub>DP</sub> a [<sub>NP</sub> **t<sub>i</sub> novel**]]] did Ralph read?  
 b. \* [<sub>DP</sub> A [<sub>NP</sub> [<sub>QP</sub> **how interesting**] **novel**]] did Ralph read?

As can be seen, the construction is grammatical only if the QP moves up to the FP level, as in (35a): if it stays in its base position, as in (35b), the result is ungrammatical. The quantified expression in this case contains a *wh*-operator (*how*), which has to move upwards because of its [EDGE]

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<sup>32</sup> For the time being, I adopt the analysis given by Kennedy and Merchant (2000) in that the nominal expression *a novel* is indeed a DP; I will return to this issue in section 4.5, showing that the different layers in the nominal expression show different behaviour with respect to projecting an FP layer (and hence attributive modification) and hence *a novel* should rather be treated as a NumP.

feature; in addition, in the analysis given by Kennedy and Merchant (2000), this is how the entire nominal expression acquires a [+wh] feature, which can be checked off in the [Spec,CP] position. Otherwise, the [+wh] feature is claimed to be uninterpretable on the F head for PF. Essentially, the same kind of movement is claimed to take place in Attributive Comparative Deletion structures as well: however, since in these cases the higher copy is not pronounced either (due to Comparative Deletion, cf. Chapter 3), the lower copy cannot be automatically eliminated. This is why, as has been seen, VP-ellipsis applies, which can delete the lexical verb and the AP together since these are indeed adjacent at PF:

- (36) Ralph bought a bigger cat than George did [<sub>VP</sub> buy [<sub>FP</sub> [<sub>QP</sub> ~~a big~~]<sub>i</sub> [<sub>DP</sub> a [<sub>NP</sub> *t*<sub>i</sub> cat flap]]]].

The issue here is rather why the particular position of the QP is ungrammatical. According to Kennedy and Merchant (2000), it should be the presence of an unchecked [+wh] – or, in comparative subclauses, rather a [+rel] – feature on an F head. This is problematic for a number of reasons: first, the feature under discussion is checked off in the higher copy and therefore should no longer cause a problem for any copy in the movement chain. Second, the F head is not visible in these cases and it is thus not straightforward why a given feature on an invisible head should in itself be a PF-violation.

More importantly, as was also discussed by Kennedy and Merchant (2000), there are constructions that clearly do not involve the movement of the entire nominal expression to an operator position and yet inversion is attested. For instance, the degree element *too* also requires inversion:

- (37) a. Ralph bought [<sub>FP</sub> [<sub>QP</sub> **too big**]<sub>i</sub> [<sub>DP</sub> a [<sub>NP</sub> *t*<sub>i</sub> cat]]].  
 b. \*Ralph bought [<sub>DP</sub> a [<sub>NP</sub> [<sub>QP</sub> **too big**] cat]]].

In the case of (37a), it does not seem valid that the F head is equipped with a [+wh] feature that happens to be uninterpretable at PF: the QP itself is not [+wh] in nature and the whole FP does not move up to a

[+wh] position – moreover, the construction is grammatical so there seems to be no PF-violation at hand.

As was mentioned, while movement to [Spec,FP] is obligatory for *too*, as is for *so*, QP degree modifiers (e.g. *more*, *enough*, *quite*) generally involve this movement optionally, cf. Kennedy and Merchant (2000: 129–130), based on Bresnan (1973: 287–288). Yet, as noted by the same authors, there is one construction which does not allow this movement and this is the case of bare adjectives (which are nevertheless analysed as QPs containing a null degree element marking the positive degree<sup>33</sup>). Consider:

- (38) a. \*Ralph bought [FP [QP **big**]<sub>i</sub> [DP a [NP *t*<sub>i</sub> cat]]].  
 b. Ralph bought [DP a [NP [QP **big**] cat]].

One may think that this is so because bare adjectives cannot move to the [Spec,FP] position at all – and indeed, if they lacked a degree element this would be a plausible consequence. However, it appears that even positive adjectives can undergo this movement, as shown in (16). Observe the following sentence of the same type:

- (39) Ralph saw a lilac cat and Mike did a tiger.

Recall that sentences like (39) are ambiguous between two readings (cf. Kennedy and Merchant 2000: 127–131) such that under one reading Mike saw a tiger, which was not necessarily lilac, while under the other reading Mike saw a tiger that was lilac. Hence in the first case the adjective *lilac* is not even underlyingly present in the second clause whereas in the second case it has to be deleted, given that the information carried by it is also present. The two structures are shown in (40a) and (40b), respectively:

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<sup>33</sup> As was shown in Chapter 2 in detail, gradable adjectives are in the specifier of a DegP irrespectively of whether the degree is absolute, comparative or superlative since the degree itself is expressed by the Deg head and not the AP itself as it is also this Deg head that may take an argument expressing the standard value. Moreover, modifiers are located in the [Spec,QP] position and these show agreement with the Q head with respect to its degree – the absolute degree also has its modifiers as well, e.g. *very*.

- (40) a. Ralph saw a lilac cat and Mike did [<sub>VP</sub> ~~see~~ [<sub>DP</sub> a [<sub>NP</sub> tiger]]].  
 b. Ralph saw a lilac cat and Mike did [<sub>VP</sub> ~~see~~ [<sub>FP</sub> [<sub>QP</sub> lilac]<sub>i</sub>] [<sub>DP</sub> a [<sub>NP</sub> *t<sub>i</sub>* tiger]]].

The deletion of the adjective together with the verb in (40b) is possible only if the adjective moves up to the specifier of the FP. Note that in this case deletion saves the construction from ungrammaticality as the overt presence of *lilac* in (40b) would not be grammatical, just as in (38a) above.<sup>34</sup>

It seems then that inverted degree expressions are ungrammatical precisely when there is no overt degree element. These QPs move to a left peripheral position within the extended nominal expression and just as the [Spec,CP] position is reserved for elements with an overt operator, as was seen in Chapter 3, the [Spec,FP] position must have an overt degree element so as to avoid PF-uninterpretability.

This implies that the overtness condition is not specific to comparative structures. This is further reinforced by the fact that it can be observed in the [Spec,CP] position in structures other than comparatives; that is, in relative clauses that may contain the sequence of a relative operator and some lexical projection. Though this construction is generally not widespread, there are still some examples such as the one from Hungarian given in (41):

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<sup>34</sup> It has to be mentioned that the acceptability of pseudogapping constructions seems to show interesting dialectal and/or idiolectal differences. Some speakers do not find structures like (40) natural and prefer a construction like (i) below:

- (i) Ralph saw a lilac cat as Mike did a tiger.

On the other hand, there is a difference in the availability of the two readings: a reading like (40a) is generally more available than a one like (40b), hence speakers who get an interpretation like (40b) also get (40a) but this is not true vice versa. This should not be surprising as the derivation in (40a) is more economical than the one in (40b): apart from the fact that there is more material elided in (40b), there is also an extra movement operation. The same applies to structures like (i) above and also to cases where the degree expression is more complex:

- (ii) Ralph saw a most interesting play as did Peter a movie.

In this case, the ambiguity of the sentence depends on the presence/absence of the QP *most interesting* in the subordinate clause in the underlying structure.

- (41) a. Mari Judith Hermann könyvét  
 Mary Judith Hermann book-POSS.3SG-ACC  
 olvasta, **amely könyvet** egyébként még  
 read-PST.3SG which book-ACC incidentally still  
 én küldtem neki Berlinből.  
 I sent-1SG she.DAT Berlin-ELA  
 ‘Mary was reading Judith Hermann’s book, which actually I had sent her from Berlin.’
- b. Leégett a gyár, **amely esemény**  
 down-burned-3SG the factory which event  
 megmozgatta a várost.  
 PRT-moved-3SG the city-ACC  
 ‘The factory burned down, which moved the city.’

The reason why such constructions are relatively rare is presumably that they either involve the repetition of the matrix clausal nominal expression, as in (41a), or the noun in the subclause should be general enough to be an anaphor for the entire matrix clause, as in (41b); still, the clauses in (41) are grammatical.

Naturally, the configuration is grammatical in the absence of an overt NP too:

- (42) a. Mari Judith Hermann könyvét  
 Mary Judith Hermann book-POSS.3SG-ACC  
 olvasta, **amelyet** egyébként még én  
 read-PST.3SG which-ACC incidentally still I  
 küldtem neki Berlinből.  
 sent-1SG she.DAT Berlin-ELA  
 ‘Mary was reading Judith Hermann’s book, which actually I  
 had sent her from Berlin.’
- b. Leégett a gyár, **ami** megmozgatta  
 down-burned-3SG the factory what PRT-moved-3SG  
 a várost.  
 the city-ACC  
 ‘The factory burned down, which moved the city.’

As can be seen, in (42a) the operator itself takes on the accusative case suffix and marks the relative nature of the clause just as in (41a); in (42a) the relative pronoun *ami* ‘what’ refers back to the entire matrix clause just as the nominal expression in (41b). However, it is not grammatical to have an overt NP in the [Spec,CP] position without an overt operator:

- (43) a. \*Mari Judith Hermann könyvét  
 Mary Judith Hermann book-POSS.3SG-ACC  
 olvasta, **könyvet** egyébként még én  
 read-PST.3SG book-ACC incidentally still I  
 küldtem neki Berlinből.  
 sent-1SG she.DAT Berlin-ELA  
 ‘Mary was reading Judith Hermann’s book, which actually I had sent her from Berlin.’
- b. \*Leégett a gyár, **esemény** megmozgatta  
 down-burned-3SG the factory event PRT-moved-3SG  
 a várost.  
 the city-ACC  
 ‘The factory burned down, which moved the city.’

The reason behind the ungrammaticality of (43) is that Hungarian lacks zero relative operators; moreover, even if there were one, it would not be interpretable for PF to have overt material in a [+rel] position without an overt element representing [+rel].<sup>35</sup> Note that this does not exclude the possibility of having null operators in [Spec,CP] on their own if they are

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<sup>35</sup> It has to be mentioned that some strings that look like the ones in (43) may in fact be grammatical. Consider:

- (i) Mari Judith Hermann könyvét olvasta, **a**  
 Mary Judith Hermann book-POSS.3SG-ACC read-PST.3SG the  
**könyvet** egyébként még én küldtem neki Berlinből.  
 book-ACC incidentally still I sent-1SG she.DAT Berlin-ELA  
 ‘Mary was reading Judith Hermann’s book; actually I had sent it to her from Berlin.’
- (ii) Leégett a gyár, **ez az** **esemény**  
 down-burned-3SG the factory this the event  
 megmozgatta a várost.  
 PRT-moved-3SG the city-ACC  
 ‘The factory burned down; this event moved the city.’

However, these are instances of coordination and hence the DPs *a könyvet* and *ez az esemény*, respectively, are not in a [Spec,CP] position.

available, e.g. the zero relative operator in English, since then there is no visible lexical material to cause uninterpretability either.

Hence it seems justifiable that the overt requirement holds in a similar way in [Spec,CP] positions as in [Spec,FP] positions at left edges of nominal expressions.<sup>36</sup> Considering this, the following generalisation arises. Certain phrase-sized constituents moving leftwards to an operator (specifier) position have to have an overt marker on their left edge in order for the configuration to converge. This overt marker may be the head but may also be an element that is a specifier itself. In either case, the topmost projection of the given phrase is equipped with certain features either because the head itself inherently has that feature or because it acquires that feature via specifier–head agreement. These features are interpretable at LF but the same is not necessarily true for PF: a feature that is interpretable at LF is not necessarily so at PF, and vice versa (cf. Tsimpli and Dimitrakopoulou 2007: 223).

In the case of Comparative Deletion and the obligatory overt requirement of relative operators, there is a zero element bearing the [+rel] feature followed by overt material. Consider the following grammatical,<sup>37</sup> non-deleting counterparts from Dutch:

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<sup>36</sup> The scope of the present investigation does not enable a broader investigation of the issue in the sense that there might be other overt requirements related to left-peripheral positions. For instance, such a case seems to be topicalised subordinate clauses in English:

- (i) I know [<sub>CP</sub> (**that**) he arrived late].
- (ii) [<sub>CP</sub> \*(**That**) he arrived late] is surprising.

As indicated, the complementiser *that* can be omitted in (i), where it appears at the right edge but not when it does so at the left edge, i.e. when it is topicalised, as in (ii). The phenomenon is not restricted to English; for instance, Poletto (1995) observes a similar phenomenon in Italian. Since the investigation of this problem would go far beyond the scope of the dissertation, I will leave this question open here.

<sup>37</sup> As was pointed out in Chapter 3, there is variation in the acceptability of *hoe* in these cases; hence the present discussion applies to those dialects that have *hoe* as a comparative operator.

- (44) a. Maria is groter dan **hoe groot** Jan is.  
 Mary is taller than how tall John is  
 ‘Mary is taller than John is.’
- b. De tafel is langer dan **hoe breed** het  
 the table is longer than how wide the.NEUT  
 kantoor is.  
 office is  
 ‘The table is longer than the office is wide.’

The PF string for *hoe groot* ‘how tall’ would be as follows:

- (45) hoe<sub>[+rel]</sub> groot

The [+rel] feature on *hoe* instructs PF to align the left edge of the phrase with the left edge of a phonological unit. However, in cases where the operator is phonologically zero, the PF string is the following:

- (46) [+rel] tall

This causes a problem for PF because the [+rel] feature on its own, i.e. without any visible element carrying it, is not alignable.

The problem is fundamentally similar in the case of Attributive Comparative Deletion and the movement of quantified expressions to the left edge of a functional FP. In a string such as *how big a cat*, PF sees the following string:

- (47) how<sub>[+wh]</sub> big

By contrast, the zero comparative operator in English attributive comparative structures produces a string similar to the one in (46):

- (48) [+rel] big

Again, the [+rel] feature is not interpretable for PF without a visible element: the string should be aligned to the left edge of the extended nominal expression (FP).

Given the similarity that holds between (45) and (47) on the one hand and between (46) and (48) on the other hand, it seems reasonable to claim that there should be a generalised pattern behind these. Instead of the separate operator features [+wh] and [+rel], one may assume there to be a general operator feature: an operator feature is essentially responsible for elements moving to the left edge (cf. also Müller 2003) and hence the generalised feature may be called simply [EDGE]. This predicts that it is not a zero *wh*-element or relative pronoun that is ungrammatical but these become PF-uninterpretable if they move to the edge, i.e. if they are equipped with an [EDGE] feature.

Hence the generalised PF-interpretable configuration of strings containing [EDGE] features is as follows:

(49)  $X_{[EDGE]} Y$

The syntactic status of *X* and *Y*, as well as their exact structural relation, is not of importance in terms of PF-interpretability: *X* itself is naturally a head, such that it may be a head taking *Y* as its complement, or it may be the head of a phrase that is located in the specifier of the phrase headed by *Y*. In either case, the [EDGE] feature itself is located on a phonologically visible head and the structure converges.

By contrast, the PF-uninterpretable configuration should be assigned the following representation:

(50) [EDGE] *Y*

Again, the syntactic status of *Y* is not important here as PF-uninterpretability is due to the fact that the [EDGE] feature is not attached to any phonologically visible material.

#### 4.5. More on attributive modification

Since the reason behind Attributive Comparative Deletion in English is that it is not allowed to have an inverted AP in an edge position without an overt operator element there, it is worth examining how languages and structures differ in this respect. The expectation is that if the QP does not invert, then PF uninterpretability again does not arise since the QP is not in an edge position.

It has been seen that in English certain QPs require movement to the [Spec,FP] whereas others do not. Based on the analysis given by Kennedy and Merchant (2000), the following examples all involve this kind of movement:

- (51) a. [**How big a cat**] did Ralph see?  
 b. Ralph bought [**too big a cat**].  
 c. Ralph bought a bigger house than Michael did [**a flat**].

Underlyingly, in accordance with what has been claimed in the previous sections, the structures of the bracketed constituents are shown in (52), respectively:

- (52) a. [FP [QP how big]<sub>i</sub> [DP a [NP t<sub>i</sub> cat]]]  
 b. [FP [QP too big]<sub>i</sub> [DP a [NP t<sub>i</sub> cat]]]  
 c. [FP [QP x-big]<sub>i</sub> [DP a [NP t<sub>i</sub> flat]]]

Inversion is essentially dependent on two factors: whether the nominal expression enables the projection of an FP layer and whether the QP can undergo such movement. As far as the latter condition is concerned, it has already been seen that not all QPs require this kind of inversion: still, it is expected that the properties of the QP can be projected to the entire nominal expression via feature percolation. Consider the following pair of examples involving the optional movement of the QP *more intelligent*:

- (53) a. I have never seen [**a more intelligent dog**].  
 b. <sup>?</sup>I have never seen [**more intelligent a dog**].

In line with Kennedy and Merchant (2000: 130) and Bresnan (1973: 287–288), the structure involving inversion, as shown in (53b), is slightly less acceptable than the non-inverted one in (53a). The possibility of (53b) shows that *more*, composed of the Deg head *-er* and the Q head *much*, can move to [Spec,FP] if that position is generated but is grammatical in its base position as well. By contrast, the Q heads in (52) require movement obligatorily. Since the structures in (53) are otherwise equivalent, it is reasonable to claim that feature percolation is possible without movement and hence movement is triggered rather by the properties of the individual quantifiers. Note that since the QP appears in a [Spec,NP] position it can enter into an agreement relationship with the N head, which in turn can project its features upwards in the structure. Hence inversion does not stem from the inability of a nominal expression to be marked for quantification otherwise; rather, it is an [EDGE] feature of a quantifier that needs to be satisfied by movement to an edge position.

On the other hand, the availability of a [Spec,FP] position seems to be dependent on the internal structure of the nominal expression as well. Consider the following pair of examples:

- (54) a. [**How big a dog**] did Peter see?  
 b. \***[How big dogs]** did Peter see?

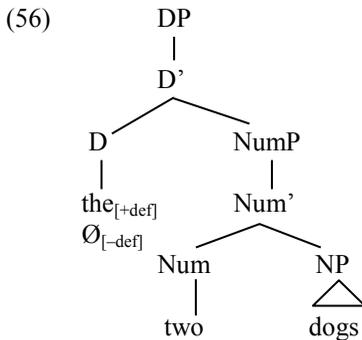
As has been established, structures like (54a) involve the obligatory movement of the QP to the [Spec,FP] position, which suggests that *how* requires inversion. It follows that in (54b) inversion should happen in order to derive a grammatical configuration; however, (54b) is not grammatical. The difference between (54a) and (54b) is that the latter involves a plural, while the former involved the indefinite article *a*. If one were to claim that in both cases there is a single DP above the NP – disregarding now the FP –, then the difference between (54a) and (54b) would be left unaccounted for.

Instead, I propose that the reason why (54a) allows inversion is that the DP layer is not present in the structure and hence extraction is possible; furthermore, the indefinite article is claimed to be the head of a NumP. As Zamparelli (2008: 11) describes, the NumP must always be present in English, partly because it is responsible for agreement as well – contrary to Romance languages that have a separate AgrP for this. The NumP may be headed by numerals (e.g. *one*, *two*) or indefinite articles. The DP layer appears above the NumP, which is also shown by the fact that Num heads may co-occur with the definite article:

- (55) a. [**The two** dogs] are sleeping.  
 b. [**Two** dogs] are sleeping.

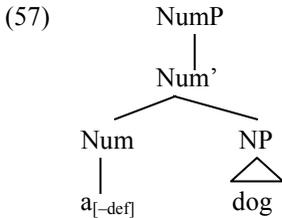
In (55a), the nominal expression is definite as it contains the D head *the*; by contrast, the nominal expression in (55b) is indefinite. As should be obvious, *two* in itself does not determine [ $\pm$ def] as it may occur in both constructions hence the [ $-$ def] nature of the nominal expression does not come from the Num head itself but rather from an indefinite zero D head, in the same way as [ $+$ def] is marked by *the* in (55).

The structure of DPs in (55) is shown in (56):

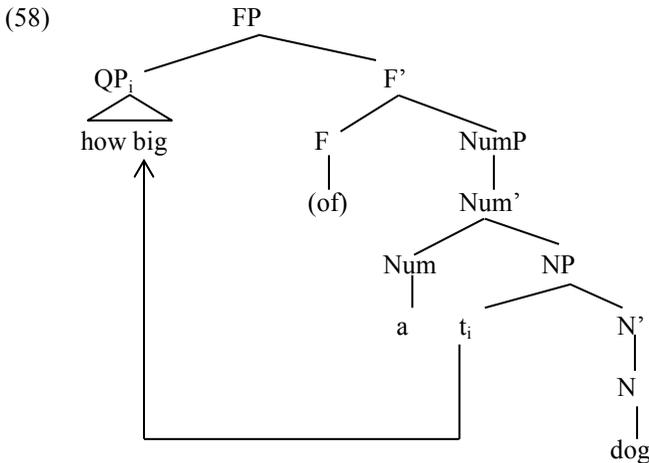


As can be seen, definiteness is encoded in the DP layer and not in the NumP for Num heads like *two*. However, if the Num head is an indefinite article, the situation is quite different because the indefinite article is

unambiguously associated with [-def], thus there is no reason for introducing a DP layer for marking definiteness separately. Hence a nominal expression such as *a dog* should be assigned the following structure:



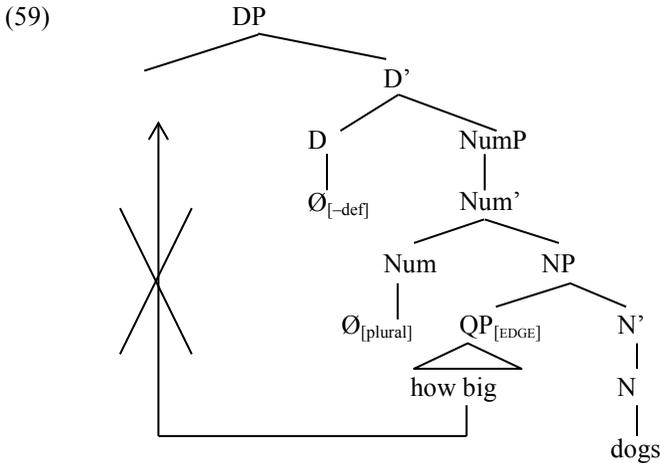
The structural difference between (56) and (57) has a bearing on the availability of inversion, as demonstrated by the contrast in (54). In cases like (54a), i.e. with the string *how big a dog*, an FP layer is projected on top of the NumP, as shown in (58):



As can be seen, the QP can be extracted from within the NP and move to the [Spec,FP] position; depending on the dialect, the F head can be filled by *of* and it is precisely this option why I would not like to claim that the

FP is in fact the DP since *of* is clearly not a D head and, unlike D heads in structures like (56), *of* plays clearly no role in marking definiteness.

By contrast, a structure like (54b) involves the plural, i.e. *\*how big dogs*, and the maximal projection, disregarding the FP, is a DP, not a NumP, as given in (56) since definiteness is not inherently determined by the Num head.<sup>38</sup> It would be highly problematic to claim that a DP projects an FP layer in the same way a NumP does: the DP is a phase boundary in itself and hence the left edge of the nominal expression is already created. Hence there is no [Spec,FP] position for the QP to move to. The key difference between the FP and the DP is precisely this: once the FP layer is projected, it requires material to move to its specifier position and, as far as PF is concerned, this material has to be associated with a phonologically visible marker equipped with designated properties. The DP specifier is not an edge position in this sense since there is no requirement that would rule out [Spec,DP] positions that remain unfilled. Consider the following representation:



<sup>38</sup> Note that by assuming that in structures like (58) there is a NumP layer generated instead of a DP I propose an analysis that is fundamentally different from the one presented by Kennedy and Merchant (2000), who do not distinguish between these functional layers in the nominal expression and do not discuss the NumP at all.

Movement is not available in the way it is in (58). Hence the problem with strings like *\*how big dogs* is that though the [EDGE] feature of the QP should be checked, there is no element that would attract it to a relevant specifier position and thus the structure is ungrammatical.

This accounts well for differences between (54a) and (54b). There is one more difference to be explained, shown in (60):

- (60) a. **\*[How big cats]** did Ralph see?  
 b. **[How many cats]** did Ralph see?

Interestingly, it seems that while a QP like *how big* cannot modify a plural nominal expression, a QP like *how many* can.<sup>39</sup> The same difference holds in comparative subclauses:

- (61) a. *\*Ralph bought a bigger house than Michael bought [a flat].*  
 b. *Ralph bought more houses than Michael bought [flats].*

The difference lies in the fact that English requires VP-ellipsis in attributive comparatives like (61a), as shown by Kennedy and Merchant (2000), but does not do so in nominal comparatives like (61b), as also pointed out by Reglero (2006).

Observing the difference between (60a) and (60b), it should be clear that the nominal expressions themselves have the same layers, i.e. a DP and a NumP above the NP (the DP being responsible for definiteness and the NumP for marking the plural), hence the difference in the acceptability of the two structures stems from differences that hold within the QPs. In other words, QPs such as *how many*, *more* and *x-many* are different from ones like *how big*, and this difference is encoded in the quantifiers.

Recall from Chapter 2 that the Deg head and the Q head are distinct projections but the upward movement of the Deg head to the Q head may result in composite forms, e.g. the movement of *-er* to *much*

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<sup>39</sup> As will be shown later on in connection with German, there are interesting cross-linguistic differences in this respect; at this point, what is important for us is that English does not allow constructions like (61a).

results in *more* in constructions such as *more intelligent*, and the movement of *-er* to *many* results in *more* in strings like *more cats*. Note that while both cases result in the surface form *more*, the Q heads themselves – *much* or *many* – are different.

In (60), the Deg head itself is *how* and the Q head is a zero in (60a) and *many* in (60b); as was argued for in Chapter 2, the upward movement of the Deg head to the Q head results in a reverse order, i.e. the original Deg head is adjoined from the right, in line with the Linear Correspondence Axiom, cf. Kayne (1994) and the Mirror Principle, cf. Baker (1985, 1988). The zero Q head requires movement to a [Spec,FP] position, as in constructions such as *how big a cat*; however, the DP in (60a) has the structure given in (59) and hence there is no [Spec,FP] position available – consequently, (60a) is ungrammatical. By contrast, *many* in (60b) does not require movement and hence the QP may remain in situ, i.e. within the NP. It should be obvious that it is only the Q head that can be held responsible for obligatory movement as the Deg head is *how* in both cases.

Turning now to the structures given in (61), it seems plausible that the Q heads – though zero in both cases – differ in a similar way, i.e. the one in (61a) requires movement to the [Spec,FP] position, which results in obligatory Attributive Comparative Deletion, the condition of which is not met in (61a), hence its ungrammaticality. By contrast, the Q heads in the subclause in (61b) does not require movement to a [Spec,FP] position and as the – phonologically not visible – QP is not inverted, the overttness requirement on left-peripheral elements is not violated since the FP layer is not generated at all.

It is the idiosyncratic property of a given Q head whether it is equipped with the [EDGE] feature triggering movement or not and is not directly linked to other features; hence while certain quantifiers in English require inversion, this may not be true for their counterparts in other languages – this was seen in connection with Reglero (2006) in terms of differences between English and Spanish nominal comparatives. As was discussed in section 4.3., German does not show Attributive Comparative Deletion because there is no inversion required. In (51a) and (51b), it was shown that QPs such as *how big* and *too big* are inverted in English; consider the following examples from German:

- (62) a. [**Eine**        **wie**    **große**        **Katze**] hat Ralf  
           a-ACC.FEM    how    big-ACC.FEM    cat        has Ralph  
                   gekauft?  
                   bought  
           ‘How big a cat did Ralph buy?’
- b. \***[Wie**    **große**        **eine**        **Katze**] hat Ralf  
           how    big-ACC.FEM    a-ACC.FEM    cat        has Ralph  
                   gekauft?  
                   bought  
           ‘How big a cat did Ralph buy?’
- c. Ralf    hat [**eine**        **zu**    **große**        **Katze**]  
   Ralph    has    a-ACC.FEM    too    big-ACC.FEM    cat  
                   gekauft.  
                   bought  
           ‘Ralph bought too big a cat.’
- d. \*Ralf    hat [**zu**    **große**        **eine**        **Katze**]  
   Ralph    has    too    big-ACC.FEM    a-ACC.FEM    cat  
                   gekauft.  
                   bought  
           ‘Ralph bought too big a cat.’

As can be seen, German does not only allow the non-inverted orders given in (62a) and (62c) but actually requires them: (62b) and (62d) – that are structurally parallel with the English examples in (51a) and (51b) – are ungrammatical. This shows that even in cases involving an indefinite nominal expression, the FP layer is not generated. I do not wish to investigate the internal structure of German nominal expressions here; the point is rather that since German obviously lacks the FP in structures involving overt operators, there is nothing unexpected in the claim that the FP is not generated in comparative subclauses such as the one in (34), repeated here as (63):

- (63) Ralf hat eine größere Wohnung als  
 Ralph has a-ACC.FEM bigger-ACC.FEM flat than  
 Michael [ein geräumiges Haus] hat.  
 Michael a-ACC.NEUT spacious-ACC.NEUT house has  
 ‘Ralph has a bigger flat than Michael a house.’

Since the QP in the subclause in (63) is obviously within the NP and the result is grammatical, the fact that the QP does not have to be deleted, contrary to English, is expected.

On the other hand, it is likewise expected that, unlike English in (60a), German allows plurals to appear together with QPs such as *how big*. Consider:

- (64) [Wie große Katzen] hat Ralf gesehen?  
 how big-ACC.PL cats has Ralph seen  
 ‘How big were the cats that Ralph saw?’

Since there is no requirement on the QP in German to move to [Spec,FP], structures like (64) are grammatical whereas they are not derivable in English.

All this shows that Attributive Comparative Deletion is not a separate mechanism as such but it is the surface result of various other factors that interact with each other, namely: whether there is Comparative Deletion in the [Spec,CP] position, whether the QP has to move to a [Spec,FP] position within the extended nominal projection, and whether the language has VP-ellipsis.



# Chapter Five

## Comparative Deletion and cyclic change

The aim of this chapter is to examine the phenomenon of Comparative Deletion from a diachronic perspective and to see how the changes in the status of comparative operators led to changes in whether Comparative Deletion is attested in the given language or not. The analysis presented here will also account for an asymmetry between interrogative and relative operators: in some languages (such as certain dialects of German and Italian), there are left-peripheral elements in the comparative subclause that have the same phonological form as certain interrogative operators, yet they show markedly different behaviour. I will argue that this is so because these elements have been reanalysed as C heads. I will show that the difference between proform operators and ones that take lexical APs (or NPs) also has a bearing on whether they could be reanalysed as complementiser heads, such that while operators without a lexical XP can be grammaticalised others cannot. This will be linked to the nature of the formal features associated with the various operator elements and as such will be argued to be present in other subordinate structures as well beside comparatives, conforming to the general mechanism of the relative cycle. Though the main focus will be on Hungarian historical data, I will show that the analysis is well applicable to other languages as well, such as German and Italian, since the reanalysis and grammaticalisation processes that hold between operators and complementisers follow general principles of economy. Since the core of the argumentation to be presented here is the mechanism of the relative cycle, first I will briefly summarise the findings of van Gelderen (2004, 2009) in this respect, since it is fundamentally her analysis that I would like to rely on and expand based on my own findings.

## 5.1. The relative cycle – van Gelderen (2004, 2009)

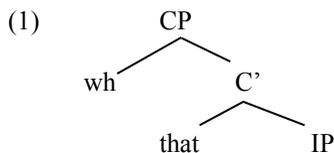
The idea underlying the analysis given by van Gelderen (2004), in line with Roberts and Roussou (1999, 2003), is that grammaticalisation processes can and should be accounted for in structural terms. As van Gelderen (2004: 10) argues, quoting Roberts and Roussou (2003: 198–199), there are three major ways of grammatical changes: loss of movement, reanalysis due to a loss of morphological endings, and a combination of these two. Underlying these changes, van Gelderen (2004: 10) claims two principles to be at work: the Late Merge Principle and the Head Preference Principle.

Both of these are essentially principles of economy. The Head Preference Principle (also referred to as the Spec to Head Principle) states that it is more economical to be a head than to be a phrase, that is, it is more economical for an element to be base-generated as a head in a given structural position than to enter in a checking relationship as a specifier with that head (van Gelderen 2004: 11). This principle accounts for the fact that many historical changes involve the reanalysis of a phrase in a specifier position to a single head, such as for the origins of complementisers and relative markers (van Gelderen 2004: 11, 17).

On the other hand, the Late Merge Principle, which is likewise a driving force underlying many historical changes, states that it is more economical for an element to be merged later in the structure than to be merged early and move up subsequently; in other words, merge is preferred over movement (van Gelderen 2004: 12). Naturally, the options for an element to be merged higher are limited: for instance, an argument cannot be merged higher than the site where theta-role assignment takes place; for example, an argument of the verb has to be base-generated within the VP domain (van Gelderen 2004: 12). The Late Merge Principle explains why elements go to higher positions when they grammaticalise (van Gelderen 2004: 17), such as – among others – in the case of complementisers and modal verbs (van Gelderen 2004: 28–29). Unlike the Head Preference Principle, this had been widely discussed in the literature prior to van Gelderen (2004) as well; cf. for instance Haspelmath (1989), van Gelderen (1993), IJbema (2002) or Roberts and Roussou (2003).

Following Rizzi (1997), van Gelderen (2004: 41–44) adopts the split CP hypothesis, according to which there are two CP layers at the left periphery of a clause that – in subordinate clauses – may accommodate complementisers. In certain cases this may result in double complementisers, such as *of dat* ‘if that’ in Dutch with certain verbs in the matrix clause (van Gelderen 2004: 48–49). It is also possible for languages not to have a split CP in, for instance, subordinate clauses: as van Gelderen (2004: 51–55) argues, this is the case for Old English and the situation changed only during the Middle English period with the introduction of new complementiser elements in certain subordinate clauses.

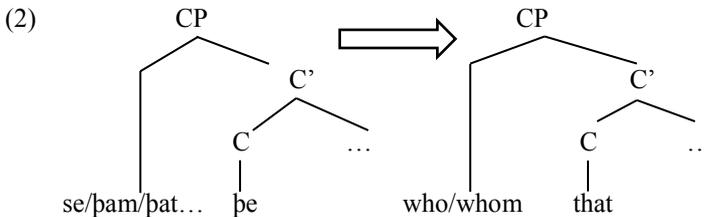
As noted by van Gelderen (2004: 77–78), the fact that certain demonstratives become complementisers or relative markers has widely been discussed in the literature (cf. Hopper and Traugott 1993 or Heine and Kuteva 2002). In Modern English, there are two fundamental ways of relative clause formation: *that*-relatives and *wh*-relatives (van Gelderen 2004: 78–79). Using a simplified representation, the positional differences between *that* and *wh*-pronouns are shown in (1) below (van Gelderen 2004: 78, ex. 5).<sup>40</sup>



<sup>40</sup> Note that the distinction taken up by van Gelderen (2004) is actually a standard one and goes back to Chomsky (1977, 1981). It is also worth mentioning that there are nevertheless different views concerning the relation of relative operators and complementisers in the literature. For instance, Kayne (2009, 2010a, 2010b) argues that complementisers are merely demonstrative/relative pronouns. Naturally, I will not venture to examine this question in detail in the present dissertation: suffice it to mention that there are considerable counterarguments raised against such a stance, and that counterevidence is to a large extent based on diachronic data, cf. e.g. Franco (2012: 12–13 on Germanic). In my view, the diachronic examination of Hungarian further reinforces the structural difference between complementisers and operators, as will be demonstrated in the forthcoming sections. On the difference between complementisers and operators – in Hungarian but also cross-linguistically – see also Kenesei and Ortiz de Urbina (1994).

The *wh*-pronoun is invariably located in a specifier position while *that* is a head: as shown by van Gelderen (2004: 78–81), there is a strong preference for the head position, which is in line with the claim that heads are more economical than specifiers (Head Preference Principle). On the other hand, the lack of overt case/marking in certain *wh*-elements (e.g. *who* instead of *whom*) may result in these elements reinterpreted from being specifiers to heads (van Gelderen 2004: 80–81). This is essentially the same process that resulted in the establishment of *that* as a head as *that* was originally a specifier as well (van Gelderen 2004: 81–87).

Turning now to the historical data in English, van Gelderen (2004: 81) adopts the view (expressed by e.g. Quirk and Wrenn 1955 or Allen 1977) that the regular relative complementiser in Old English was *þe* ‘that’. In addition, relative clauses could be marked by demonstratives such as *se* ‘the’ or *þat* ‘that’ (van Gelderen 2004: 81). In structural terms, this meant that *se* or *þat* were located in a [Spec,CP] position while *þe* was a C head; however, in the 13th century *þat* replaced *þe*. That is, it was reanalysed from a specifier into a head; in turn, the [Spec,CP] position could now be filled by other relative pronoun elements such as *hwa* ‘who’ as a way of reinforcement (van Gelderen 2004: 82). The changes are schematised in (2), cf. van Gelderen (2004: 82, ex. 22):



As can be seen, there are two important changes to be observed: the reanalysis from specifier to head in the case of *that*, motivated by economy, and the appearance of new relative pronouns in the specifier position as a way of reinforcement. This process is referred to as the relative cycle by van Gelderen (2009: 161–168).

According to van Gelderen (2004: 83), evidence for *that* being a relative pronoun comes from the fact that it can co-occur with *þe*;

though this may in principle be a case with two C heads, there is no additional evidence for that. However, *that* as a pronoun could co-occur with prepositions (e.g. *embe þæt* ‘about that’) and V2 word order is attested in its presence, which shows that it cannot be located in the C head (van Gelderen 2004: 83). Later on, *that* was reanalysed as a head: as far as which CP is concerned here, van Gelderen (2004: 83–84) argues that the CP is not split initially but as soon as it is, *that* first occurs as a lower C (Fin) head and is only subsequently reanalysed as a higher (Force) one. Reanalysis from specifier to head was facilitated by *that* losing its original gender and agreement features (van Gelderen 2004: 84–86). It has to be mentioned that the changes described so far are attested not only in English but in other languages as well (van Gelderen 2004: 96–99); in addition, they are not restricted to earlier stages of English but can be observed in Modern English as well, e.g. in the case of *whether* or *how* (cf. van Gelderen 2009: 140–145, 154–157).

Essentially the same changes are at hand in the case of *that* as a complementiser in *that*-clauses (cf. van Gelderen 2004: 89–92; van Gelderen 2009: 157–161). Once it becomes a C head, it can also be omitted (van Gelderen 2004: 92). On the other hand, as a lower (Fin) head it could appear in combinations such as *for that* (note that this refers to finite *for*) or *whether that*, an option not permitted after it was reanalysed as a higher (Force) head (van Gelderen 2004: 92, 104).

The order of combinations containing two C heads follows from the status of the individual elements, such that Force C always precedes Fin C, hence the combinations *for that*, *for if* or *till that* but not *that for*, *if for* or *that till* (cf. van Gelderen 2004: 104–105). Moreover, the co-occurrence of two Force C heads is also prohibited, hence the sequence *till for* is not attested (van Gelderen 2004: 105). As for the change in the status of *that* from lower to higher C, it is not only shown by the combinations above but also by the fact that it can co-occur with topics as a Force C, while this was not available when it was still a Fin head (van Gelderen 2004: 105–106). Furthermore, Middle English did not rule out the co-occurrence of *wh*-pronouns in a [Spec,CP] when the head of the same CP was filled by *that*: hence the sequence of a *wh*-pronoun + *that* was available but only as long as *that* was in Fin (van Gelderen 2004: 105–106). Naturally, reanalysis from lower C to higher C is in accordance with the Late Merge Principle (cf. van Gelderen 2004: 126).

As was established at the beginning of this section, the Head Preference Principle and the Late Merge Principle are general principles of economy and as such are not restricted to operate in the CP-domain but are found for instance in the IP or the VP level as well (cf. van Gelderen 2004: 135–154, 229–248).

The issue of cyclic changes in the left periphery of subordinate clauses is re-addressed by van Gelderen (2009) in more detail; the analysis still relies fundamentally on the economy principles mentioned above, though the principles are reformulated as principles of feature economy (van Gelderen 2009: 135–136). Cyclic change in terms of the CP domain refers to a two-step change whereby an element that is originally a demonstrative “is incorporated into the head of the CP and then reanalysed as the head *C*” (van Gelderen 2009: 157). This is attested for instance in the case of *that*; note that under this view the demonstrative originates in the matrix clause; cf. van Gelderen (2009: 157), based on, for example, Lockwood (1968) and Hopper and Traugott (2003).

As argued for by van Gelderen (2009: 186), the Head Preference Principle and the Late Merge Principle can be accounted for in terms of feature economy. Feature economy basically states that semantic and interpretable features should be minimised in the derivation, such that semantic features are reanalysed as interpretable features, and interpretable features are reanalysed as uninterpretable features (van Gelderen 2009: 186). Merging elements later in the structure instead of moving them involves these elements having fewer features, which is more economical.

## 5.2. Diachronic change in Hungarian comparatives

In what follows, I will show that diachronic changes affecting comparative subclauses in Hungarian can be understood in terms of the relative cycle and the principles of economy described in the previous section. Moreover, the processes at hand will be shown to be operative in other subordinate clauses as well, and will also be linked to the phenomenon of Comparative Deletion.

The problem regarding the history of Hungarian comparative subclauses is essentially the following. In Modern Hungarian, comparative subclauses are invariably introduced by the complementiser *mint* ‘than’, which may be followed by an overt comparative operator (e.g. *ahányszor* ‘how many times’). However, in Old Hungarian the subclause was initially and typically introduced by the complementiser *hogy* ‘that’ and the comparative operator remained covert. Though the two stages seem to be radically different, I will show that the latter can actually be derived from the former by assuming the development of the complementiser and that of the operator to be two interrelated processes. The most important aspects of the changes are the reanalysis of the complementiser *mint* ‘than’ and the change in the deletion of the operator.

Maintaining that there are two CP layers at the left edge of the clause, it is worth mentioning that in Modern Hungarian only the complementisers *mint* ‘than’, *hogy* ‘that’, *mert* ‘because’ and *ha* ‘if’ are all in the higher C head and the lower C head is zero; I will return to the issue of why this should be so later on. As far as the lack of two filled distinct C heads is concerned, Hungarian is similar to Standard Italian, as described by Rizzi (1997, 2004).<sup>41</sup> This is not necessarily so, as shown by Welsh, which does allow two filled C heads (cf. Roberts 2005: 122, ex. 8):

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<sup>41</sup> In Italian, *che* ‘that’ is claimed to be a higher C head and *di* ‘of’ is a lower C head, as demonstrated by the following examples (Rizzi 2004: 237, exx. 44 a–b):

- (i) Credo      **che**    ieri      QUESTO    a    Gianni    avreste  
 think-1SG    that    yesterday    this.MASC    to    Gianni    have-COND.2PL  
               dovuto      dirgli.  
               must-PTCP    tell.INF-he.DAT  
 ‘I believe that yesterday you should have told THIS to Gianni.’
- (ii) Penso      a    Gianni, **di**    dovergli      parlare.  
 think-1SG    to    Gianni    of    must.INF-he.DAT    speak-INF  
 ‘I think one should talk to Gianni.’

The C head *che* precedes left-peripheral topics and foci, as shown by (i), while *di* appears at the right edge of the CP-domain, as shown by (ii). The two are not licensed to appear together as *che* is compatible only with finite clauses and since there is no other lower C head other than *di*, there is no configuration in which two overt C heads would be possible in Standard Italian.

- (3) Dywedais, i **mai** 'r dynion fel arfer **a** werthith  
 say I that the men as usual that sell  
 y ci.  
 the dog

'I said that it's the men who usually sell the dog.'

This provides evidence for the two possible positions of C heads. More importantly, it also raises the question of whether Old Hungarian had a setting similar to the one observed in Modern Hungarian and Standard Italian, or rather to that of Welsh. Note that Welsh is not unique in allowing the co-presence of two overt complementisers: the same is described extensively by Paoli (2007) for a number of present-day and historical Romance dialects, including Turinese and Ligurian, which hence differ from the Standard Italian pattern (see Rizzi 2004).

Let us now turn to the data from the Old (and partly also from the Middle) Hungarian period and see what the most important stages were in the development of comparative subclauses. As has already been mentioned, the clause was initially introduced by *hogy* 'that'. The subclause contained the negative element *nem* 'not' (or, less typically, *sem* 'neither') as well (Haader 2003a: 515). The differences between *nem* and *sem*, as well as the status of negation in the comparative subclause, will be discussed in section 5.6. Suffice it to say that the appearance of a negative element is due to the negative polarity of the clause and hence it is not an instance of true negation. Note that since these negative-like elements are required by polarity in certain languages, they are independent of whether there is Comparative Deletion in the [Spec,CP] or not.

Consider the following examples for this stage:

- (4) a. Mert iob hog megfogdofuā algukmég  
 because better that PRT-catch-PTCP bless-SUBJ-3PL-PRT  
 vrat èlèuènèn **hog nē** mèghal'1'òc  
 Lord-ACC alive that not PRT-die-SUBJ-1PL  
 'because it is better to bless the Lord if we are captured alive  
 that not (= than) to die' (BécsiK. 25)
- b. mert emberi elme, mindenkoron kezebb az  
 because human mind always readier the  
 gonozra, **hog nem** az iora  
 evil-SUB that not the good-SUB  
 'because the human mind is always readier for evil that not  
 (= than) for good' (BodK. 2r)
- c. Hog ha te iog zéméd meggonozbeitand  
 that if you right eye-POSS-2SG PRT-offend-FUT.3SG  
 tegedet ved ki ətèt &  
 you-ACC take-IMP.2SG out it-ACC and  
 vefd èl tetòllèd / mert iob tenèked  
 cast-IMP.2SG off you-ABL because better you.DAT  
 hog eg èluèzien te tagid  
 that one off-perish-SUBJ.3SG you members.POSS-2SG  
**hog nē** mend te tétfed  
 that not all you body-POSS-2SG  
 èrèztèffec pokolba  
 cast-SUBJ-3SG hell-ILL  
 'And if thy right eye offend thee, pluck it out, and cast it from  
 thee: for it is more profitable for thee that one of thy members  
 should perish that not (= than) that thy whole body should be  
 cast into hell.' (MünchK. 11rb–11va)

- d. Ha azert te yob zómód meg tantoroyth  
 if that-FIN you right eye-POSS-2SG PRT tempts  
 teeghedet, vayth ky hewtet, es  
 you-ACC cut-IMP.2SG out it-ACC and  
 vesd el thwled, mert yncab yllyk  
 cast-IMP.2SG off you-ABL because rather fits  
 teneked hoǵ el vezyen egik  
 you.DAT that off perish-SUBJ.3SG one  
 tagod, **honnem** te tellyes  
 member-POSS.2SG that-not you entire  
 tested vettesseg pokorra  
 body-POSS-2SG cast-SUBJ.3SG hell-SUB

‘And if thy right eye offend thee, pluck it out, and cast it from thee: for it is more profitable for thee that one of thy members should perish that not (= than) that thy whole body should be cast into hell.’ (JordK. 367)

The parallel clauses in (4c) and (4d) also illustrate that the string *hogy nem* ‘that not’ could develop into a phonologically fused form *honnem*: the Munich Codex (1466) invariably uses the earlier form *hogy nem*, while the Jordánszky Codex (1516–1519) always has *honnem*. I will return to this question further on in more detail.

Later *mint* ‘than’ could also appear in the structure, typically in the sequence *hogy nem mint* ‘that not than’ (or *hogy sem mint* ‘that neither than’); this construction appeared already in the late Old Hungarian period but became characteristic of Middle Hungarian (Haader 2003a: 515, 2003b: 681). Consider the following examples of *hogy nem mint* in (5):

- (5) a. mert        mastan   közelben    vagyón a”mý  
 because    now        nearer     is        the-we  
           I dwesseegw̃nk        **honnem mýnt**    eleeb  
           salvation-POSS.1PL    that.not    than    earlier  
           hýttók  
           thought-1PL  
 ‘because now our salvation is nearer than we thought before’  
 (ÉrdyK. 3b)
- b. az    mentól    alsobýkban    is    tøb    angýal    uaĝon  
 the    all-ABL    lower-INE    also    more    angel    is  
           **honnem mynth**    az    napnak    feneben  
           that.not    than    the    sun-DAT    light-POSS.3SG-INE  
 ‘there are more angels in the basest one of them than in the  
 sun’s light’ (SándK. 1v)
- c. S    mit        hazznal    zegeńeknek    osztani  
 and    what-ACC    uses        poor-PL-DAT    distribute-INF  
           es    zegẽne        lëni,    ha    naualas    lelek    keuelb  
           and    poor-TRANS    be-INF    if    wretched    soul    prouder  
           lezen    kazdakfagot    meg    vtułuã:    **hoĝ nem mýt**  
           is    richness-ACC    PRT    hating    that    not    than  
           volt        øtet        bíruan  
           was.3SG    it-ACC    possessing  
 ‘and what is the point in giving to the poor and in becoming  
 poor if the wretched soul becomes prouder when despising  
 richness than it was when possessing it’ (BirkK. 1a)

Note that it is possible for the comparative operator to move long distance, as, for example, in (5a): in these cases, the only difference from the ones in (5b) and (5c) is that the operator starts from a clause other than the one headed by the comparative complementiser. However, this has no bearing either on the structure of the left periphery or on the obligatoriness of operator deletion and is hence irrelevant for the present

investigation. For a discussion on long-distance operator movement in comparatives, see Bacskai-Atkari (2010a: 28–30).

The following examples show *hogy sem mint*:

- (6) a. *többet tulaidonetot effele irot kepeknc,*  
 more-ACC attributed-3SG such written pictures-DAT  
**hogy sem mint** az irasnac  
 that neither than the writing-DAT  
 ‘he attributed more to such carved pictures than to the scrip-  
 ture’ (Pécsi L.)
- b. *merth Ferencz wram (ezth en pedeglen*  
 because Francis lord-POSS-1SG this-ACC I however  
*sem ýreghsegbewl sem bozwsag[bol] nem*  
 neither envy-ELA neither annoyance-ELA not  
*ýrom) thewbzer wacharalth az warban*  
 write-1SG more.times suppered.3SG the castle-INE  
*az kýralne azz[ony] leanýwal, Borbara*  
 the queen woman daughter-COM Barbara  
*azzannal, hogh sem mýnth warasban az*  
 woman-COM that neither than town-INE the  
*wrak kezewth*  
 lords among  
 ‘because my lord Francis (and I am saying this neither out of  
 envy nor out of annoyance) had supper in the castle with  
 mistress Barbara, the queen’s daughter more often than in  
 town with the gentlemen’ (Level 139.)

Later on, the negative element *nem (sem)* could also be left out, rendering the sequence *hogy mint* (Haader 2003a: 515):

- (7) edesseget      erze      nagyobbán      **hogymint**      annak  
 sweetness-ACC   felt.3SG   bigger   that-than   that-DAT  
 előtte  
 before  
 ‘(s)he felt sweetness even more than before’ (LázK. 141)

These are the main stages in the development of Hungarian comparative subclauses, the final one of course being the Modern Hungarian configuration, where the subclause is introduced only by *mint*.<sup>42</sup>

- (8)      hogy nem  
           ↓  
           hogy nem mint  
           ↓  
           hogy mint  
           ↓  
           mint

Before turning to the analysis and explanation of the phenomenon, let us consider the table in (9), which shows some data from the Old Hungarian corpus (in these texts I did not find any examples for the sequence *hogy mint*, hence this configuration is not indicated):

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<sup>42</sup> Note that *mint* is itself a morphologically complex unit, as far as its etymology is concerned: it contains the stem *mi* ‘what’ and two adverbial suffixes, the modal suffix *-n* and the locative suffix *-t*.

(9)

| Codex             | Date               | <i>hogy nem</i> | <i>hogy nem mint</i> | <i>mint</i> |
|-------------------|--------------------|-----------------|----------------------|-------------|
| Jókai             | btw. 1372 and 1448 | 3               | 4                    | 4           |
| Müncheni          | 1466               | 3               | –                    | –           |
| Bécsi             | btw. 1416 and 1450 | 15              | –                    | 1           |
| Birk              | 1474               | 2               | 2                    | –           |
| Weszprémi         | around 1512        | –               | 7                    | –           |
| Gömöry            | 1516               | –               | 1                    | –           |
| Sándor            | around 1518        | 3               | 2                    | 1           |
| Pozsonyi          | 1520               | 3               | 1                    | –           |
| Bod               | after 1520         | 4               | –                    | 2           |
| Székelyudvarhelyi | 1526-1528          | –               | 3                    | –           |

It has to be mentioned that the chart does not cover all the data from Old Hungarian, that is, there are other texts as well that might contain comparative subclauses of the sort concerned here, while there are some which apparently include none. However, what is important here is not really the number of the instances of each type but rather the relative distribution thereof. As has been said already, the earliest type was *hogy nem*, to be followed by *hogy nem mint*, and it is only in the final stage where we have *mint* only. It should be obvious that although the diachronic development of comparatives follows this order, the actual occurrences of the individual constructions do not strictly reflect it. For instance, the earliest text, the Jókai Codex, contains all the three constructions to about the same extent, whereas the Bécsi Codex (Vienna Codex) almost exclusively uses the earliest form *hogy nem*. On the other hand, late examples such as the Bod Codex still contain a relatively large amount of *hogy nem*, in spite of featuring examples containing *mint*.

This is important because it explicitly shows that the various types of constructions did not strictly follow each other in time, and – as can be expected – there was considerable overlapping in the period. Consequently, the late Old Hungarian (and also the early Middle

Hungarian) period was characterised by several changes and these are reflected in the co-occurrence of the forms in the texts for a considerable time. This also implies that the individual stages used in the description to be presented in the next section are not meant to be strictly distinguishable periods, and are used rather to facilitate the description of the change. However, in the actual language use these steps did feature simultaneously for quite a long time and thus the change was far from being abrupt.

However, comparing texts from more distinct periods reveals the individual stages clearly. I carried out a comparison of four translations of the four gospels: I took two Old Hungarian ones, the Munich Codex and the Jordánszky Codex, a Middle Hungarian one (the translation by György Káldi) and a Modern Hungarian one (the so-called Neovulgata translation). I examined altogether 36 loci and the distribution of the various types of comparatives is shown in (10); note that there are additional ways of expressing comparison, hence the apparent discrepancy that can be observed when comparing the individual columns:

(10)

|                    | <b>Munich<br/>Codex<br/>(1466)</b> | <b>Jordánszky<br/>Codex<br/>(1516–1519)</b> | <b>Káldi<br/>translation<br/>(1626)</b> | <b>Neovulgata<br/>(1997)</b> |
|--------------------|------------------------------------|---|---|------------------------------|
| <i>hogynem</i>     | 34                                 | 20  | –                                       | –                            |
| <i>hogynemmint</i> | –                                  | 11  | –                                       | –                            |
| <i>mint</i>        | –                                  | 4   | 23                                      | 20                           |

The data show that while in the Munich Codex comparative subclasses were introduced by *hogynem* ‘that not’, the picture was much more diversified already in the Jordánszky Codex, where the number of *hogynem* significantly decreased in favour of *hogynemmint* and the use of single *mint* was also an option. By contrast, in the Káldi and the Neovulgata translations it is only *mint* that is used: as a matter of fact, *hogynemmint* – and also *hogysemmint* – was still possible in Middle Hungarian but they became obsolete before the Modern Hungarian period. At any rate, the appearance of the combination *hogynemmint* is definitely significant.

On the other hand, neither *hogynem* nor *hogynemmint* is a Latin reflex: in all the instances under scrutiny, the Latin text simply contains *quam* ‘than’.

### 5.3. Cyclic change in comparatives

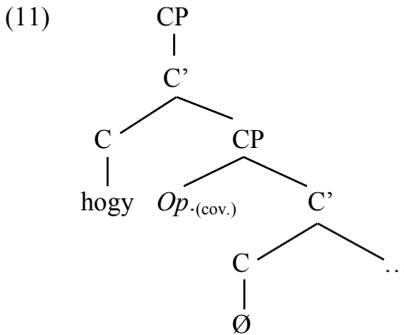
Let us now turn to the analysis of the diachronic change concerning comparatives in Hungarian. There will be two issues to focus on: the status of the C heads and that of the comparative operator.

Initially, as has already been mentioned, the comparative subclause was introduced by the higher C head *hogy* ‘that’. At this stage, the comparative operator was covert; how this can be proved will be explained later on: for the time being, let us focus on the description of the initial pattern. On the other hand, the subclause also contained the negative element *nem* ‘not’, required by the negative polarity of the comparative clause originally – later it disappeared from the construction, as comparatives are not universally accompanied by overt negative-like elements, see, for example, Modern Hungarian.

The configuration with respect to the structure of the two CPs is schematised in (11):<sup>43</sup>

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<sup>43</sup> As in the previous chapters of this dissertation, the analysis presented here is strongly built on the possibility of two CP layers: this is evidently needed in cases when there is an overt C head followed by an overt operator moving to a [Spec,CP] position since the operator then cannot be located in the specifier of the CP headed by the complementiser, as that would produce exactly the opposite order (as in the case of the English historical data presented by van Gelderen 2004, 2009, see section 5.1). On the other hand, the co-presence of two distinct C heads in one and the same left periphery again shows that there is not merely one single CP projection.



As can be seen, *hogy* is a C head; historically, though, Haader (2003a: 515; 2003c: 263) and Juhász (1991: 479) derive it from a relative pronoun of the same form (functionally equivalent with the present-day relative pronoun *ahogy* ‘how’). The same is true for other present-day Hungarian complementisers as well, that is, *ha* ‘if’, *mint* ‘than/as’ and *mert* ‘because’. As has long been argued for in the literature, these were originally operators (cf. Juhász 1991, 1992; Haader 1991, 1995) such that *ha* meant ‘when’, *mint* meant ‘how’, and *mert* meant ‘why’.

What is more important for us here is that at the beginning of the Old Hungarian period *hogy* as a complementiser was already distinct from the relative pronoun; I will return to this question later on in more detail. Evidence for this partly stems from the fact that *hogy* was able to fuse with other heads via head adjunction, for example, with *ha* ‘if’ and *mert* ‘because’— hence it was a head and not a phrase. Second, *hogy* introduced other types of finite clauses as well in the periods under scrutiny: both *that*-clauses and ordinary relative clauses (cf. Haader 1991, 2003a; Galambos 1907).

This configuration – i.e. that the C head introducing comparatives occurs in other (finite) subclauses as well – can be observed in other languages too, thus the Old Hungarian setup is not unique cross-linguistically. For instance, it is quite frequent in Romance languages, such as Italian or French: Italian *che* or French *que* introduce not only comparative subclauses but also ordinary relative clauses and *that*-clauses, and both are higher C heads (see Rizzi 1997; Rowlett 2007:

147–148). The comparative clauses introduced by them are shown below, the Italian pattern by (12a) and the French one by (12b):

- (12) a. Maria mangia più **che** Paolo.  
 Mary eats more that Paul  
 ‘Mary eats more than Paul.’
- b. Anne est plus fatiguée **que** Marie.  
 Ann is more tired-FEM that Mary  
 ‘Ann is more tired than Mary.’

To conclude, it seems that the representation in (11) is supported also by cross-linguistic data and will be used in the present discussion as the basis of representing the structures found in Old Hungarian.

I will return to the status of the negative-like elements later on; let us now concentrate on the appearance of *mint* ‘than/as’ in Old Hungarian. This has an interesting parallel phenomenon in relative clauses, which is not quite unprecedented as comparatives are a subtype of relative clauses. Though, as will be shown, the development of the two structures in Hungarian seems to have been fed from two different directions, the resulting structures show many common aspects, which will be used in the present analysis.

In Old Hungarian and Middle Hungarian, relative clauses were frequently introduced by the string *hogy* ‘that’ + a relative pronoun (see Galambos 1907: 14–18; see also Haader 1995; Dömötör 1995, and for a recent analysis Bacskai-Atkari 2011, 2013b),<sup>44</sup> resulting in combinations such as *hogy ki* ‘that who’ or *hogy mi* ‘that what’. The structure of these configurations is illustrated in (13):

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<sup>44</sup> It must be mentioned that although the first formal account for relative clauses containing *hogy* ‘that’ and *ha* ‘if’ is given by Galambos (1907), who places these constructions in the general (diachronic) system of Hungarian relative clauses, the literature on Hungarian historical linguistics later on forgot about his work and hence most traditional analyses are not influenced by his ideas at all. This may well be the reason behind the fact that the *hogy/ha* + operator combinations received very little attention, thereby also leaving many questions regarding relative clauses (and finite subordination) unanswered. The first to (re)discover the due merits of Galambos (1907) was Kenesei (1992a, 1992b).

- (13) olýaat      tezok    raýtad    **hog kýtol**      felz  
 such-ACC    do-1SG    you-SUP    that who-ABL    fear-2SG  
 ‘I will do such on you that you fear.’ (SándK. 14v)

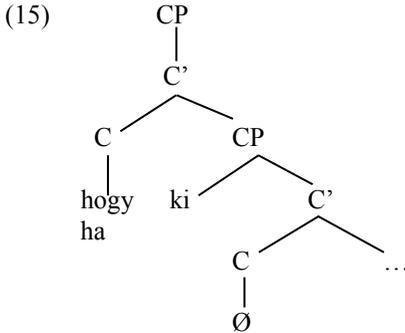
In (13), the complementiser *hogy* is followed by the relevant form of the pronoun *ki* ‘who’. Phonologically, there is no difference between the interrogative and the relative pronoun: the distinction between the two (i.e. Modern Hungarian *ki* ‘who-Int.’ and *aki* ‘who-Rel.’) started to emerge only in the late Old Hungarian period but was not completed even in early Middle Hungarian (Sipos 1991: 398; G. Varga 1992: 524–525; Juhász 1992: 791; Haader 1995).

This kind of construction was possible even with the complementiser *ha* ‘if’:

- (14) kÿ      tegod      zereth.    az    nem    epedh:    **ha kÿ**    keserg  
 who    you-ACC    loves    that    not    longs    if    who moans  
       akkor    wÿgad  
       then    rejoices  
 ‘those who love you, do not long: those who moan, then rejoice’  
 (CzechK. 51–52)

It is worth mentioning that this type of configuration (i.e. *hogy* + relative pronoun) has disappeared from the language. To investigate the reasons for this would be far beyond the scope of the present study and therefore I will leave this question open here. Though the issue of Hungarian complementisers will be addressed later on in more detail, it is worth noting that the fact that *hogy* and *ha* allowed such configurations, as opposed to the other present-day complementisers *mint* and *mert* ‘because’ shows an important structural difference between these two groups of complementisers: while *hogy* and *ha* occupied the higher C head position and hence could co-occur with either an operator or a lower C head, *mint* and *mert* were either still operators in the period, or, as will be shown later on, lower C heads; in either case, they could naturally not allow an overt operator to be present in the lower [Spec,CP] position.

The structure of the left periphery of the subclauses such as the ones in (13) and (14) is shown in (15):



As can be seen, the higher CP is headed by *hogy* or *ha*, while the lower CP has a zero head and a relative operator (e.g. the relevant form of *ki* ‘who’) in its specifier. For the explanation of the phenomenon the hypothesis of Galambos (1907: 15) was that the relative pronoun was in this period still closer to its original pronominal function and *hogy* was at least partly used to reinforce it as an operator, whereas later it became redundant. On the other hand, the construction expresses consequence besides being a relative clause, and thus it was not merely a structural variant.

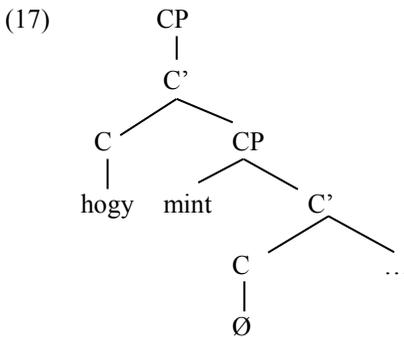
More importantly, a similar construction can be found in comparatives from the same period: like the relative operator, the comparative operator *mint* started to appear in the lower [Spec,CP]; actually, this was a relative pronoun in the period (see Juhász 1991: 480–481), in examples such as (5b), repeated here as (16):

- (16) az mentől alsóbőkban is tőb angyal uağon  
 the all-ABL lower-INE also more angel is  
**honnem mynth** az napnak feneben  
 that.not than the sun-DAT light-POSS.3SG-INE  
 ‘there are more angels in the basest one of them than in the sun’s light’ (SándK. 1v)

It should not be surprising that *mint* did not show its operator status by having a distinctive morpho-phonological form of (relative) operators (i.e. marked by the prefix *a-*), as it was true for other relative operators

in the period that phonologically they had the same forms as their *wh*-pronoun counterparts used in main clause questions (e.g. *ki* ‘who-Int.’ vs. *ki* ‘who-Rel.’). Thus it is not exceptional that no functional split can be observed (as between Modern Hungarian *ki* ‘who-Int.’ and *aki* ‘who-Rel.’) and that the operator *mint* does not feature as *amint*.

The structure (disregarding now the negative-like element) is shown in (17):



Hence the higher C head is still filled by *hogy*, the lower CP is headed by a zero; however, in the specifier of the lower CP one can find an overt operator, *mint*. It has to be noted that although the structures in (15) and (17) are fundamentally the same, they developed from exactly the opposite directions, that is, in the case of comparatives *hogy* was present first and the operator appeared later, while in the case of relative clauses the operator was there originally and *hogy* was inserted only later (and did in fact disappear ultimately, unlike *mint* in comparatives). Nevertheless, the strict similarity is important because in terms of the resulting structure, they are the same; on the other hand, the comparative structure could have been reinforced by analogy from relative clauses.

The operator *mint* in Old (and Middle) Hungarian was similar to English *what* – as discussed in Chapter 3 – in that it was a proform standing for the entire QP (or DP), which also means that these QPs (and DPs) did not include a lexical AP (or NP), as would be possible in Modern Hungarian, as was shown in Chapters 3 and 4. This is not surprising inasmuch as even in late Old Hungarian, the relative pronouns

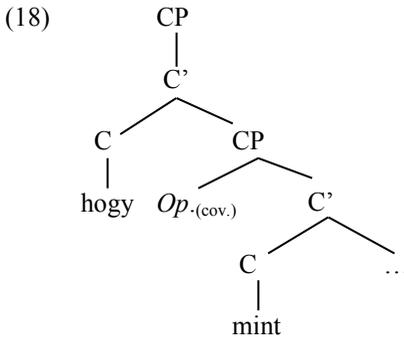
*milyen/amilyen* ‘how-Adj/Adv.’ and *mekkora/amekkora* ‘how big’ were still missing (see G. Varga 1992: 525), which are otherwise readily combined with lexical APs or NPs in Modern Hungarian. Hence the only way to have an overt comparative operator in Old Hungarian was to have a proform operator (*mint*) functioning as such – before that, it seems that Old Hungarian did not have an overt comparative operator in the [Spec,CP] position.

It is also important to mention that *mint* as an operator could alternate with the operators *miként* ‘how’ and *miképpen* ‘how’ in the same functions and these elements are not attested as grammaticalised complementisers even in later periods.

The next step in the development of *mint* was basically the second step of the relative cycle, that is, an operator being reanalysed as a C head. Thus the original operator *mint* started to be analysed as an element generated in the lower C head, while the higher C head still contained the complementiser *hogy* (and the negative element *nem/sem* was still allowed to be present). This was possible because Old and Middle Hungarian allowed the co-presence of two C heads in one left periphery, unlike Modern Hungarian; the reasons of this will be investigated in the next section.

Admittedly, it is in most cases impossible to detect in a given example of the string *hogy nem mint* whether *mint* was a C head or still an operator; however, by looking at a large corpus it can be proved that the change did take place during the Middle Hungarian period. First, unlike ordinary relative operators from the period, *mint* remained insensitive to the choice of the matrix pronominal element (Juhász 1992: 799), though as an operator it should have shown changes accordingly (i.e. it would not have been possible to have *mint* invariably after various matrix pronominal elements like *annyiszor* ‘many times’, *akkora* ‘such big’, *olyan* ‘how’). On the other hand, it did not develop into a proper operator morphologically, unlike relative pronouns, which started to be distinguished from *wh*-operators in their overt forms, for instance, showing a difference between *ki* ‘who-Int.’ and *aki* ‘who-Rel.’. These indicate that *mint* was no longer a relative pronoun but a C head, and as such it naturally did not show the changes indicated above.

The structure was thus the one given in (18):<sup>45</sup>



As can be seen, there were two C heads filled, the higher by *hogy*, the lower by *mint*. At this stage, the specifier of the lower CP could contain only a covert operator, which is not surprising since otherwise there would have been a violation of the Doubly Filled Complementiser Filter, which seems to have held in Hungarian.

Note that the Doubly Filled Complementiser Filter is not a special rule but it is essentially an economy principle that rules out the co-presence of two overt elements that have largely overlapping functions, such as a comparative operator and a comparative complementiser that are both equipped with [+rel] features, or as was shown in Chapter 3 in connection with Hungarian, the co-presence of comparative operators in distinct positions within one QP, for instance *amilyen* ‘how’ in the Q head and *amennyire* ‘how much’ in the [Spec,QP] position.

Such economy requirements hold not only for essentially left-peripheral elements; in Hungarian, as in other Uralic languages, the (suffixal) plural marker and the numeral are mutually exclusive in a similar way, as described by É. Kiss (2002: 152–153). The plural marker (-k

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<sup>45</sup> Again, note that for the time being the status of the negative-like element is not discussed here but is to be dealt with in section 5.6. As will be shown, the projection headed by this element is located in between the two CPs, such that the negative-like element is base-generated there and hence there is no need to cross either of the CP layers by head movement.

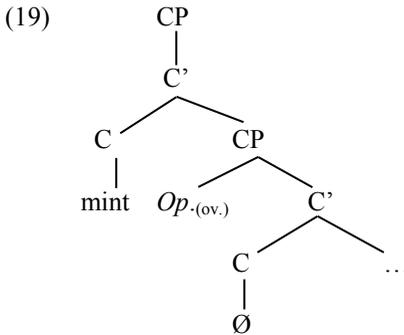
‘-s’) is assumed to be the head of a NumP, which dominates the NP; by contrast, the numeral (e.g. *két* ‘two’, *néhány* ‘some’) appears in [Spec,NumP]. Both of these elements are marked with the feature [+plural] but only one of them may be present in the structure at a time, hence Hungarian has configurations such as *lányok* ‘girls’ and *két lány* ‘two girl’ but not \**két lányok* ‘two girls’.

Turning back to the development of *mint*, the final step concerns the development of *mint* into a higher C head: this process involved the reanalysis of *mint* from C to C, and happened simultaneously with the disappearance of *hogy*. On the one hand, the fact that *mint* was reanalysed as a head responsible for the comparative Force required it to be base-generated in the relevant position, thus inducing a structural change and making *hogy* disappear. On the other hand, the disappearance of *hogy* from the construction made it possible for *mint* to start occupying the higher C head as an element base-generated there.

By *mint* appearing in the higher C head, it was possible for the comparative operator to appear in the specifier of the lower CP again, which is actually similar to the first step of the relative cycle. This time, however, operators were proper overt relative pronouns (such as *amennyi* ‘how many’, *ahányszor* ‘how many times’ and *amilyen* ‘how’) and this can be attributed to analogy with ordinary relative clauses. These do allow the co-presence of a lexical AP or NP, and since they are phonologically overt, Comparative Deletion is not attested in Modern Hungarian.

Interestingly, the use of these comparative operators together with *mint*, as described by Galambos (1907), was a point of disapproval for purists such as Zsigmond Simonyi, for the reason that they found the operator appearing after *mint* unnecessary. However, the co-presence of the C head and an operator in this case is just the repetition of a diachronic change which actually produced *mint* to be the C head introducing comparatives at all.

The structure of the final stage is shown in (19):



Showing the present-day configuration, (19) highlights that *mint* is located in the higher C head, the lower CP being headed by a zero complementiser, with its specifier optionally hosting an overt comparative operator (and potentially also a lexical AP or an NP).

#### 5.4. The relative cycle and Hungarian complementisers

One of the questions that arise in connection with the analysis presented above is whether the reanalysis processes attested in the case of *mint* can be observed for other Hungarian complementisers too. In this section I will show that the relative cycle and the reanalysis from lower to higher C head apply to all the four present-day Hungarian complementisers (cf. Bacskai-Atkari 2012b) and hence the behaviour of *mint* is not exceptional in this respect.

To start with, it was mentioned in the previous section that both the original comparative complementiser *hogy* ‘that’ and *mint* ‘than/as’ started as operators. In Modern Hungarian, there are four complementisers to consider: apart from *hogy* and *mint*, there is *ha* ‘if’ and *mert* ‘because’. As has long been argued for in the literature, all of these were originally operators (cf. Juhász 1991, 1992; Haader 1991, 1995) such that *hogy* meant ‘how’, *ha* meant ‘when’, *mint* meant ‘how’, and *mert* meant ‘why’. Examples for the original pronominal uses are given in (20):

- (20) a. furifcte muſia!|| etetý ýmletí. ug **hug** ana  
 bathes washes feeds breastfeeds so how mother  
 fciluttet.  
 child-POSS.3SG-ACC  
 ‘she bathes, washes, feeds and breastfeeds him as a mother  
 does her child’ (KTSz.)
- b. mvnyb [ele] **ha** tekunte [ek]effen  
 heaven-ILL.down when looked.3SG embellished  
 tegud e[ɫ] **ha** lata. ýfte[n]||fegnec  
 you-ACC too when saw.3SG deity-DAT  
 [ne]we mia ro[la]d ozun keppe[n]  
 name-POSS.3SG for you-DEL that.way  
 fcola  
 spoke.3SG  
 ‘when he looked down to heaven and saw you embellished,  
 he spoke of you that way for the name of God’ (KTSz.)
- c. Ez oz ýften **myntevt** efmeriuc!  
 this the God how.he-ACC know-1PL  
 ‘this is God as we know him’ (KTSz.)
- d. Sydou || mynth thez turuentelen / || fyom  
 Jew how do.2SG unlawful son-POSS-1SG  
**merth** hol byuntelen  
 why dies innocent  
 ‘Jew, what are you doing unlawfully, why does my son die  
 innocent’ (ÓMS.)

It has to be mentioned that though all future complementisers went through a functional split from these original operator functions, this did not take place at the same time, which also has a bearing on whether they still have their etymologically related operator counterparts in Modern Hungarian. The differences are summarised in (21):

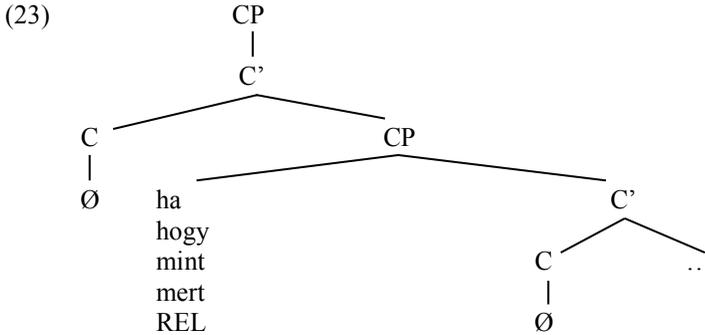
(21)

| Complementiser        | Original operator | Time of split                              | Present-day related operator  |
|-----------------------|-------------------|--|---|
| <i>ha</i> ‘if’        | <i>ha</i> ‘when’  | before Old Hungarian – Early Old Hungarian | –   |
| <i>hogy</i> ‘that’    | <i>hogy</i> ‘how’ | before Old Hungarian – Old Hungarian       | <i>hogyan</i> ‘how-Int.’, <i>ahogy</i> ‘how-Rel.’                   |
| <i>mint</i> ‘than/as’ | <i>mint</i> ‘how’ | Old and Middle Hungarian                   | <i>miképpen</i> ‘how’, <i>miként</i> ‘how’, <i>amint</i> ‘how-Rel.’ |
| <i>mert</i> ‘because’ | <i>mert</i> ‘why’ | Old and Middle Hungarian                   | <i>miért</i> ‘why’  |

Apart from future complementisers, ordinary relative pronouns – e.g. *ki* ‘who’, *mi* ‘what’ – were also located in the operator position, i.e. the specifier of the lower CP. An early example of *ki* is shown in (22):

- (22) Ef uimagguc || fzent peter urot. **Kinec** odut  
 and pray-IMP-1PL saint Peter lord-ACC who-DAT given  
 hotolm ovdonia. ef ketnie  
 power loose-INF-3SG and bind-INF-3SG  
 ‘and let us pray to the lord Saint Peter, to whom the power was given to loose and to bind’ (HB.)

The starting position of all these elements is shown in (23):

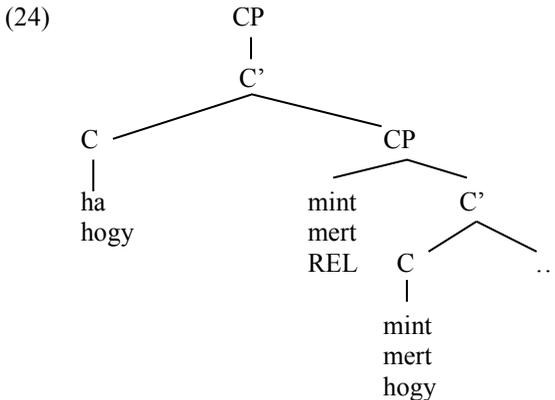


As can be seen, the original position is the same for all the elements in question. Note that these elements could occupy the same position at the same time rather before the Old Hungarian period than later: as changes started to affect some of them earlier, their positions also started to differ, as will be shown further on. What is important for us here is that as far as comparatives are concerned, the original comparative complementiser *hogy* ‘that’ and the present-day comparative complementiser *mint* ‘than/as’ started in exactly the same position and were reanalysed as C heads (and later on as higher C heads) in exactly the same way, though at different stages of the language; hence the relative cycle is attested in Hungarian comparatives at least twice.

The grammaticalisation of these complementisers followed the general mechanism of the relative cycle and hence the two basic economy principles, the Head Preference Principle (HPP) and the Late Merge Principle (LMP). As has been mentioned earlier, the functional split between the original operators and the new complementiser functions took place at different times, cf. (21). That is, while for *hogy* ‘that’ and *ha* ‘if’ it happened before the Old Hungarian period and partly in Early Old Hungarian, for *mint* ‘than/as’ and *mert* ‘because’ it took place in Old and Middle Hungarian. This led to a difference in their typical positions in Old and Middle Hungarian: *ha* was invariably a higher C head, while *hogy* was typically a higher C head but could also be base-generated in the lower C position. By contrast, *mint* and *mert* were either lower C heads or were still located in the lower [Spec,CP] position.

As for ordinary relative pronouns (e.g. *ki* ‘who’), they did not develop into C heads and hence stayed in the lower [Spec,CP] position. This is not the least due to relative pronouns being exceptional in some way but it can well be explained by the lack of feature loss in their case. Operators that came to be grammaticalised into C heads had to lose for instance their person and number features (if they had any), which is clearly not the case for ordinary relative pronouns. If this is due to feature loss, one may expect a similar process to happen elsewhere too, which is indeed the case: for instance, *where* in certain English dialects may also function as a complementiser, similarly accompanied by a loss of its original syntactic or semantic roles as a relative pronoun, see Comrie (1999: 88) and Brook (2011); similar phenomena are attested in various (southern) German dialects with *wo* ‘where’, cf. Bayer and Brandner (2008). The loss of features is seen as the “associated result” of the Late Merge Principle by Hancock and Bever 2009: 305), in that ‘the word that originally required a theta role, now becomes a pure “syntactic” word without a theta role’.

The possible positions for complementisers and operators in Old Hungarian are shown in (24):



As can be seen, the higher C head was filled by either *ha* or *hogy*, while the lower one hosted either *mint* or *mert*, or – less typically – *hogy*. On the other hand, the lower [Spec,CP] could contain the future

complementisers *mint* or *mert*, as well as ordinary relative operators. This naturally gives the combination *hogy mint*, as described in the previous section, and also the combinations involving *hogy* or *ha* and an ordinary relative pronoun such as *ki* ‘who’; however, as will be shown in the next section, there are several other combinations to be considered and these come in a systemic way.

### 5.5. Multiple and complex complementisers

By looking at the positions indicated in (24), the question arises whether and to what extent elements taking different positions could co-occur in the same subclause. The answer to the first part of the question is clearly positive as in Old and Middle Hungarian both co-occurrences of a higher C and a lower C and of a higher C and an operator (cf. Galambos 1907) existed.

If the higher C head was filled by *ha* ‘if’, it produced the combinations *hamint* ‘if as’, *hahogy* ‘if that’, as well as various combinations of *ha* + a relative pronoun. Consider the following example of *hamint*, used in conditional comparatives:

- (25) de **ha** **mýnt** <ak el aluttak volna  
 but if as only off slept-3PL be-COND.3SG  
 lelöketh istennek meg adaak  
 soul-POSS.3PL-ACC God-DAT PRT gave-3PL  
 ‘but as if they had only fallen asleep, they gave their souls to God’ (SándK. 28)

Examples for *hahogy* are shown in (26) below – the fact that the adverb *késen* ‘late’ can appear in between *ha* and *hogy* in (26a) shows that these two elements are base-generated as distinct C heads:

- (26) a. **Ha** késen **hogy** el nyugot az nap, hamar  
 if late that off set-PST.3SG the sun soon  
 esőt váry  
 rain-ACC expect-IMP.2SG  
 ‘if the sun has set late, expect rain soon’ (Cis. G3)
- b. Az én jó istenem, **ha hogy** sok ellenség,  
 the I good God-POSS-1SG if that many enemy  
 ream fegyverkezék, tolok megmente  
 I.SUB armed.3PL they.ABL PRT-saved.3SG  
 ‘my good God, if many enemies armed against me, saved me  
 from them’ (Balassa 32)

Though it is not typical for elements such as the adverb *késen* ‘late’ to move into a position above the lower C head, it is by no means impossible and since in (26a) the C heads *ha* ‘if’ and *hogy* ‘that’ clearly belong to one and the same left periphery (otherwise the sentence could not be assigned any valid interpretation), there is no reason to assume that *késen* would be located in a higher clause than the one obviously containing *hogy*.

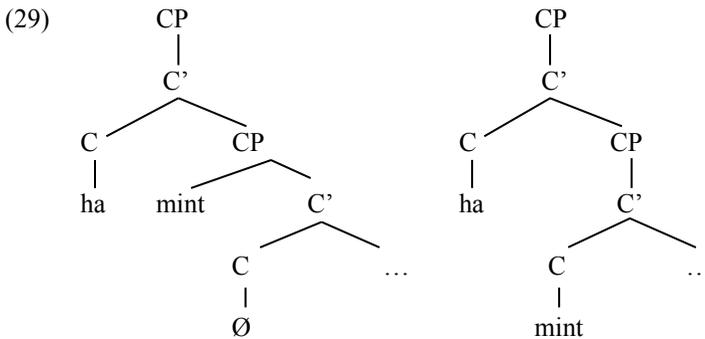
If the higher C head was filled by *hogy*, it resulted in combinations such as *hogymint* ‘that than’ and *hogymert* ‘that because’, as well as ones of *hogy* with relative pronouns. Consider the example of *hogymint* in (7), repeated here as (27):

- (27) edesseget erze nagyobb **hogymint** annak  
 sweetness-ACC felt.3SG bigger that-than that-DAT  
 elötte  
 before  
 ‘(s)he felt sweetness even more than before’ (LázK. 141)

The combination *hogymert* is illustrated in (28):

- (28) **Dehogy mert** zent ferenc ygen zeretiala  
 but-that because saint Francis well loves-was.3SG  
 ewtett tÿztagert es alazatossagert  
 him-ACC purity-FIN and humility-POSS.3SG-FIN  
 kyt valuala Monda nekÿ  
 who-ACC has.was.3SG said.3SG he.DAT  
 ‘but because Saint Francis liked him well for his purity and for his humility’ (JókK. 46)

The possible structures for the combinations dealt with in this section so far are shown below in (29), using the example of *hamint*:



The left-hand side diagram shows the type of combination where a higher C head (e.g. *ha*) is followed by an operator in the lower [Spec,CP] – this operator could be a future complementiser (e.g. *mint*) or an ordinary relative operator (e.g. *ki*). By contrast, the right-hand side diagram shows a structure where two C heads occur in one left periphery: this configuration was not available for ordinary relative operators as they did not develop into C heads at all.<sup>46</sup> The same structures were shown to have been valid for ordinary comparatives, see the representations in (17) and (18), respectively.

<sup>46</sup> This is due to the fact that relative operators kept features that are incompatible with C heads in Hungarian; see the discussion at the end of section 5.4.

As was said in connection with simplex complementisers, lower C heads started to move up to the higher C position and were later reanalysed as elements base-generated in that position. Interestingly, a lower C could move up even if the higher C was already filled by another element: in this case the two heads were adjoined. In line with Kayne's Linear Correspondence Axiom, adjunction resulted in the reverse order in the linear structure of the two heads (Kayne 1994); cf. also the Mirror Principle of Baker (1985, 1988).

Accordingly, in Old and Middle Hungarian the reverse order is found in the case of all C + C combinations mentioned in the previous section, hence: *mintha* 'as if', *hogyha* 'that if', *minthogy* 'than that' and *merthogy* 'because that'. This gives a symmetric arrangement of multiple and complex complementiser combinations:

(30)

|             | <i>ha</i>            | <i>hogy</i>            | <i>mert</i>      | <i>mint</i>     |
|-------------|----------------------|------------------------|------------------|-----------------|
| <i>ha</i>   | –                    | <i>hahogy</i>          | –                | <i>hamint</i>   |
| <i>hogy</i> | <u><i>hogyha</i></u> | –                      | <i>hogy mert</i> | <i>hogymint</i> |
| <i>mert</i> | –                    | <u><i>merthogy</i></u> | –                | –               |
| <i>mint</i> | <u><i>mintha</i></u> | <u><i>minthogy</i></u> | –                | –               |

As can be seen, for every C + C combination the reverse order is attested, the latter shown underlined in (30). These reverse order combin-

ations are complex C heads; moreover, they survive into Modern Hungarian as well, unlike the original C + C combinations. I will return to the issue of why this should be so later; for now, what is important to stress is that as far as the original meaning of the combinations is concerned, for any pair of C + C and complex C combinations it is true that they had the same meaning and function.

Examples for these combinations are given below in (31):

- (31) a. *kí menének zocafoc zerent mint ha*  
 out went-3PL custom-POSS.3PL according as if  
*az imadfagra mēnenec*  
 the prayer-SUB go-COND-3PL  
 ‘they went out as was their custom, as if going for prayer’  
 (GuaryK. 113–114)
- b. *vig orchaul elmegien vala, hogiha*  
 happy face-COM off-go-3SG was.3SG that-if  
*ingen nem hallanaĳa*  
 absolutely not hear-COND-3SG  
 ‘(s)he went away with a happy face, as if (s)he had absolutely not heard it’ (VirgK. 81)

- c. Mely bozzosagokot frater Bernald. | bÿzon zent.  
 which irritations-ACC brother Bernald indeed saint  
 nem csak engedelmest. | de es vÿgasagost  
 not only obeying but too joyfully  
 zenuediuala: | **Mert hogÿ** bizonual  
 suffered.3SG-was.3SG because that indeed  
 uoltoalna cristusnak tekelltes  
 was.3SG-be.COND.3SG Christ-DAT perfect  
 tanoÿtuanÿa nepnek vlatatÿa es  
 student-POSS.3SG folk-DAT detest-POSS.3SG and  
 emberek zemerme  
 people shame-POSS.3SG

‘which irritations brother Bernald, indeed a saint, suffered not only obeyingly but also joyfully: for he was indeed a perfect student of Christ, and the detest and the shame of people’ (JókK. 20–21)

- d. semi nagob nem mondathatik: **mint**  
 nothing greater not say-PASS-POSSIB-3SG than  
**hogh** legon istenek ania  
 that be.SUBJ.3SG God-DAT mother-POSS.3SG

‘nothing can be said to be greater than that she be the mother of God’ (TihK. 143)

The fact that complex complementisers of the type discussed here actually derive from the ones presented in the previous section suggests that the former type was less frequent in earlier texts than in later ones. This is indeed the case, as reinforced by the short survey I carried out on the four different translations of the gospels given in section 5.2. The number of each complex complementiser in each text is given below in (32):

(32)

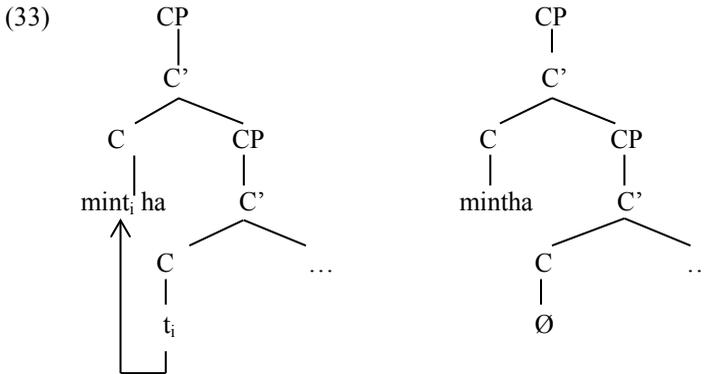
|                 | <b>Munich<br/>Codex<br/>(1466)</b> | <b>Jordánszky<br/>Codex<br/>(1516–1519)</b> | <b>Káldi<br/>translation<br/>(1626)</b> | <b>Neovulgata<br/>(1997)</b> |
|-----------------|------------------------------------|---|---|------------------------------|
| <i>hogyha</i>   | 9                                  | 8   | 9                                       | –                            |
| <i>mintha</i>   | –                                  | 1   | 3                                       | 7                            |
| <i>minthogy</i> | –                                  | –   | 4                                       | 1                            |
| <i>merthogy</i> | –                                  | 1   | –                                       | –                            |

As can be seen, it is only *hogyha* that has examples in the Munich Codex: all the other ones appear considerably later, with only sporadic examples in the Jordánszky Codex and a possibly more significant number of occurrences in later translations. It has to be mentioned that all of these combinations exist in Modern Hungarian and hence if they happen to be absent from the Neovulgata translation, it is merely accidental. The most important claim here to make is that the early and frequent appearance of *hogyha* is actually not surprising, taking into account that *hogy*, as has been said, preferably moved up even in its combinations with *ha* – as it was preferably a higher C head anyway – and hence it logically follows that *hogyha* appeared considerably earlier than all the other complex complementisers under scrutiny.

Having established this, we can conclude that all C + C combinations regularly developed their complex C counterparts by movement. On the other hand, it follows that the *hogy/ha* ‘that/if’+ relative pronoun combinations had no inverse order counterparts as there was no movement either: ordinary relative operators did not develop into C heads.

Though movement of the lower C head to the higher one was responsible for the appearance of complex complementisers, it has to be mentioned that these complex complementisers actually grammaticalised as such, i.e. they started to be base-generated as single C heads. This is again due to economy: base-generation is more economical than movement, cf. van Gelderen (2004).

Hence the structures underlying complex complementiser such as *mintha* could be the following:

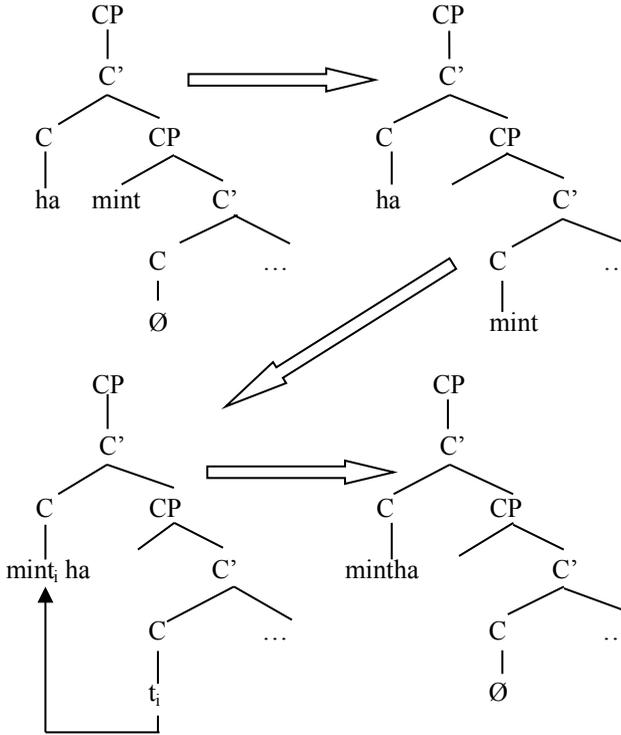


The left-hand side diagram shows the earlier configuration where the complex complementiser is derived by way of the lower C head moving to the higher one to form a complex unit via adjunction there. In the right-hand side diagram, the complex complementiser is already grammaticalised and is hence base-generated as a complex unit in the higher C head (that is, merged as such, in line with the view that Merge is more economical than Move): in this case the lower C head is zero.

This has the immediate consequence that Modern Hungarian no longer has C + C combinations, as there is no overt complementiser to occupy the lower C head. Accordingly, the combinations *hamint* ‘if as’, *hahogy* ‘if that’, *hogymint* ‘that than’ and *hogymert* ‘that because’ have disappeared, as opposed to fully grammaticalised complex C heads, which are still present. In this way, the analysis given here is suitable for explaining not only how complex complementisers arose but also why certain configurations necessarily disappeared.

The four main steps leading to complex grammaticalised complementisers are summarised in (34):

(34)

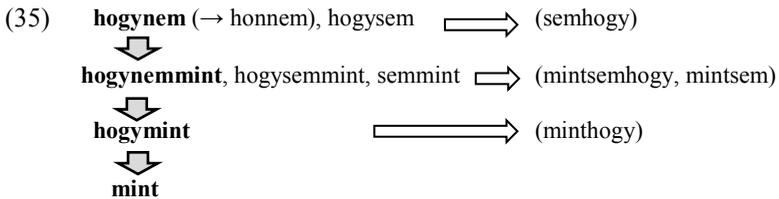


Note that this way not only the development of *mint* but also the emergence and the disappearance of *hogymint* can be linked to more generally attested grammaticalisation processes in the Hungarian language, apart from the theoretical foundations presented in section 5.1; hence the behaviour of comparatives in this respect is far from being exceptional.

## 5.6. The role of negative-like elements

Let us now return to the question of negative-like elements in Hungarian comparatives and examine how these data can be accommodated into the system described so far. As was mentioned in section 5.2, the comparative subclause initially contained the negative element *nem* ‘not’ (or, less typically, *sem* ‘neither’), which could still co-occur with *mint* ‘than/as’ and disappeared only later.

The following diagram shows the main points in the development of the left periphery of comparative subclauses expressing inequality, including now also the inverted orders:



As was also said before, the presence of the negative-like element is due to the negative polarity of the clause; more precisely, negative polarity enables the presence of negative elements but it is by no means necessary that all comparative subclauses overtly contain a negative element even if the polarity is still negative – hence the fact that *hogymint* could arise and that ultimately comparatives are marked only by *mint* in Modern Hungarian, just as in many other languages, e.g. English *than* or German *als*.

Still, the presence of a negative element is familiar from other languages as well (see Salvi and Vanelli 2004: 283–285; Seuren 1973: 532–537); let us consider the following Italian example:

- (36) Maria mangia più che **non** Paolo.  
 Mary eats more that not Paul  
 ‘Mary eats more than Paul.’

The comparative subclause in (36) includes the negative element *non* ‘not’, though semantically there is no negation involved. A similar phenomenon is attested in French too, as shown by the following example from Seuren (1973: 535, ex. 44):

- (37) Jean est plus grand que je **ne** pensais.  
 John is more tall.MASC that I not thought.1SG  
 ‘John is taller than I thought.’

It must be noted that the presence of the negative element is far from being obligatory in these languages, as can be seen from the Italian pair of (12a) and (36), where the latter (containing *non*) differs from the former only in style, in being more formal or elevated. I will not engage in analysing these differences, nor will I venture to examine the status of *ne* with respect to actual negation in Modern French; suffice it to say that though the negative function of these elements is no longer evident today, their origin is so, as is the case with the Old Hungarian *hogy nem*.

The presence of negative elements is not necessarily manifest in the form of a negative head but potentially some other negative element. This can be traced in Cockney English, as described by Seuren (1973: 535). Consider the following example (Seuren 1973: 535, ex. 48):

- (38) She did a better job than what I **never** thought she would.

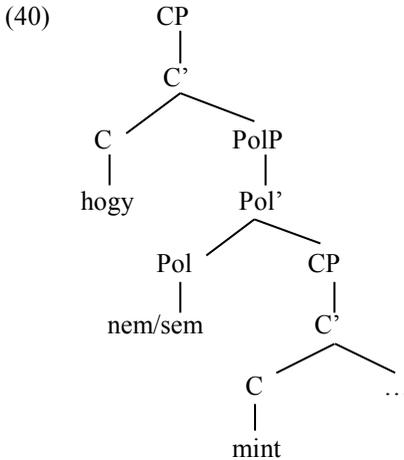
The phenomenon can partly be observed in Standard English, with respect to the acceptability of negative polarity items in the subclause, see Seuren (1973). Compare:

- (39) She would rather die than **lift a finger**.

Negative polarity items, such as *lift a finger* in (39), can appear only in clauses that have negative polarity and they are perfectly acceptable in comparative subclauses, hence there is reason to claim that comparative subclauses have negative polarity (cf. also Gergel 2010). I do not wish to elaborate further on the (optional) presence of negative elements in comparatives and on the possible semantic reasons thereof as this would be far beyond the scope of the present investigation – for that, see

Matushansky (2011). Note, however, that the negative element cannot be in a FocP: it can co-occur with foci, such as *Paolo* in (36) and these foci follow the negative element, hence the negative cannot be the head of FocP either.

Since negative elements such as *nem* or *sem* in Old and Middle Hungarian do not express negation but represent the negative polarity of the subclause, I assume that they head a polarity projection (PolP – cf. Homer 2011), which appears in between the two CPs:



The diagram in (40) shows the configuration where *mint* appears already as a C head; naturally, the previous stage would be for *mint* to be located in the lower [Spec,CP] position and initially the lower CP did not contain any overt element at all.

As can be seen, the PolP appears between the two CP projections headed by two distinct complementisers.<sup>47</sup> It has to be mentioned that

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<sup>47</sup> It has to be mentioned that while the overt presence of a Pol head is due to a polarity-sensitive context, there is no entailment the other way round: that is, not all polarity-sensitive contexts require an overt Pol head. As shown by Seuren (1973), a comparative subclause expressing inequality has negative polarity but this is not necessarily manifest in the presence of a Pol head: in English there is no Pol head at all but examples such as (38) and (39) demonstrate that the *than*-clause is a negative polarity environment. On the other

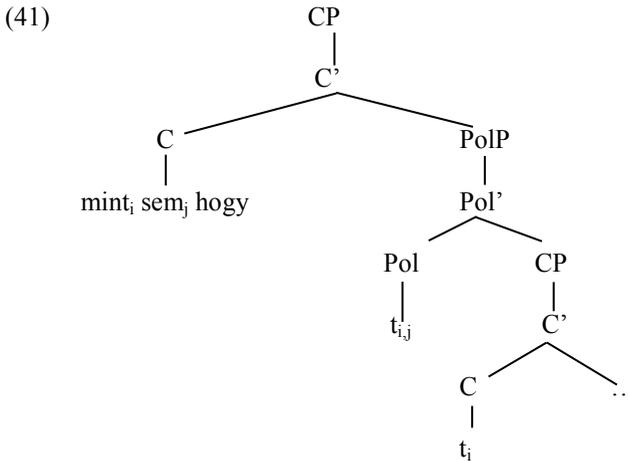
*nem* ‘not’ and *sem* ‘neither’ differ in that the former but not the latter became a clitic. This is also demonstrated by the fact that while in the Munich Codex (1466) it is invariably in the form *hogy nem*, in the Jordánszky Codex (1516–1519) it is *honnem (mint)*; that is, there is phonological assimilation – however, the same is not true for *sem*.<sup>48</sup>

The question arises whether the movement and adjunction analysis for complex complementisers presented in the previous section can be traced if the structure contained a negative-like PolP. This is indeed the case: the combination *mintsemhogy* is attested in the language (and survives into Modern Hungarian); the derivation is shown in (41):

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hand, though in Romance languages (see the Italian and the French examples) the presence of a Pol head tends to be possible, it is far from being obligatory. It seems that an overt Pol head appears only when the comparative C head is not unambiguously associated with a negative polarity environment, which occurs in cases when the comparative complementiser is the same as the general declarative C head – hence the presence of an overt, separate Pol head in Old Hungarian and in Romance languages, and its absence in Modern Hungarian and English.

<sup>48</sup> Note that the behaviour of *nem* ‘not’ and *sem* ‘neither’ as Pol heads is different from *nem* and *sem* as Neg heads: as a Neg head, *nem* is not a clitic but *sem* is (see É. Kiss 2002: 141–142). This again reinforces that *nem* and *sem* found in Old and Middle Hungarian comparative subclauses are categorically distinct from Neg heads; furthermore, this distinction cannot be the result of Neg heads moving up to the Pol head (hence from a projection below the CP-domain into a position in between the two CPs). In other words, though Pol heads are historically related to Neg heads, they can grammaticalise as Pol heads and are then base-generated directly as Pol heads. The same is true for French *ne* in examples such as (37): *ne* in itself is no longer able to express negation (that being rather expressed by *pas*) and hence its presence in comparative subclauses is clearly not an instance of true negation but is rather an overt indicator of negative polarity.



What happens in this case is exactly the same that was seen in connection with C + C underlying combinations, see (33). First the lower C head *mint* moves up to the head of the PolP, *sem* ‘neither’ and as adjunction takes the original lower head to the left of the original higher head, the result is the combination *mintsem* ‘than neither’. Conversely, the combination *mintsem* moves up to the higher C head in the same way, to left-adjoin to *hogy*, ultimately resulting in the combination *mintsemhogy* ‘than neither that’. Note that this process can be traced only if the PolP was headed by *sem* but not in the case of *nem* ‘not’, which was a clitic and hence did not take part in movement.

It must be highlighted that since the lower C head ultimately moves up to the higher C head position, its landing in the Pol head is only an intermediate step in the derivation but never a final state. In other words, though there is ample evidence that this movement step actually took place, there are no combinations that would include this step without the further movement of the combination to the higher C head, hence there are no combinations such as *hogy mintsem* ‘that than neither’ attested: if the higher C head was filled by *hogy*, then the result of *mint* moving up was invariably *mintsemhogy*, as indicated in (41) – if, however, the higher C head was empty, the combination was realized as *mintsem*.

Again, just as with combinations involving two C heads, it is only the grammaticalised complex C head that could remain in the language: configurations such as (40) disappeared on the one hand because lower C heads are no longer attested – and, on the other hand, overt Pol heads are not present in comparative subclauses either. The two changes are presumably not independent of each other, in the sense that the change from *hogy* to *mint* as the comparative complementiser is accompanied by the loss of an overt PolP. The key difference between *hogy* and *mint* seems to be that while *hogy* was a general subordination marker that appeared in a large number of other (and very different) constructions, *mint* is unambiguously associated with comparative Force. Note also that in Italian and French, where the optional presence of Pol heads is likewise attested, the comparative complementisers *che* and *que* behave exactly the same way as *hogy* in Old Hungarian; that is, they are not exclusive to comparatives. By contrast, *than* in English is unambiguously a comparative complementiser and though the presence of negative polarity items is permitted, as well as certain negative elements in, for example, Cockney English, there seems to be no grammaticalised Pol head present. In sum, the disappearance of the negative Pol heads in Hungarian is presumably due to the fact that, since the new comparative complementiser was unambiguously associated with comparative Force and hence negative polarity, the generation of an overt Pol head was no longer necessary to encode negative polarity and hence was ruled out by general principles of economy that disfavour the generation of superfluous structural layers.

### 5.7. Comparative Deletion and grammaticalisation

Although the relation between grammaticalisation and Comparative Deletion was touched upon in sections 5.2 and 5.3, let me briefly return to the issue in order to provide a systemic account for the changes in question. In addition to Hungarian, I will take German and Italian data into account by readdressing certain problems related to operator-like elements that were left unexplained in Chapter 3.

Based on the analysis given in Chapter 3, it should be clear that Comparative Deletion depends on the overtness of the operator – of

course, if the operator moves out on its own, then the AP may escape deletion simply by remaining in its base position, and, furthermore, if the operator is overt but does not take an AP at all, then AP-deletion is again not attested. The question is of course which of these configurations may lead to the grammaticalisation of the operator into a C head at all.

Starting with the case of the zero operator, it is obvious that, irrespective of whether the operator is a Deg head or a QP modifier, grammaticalisation is not attested in this case. The reason behind this is quite simple: grammaticalisation affects overt elements, in the sense that certain overt elements become reanalysed – in language acquisition – as elements having a different structural status underlyingly.

However, not all overt operators can be reanalysed as C heads: operators that take a lexical AP, or appear within a quantified DP, cannot be reinterpreted as heads since in these cases there is a visibly phrased-sized constituent moving to the [Spec,CP] position and as such could not be base-generated as a C head at all.

This leaves only one option for operators to be reanalysed as C heads and that is when the operator moves to the [Spec,CP] position on its own – either because it is a proform Deg head that does not take a lexical AP at all and does not appear as a nominal modifier, or because it is stranded from the lexical AP in most cases and ultimately starts to be interpreted as an element independent from the lexical AP itself.

On the other hand, the grammaticalisation of an operator into a (lower) C head naturally involves the appearance of new comparative operators: these are by no means necessarily overt but the point is that the degree expression has to have an operator element that is associated with the degree expressed by the subclause. As long as the comparative complementiser is in the lower C head and the operator moves to the specifier of the same CP, the presence of overt material in that [Spec,CP] position is generally ruled out by economy (the Doubly Filled Comp Filter). With the reanalysis of lower C heads into higher ones, however, overt operators – together with potential lexical phrases – may appear (again) in the lower [Spec,CP] position. In other words, while grammaticalisation from operator to lower C head feeds Comparative Deletion, grammaticalisation from lower C to higher C bleeds it.

### 5.7.1. Hungarian

It is not difficult to see how Hungarian data can be handled along the principles described above. As far as overt operators are concerned, there are altogether three in the history of the Hungarian language: *hogy*, *mint* and the present-day operators such as *amilyen* ‘how’ or *amennyire* ‘how much’.

Examples of *hogy* ‘how’ used as an operator in comparatives are scarce since, as has been argued for in the previous sections, *hogy* was already a complementiser – and preferably a higher C – in Old Hungarian too. An example from Early Old Hungarian was given in (20a), repeated here as (42):

- (42) *furifcte mufia!|| etety ýmletí. ug hug ana*  
 bathes washes feeds breastfeeds so how mother  
*fciluttet.*  
 child-POSS.3SG-ACC  
 ‘she bathes, washes, feeds and breastfeeds him as a mother does her child’ (KTSz.)

As can be seen, *hug* ‘how’ appears on its own at the beginning of the comparative subclause that expresses equality; since it is a VP-adverb, it is not surprising that it does not co-occur with a lexical AP or NP. This was most probably the case for *hogy* in general and taking also the fact into account that it could grammaticalise into a C head, it seems more than likely that *hogy* was a proform operator.

The next step is when *hogy* is already in the higher C head, above the PolP headed by the negative element *nem* ‘not’ (or *sem* ‘neither’), in examples such as (4b), conveniently repeated here as (43):

- (43) *mert emberi elme, mindenkoron kezzebb az*  
 because human mind always readier the  
*gonozra, hóg nem az iora*  
 evil-SUB that not the good-SUB  
 ‘because the human mind is always readier for evil than for good’  
 (BodK. 2r)

In these cases no overt comparative operators are attested until the appearance of *mint*; this is not surprising since, as was pointed out, operators – both interrogative and relative ones – that could have combined with lexical APs and NPs were missing from the language (cf. G. Varga 1992: 525). Before the appearance of *mint* (and its possible alternates *miképpen* ‘how’ and *miként* ‘how’), it seems plausible that Hungarian had zero comparative operators. Given that, it follows that if lexical material moved together with it, then this had to be eliminated by Comparative Deletion in order to avoid the violation of the overtiness requirement on left-peripheral elements.

On the other hand, it is not possible to detect whether APs obligatory had to move together with the zero operators, that is, whether zero operators were Deg heads or QP modifiers. This is so because most structures involving comparison are like the one in (43): apart from the complementiser – and, if applicable, the Pol head –, there is only one constituent that is overtly present in the subclause such that this constituent is focussed and the rest of the clause undergoes sluicing. This can also be observed in Modern Hungarian, as will be shown in Chapter 6 in more detail. Disregarding the case of subcomparatives, where the main contrast is expressed by the quantified expression itself, in comparatives the AP in the subclause is usually GIVEN and is preferably not pronounced, even if its appearance would be grammatical. In other words, while it is perfectly possible that Old Hungarian resembled German in that the overt realisation of a non-contrastive AP in its base position would have been grammatical, such examples are not attested and it may well be due to the mere fact that these APs would have been superfluous. Note, however, that the absence of such examples does not suggest the necessity of the English pattern in the way the presence of non-contrastive APs would explicitly imply the German pattern; the absence of certain structures in historical texts does not mean that these structures were ungrammatical and it is of course impossible to collect native judgements retrospectively.

The appearance of overt operators such as *mint*, *miképpen* and *miként* again represents a clear case: these operators were proforms that did not co-occur with lexical elements. Recall the example given in (5a), repeated here as (44):

- (44) mert        mastan   közelben    vagyon    a”mÿ  
 because    now        nearer     is         the-we  
           Idwesseegw̃nk        **honnem mÿnt**    eleeb    hÿttók  
           salvation-POSS.1PL    that.not    than    before    thought-1PL  
 ‘because now our salvation is nearer than we thought before’  
 (ÉrdyK. 3b)

Since in these cases the overttness condition is not violated, as there is an overt operator moving to the [Spec,CP] position, there is naturally no Comparative Deletion attested.

The reanalysis of *mint* into a C head resulted in a situation similar to the one involving *hogy* as a sole comparative complementiser, that is, there were zero comparative operators – as long as *mint* was a lower C head, the co-presence of overt material in the [Spec,CP] position is expected to be ruled out due to the Doubly Filled Comp Filter, and after *mint* was reanalysed as a higher C head, zero operators occur until the introduction of new – interrogative and relative – degree operators in Middle Hungarian.

It is not difficult to see why the operators in Modern Hungarian have not been reanalysed into C heads as *mint* and *hogy* previously did. The present-day operators can co-occur with lexical APs (and NPs), which rules out the possibility of their interpretation as C heads. Moreover, they also vary according to the subtype of comparative they appear in and show agreement features with the lexical material they take; in other words, they have features that C heads do not have in Hungarian. By contrast, *mint* (and also *hogy*) was a proform operator that appeared in all kinds of comparatives and was equipped with a [+compr] and a [+rel] feature, which are compatible with C heads having exactly the same features. The reanalysis from operator into C head hence involves the loss of the degree property but cannot be accompanied by the abrupt loss of essentially lexical features.

### 5.7.2. German

Seen in this light, let me re-address the issue of German *wie* ‘how’ that was touched upon in Chapter 3. The question was whether it can function as a comparative operator; recall that it is possible as an interrogative operator and then it is a Deg head:

- (45) a. **Wie groß** ist Johann?  
           how tall is John  
           ‘How tall is John?’
- b. \***Wie** ist Johann **groß**?  
           how is John tall  
           ‘How tall is John?’

The expectation is that if *wie* is a Deg head in comparative subclauses as well, then it should appear together with the AP in the [Spec,CP] position. This is, however, not the case:

- (46) a. \*Maria ist größer als **wie groß** Johann ist.  
           Mary is taller than how tall John is  
           ‘Mary is taller than John.’
- b. \*Der Tisch ist länger als **wie breit**  
           the.MASC table is longer than how wide  
           das Büro ist.  
           the.NEUT office is  
           ‘The table is longer than the office is wide.’

The data in (46) indicate that *wie* cannot be a comparative operator in German: both as a Deg head and as a QP modifier it should tolerate the co-presence of the lexical APs in the lower [Spec,CP] position.

Consider now the following data involving the apparent stranding of the APs:

- (47) a. <sup>??</sup>/\* Maria ist größer als **wie** Peter **groß** ist.  
 Mary is taller than how Peter tall is  
 ‘Mary is taller than Peter.’
- b. <sup>???</sup> Der Tisch ist länger als **wie** das  
 the.MASC desk is longer than how the.NEUT  
 Büro **breit** ist.  
 office wide is  
 ‘The desk is longer than the office is wide.’

If *wie* were a Deg head operator, then the structures in (46) should be grammatical and the ones in (47) should be ruled out, which is not the case: though the sentences in (47) are not fully acceptable, they are clearly better than the ones given in (46), which are ungrammatical. On the other hand, if *wie* were a QP operator then it may be expected that structures involving extraction and the stranding of the AP are judged better; however, constructions involving the movement of the entire degree expression, as in (46), should not be ruled out.

The co-occurrence of *wie* with lexical APs shows that *wie* cannot be a proform Deg head either since then the presence of lexical APs would not be allowed, cf. the behaviour of *what* in English. It is nevertheless possible for *wie* to appear without a lexical AP:

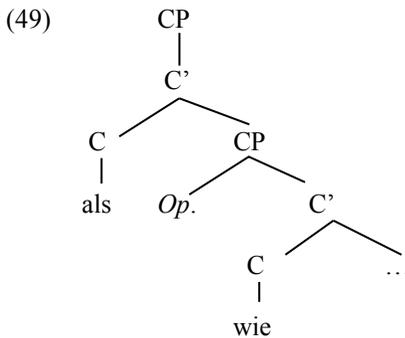
- (48) <sup>???</sup> Maria ist größer als **wie** Peter.  
 Mary is taller than how Peter  
 ‘Mary is taller than Peter.’

Though the average judgement of constructions like (48) is quite marked, there is considerable variation among speakers: whereas for some the use of *wie* is indeed very marked, many speakers find it only slightly marked and judge it as a substandard form, and there are yet other speakers according to whom sentences like (48) are fully acceptable. Hence the markedness of (47) is in fact the consequence of *wie* in *als*-clauses and not of the overt presence of the APs.

All this points to the conclusion that *wie* in German *als*-clauses is not an operator but rather a lower C head, in line with the same claim made by Jäger (2012). Note also that the grammaticalisation of *wie* ‘as’

in comparatives expressing equality has already taken place (cf. Jäger 2012) and hence the way German crucially differs from what was attested in connection with *mint* in Hungarian is that comparatives expressing inequality and ones expressing equality do not develop in a parallel fashion.

The representation of the left periphery of subclauses involving *als* ‘than’ and *wie* is hence the following:



The structure in (49) shows why lexical APs cannot co-occur with *wie* in the [Spec,CP] position: *wie* is itself a C head and hence cannot take an AP into the specifier position, which hence hosts covert operators: these may or may not move together with the AP, but if they do, then Comparative Deletion naturally applies. There seems to be no candidate for an overt comparative operator in German and even if there were one, it might not be acceptable to co-occur with *wie* in the lower C head. Note also that it was possible for *wie* to be reanalysed as a C head because, just as in the case of *mint* in Hungarian, it did not show feature incompatibility with a grammaticalised C head.

Since the operator can be moved out on its own, as shown in (47), the zero operator does not show different behaviour in *als wie* clauses from the ones in ordinary *als*-clauses: it is a QP modifier and hence as far as German comparative operators are concerned, there is only one such available.

In sum, the fact that German *wie* is not available as a comparative operator is the result of grammaticalisation processes that are attested in other languages as well.

### 5.7.3. Italian

Let us turn to Italian, which is similar to German as far as the possible candidate for a comparative operator is concerned, as was shown in Chapter 3. The possible candidate is *quanto* ‘how much’, which is a Deg head in interrogatives:

- (50) a. **Quanto** **alta**      è Maria?  
           how      tall-FEM is Mary  
           ‘How tall is Mary?’
- b. \***Quanto**      è Maria **alta**?  
           how      is Mary      tall-FEM  
           ‘How tall is Mary?’

As can be seen, *quanto* ‘how much’ is also a Deg head and the AP cannot be stranded. However, the grammatical interrogative configuration in (50a) has no matching counterpart in comparative subclauses:

- (51) a. Maria è più alta di **quanto** Giovanni  
 Mary is more tall-FEM of how John  
 sia **alto.**  
 be.SUBJ.3SG tall-MASC  
 ‘Mary is taller than John.’
- b. \*Maria è più alta di **quanto alto**  
 Mary is more tall-FEM of how tall-MASC  
 Giovanni sia.  
 John be.SUBJ.3SG  
 ‘Mary is taller than John.’
- c. La tavola è più lunga di **quanto**  
 the.FEM table is more long-FEM of how  
 l’ufficio sia **largo.**  
 the-office be.SUBJ.3SG wide-MASC  
 ‘The table is longer than the desk is wide.’
- d. \*La tavola è più lunga di **quanto**  
 the.FEM table is more long-FEM of how  
**largo** l’ufficio sia.  
 wide-MASC the-office be.SUBJ.3SG  
 ‘The table is longer than the desk is wide.’

If *quanto* were a Deg head, then (51b) and (51d) should be grammatical and (51a) and (51c) would be ruled out. Since this is not the case, *quanto* in comparative subclauses, unlike *quanto* in interrogatives, is not a Deg head. Again, just as was argued for in German, the fact that it is not possible for it to appear together with the AP in the [Spec,CP] position shows that it cannot be a QP modifier either. Finally, *quanto* cannot be a proform operator either because then (51a) and (51c) should not be acceptable but they are in fact fully grammatical.

In other words, *quanto* is not a comparative operator but a C head: the operator itself is a zero that may move out on its own, leaving the AP overt in its base position. It has to be mentioned that in this case

there is only one overt C head, which is *quanto*: the element *di* ‘of’ is a preposition, which takes a DP in its complement position and the comparative subclause is in fact an adjunct to this DP and not a complement clause (cf. Bacskai-Atkari 2010a). The C head *quanto* is in complementary distribution with *che* ‘that’, hence there is reason to believe that both are generated as higher C heads.

I do not wish to further elaborate on this here as the discussion would then necessarily have to involve details of subordination in Italian that are not relevant here. What is crucial for us is that Italian again displays a grammaticalisation process leading to the reanalysis of an original operator into a C head and hence resulting in the asymmetry between interrogative operators, which still prevail, and their original relative operator counterparts, which have been reinterpreted as C heads. Unlike *wie* in German, *quanto* in Italian is not only marginally acceptable as a comparative C head but is in fact a standard one, just as is the case with *mint* in Hungarian.

# Chapter Six

## Ellipsis without Comparative Deletion

The last chapter of my dissertation is devoted to the examination of ellipsis phenomena other than Comparative Deletion that are also responsible for the derivation of comparative subclauses. So far I have been dealing with the elimination of the degree expression itself, that is, a QP or a DP containing a QP in the subclause; though in Chapter 4 I also examined the case of VP-ellipsis in English to a limited extent. The importance of taking other deletion phenomena into consideration is that comparative subclauses tend to include the ellipsis of more material than that, resulting in there being only one overt constituent following the complementiser. In languages such as English, this means that there is ellipsis taking place besides Comparative Deletion. In other languages, such as Hungarian, where Comparative Deletion is not available since comparative operators are overt, this also raises the question of how the degree expression can be eliminated at all. As I will show, in such cases there is no movement taking place to the lower [Spec,CP] position and hence the well-formedness of the construction can be repaired only via ellipsis, which in turn eliminates larger units than the quantified expression itself.

### 6.1. Ellipsis in English

First of all, let us consider ellipsis phenomena in English comparatives, which operate in addition to Comparative Deletion and which are responsible for the formation of typical comparative constructions that tend to involve only contrastive elements in the comparative subclause overtly. Though these processes tend to be instances of VP-ellipsis, I will show that the ellipsis domain can also be larger, even though the mechanism of ellipsis is essentially the same.

### 6.1.1. VP-ellipsis revisited

As was already seen in Chapter 4, comparative subclauses may involve VP-ellipsis, which is an optional deletion operation. To gain a fuller picture of its role in the formation of comparatives, let us first have a look at the data from various subtypes of comparatives.

As far as predicative structures are concerned, the following pattern arises:

- (1) a. The table is longer than the office is wide.
- b. Ralph is more enthusiastic than Jason is.
- c. Ralph is more enthusiastic than Jason.

The full string is represented in (1a), where the lower copy of the QP (*wide*) remains overt, since it is contrastive. As there is no contrastive QP in the subclause in (1b), the lower copy is regularly eliminated but there is no VP-ellipsis; finally, in (1c) the verb is eliminated since it is recoverable.

The picture is slightly more complicated in nominal comparatives:

- (2) a. Ralph bought more houses than Michael bought flats.
- b. Ralph bought more houses than Michael did flats.
- c. Ralph bought more houses than Michael did.
- d. Ralph bought more houses than Michael.

As was shown in Chapter 4, nominal comparatives allow a full structure to appear in the subclause, as in (2a); the lexical verb may be eliminated, as in (2b), resulting in a gapping construction. By contrast, in (2c) not only the lexical verb but also the nominal expression is eliminated, under identity with its matrix clausal antecedent; the same is true for (2d), where the auxiliary is also absent and hence there is only one overt DP (*Michael*).

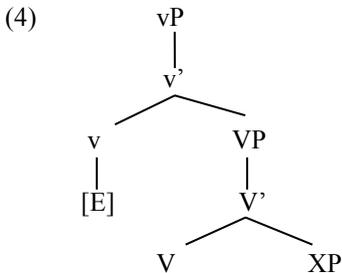
Finally, attributive comparatives show the following distribution:

- (3) a. Ralph bought a bigger house than Michael did a flat.  
 b. Ralph bought a bigger house than Michael did.  
 c. Ralph bought a bigger house than Michael.

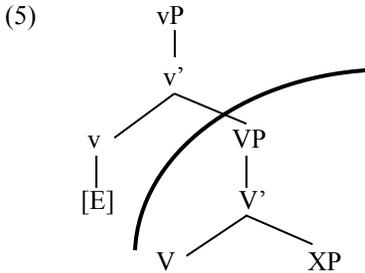
The structure parallel to the one in (2a) is not allowed, as shown in Chapter 4 and hence the lexical verb must be eliminated, as in (3a). If the NP is GIVEN, as in (3b) and (3c), then it is also deleted: this may result in an overt auxiliary, as in (3b) or just a single overt DP (*Michael*), as in (3c).

I claim that in all of these cases the mechanism responsible for eliding the verb is VP-ellipsis, and hence there is no specific ellipsis mechanism applying in comparative subclauses, that is, there is no need for a separate process such as Comparative Ellipsis (cf. also Kennedy 2002; Lechner 2004). Based on Merchant (2001) I assume that ellipsis is carried out via an [E] feature that is present on a functional head, such that it instructs PF to eliminate its complement, that is, the head itself remains intact. Moreover, based on the discussion given in Chapter 4, I also assume that the presence of an F-marked constituent may stop the linear deletion process; note that this is prosodically licensed if the constituent is also aligned to the right edge of an Intonational Phrase (cf. Szendrői 2001; based on Selkirk 1984, 1986; Nespors and Vogel 1986; Chen 1987; Inkelas 1989; McCarthy and Prince 1993; Neeleman and Weerman 1999; Truckenbrodt 1999 among others).

In the case of VP-ellipsis, the [E] feature can be located in a *v* node above the VP (or any thematic *vP*). This is schematically represented below:



As can be seen, the [E] feature is located in the  $v$  head above the VP and hence deletion at PF will affect the complement of  $v$ , that is, the VP (the domain of ellipsis):

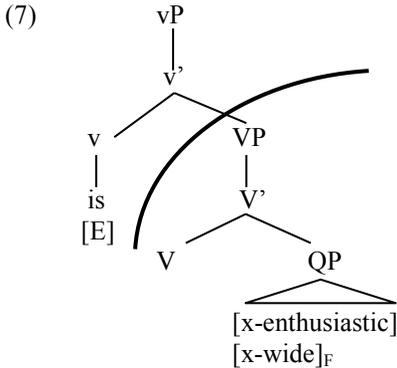


This leaves the  $v$  head itself intact and deletes the VP afterwards, including the V head and the XP in the complement position of the V head. However, if the XP (or a subpart thereof) is contrastive, then it can withstand deletion, as follows:

- (6) a.  $v_{[E]} [_{VP} \cancel{V} [XP]]$   
 b.  $v_{[E]} [_{VP} \cancel{V} [XP]_F]$

Note that the presence of the [E] feature is optional in itself; on the other hand, if the XP is a non-contrastive lower copy, then it is regularly deleted as a lower copy irrespectively of the [E] feature and hence VP-ellipsis.

Let us now turn to the particular cases outlined at the beginning of this section. In predicative structures like (1), the  $v$  node is headed by the copula (*is*) and the XP is a QP:



Obviously, if the [E] feature is not present on the  $v$  node, then the  $QP$  *x-enthusiastic* is deleted regularly as a lower copy, resulting in the structure in (1b), while the  $QP$  *x-wide* is realised overtly since it is F-marked, as in (1a). The representation in (7) shows the case when the [E] feature is present on the  $v$  head: the ellipsis domain is the  $VP$  and the  $v$  head itself (*is*) remains intact. This means that a non-contrastive  $QP$  such as *x-enthusiastic* is deleted, giving a structure like (1b) but note that the same structure emerges even without the presence of the [E] feature too. On the other hand, a contrastive  $QP$  such as *x-wide* is not deleted, resulting in a structure like (1a), which is again the same output that emerges without the presence of the [E] feature too.

At this point it may seem that the presence of the [E] feature does not make any difference as far as the final structure is concerned; furthermore, it does not seem to matter either whether the verb itself is GIVEN or not does not since the [E] feature does not delete the verb itself. The importance of the [E] feature will become clearer when considering attributive and nominative structures; before turning to them, however, let me briefly discuss one issue related to predicative structures that is crucial in understanding the importance of where the [E] feature is located.

Let us suppose that the [E] feature can be located on a node immediately dominating the  $vP$  headed by *is*, call it an I head. This would mean that the I head itself is not affected by deletion but its complement is and hence the ellipsis domain would be the entire  $vP$  and not just the

VP, as in (7). Following the analysis given above, this would mean that if the QP is GIVEN, then the entire vP is deleted, while a contrastive QP is overt (but the v head is not). In other words, this would predict that both (8a) and (8b) should be grammatical, which is clearly not the case:

- (8) a. Ralph is more enthusiastic than Jason ~~is enthusiastic~~.  
 b. \*The table is longer than the office ~~is wide~~.

The ungrammaticality of (8b) shows that the [E] feature cannot be located right above the vP node containing *is*. On the other hand, the grammaticality of (8a) raises the question how the auxiliary can still be eliminated. Note that the vP in question is a phase boundary and hence in structures like (8a) the entire vP-phase is eliminated at PF – this is perfectly possible because it affects only recoverable material, while this option would render an invalid construction in the case of (8b). I adopt the view that phases can be split: that is, material is transferred only to PF or LF (Marušič 2005: 129–130; based on Felser 2004, Bobaljik and Wurmbrand 2005; cf. also Marušič and Žaucer 2004). In the particular case, this means that the vP headed by *is* in (8a) is not transferred to PF but only to LF and hence its absence is actually due to the lack of PF-transfer and not to PF-deletion.<sup>49</sup>

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<sup>49</sup> The lack of spellout in these cases may also account for constructions such as (i) below:

- (i) Ralph is taller than me.

As can be seen, the DP following *than* is in the accusative case, even though it is underlyingly a subject in the subordinate clause. Note that if the entire subclause overt, then the subject is obligatorily in the nominative:

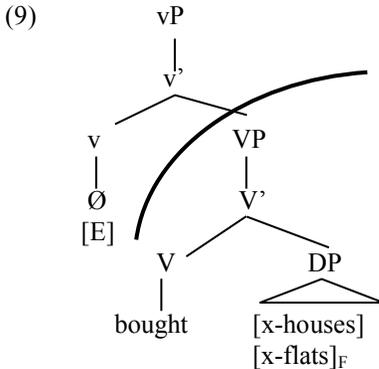
- (ii) Ralph is taller than I am.

It is known that nominative Case is assigned to the subject by a finite inflection, which is overt in (ii) but not in (i) – hence if the finite inflection is absent, then the subject in the nominative is either fully ungrammatical or at least severely degraded:

- (iii) ??/\*Ralph is taller than I.

In English, the default case is the accusative (cf. Schütze 2001) and if there is no overt case assigner, then nominal expressions appear in the accusative. The problem with deriving (i) by means of some ellipsis process instead of the lack of spellout of the vP is essentially as follows. If the vP is spelt out to PF, then there is an overt case assigner up until

Let us now turn to nominal comparatives, as given in (2). In these structures the *v* node is either zero or is headed by the auxiliary *do*; the XP is a DP functioning as the object. Consider first the case when there is no overt auxiliary:

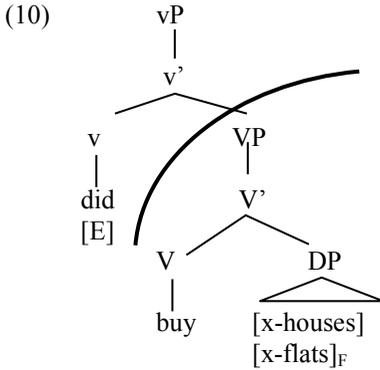


If there is an [E] feature, then it is on the *v* head. If there is no [E] feature, the VP is not elided; however, since the DP is actually a lower copy, it is deleted regularly as a lower copy (and hence *houses* is not overt), while it remains overt if it is contrastive (as in the case of *flats*). The picture is slightly different if the [E] feature is present since in that case the VP is the ellipsis domain: if the DP is not contrastive, this eliminates the entire VP but if the DP is contrastive, then it stays overt.

Naturally, it is also possible that the *v* head is filled by the auxiliary *do*:

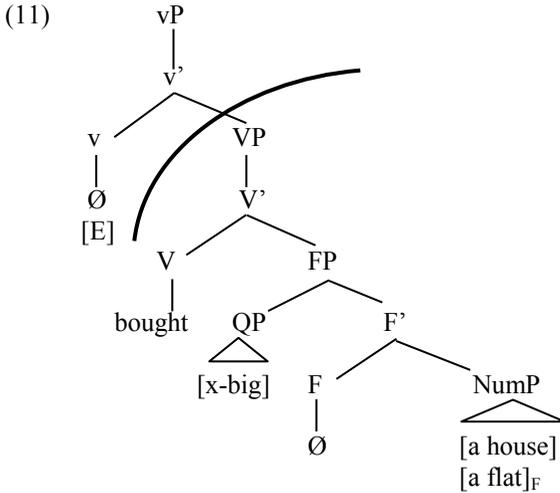
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ellipsis applies and consequently the subject should appear as *I*. If, however, the *vP* is not spelt out, then it follows naturally that there is no overt case assigner and hence the DP appears in the default case (that is, in the accusative). In previous approaches (e.g. Hankamer 1973) *than* was treated as a preposition in these cases but this is ad hoc inasmuch as there is no evidence for *than* being a preposition otherwise. However, a phase-based approach is able to account for constructions like (i): the *vP* is present in the syntax and is sent to LF, hence the similarity to cases like (ii) but the same *vP* is not sent to PF and hence is absent as far as Case assignment is concerned. In this way, structures like (i) and (ii) are connected but they are not derived from each other; rather, they are the surface results of two possibilities regarding the spellout of the *vP* to PF. For an alternative solution to the paradox given in Hankamer (1973), see Kántor (2008d).



The insertion of the auxiliary is motivated precisely because in the absence of the lexical verb the tense morpheme could not be spelt out: in other words, the dummy auxiliary appears when there is an [E] feature on the *v* head but not otherwise, since the overt co-occurrence of *did* and *buy* in structures like (10) would violate general rules of economy. The ellipsis domain is the VP and only contrastive elements, such as the DP *flats* can withstand linear deletion, as in (2b); otherwise the entire VP is eliminated at PF, as in (2c).

Finally, let us consider what happens in attributive comparatives. The crucial difference from nominal comparatives lies in the presence of a functional FP layer above the NumP (see Chapter 4), the specifier of which hosts the QP. Again, the *v* head may or may not be filled by the dummy auxiliary. In (11) below, there is no overt *v* head:

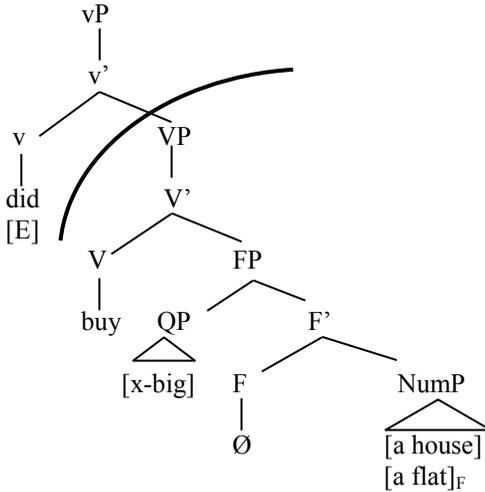


If the entire FP is GIVEN, then it can be deleted regularly as a lower copy: in these cases if there is no [E] feature on the v head, the lexical V may remain overt in the structure. Otherwise, as was argued for in Chapter 4 in detail, the presence of the [E] feature on the v head is necessary since the QP must be eliminated – recall also that this requirement is not sensitive to whether the lexical AP is contrastive or not but it stems from an overtness requirement on operators moving to a left-peripheral position and hence a contrastive AP would render an ungrammatical configuration.

It follows that the presence of the [E] feature on the v head causes the elimination of the lexical V and also of the QP and only a contrastive NumP (such as *a flat*) may remain overt. Note that if the NumP is not contrastive, then the entire FP can be eliminated as a lower copy.

The situation is essentially the same if the v node contains the dummy auxiliary:

(12)



Again, the lexical verb and the QP are deleted and the dummy auxiliary *did* remains overt; the NumP is elided if it is not contrastive, as in (3b) and withstands linear deletion if it is contrastive, as in (3a).

### 6.1.2. Different domains of ellipsis and syntactic ambiguity

The analysis presented so far provides a unified account for ellipsis phenomena in English comparatives. Elliptical clauses tend to contain only a single contrasted constituent overtly. Note that although in the examples considered so far this constituent was invariably the subject, this is not necessarily the case, as shown by (13) below:

(13) More girls ate sandwiches than hamburgers.

In this case, the remaining DP constituent in the subclause is *hamburgers*, which is an object. The derivation of the subclause is outlined in (14):

(14) [CP than [CP [~~DP x many girls~~] [<sub>IP</sub> [~~DP x many girls~~] [<sub>VP</sub> ate [<sub>DP</sub> hamburgers]<sub>F</sub>]]]]

As can be seen, the highest copy of the quantified DP (*x-many girls*) in the [Spec,CP] position is eliminated due to the overttness requirement. In addition, the rest of the clause is elided except for the object DP (*hamburgers*), which is possible because the lower copies of the quantified DP and the lexical verb are not contrastive.

Since the lower copy of the subject DP is regularly eliminated, and VP-ellipsis can take place independently, there is no reason to suppose that the two processes are connected. However, this is not necessarily so in cases when the subject and the quantified expression are independent. Consider:

- (15) Mary drank ale more often than sherry.

The derivation is shown below:

- (16) [<sub>CP</sub> than [<sub>CP</sub> [<sub>AP</sub> ~~x-often~~] [<sub>IP</sub> [<sub>DP</sub> ~~Mary~~] [<sub>VP</sub> ~~drank~~ [<sub>DP</sub> sherry]<sub>F</sub>] [<sub>AP</sub> ~~x-often~~]]]]]

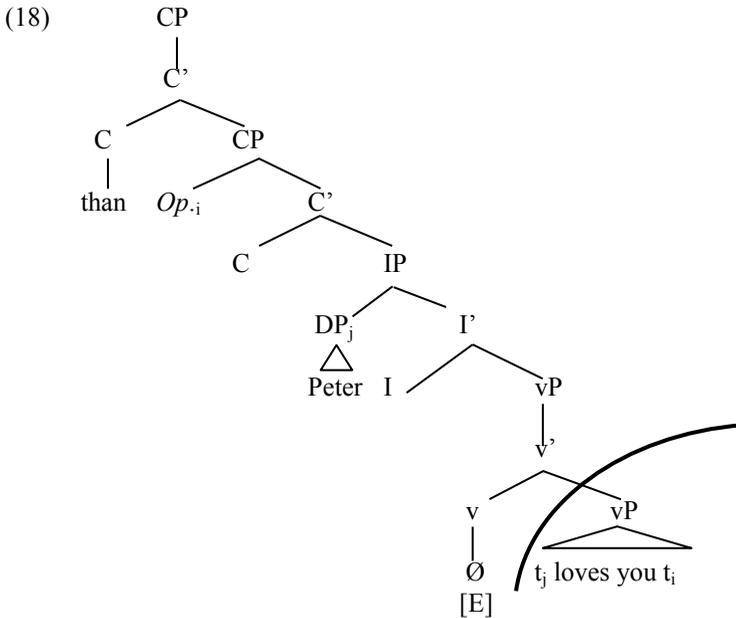
In this case, the lower copy of the quantified adverb (*x-often*) is elided in its base position; the subject DP *Mary* and the lexical verb are deleted together. This is possible if the [E] feature is located on the C head and ellipsis in this case naturally affects both the subject and the verb, neither of which are F-marked.

As shown by Merchant (2001), ellipsis is carried out via an [E] feature that is present on a functional head: in sluicing, for instance, this functional head is a C in English and as *wh*-pronouns located in the lower [Spec,CP] remain overt in sluicing constructions, this is rather the lower C head than the higher one. In cases like (14), then, if the [E] feature is located on this C head, ellipsis affects the non-contrastive lexical verb. This option is preferable to locating the [E] feature on the *v* head because it is preferable to elide the maximal largest unit (cf. Merchant 2008). Similarly to the cases of VP-ellipsis, an F-marked constituent blocks the linear deletion process and hence the DP *hamburgers* remains overt.

The availability of [E] on both C and *v* is responsible for certain structural ambiguities. Consider the following examples:

- (17) a. I love you more than Peter.  
 b. I'm a linguist. I like ambiguity more than most people.

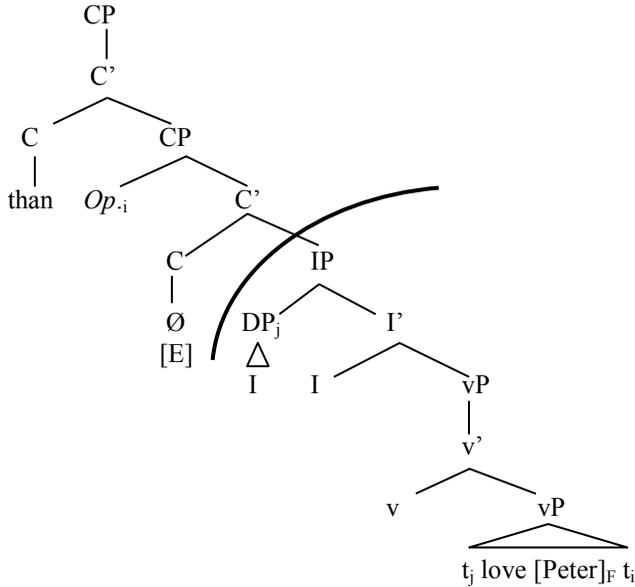
In both cases the DP following *than* can be interpreted either as the subject or the object, as there is no overt Case distinction either. Taking the example in (17a), the ellipsis domain for a structure containing *Peter* as the subject is shown below:



As can be seen, in this case the contrastive element is the subject and hence the [E] feature can only be located on a v head and not on C; since there is no contrastive element in the ellipsis domain, the entire vP is eliminated.

By contrast, if *Peter* in (17a) is an object, then the following takes place:

(19)



As can be seen, in this case the ellipsis domain is the complement of a C head equipped with the [E] feature. Ellipsis hence affects the entire IP and stops only at the F-marked DP *Peter*. Note that if the [E] feature were located on a v head just like in (18), then the subject would also remain overt and hence (20) should be grammatical, which is not the case:

(20) \*I love you more than I Peter.

The fact that the feature [E] is located as high as possible in the structure is essentially in line with economy requirements since the elimination of a larger unit is hence the result of a single process but the possibility of [E] appearing on a lower functional head is not excluded either.

Hence ambiguity may result from there being two possible underlying structures, with respect to the position of a remnant DP in the subclause. On the other hand, ambiguity may also be the result of which

projection is responsible for withstanding deletion. Consider the following example:<sup>50</sup>

(21) More people die each year from falling coconuts than sharks.

The sentence in (21) is ambiguous and the three possible readings are paraphrased with fuller structures in (22) below:

- (22) a. More people die each year from falling coconuts than sharks do.  
 b. More people die each year from falling coconuts than from sharks.  
 c. More people die each year from falling coconuts than from falling sharks.

The most plausible meaning is the one given in (22b) but the other two meanings are also available and congruent. To derive the sentence in (21) with the meaning of (22a), the [E] feature has to be present on the v head and the entire VP is elided; the subject DP *sharks* is left intact because it falls outside of the ellipsis domain. Note that the DP *x-many sharks* is the quantified expression in the subclause and hence it is moved from the VP first into the [Spec,IP] position as the subject and then further to the [Spec,CP] position as the quantified expression – the copy in the [Spec,CP] position is eliminated via Comparative Deletion (due to the overtness requirement) and the lowest copy would have to be regularly deleted anyway. For the sake of convenience, I do not include these copies in the representation below, which hence shows exclusively the effect of VP-ellipsis:

(23) [<sub>CP</sub> than [<sub>IP</sub> [<sub>DP</sub> x-many sharks]<sub>F</sub> [<sub>VP</sub> [<sub>VP</sub> die [<sub>PP</sub> from falling coconuts]]]]]]

Naturally, the [E] feature cannot be located on the C head since then the contrastive DP (*sharks*) would stop the deletion process to apply further.

<sup>50</sup> I am indebted to Jenneke van der Wal for calling my attention to this particular example.

However, in order to derive the readings in (22b) and (22c), the [E] feature is present on the C head and it stops only at the clause-final contrastive element, which is either a full DP or a part thereof. In the case of the reading given in (22b), the following happens:

- (24) [<sub>CP</sub> than [<sub>IP</sub> [<sub>DP</sub> ~~x many people~~] [<sub>VP</sub> [<sub>VP</sub> die [<sub>PP</sub> from [<sub>DP</sub> sharks]<sub>F</sub>]]]]]]

By contrast, for a reading such as the one in (22c), there also has to be an AP present within the DP, which is also elided:

- (25) [<sub>CP</sub> than [<sub>IP</sub> [<sub>DP</sub> ~~x many people~~] [<sub>VP</sub> [<sub>VP</sub> die [<sub>PP</sub> from [<sub>DP</sub> [<sub>AP</sub> falling]<sub>F</sub>]]]]]]]]

Note also that the PP may be able to withstand deletion too, as in (22b), which is then derived as follows:

- (26) [<sub>CP</sub> than [<sub>IP</sub> [<sub>DP</sub> ~~x many people~~] [<sub>VP</sub> [<sub>VP</sub> die [<sub>PP</sub> from [<sub>DP</sub> sharks]]<sub>F</sub>]]]]]]

This is possible because F-marking may affect either the entire PP or the DP: just as an F-marked lexical element (the noun *sharks*) can project this property up to the DP level, the same may be projected up to the PP.

Naturally, the ellipsis processes described above could be examined in other constructions as well; however, since the aim of the present investigation is not to provide a unified account for ellipsis but to investigate the structure of comparative constructions, I will leave such questions open here. The advantage of the analysis presented in this section lies in the fact that it provides a unified framework for the various outputs, which are hence the results of otherwise optional processes and general requirements on GIVEN/contrastive lower copies. While the lack of PF-spellout of a vP-phase is an option and so is the presence of an [E] feature on a functional head, once these options are taken, the way ellipsis applies is predictable. In other words, all deletion rules applying in English comparatives can be reduced to general principles.

## 6.2. Ellipsis in Hungarian

The question arises whether and to what extent the analysis given in section 6.1 can be applied to other languages, such as Hungarian; in English, the higher copy of the quantified expression is regularly eliminated in the [Spec,CP] position due to the overtness requirement but this is not so in languages that have overt comparative operators. Yet, the final linear structure of comparative subclauses in Hungarian tends to be strikingly similar to their English counterparts: that is, only contrastive elements are preserved and the quantified expression is not visible either.

### 6.2.1. Sluicing as VP-ellipsis

First of all, let us turn to examples containing a GIVEN verb: in all of these cases there is a synonymous pair of sentences where one contains a full subclause and the other shows the result of ellipsis. I will argue that in these ellipsis examples the [E] feature is located on a functional head at the left edge of the verbal domain, which is hence essentially similar to cases of VP-ellipsis in English.

Consider the following examples for predicative structures:

- (27) a. Mari magasabb volt, mint **amilyen magas** Péter  
 Mary taller was.3SG than how tall Peter  
**volt.**  
 was.3SG  
 ‘Mary was taller than Peter.’
- b. Mari magasabb volt, mint Péter.  
 Mary taller was.3SG than Peter  
 ‘Mary was taller than Peter.’

The sentence in (27a) represents the full structure of a predicative comparative subclause, that is, the subclause that does not contain ellipsis. By contrast, the one in (27b) is the result of ellipsis, since only a contrastive DP (*Péter*) remains overt and both the finite verb (*volt*) and the

quantified expression (*amilyen magas*) are elided. As far as their semantics is concerned, the two sentences are equivalent. The question that arises is how the quantified expression is deleted since Comparative Deletion is not applicable (the operator being visible); furthermore, (27a) suggests that the quantified expression and the finite verb are not even adjacent.

Before attempting to provide an answer to this, let us see some examples for nominal comparatives:

- (28) a. Mari több macskát vett, mint **ahány**  
 Mary more cat-ACC bought.3SG than how.many  
**macskát Péter vett.**  
 cat-ACC Peter bought.3SG  
 ‘Mary bought more cats than Peter did.’
- b. Mari több macskát vett, mint Péter.  
 Mary more cat-ACC bought.3SG than Peter  
 ‘Mary bought more cats than Peter did.’

The (more) complete string of items is given in (28a) and the one in (28b) is the result of ellipsis affecting the quantified DP (*ahány macskát*) and the lexical verb (*vett*). The picture is similar in the case of attributive structures:

- (29) a. Mari nagyobb macskát vett, mint **amilyen**  
 Mary bigger cat-ACC bought.3SG than how  
**nagy macskát Péter vett.**  
 big cat-ACC Peter bought.3SG  
 ‘Mary bought a bigger cat than Peter did.’
- b. Mari nagyobb macskát vett, mint Péter.  
 Mary bigger cat-ACC bought.3SG than Peter  
 ‘Mary bought a bigger cat than Peter did.’

Again, (29a) shows the complete string of items containing the finite verb and the quantified DP (*amilyen nagy macskát*), while in (29b) these

elements have been elided from the subordinate clause. Both in (28) and in (29) it seems that the quantified expression and the finite verb are not adjacent and hence the question posed in connection with (27) remains: that is, how both of these elements can be elided if the elements are not adjacent. There are two basic possibilities: first, there might be two different processes involved (even though the elimination of the highest copy of the quantified expression cannot be the result of Comparative Deletion), or there is a single process that is able to affect both elements that are adjacent at some point. In what follows, I will argue for the latter.

That there is indeed a correlation between the deletion of the quantified expression and the finite verb is shown by the phenomenon termed as Comparative Verb Gapping by Bacskai-Atkari and Kántor (2012). This is the observation “that if the operator is deleted, the finite verb must also be deleted” (Bacskai-Atkari and Kántor 2012: 49). In other words, while examples (27)–(29) clearly show that structures containing both the quantified expression and the finite verb are grammatical and so are ones where both of these elements are elided, the absence of an overt quantified expression seems to require the deletion of the finite verb. This is demonstrated by the ungrammaticality of the following sentences (but cf. also the examples given in Bacskai-Atkari and Kántor 2012: 54–56):

- (30) a. \*Mari magasabb volt, mint Péter **volt**.  
 Mary taller was.3SG than Peter was.3SG  
 ‘Mary was taller than Peter.’
- b. \*Mari több macskát vett, mint Péter  
 Mary more cat-ACC bought.3SG than Peter  
**vett**.  
 bought.3SG  
 ‘Mary bought more cats than Peter did.’
- c. \*Mari nagyobb macskát vett, mint Péter  
 Mary bigger cat-ACC bought.3SG than Peter  
**vett**.  
 bought.3SG  
 ‘Mary bought a bigger cat than Peter did.’

The ungrammaticality of the examples in (30) shows that the deletion of the quantified expression should affect the GIVEN finite verb as well.

The core argument of Bacskai-Atkari and Kántor (2012: 56–59) is that when there is no overt quantified expression in a Hungarian comparative subclause, it is so because the operator failed to undergo movement to the [Spec,CP] position before spell-out to PF. However, it is ungrammatical to have a phrase containing a relative operator in its base position; more precisely, there is an unchecked [+rel] feature on the operator, and the construction can be saved only by deletion (Bacskai-Atkari and Kántor 2012: 58).

Interestingly, the phenomenon is not restricted to comparative subclauses but can be found in certain relative clauses as well; consider the following set of examples (based on Bacskai-Atkari and Kántor 2012: 59, ex. 32):<sup>51</sup>

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<sup>51</sup> It has to be highlighted that ordinary relative clauses in Hungarian do not contain the complementiser *mint* ‘as’: they are introduced by a zero complementiser and contain overt relative operators, there being no zero relative operators in Hungarian. If, however, there is an overt *mint* in the subclause, then the relative operator is licensed to be absent (under the conditions discussed in connection with (31) above) since there is an overt marker introducing the subordinate clause. In other words, the sentences in (31a) and (31b) would be

grammatical without *mint* as well. It is also worth mentioning that the pronoun in the matrix clause is a composite of the prefix *ugyan-* ‘same’ and the pronoun *azt* ‘that-Acc.’ but it could appear in the simple form of *azt* as well; however, the constructions sound more natural with the emphatic version given in (31). Since the pronoun is also marked for case, the DP containing the lexical noun (*a könyvet* ‘the book’) can also be left out. The variations concerning relative clause constructions containing the matrix pronominal element *ugyanazt* and the overt relative pronoun *amit* are summarised in (i) below:

- (i) Ugyanazt (a könyvet) olvasom, (mint) amit Péter  
 that.same-ACC the book-ACC read-1SG as what-ACC Peter  
 (olvas).  
 reads  
 ‘I am reading the same (book) that Peter is reading.’

Interestingly, the same options are available for comparatives expressing equality; these contain the matrix clausal pronoun *olyan* ‘so’ or *ugyanolyan* ‘self-same’ and if there is an overt comparative operator in the subclause, then the complementiser *mint* can be left out:

- (ii) Ugyanolyan könyvet olvasok, (mint) amilyet Péter (olvas).  
 self.same book-ACC read-1SG as how-ACC Peter reads  
 ‘The book I am reading is like the one Peter is reading.’

Again, the noun can be left out from the matrix clause, provided that the pronoun *ugyanolyan* takes the relevant case endings (this of course results in a change in the meaning):

- (iii) Ugyanolyat olvasok, (mint) amilyet Péter (olvas).  
 self.same-ACC read-1SG as how-ACC Peter reads  
 ‘What I am reading is like what Peter is reading.’

The same option is available in ordinary comparative subclause expressing equality:

- (iv) Mari olyan magas, (mint) amilyen az anyja.  
 Mary as tall as how the mother-POSS.3SG  
 ‘Mary is as tall as her mother.’

However, this is not possible in comparatives expressing inequality:

- (v) Mari magasabb, \*(mint) amilyen az anyja.  
 Mary taller than how the mother-POSS.3SG  
 ‘Mary is taller than her mother.’

This shows that there is a difference in the selectional restrictions between the two types: while the degree element *olyan* may select for a comparative subclause introduced by *mint* or by zero, the degree element *-bb* ‘-er’ selects exclusively for *mint* as a C head. The requirement to have an overt relative operator in the subordinate clause in the absence of *mint* is a requirement that holds in the subclause and is essentially one that makes the presence of some overt clause-type marker necessary: in this respect, a relative operator is

- (31) a. Ugyanazt a könyvet olvasom, mint  
 that.same-ACC the book-ACC read-1SG as  
**amit** Péter olvas.  
 what-ACC Peter reads  
 ‘I am reading the same book that Peter is reading.’
- b. Ugyanazt a könyvet olvasom, mint  
 that.same-ACC the book-ACC read-1SG as  
**amit** Péter.  
 what-ACC Peter  
 ‘I am reading the same book that Peter is reading.’
- c. \*Ugyanazt a könyvet olvasom, mint Péter  
 that.same-ACC the book-ACC read-1SG as Peter  
**olvas.**  
 reads  
 ‘I am reading the same book that Peter is reading.’
- d. Ugyanazt a könyvet olvasom, mint Péter.  
 that.same-ACC the book-ACC read-1SG as Peter  
 ‘I am reading the same book that Peter is reading.’

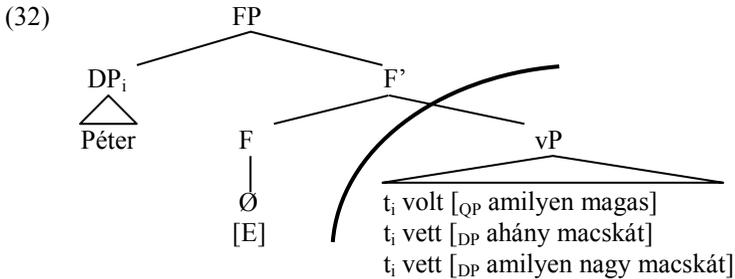
The relative clauses in (31) differ from ordinary relative clauses in that they also contain the complementiser *mint* ‘as’ but the structure is not comparative (as there are no degree expressions either in the matrix clause or in the subordinate clause). The point is that since there is an overt complementiser at the left periphery, the relative operator *amit* ‘what’ may be deleted, which would not be possible otherwise. Since Hungarian lacks zero relative operators, the absence of an overt relative operator from a relative clause can only be the result of deletion.

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sufficient because it is also equipped with the [+rel] feature and in comparatives also with a [+compr] feature. I will not venture to investigate the difference between *olyan* and *-bb* in this respect (it is presumably related to their different morphological status, that is, *-bb* is a bound morpheme but *olyan* is not).

The full version is given in (31a), containing both the operator and the finite verb (*olvás*); note that the verb can be elided even if the operator is overt, as shown by (31b) and the same would be true for comparatives as well (cf. Bacskai-Atkari and Kántor 2012: 59). The ungrammatical configuration in (32c) lacks an overt operator but the finite verb is present; finally, the construction in which both the operator and the finite verb are deleted is again grammatical, as in (31d). This reinforces the hypothesis that the absence of the operator (or of the phrase containing the operator) is due to some ellipsis process that takes place in the verbal domain: that is, when the operator fails to move up to the [Spec,CP] position.

As argued for by Bacskai-Atkari and Kántor (2012: 57–59), what happens in the constructions containing ellipsis is sluicing: hence the subclauses in (27b), (28b) and (29b) all contain an [E] feature on the F (focus) head and thus the complement of the F head is elided. The ellipsis domain is schematically drawn in (32):<sup>52</sup>



The analysis follows the claim made by van Craenenbroeck and Lipták (2006) that sluicing in Hungarian is carried out by an [E] feature located on the F head; on the other hand, it is also a fairly standard assumption that PF may save a construction via deletion, which eliminates some

<sup>52</sup> Note that although there is a vP projection in the complement of the F head in all cases, these vPs actually fall into two types. The vP headed by the copula *volt* ‘was’ is a functional one, just like in English, whereas the vP headed by the lexical verb *vett* ‘bought’ is a thematic (agentive) vP. This difference is immaterial in the case of (32) but will be important if the verbs are contrastive, as will be shown in the next two sections.

uninterpretable feature (see the discussion in Chapter 4 and cf. also Kennedy and Merchant 2000: 131).

As was argued for in Chapter 3 in connection with extractable degree operators, the quantified expression moves up first to the edge of the verbal domain and subsequently to the [Spec,CP] position, and a contrastive lexical AP is preferably stranded in the [Spec,FP] position. In the examples derived by ellipsis, however, there is obviously no movement to the edge of the verbal domain either since then the lexical element in the quantified expression should precede the focussed DP *Péter*, which is not the case; alternatively, the ellipsis domain could be larger by way of placing the [E] feature on a C head, but then the entire subclause would have to be elided. Since the FP is a functional extension of the verbal domain, the F head is essentially a functional v head: locating the [E] feature on this head is thus similar to what was attested for in English.

On the other hand, note that the informational structural status of the quantified expression does not affect the ellipsis processes in the way it was attested for English. The reason behind this is that they are not the lower copies of a moved constituent that may be realised overtly under special conditions but they are the only copies since movement has not taken place; furthermore, due to the presence of an overt operator with unchecked features, they are ungrammatical in their base position irrespectively of whether they are contrastive or not. Consequently, elliptical comparatives of the type in (32) are only possible if the quantified expression is GIVEN since the elimination of an F-marked phrase would violate recoverability.

### 6.2.2. Contrastive verbs in predicative structures

However, the question arises what happens if the verb is not GIVEN. Consider first the following example for a predicative structure (cf. also Bacsikai-Atkari and Kántor 2012: 55, exx. 28a–b):

- (33) Mari magasabb, mint Péter **volt**.  
 Mary taller than Peter was.3SG  
 ‘Mary is taller than Peter was.’

As can be seen, the finite verb (*volt*) is overt in the subclause but there is no overt quantified expression present; however, unlike the sentences in (30), it is still grammatical. The difference is that *volt* in (33) is not GIVEN since the zero copula in the matrix clause is in the present tense and hence the past tense of *volt* expresses new information that would not be recoverable if the verb were elided.

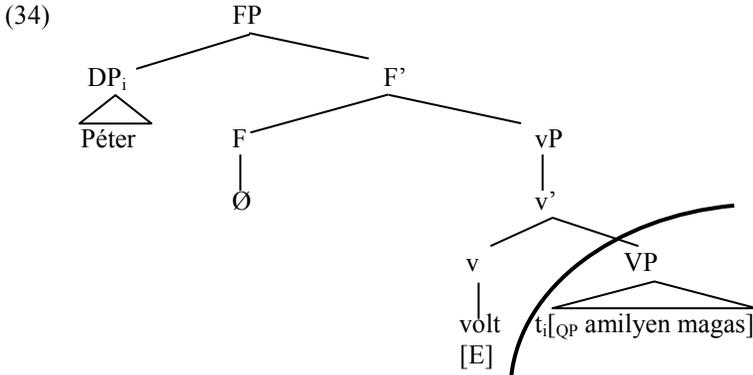
This is possible if the [E] feature is located on a functional head lower than the F head; that is, on the head filled by the copula itself: this proposal was made by Bacskai-Atkari and Kántor (2011) and the relevant functional projection was identified as the AspP (aspectual phrase). Since the AspP is also a functional extension of the verbal domain (similarly to the FP), I will simply refer to this projection as a vP, as also indicated in (32): it has to be stressed that in the case of the copula, this vP is not a thematic but a functional layer with the same function that could be observed in English predicative structures. The reason why the [E] feature cannot be located on this v head in (30a) is that the [E] feature has to be located as high as possible and in (30a) the copula does not carry new information and hence should be deleted: this is enabled if the [E] is on the F head, as demonstrated by (27b).

Note that even though the copula remains overt and carries new information in (33), the main stress still falls on the focussed DP *Péter*, just as in (27b). This is not surprising since the copula is a function word: as stated by the Lexical Category Condition (Truckenbrodt 1999: 226) and the Principle of Categorical Invisibility of Function Words (Selkirk 1984: 226), function words are to be treated as invisible with respect to constraints holding at the syntax–phonology mapping and hence they do not receive main stress but are rather phonologically dependent on another element – in (33), it is the preceding DP *Péter* (cf. É. Kiss 2002: 74). On the other hand, main stress is assigned to the DP because Intonational Phrases are left-headed in Hungarian: hence main stress falls on the focussed constituent in a focus construction and not on the main (lexical) verb (cf. Szendrői 2001: 50–53).<sup>53</sup>

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<sup>53</sup> In other words, nuclear stress falls on the leftmost element that may bear nuclear stress. This excludes topics from being assigned main stress as topics are treated as extrametrical (cf. Szendrői 2001: 49, based on Truckenbrodt 1999). On the other hand, the complementiser is not to be stressed either, though, as shown by Kenesei and Vogel (1989, 1995, 1998), complementisers belong to the same Intonational Phrase that the entire subclause

The derivation of (33) is schematically given in (34):



The difference from (32) lies in the fact that here the [E] feature is located on the *v* head containing *volt* and not on the [F] head: this is possible because this *vP* is a functional projection and because in (34) the maximal GIVEN constituent is the VP and not the *vP*, hence the highest functional head where the [E] feature can be located is the *v*.

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belongs to. However, based on the Lexical Category Condition (Truckenbrodt 1999: 226) and the Principle of Categorical Invisibility of Function Words (Selkirk 1984: 226), function words are to be treated as invisible with respect to constraints holding at the syntax–phonology mapping: as a consequence, the complementiser *mint* ‘than’ may not receive strong stress. In the analysis provided by Sato and Dobashi (2012) for English, it is shown that complementisers are phonologically dependent on the word that immediately follows them. Since the present dissertation is not centred on prosody and the mapping rules between syntax and prosodic structure, I do not wish to elaborate on these issues any further here; for a recent discussion on the syntax–prosody mapping in Hungarian comparatives, see Bacskai-Atkari (2013a).

### 6.2.3. Contrastive verbs in attributive and nominal structures

The importance of all this becomes straightforward when considering nominal and attributive comparative examples such as (35), where the verb that carries new information is a lexical one and as such is actually F-marked.<sup>54</sup>

- (35) a. ? Mari több macskát vett, mint Péter  
 Mary more cat-ACC bought.3SG than Peter

**látott.**

saw.3SG

‘Mary bought more cats than Peter saw.’

- b. ? Mari nagyobb macskát vett, mint Péter  
 Mary bigger cat-ACC bought.3SG than Peter

**látott.**

saw.3SG

‘Mary bought a bigger cat than Peter saw.’

As can be seen, the lexical verb in the subclause (*látott*) is different from the one in the matrix clause (*vett*); the sentences are acceptable but marked (individual ratings may differ as far as the degree of markedness is concerned).

Note that although in (32) the projection headed by the lexical verb (*vett*) is a vP, this is a thematic vP layer (adopting a layered

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<sup>54</sup> Since the present dissertation is not particularly concerned with the theory of focus in general, I do not attempt to investigate the issue of verbs and focus in detail. As shown by Kenesei (2006), instances where the verb seems to be focussed do not involve the focusing of the V head as such but either the VP or the entire proposition is focussed. This is actually in line with my analysis here and the examples in this section clearly demonstrate that it is not merely a verb in the subclause that is contrasted with the one in the matrix clause but rather an entire proposition: there are other elements that are contrastive, such as the subject DP in the examples in (35). However, since in the construction under scrutiny contrastive elements are located above the VP (all thematic vP layers) and elements that are left in the thematic verbal domain are non-contrastive, what really matters to us here is indeed the status of the lexical verbal head, which behaves differently with respect to the ellipsis domain depending on whether there is propositional contrast or not.

analysis of the Hungarian verb phrase, cf. É. Kiss 2008, 2009) and not a functional one as with the copula. This means that in order to derive the constructions in (35), the lexical verb has to move up to a functional *v* head that hosts the [E] feature in order to escape deletion; since the quantified DPs are not present overtly, ellipsis must have taken place, as should be obvious from the discussion in this section. Since the lexical verb has to undergo a movement operation that it would not take otherwise, the construction is marked.

Moreover, in (35) the main stress has to fall on the verb in the subordinate clause; this follows from the fact that in (35) there are two propositions compared and hence the contrast is expressed by the main verb. However, this would not be possible if the DP *Péter* were located in a focus – [Spec,FP] – position because then the main stress would be assigned to that constituent. Hence in (35) the DP *Péter* has to move to a topic position in order to escape both ellipsis and main stress (cf. Szendrői 2001 on the extrametricality of topics).

There are a number of arguments in favour of this analysis – both of the movement of the lexical verb and the non-focussed nature of the subject DP. Evidence comes from constructions involving a verbal particle; consider first the following examples that do not involve ellipsis:<sup>55</sup>

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<sup>55</sup> As was mentioned before, contrastive verbs involve the contrast between entire propositions and not merely verbal heads; in (36), for instance, the subject DPs in the two clauses are also different. Though contrastive elements tend to appear preverbally, it is also possible to have contrastive elements that follow the verb. Consider the following example:

- (i) Nagyobb macskát vettem **ma**, mint amekkorát láttam  
 bigger cat-ACC bought-1SG today than how.big-ACC saw-1SG  
**tegnap**.  
 yesterday

‘I bought a bigger cat today than the one I saw yesterday.’

In this case, the adjuncts *ma* ‘today’ and *tegnap* ‘yesterday’ are also contrasted and they are phonologically prominent. In this position, as pointed out by Szendrői (2001: 53–55), elements receive extra stress by an additional prosodic rule and not by the nuclear stress rule; by default, it is more economical to move a phrase to the FP for assigning stress than to leave it in the VP but in (i) above the verb is also contrastive and would not receive main stress by default if there were an element in the [Spec,FP] position. This is also in line with the analysis given by Kenesei (2006), in that in the case of VP-focus or proposi-

- (36) a. Mari több macskát vett, mint **ahány**  
 Mary more cat-ACC bought.3SG than how.many  
**macskát** Péter **meglátott**.  
 cat-ACC Peter PRT-saw.3SG  
 ‘Mary bought more cats than Peter noticed.’
- b. Mari nagyobb macskát vett, mint **amekkora**  
 Mary bigger cat-ACC bought.3SG than how.big  
**macskát** Péter **meglátott**.  
 cat-ACC Peter PRT-saw.3SG  
 ‘Mary bought a bigger cat than Peter noticed.’

In (36), the comparative subclause contains the verbal particle *meg*, which precedes the lexical verb: adopting the analysis given by É. Kiss (2008), this is because the particle moves to the specifier position of a functional projection above the lexical vP – in her analysis this is referred to as PredP (predicate phrase) but this layer is essentially the same as the FP here (in the sense of a functional projection, not of a “focus phrase”). In other words, a verbal particle preceding the lexical verb is in complementary distribution with a focussed constituent that would also move to this position and hence the verbal particle + verb order is indicative of the fact that there is no focussed constituent in the [Spec,FP] position and the DP *Péter* in (36) is a topic (though contrastive). The main sentential stress in (36) hence falls on the leftmost element of the Intonational Phrase, which is the verbal particle *meg* (cf. also Szendrői 2001).

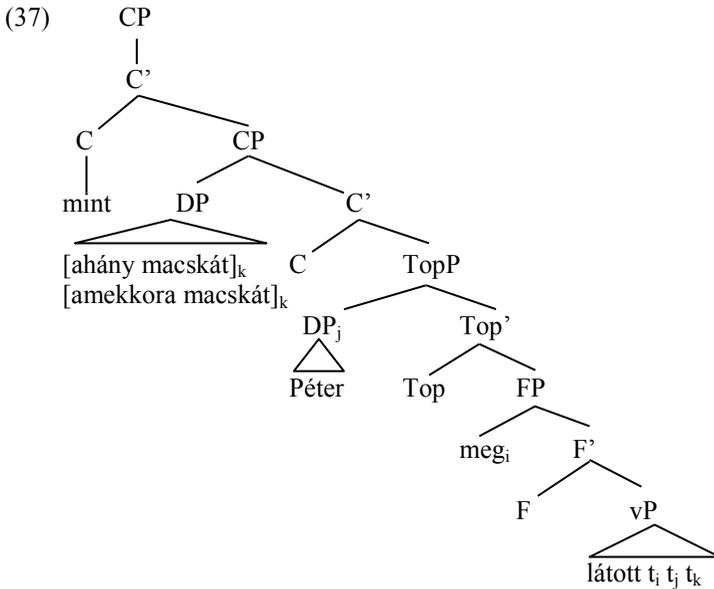
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tional focus the contrastive elements following the verb are assigned focal stress. Note that it is construction is not possible if the verb is not contrastive, that is, when there is no propositional contrast:

- (ii) \*Nagyobb macskát vettem **ma**, mint amekkorát vettem  
 bigger cat-ACC bought-1SG today than how.big-ACC bought-1SG  
**tegnap**.  
 yesterday  
 ‘I bought a bigger cat today than yesterday.’

In this case the adverb *tegnap* should move up to the [Spec,FP] position in order to give a felicitous construction.

The structure of the subclauses in (36) is represented in (37):<sup>56</sup>



Since in this case the quantified DP moves up to the [Spec,CP] position, there is no ellipsis taking place. As the [Spec,FP] is filled by the verbal particle *meg*, main sentential stress will fall on this element, which renders a felicitous sentence since the main contrast involved in the comparison is expressed by the verb.

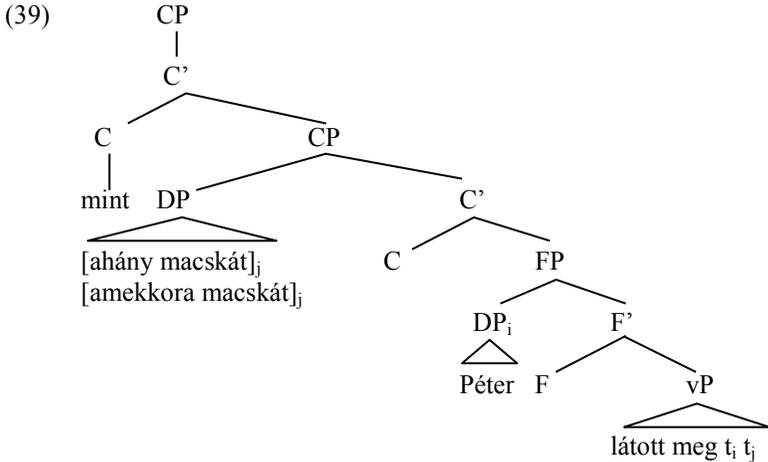
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<sup>56</sup> I follow generally accepted views regarding the structure of a Hungarian finite (subordinate) clause, as found for instance in É. Kiss (2002), in that focussed constituent may be preceded by topics and topics are immediately below the CP-layer. Of course, there are other possible functional projections that can otherwise occur but since my examples contain none of them, I am not particularly concerned with whether they are underlyingly present even when they are not overtly filled. On the other hand, É. Kiss (2008) merges many of these functional categories under the notion of PredP and hence the distinction is probably less important than previously assumed. Note also that Hungarian is generally not claimed to have a TP or IP layer and hence these are not given in the representation in this chapter either.

Note that when the verb is not contrastive, the situation is different:

- (38) a. Mari több macskát látott, mint **ahány**  
 Mary more cat-ACC saw.3SG than how.many  
**macskát** Péter látott **meg**.  
 cat-ACC Peter saw.3SG PRT  
 ‘Mary saw more cats than Peter noticed.’
- b. Mari nagyobb macskát látott, mint **amekkora**  
 Mary bigger cat-ACC saw.3SG than how.big  
**macskát** Péter látott **meg**.  
 cat-ACC Peter saw.3SG PRT  
 ‘Mary saw a bigger cat than Peter noticed.’

The subclauses in (38) contain the DP *Péter* as the focussed constituent; following É. Kiss (2008), this DP is located in the specifier of the PredP, here referred to as [Spec,FP] and the verbal particle does not move up, hence resulting in the non-neutral verb + verbal particle order. Since the leftmost constituent in this case is the focussed DP, main stress will fall on this constituent; this again renders a felicitous structure as the main contrast in (38) is expressed by the DP. The structure of the subclause is shown in (39):



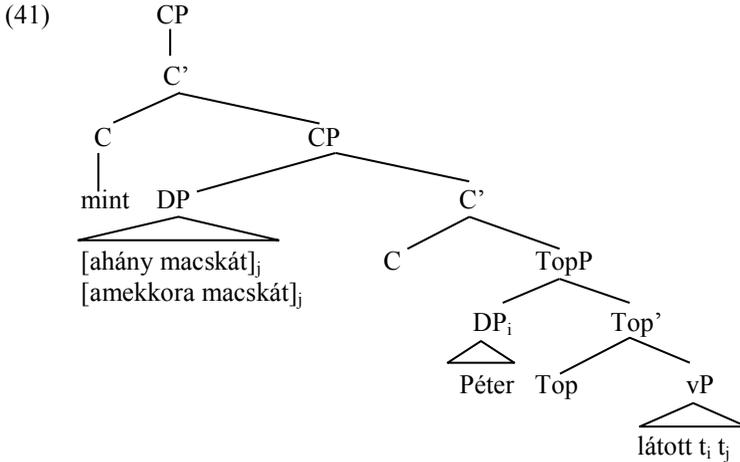
One of the chief differences between (37) and (39) is that in (39) there is no topicalised constituent since the DP *Péter* moves to the left edge of the verb phrase and not outside of it; on the other hand, as has been said, the presence of the DP in the [Spec,FP] position excludes the possibility of the verbal particle (*meg*) also moving there. The structures in (37) and (39) are not interchangeable: that is, whether the lexical verb is contrastive or not determines what constituent may move to the left edge of the verbal domain to result in a felicitous structure. On the other hand, the position of the verbal particle (its relative position to the verb) is indicative of what constituent is located in the [Spec,FP].

Naturally, it is also possible to have full comparative subclauses without verbal particles:

- (40) a. Mari több macskát vett, mint **ahány**  
 Mary more cat-ACC bought.3SG than how.many  
**macskát** Péter látott.  
 cat-ACC Peter saw.3SG  
 ‘Mary bought more cats than Peter saw.’
- b. Mari nagyobb macskát vett, mint **amekkora**  
 Mary bigger cat-ACC bought.3SG than how.big  
**macskát** Péter látott.  
 cat-ACC Peter saw.3SG  
 ‘Mary bought a bigger cat than Peter saw.’
- c. Mari több macskát látott, mint **ahány**  
 Mary more cat-ACC saw.3SG than how.many  
**macskát** Péter látott.  
 cat-ACC Peter saw.3SG  
 ‘Mary saw more cats than Peter did.’
- d. Mari nagyobb macskát látott, mint **amekkora**  
 Mary bigger cat-ACC saw.3SG than how.big  
**macskát** Péter látott.  
 cat-ACC Peter saw.3SG  
 ‘Mary saw a bigger cat than Peter did.’

In these cases the surface word order in itself is not indicative of the underlying syntactic differences; however, the main stress falls on the lexical verb (*látott*) in (40a) and (40b), while it falls on the DP *Péter* in (40c) and (40d).

The structure of the subclauses in (40a) and (40b) is outlined in (41) below:

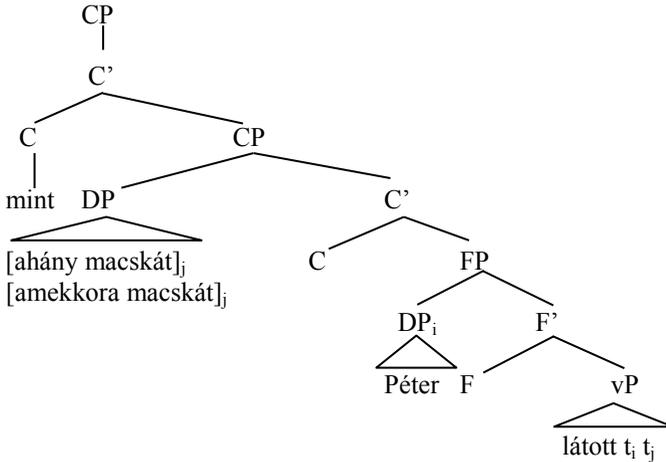


In line with É. Kiss (2008), there is no FP in these cases: the main stress falls on the lexical verb anyway and the DP moves to a topic position,<sup>57</sup> hence there is nothing that could potentially be located in the [Spec,FP] position, contrary to (37), where the verbal particle was present.

By contrast, the structure of (40c) and (40d) is as follows:

<sup>57</sup> Note that topics may also be contrastive and hence the DP *Péter* can be located in a topic position even though it is contrasted with the DP *Mari* in the matrix clause. As described for instance by É. Kiss (2007: 72–78), in case a clause contains multiple contrastive elements, contrastive topic always precede the focus, which is essentially in line with the assumption that the focus is at the left edge of the verbal domain and hence receives main stress, while elements located above it cannot be interpreted as foci. Note also that contrastive elements may occasionally also appear in a postverbal position, in which case they receive extra stress by an additional prosodic rule, as was described before (and cf. Szendrői 2001).

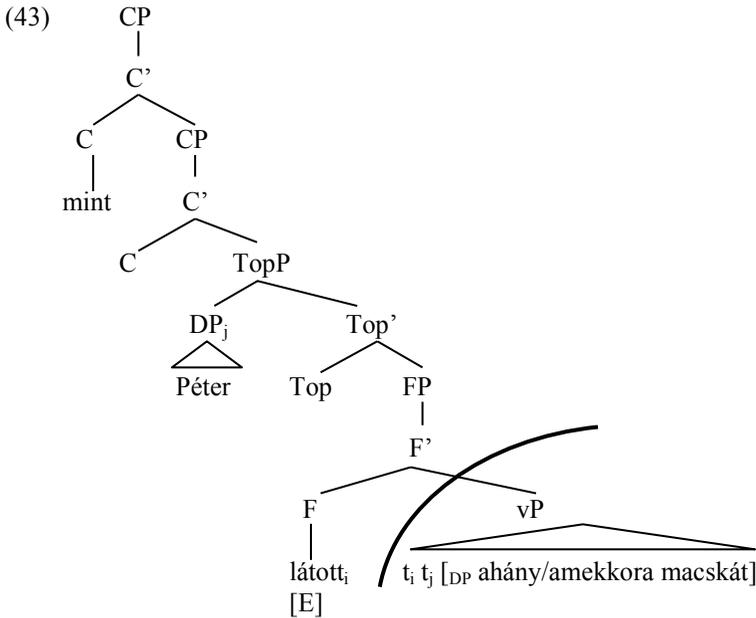
(42)



The only difference from (39) is that there is no verbal particle but since the verbal particle is located within the thematic vP in (39) as well, this makes no difference as far as the functional extension of the verbal domain is concerned.

To conclude, it should be obvious that if the verb is contrastive, then the [Spec,FP] position may be filled only by a verbal particle, which phonologically attaches itself to the verb; otherwise main stress would fall on a constituent distinct from the verb and the sentence would not be felicitous. In these cases a contrastive DP is topicalised, while it appears in the [Spec,FP] position if the verb is GIVEN.

Based on all this, the structure of the subclauses in (35) is the following:



In (43), the vP is a thematic one and hence the verb must move out of it in order to escape deletion. Since there is no constituent in the [Spec,FP] position, the sole function of the FP layer in this case is to accommodate the lexical verb, which can thus be assigned main sentential stress in the prosody: the DP *Péter* is topicalised and hence falls outside the domain of nuclear stress. The markedness of the sentences in (35) can be attributed to this additional verb movement, which would not take place in overt syntax otherwise and hence the derivation includes an extra operation; furthermore, the fact that the [Spec,FP] is not filled is marked too.

One might wonder whether the DP *Péter* is a focus, hence a constituent located in the [Spec,FP] position. However, taking such a stance would be problematic for various reasons; first of all, it would contradict the data shown by comparatives with a full subclause, as in (36), (38)

and (40).<sup>58</sup> Second, it would wrongly predict that if there is a verbal particle, then it should follow the verb, which is not the case:

- (44) a. \*Mari több macskát vett, mint Péter  
Mary more cat-ACC bought.3SG than Peter

**látott meg.**

saw.3SG PRT

‘Mary bought more cats than Peter noticed.’

- b. \*Mari nagyobb macskát vett, mint Péter  
Mary bigger cat-ACC bought.3SG than Peter

**látott meg.**

saw.3SG PRT

‘Mary bought a bigger cat than Peter noticed.’

The reason why the focus status of the DP *Péter* would trigger the verb + verbal particle order is that the [Spec,FP] would then be occupied by this DP and the particle would not move up and would hence necessarily follow the verb. However, the sentences in (44) are not acceptable, which indicates that the DP *Péter* cannot be in [Spec,FP].

Moreover, if there is a verbal particle, it moves to the [Spec,FP] position, as indicated by the acceptability of the following examples:

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<sup>58</sup> If both a preverbal DP and the verb are contrastive (that is, there is VP-focus or propositional focus), then it is the verb that should bear the pitch accent and not the DP – similarly, as was also mentioned before, if there are two contrastive DPs, then the first one is a contrastive topic and the second one a focus, the latter bearing nuclear stress. In order to ensure that the DP does not get nuclear stress it has to move to a topic position and since topics can also be contrastive, this does not result in semantic incongruence either. The correct intonation pattern can be assigned to the overt elements in the subclause in (35) but not in (44), where the postverbal position of the verbal particle clearly indicates that the [Spec,FP] is filled by another element (the DP *Péter*).

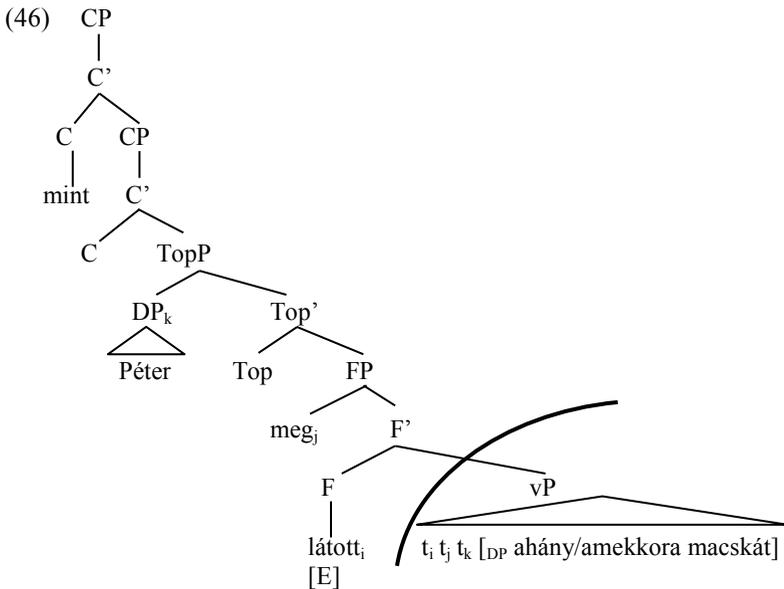
- (45) a. ? Mari több macskát vett, mint Péter  
 Mary more cat-ACC bought.3SG than Peter  
**meglátott.**  
 PRT-saw.3SG

‘Mary bought more cats than Peter noticed.’

- b. ? Mari nagyobb macskát vett, mint Péter  
 Mary bigger cat-ACC bought.3SG than Peter  
**meglátott.**  
 PRT-saw.3SG

‘Mary bought a bigger cat than Peter noticed.’

The acceptability of the sentences in (45) is similar to that of the ones in (35); again, individual ratings may differ with respect to the degree of markedness. This is not surprising since the structure should be essentially the same as the one given in (43), except that there is a verbal particle in the [Spec,FP] position:



Just as in (43), the [E] feature is located on the F head and hence the domain of ellipsis is the (thematic) vP; again, the lexical verb moves up to the F head to escape deletion, which is an extra step in the derivation and hence the structure is marked. The reason why there is no other option is that the [E] feature cannot be located on a lexical v head, hence either ellipsis would not take place, leaving the uninterpretable quantified DP overt, or ellipsis would affect the contrastive verb too – in both cases the structure would not converge.

To sum up, Hungarian comparative subclauses that contain an overt, F-marked finite verb but no overt quantified expression differ in a predictable way from ones that prohibit the presence of a GIVEN verb. That is, the ellipsis mechanisms are essentially the same in both cases: it is invariably an [E] feature located on a functional head that causes the complement to be elided at PF. On the other hand, the derivation of the ones containing a contrastive verb involves an extra movement step, which results in degraded acceptability.

### 6.3. More on cross-linguistic differences

As was seen in the previous chapters and also in the present one, Standard English and Hungarian represent two rather different patterns in terms of comparative subclause formation. Yet, as I also demonstrated, these differences can be reduced to general requirements and hence they do not result from construction-specific rules.

First, the reason why (Standard) English exhibits Comparative Deletion but Hungarian does not is due to the overtness requirement, which requires relative operators (including comparative operators) to be phonologically visible if there is other overt material in the [Spec,CP] position. Since Standard English has no overt comparative operators, deletion is required; by contrast, Hungarian has only overt comparative operators and hence deletion does not – and cannot – take place in the [Spec,CP] position. In this way, the overtness condition is responsible for the difference between the English example in (47a) and the Hungarian one in (47b):

- (47) a. Mary bought more cats than Peter bought.
- b. Mari több macskát vett, mint ahány  
 Mary more cat-ACC bought-3SG than how.many  
 macskát Péter vett.  
 cat-ACC Peter bought  
 ‘Mary bought more cats than Peter did.’

This difference can be detected in clauses that are otherwise full; however, clauses that are derived via ellipsis tend to look the same:

- (48) a. Mary bought more cats than Peter (did).
- b. Mari több macskát vett, mint Péter.  
 Mary more cat-ACC bought-3SG than Peter  
 ‘Mary bought more cats than Peter did.’

As can be seen, in both cases the lexical verb and the quantified DP are missing. I showed in the previous two sections that the deletion mechanism is essentially the same in the two languages: that is, an [E] feature is located on a functional head and the complement of that functional head is the domain of ellipsis. In English, the functional vP can be headed by the dummy auxiliary (here: *did*), which is not an option in Hungarian as Hungarian does not have such auxiliaries. Apart from that, it seems that ellipsis works in the same way in the two languages; yet, there are some questions to be clarified.

One point of difference concerns structures such as (49) below:

- (49) Mary is taller than Peter.

I argued in section 6.1 that in such constructions the vP domain – as a phase – is not spelt out at PF and in this sense there is no ellipsis taking place here. This option was not attested for Hungarian and the reason behind this is that while in English a subject DP – such as *Peter* in (49) – moves to the specifier of the IP (or TP), which is higher than the vP-domain, in Hungarian a contrastive DP like *Péter* in (48b) moves to the [Spec,FP] position, which is the left edge of the vP-domain. In other

words, it is possible in English for the remaining contrastive element to be higher than the vP and hence the vP can be elided. In Hungarian, however, the contrastive element is within the vP and therefore the lack of spell-out is not an option. Note that if there are multiple contrastive elements, or when the verb itself is contrastive, then it is possible for a contrastive element to be a topic: however, topics are essentially adjoined and prosodically count as extrametrical elements; as a consequence, there must be some overt element in the vP-domain so that main sentential stress may be assigned. To conclude, if there is a single overt DP in the Hungarian comparative subclause, such as in (48b), then it is in the [Spec,FP] position, as opposed to English.

The second important difference concerns the way ellipsis seems to operate in the two languages: whereas in English contrastive elements were shown to be able to withstand linear, left to right deletion, this is not attested in Hungarian. The reason behind this is quite simple: in Hungarian, contrastive elements move to the left and are hence located above the functional head responsible for ellipsis and thus there is simply no element that could withstand ellipsis following the deletion of a string of non-contrastive elements. In English, however, contrastive elements appear clause-finally and since ellipsis works in a left to right fashion, the only way to have both ellipsis and overt contrastive elements is precisely the one described as F-marked elements stopping the linear deletion process. Furthermore, the difference between English and Hungarian in this respect follows from the way sentential stress is assigned: in English, stress falls on the rightmost constituent in the Intonational Phrase, while in Hungarian it falls on the leftmost constituent (see Szendrői 2001). In this way, ellipsis in comparative subclauses – as well as other constructions – can be directly linked to the way syntax-prosody mapping operates in a given language. Since the detailed examination of this issue would clearly fall outside the scope of the present dissertation, I will not venture to investigate it any further here.

Finally, let me highlight an important aspect of the analysis proposed here: this concerns the location of the [E] feature on functional heads and the directionality of ellipsis. Based on Merchant (2001), the [E] feature is located on some functional head, such as a C or a v head, and ellipsis affects the complement of that functional head, which is located to the right. As I showed, this does not exclude the possibility of

contrastive elements appearing clause-finally but ellipsis still operates in a strictly left to right fashion. This predicts that ellipsis can operate in a certain domain only if the functional head precedes its complement: that is, if the projection in question (a CP or a vP) is head-initial. A head-final functional projection is not able to license ellipsis because in that case ellipsis would have to apply retrospectively.

This difference between head-initial and head-final projections is attested in German. In German, the CP is head-initial and, as also pointed out by Merchant (2004, 2013), sluicing is attested in the way English has it: that is, carried out by an [E] feature on a C head. Compare the following examples from English and German:

- (50) a. Ralph saw someone, but I don't know **who he saw**.
- b. Ralf hat jemanden gesehen, aber ich weiß  
 Ralph has someone-ACC seen but I know.1SG  
 nicht, **wen er gesehen hat**.  
 not who-ACC he seen has  
 'Ralph saw someone but I don't know who.'

In both cases there is a *wh*-pronoun located in a [Spec,CP] position and the complement of the C, equipped with an [E] feature, is elided.

However, in German the VP and all vPs are head-final (cf. Haider 1993: 34) and hence VP-ellipsis is not attested in the way it is in English (see the discussion in Chapter 4 for more details). As was pointed out in Chapter 4, this is responsible for the difference in the acceptability of the following examples for comparatives:

- (51) a. Ralph has a bigger flat than Michael ~~has~~ a house.
- b. \*Ralf hat eine größere Wohnung als  
 Ralph has a-FEM bigger-FEM flat than  
 Michael ein Haus ~~hat~~.  
 Michael a.NEUT house has  
 'Ralph has a bigger flat than Michael a house.'

The reason why (51a) is possible is that the [E] feature can be located on a *v* head in English since the complement follows that *v* head: hence the lexical verb (*has*) is elided and the object DP stops deletion. However, this is not possible in German because the *v* head taking the VP (*ein Haus hat*) as its complement follows the VP and even if an [E] feature were located on this *v*, that would not (and could not) carry out ellipsis.

The advantage of this analysis is that it connects the lack of the availability of the [E] feature on a given functional head to the relative position of that head, contrary to Merchant (2013), who proposes that this is a lexical difference, in that English has both an  $E_S$  and an  $E_V$  feature, while German lacks the  $E_V$  feature and has no VP-ellipsis (but has sluicing). Though the proposal of Merchant (2013) in this respect is descriptively adequate, it fails to link this property to some other, more general property of the grammar.

I propose that the reason why a head-final functional projection cannot license ellipsis is not because of a lexical difference from head-initial projections that would ban the appearance of an [E] feature on a head-final *vP*: it is simply that the PF mechanism defined by that [E] feature does not (and cannot) operate backwards. This also implies that there is essentially no restriction on the appearance of the [E] feature: in principle, it can appear on the head of a head-final projection but it will have no effect on the final structure.

Again, I do not wish to examine these issues any further since it would necessarily involve constructions other than comparatives. What is important for us here is that ellipsis in comparative subclauses seems to operate in a principled way, in that it is carried out by similar mechanisms in various languages, irrespectively of whether these languages show Comparative Deletion or not; the differences that do arise can be attributed to general requirements that follow either from the way syntax-prosody mapping works in the given language or from whether functional projections are head-initial or head-final.

# Chapter Seven

## Conclusion

The aim of this dissertation was to provide an analysis for the syntactic structure of comparatives, with special attention paid to the derivation of the subclause. Naturally, the analysis given here is not broad enough to cover all issues that are connected to comparatives; still, the issues that have been dealt with are of crucial importance and the proposed account explains how the comparative subclause is connected to the matrix clause, how the subclause is formed in the syntax and what additional processes contribute to its final structure. In addition, the main interest of my research was to cast light upon these problems in cross-linguistic terms and to provide a model that allows for synchronic and diachronic differences. This also enables one to give a more adequate explanation for the phenomena found in English comparatives since the properties of English structures can then be linked to general settings of the language and hence need no longer be considered as idiosyncratic features of the grammar of English.

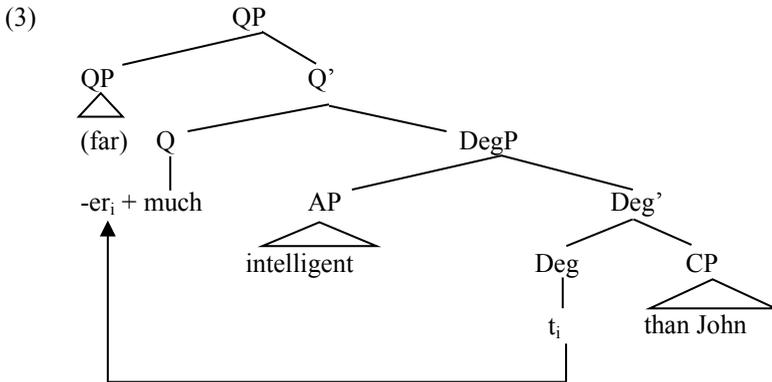
In Chapter 2, I provided a unified analysis of degree expressions, with the aim of relating the structure of comparatives to that of other (that is, the absolute and the superlative) degrees. Building on results of previous analyses such as Bresnan (1973), Izvorski (1995), Corver (1997) and Lechner (1999, 2004), I proposed a feature-based account that may explain various differences both with respect to the degree morpheme and the lexical adjective itself, either in English or cross-linguistically. It was shown that gradable adjectives are located within a degree phrase (DegP), which in turn projects a quantifier phrase (QP) and that these two functional layers are always present for gradable adjectives, irrespectively of whether there is a phonologically visible element in these layers. The difference can be captured by considering (1):

- (1) a. Mary is **tall**.
- b. Mary is **taller** than John.

While in (1a) only a bare adjective (*tall*) is visible, in (1b) the comparative degree morpheme (*-er*) and the comparative subclause (*than John*) are also overtly present. Nevertheless, building on degree semantics, I argued that the DegP and the QP are necessary also in the case of (1a) since the degree interpretation has to be present syntactically as well; in addition, modifiers also provide arguments for the existence of the QP layer. One of the strongest arguments comes from structures like (2):

(2) Mary is **more intelligent** than John.

In this case, the degree morpheme *-er* appears as part of *more* and not as a suffix on the lexical adjective itself; as was shown, *more* is in fact a composite of the Q head *much* and the Deg head *-er*. The proposed structure is given below:



As can be seen, the lexical AP and the XP expressing the standard value (here the CP *than John*) are both arguments of the degree head, in line with Lechner (1999, 2004). In addition, there is a QP layer projected on top of the DegP, such that the Deg head moves up to the Q head; the specifier of the QP may in turn host other (QP) modifiers. The Deg head is zero in (1a) and is filled by *-er* in (1b) and in (2). The movement of the Deg head up to the Q head accounts for the formation of *more*; in all

the other cases the morpheme *-er* is attached to the lexical adjective following it at PF.

Since the comparative subclause is the complement of the degree head, the Deg head can impose selectional restrictions on it, which explains the difference between the complement of the Deg head *-er* and that of the Deg head *as*:

- (4) a. Mary is **taller** [than John].  
 b. \*Mary is **taller** [as John].  
 c. \*Mary is **as tall** [than John].  
 d. Mary is **as tall** [as John].

Though all of these restrictions are associated with the Deg head rather than with the adjective, I also considered cases where the adjective has arguments of its own, as in (5):

- (5) Mary is proud [of her husband].

In (5), the adjective *proud* takes the PP as its complement and hence the PP is base-generated as the complement of the A head. Problems arise when such complements appear in comparative structures:

- (6) Mary is prouder [of her husband] than Susan is.

Since the PP appears after the degree head, it is obvious that it undergoes extraposition of some sort. I argued that this extraposition is not syntactic in nature but follows from the fact that the PP can be spelt out on its own as a phase (just like the comparative subclause) and hence appears in the PF string later than the adjective.

The analysis can thus account for differences between gradable and non-gradable adjectives; in addition, it was shown that the distinction between predicative and attributive adjectives can also be captured in that predicative-only adjectives are equipped with a [-nom] feature while attributive-only adjectives are equipped with a [+nom] feature, all other adjectives allowing for both options. By way of agreement with the degree head, this feature percolates up to the entire QP and defines

whether it can, may or must agree with a nominal expression. On the other hand, certain Deg heads may also be inherently marked as either [+nom] or [-nom], which accounts for why superlatives are invariably attributive.

In Chapter 3 I presented a novel analysis of Comparative Deletion by reducing it to an overttness constraint holding on operators. In this way, Comparative Deletion can be reduced to morphological differences and hence cross-linguistic variation is not conditioned by way of postulating an arbitrary parameter that defines whether a certain language has Comparative Deletion or not. This account is strongly feature-based in the sense that differences are ultimately dependent on whether a certain language has overt operators equipped with the relevant – [+compr] and [+rel] – features.

As was seen, the phenomenon of Comparative Deletion traditionally denotes the absence of an adjectival or nominal expression from the comparative subclause:

- (7) a. Ralph is more qualified than Jason is ~~x-qualified~~.  
 b. Ralph has more qualifications than Jason has ~~x-many qualifications~~.  
 c. Ralph has better qualifications than Jason has ~~x-good qualifications~~.

In all of the examples above in (7), *x* denotes a certain degree or quantity as to which a certain entity is qualified, good etc. As far as Standard English is concerned, this is an operator that has no phonological content. Earlier analyses of Comparative Deletion simply acknowledged that in predicative comparatives such as (7a) an adjectival expression is deleted. By contrast, in nominal comparatives such as (7b) and in attributive comparatives such as (7c) a nominal expression is deleted.

I rejected the possibility of Comparative Deletion taking place at the base-generation site and therefore the representations in (7) are only descriptively adequate: one of the greatest problems regarding the claim that Comparative Deletion takes place at the base-generation site is that it should target different constituents obligatorily, since the overt presence of the quantified expressions in (7) would lead to ungrammatical

constructions. I argued that such an operation could not be conditioned and that Comparative Deletion must be the result of more general processes.

Another problem concerning Comparative Deletion and the deletion site concerns information structural properties. In subcomparative structures, an adjectival or nominal element may be left overt in the subclause; contrary to the examples in (7), these elements are not logically identical to an antecedent in the matrix clause:

- (8) a. The table is longer than the desk is **wide**.  
b. Ralph has more books than Jason has **manuscripts**.  
c. Ralph wrote a longer book than Jason did a **manuscript**.

One of the central questions often discussed in the relevant literature is whether constructions like the ones in (8) are exempt from Comparative Deletion and hence essentially different from the ones in (7), or whether Comparative Deletion applies in both types.

I argued that Comparative Deletion takes place at the left periphery in the subclause in a [Spec,CP] position in all cases given in (7) and (8) due to an overtness requirement that requires the presence of an overt operator if there is lexical material (an AP or an NP) located in an operator position. Since Standard English has no overt operators, the deletion of the higher copy always takes place in [Spec,CP]. As was shown, the lower copy may then be realised overtly, but this happens only if it is contrastive: this condition is satisfied in (8) but not in (7) and hence lower copies are not pronounced in cases like (7).

Given that Comparative Deletion takes place in a [Spec,CP] position, if the overtness requirement is not satisfied, it is not surprising that a visible operator can appear in this position, which is possible for certain dialects of English that accept, for instance, *what* as a comparative operator (cf. Chomsky 1977):

- (9) % Ralph is more qualified than **what** Jason is.

As I argued, structures like (9) involve operator movement in the same way the ones in (7) and (8) do; the differences are due to the fact that

*what* is a proform operator that does not take a lexical AP or NP and, in addition, it can appear overtly in the [Spec,CP] position because it does not violate the overttness requirement.

In addition to instances like (9), Chapter 3 also showed that there are languages and language varieties that allow the degree element to be combined with a lexical AP/NP to appear overtly in the [Spec,CP] position, as is the case in Hungarian (cf. Kenesei 1992a):

- (10) a. Mari magasabb, mint **amilyen** **magas** Peti.  
 Mary taller than how tall Peter  
 ‘Mary is taller than Peter.’
- b. Marinak több macskája van, mint **ahány**  
 Mary-DAT more cat-POSS.3SG is than how.many  
**macskája** Petinek van.  
 cat-POSS.3SG Peter-DAT is  
 ‘Mary has more cats than Peter has.’
- c. Marinak nagyobb macskája van, mint **amilyen**  
 Mary-DAT bigger cat-POSS.3SG is than how  
**nagy macskája** Petinek van.  
 big cat-POSS.3SG Peter-DAT is  
 ‘Mary has a bigger cat than Peter has.’

As was seen, Hungarian allows the overt presence of the degree elements; again, this was shown to be so because the overttness requirement is satisfied in cases like (10). Since the overttness requirement is not specifically related to comparatives, the parametric variation attested across languages can also be linked to more general properties instead of treating Comparative Deletion as a parameter.

Strongly related to the status of operators, Chapter 3 also examined the question of how the internal structure of degree expressions plays a role in the different behaviour of individual comparative operators. In Standard English, as shown in (8a), the adjective that remains overt in the subclause is found in its base position without an overt

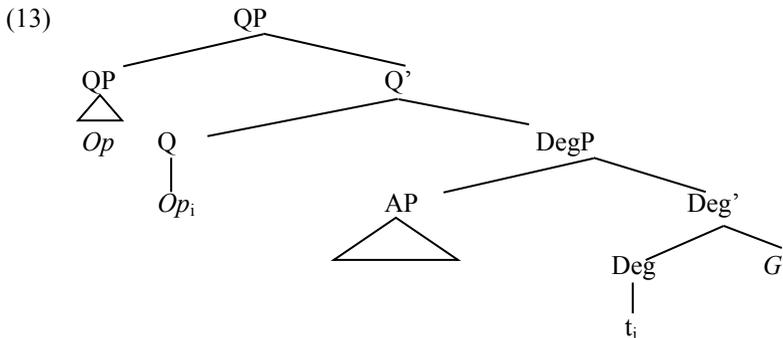
operator. However, if the operator *what* is present, the adjective cannot be overt:

- (11) \*The table is longer than **what** the desk is **wide**.

This was shown to be so because *what* is a Deg head that does not allow the co-presence of a lexical AP in its specifier position. As I also demonstrated, this is not necessarily the case for all overt Deg head operators: in Hungarian, for instance, the operator *amilyen* ‘how’ may appear together with the adjective, as in (10a), though the adjective may not be stranded:

- (12) \*Mari magasabb, mint **amilyen** Peti **magas**.  
 Mary taller than how Peter tall  
 ‘Mary is taller than Peter.’

Chapter 3 argued that the reason behind this is that the operator *amilyen* is a Deg head and as such it cannot be extracted from the degree expression that it is the head of. Adopting the general structure for degree expressions given in Chapter 2, I made the claim that there are two possible operator positions:



As can be seen, one operator position is the Deg head and operators of this type ultimately undergo movement to the Q head position; these heads then cannot be extracted from within the entire QP projection and

hence the lexical AP (if they take any) necessarily moves together with them. Some of these operators were also shown to be able to act as proforms, hence standing for the DegP without a visible lexical AP there. On the other hand, there are operators that are QP modifiers located in the [Spec,QP] position: these cannot be proforms but since they are phrase-sized, they are able to move out on their own, at least if the entire QP functions as a predicate in the clause. This can be observed in the case of the Hungarian operator *amennyire* ‘how much’:

- (14) a. Mari magasabb, mint **amennyire** **magas** Peti.  
 Mary taller than how.much tall Peter  
 ‘Mary is taller than Peter.’
- b. Mari magasabb, mint **amennyire** Peti **magas**.  
 Mary taller than how.much Peter tall  
 ‘Mary is taller than Peter.’

The extractability of operators is hence responsible for whether the AP may be stranded or not; in other words, extractability is not directly linked to Comparative Deletion, which is ultimately an overttness requirement that holds for copies in a [Spec,CP] position, but it depends on the position of the operator in the functionally extended degree expression.

As far as Hungarian is concerned, Chapter 3 also showed that if the adjective is overt, then the operator has to be overt too; this is due to the fact that Hungarian does not have zero comparative operators:

- (15) a. Mari magasabb, mint (**\*magas**) Peti.  
 Mary taller than tall Peter  
 ‘Mary is taller than Peter.’
- b. Mari magasabb, mint Peti (**\*magas**).  
 Mary taller than Peter tall  
 ‘Mary is taller than Peter.’

My analysis of Comparative Deletion takes into account that languages differ with respect to the presence/absence of the operator in a more intricate way than one that could be formulated on a +/- basis and the

factors responsible for cross-linguistic variation are related to the internal structure of degree expressions, the overtiness of degree operators and also to information structural properties. However, Comparative Deletion is not a direct reflex of the information structural status of lexical projections associated with the degree elements but it is a factor that plays a role as far as the realisation of lower copies in a movement chain is concerned and may also be linked to the preferred position of a lexical AP in the comparative subclause in case the AP may be stranded.

Chapter 4 aimed at providing an adequate explanation for the phenomenon of Attributive Comparative Deletion, as attested in English, by way of relating it to the regular mechanism of Comparative Deletion as described in Chapter 3. I showed that Attributive Comparative Deletion can only be understood as a descriptive term referring to a phenomenon that is a result of the interaction of more general syntactic processes, since there is no reason to postulate any special mechanism underlying it in the grammar. The elimination of such a mechanism allows one to achieve a unified analysis of all types of comparatives. In addition, Chapter 4 argued that Attributive Comparative Deletion is not a universal phenomenon, and its presence in English can be conditioned by independent, more general rules, while the absence of such restrictions leads to the absence of Attributive Comparative Deletion in other languages.

Attributive Comparative Deletion is a phenomenon that involves the obligatory deletion of the quantified AP and the lexical verb from the comparative subclause, if the quantified AP functions as an attribute within a nominal expression:

- (16) a. Ralph bought a bigger cat than George did ~~buy~~ a ~~big~~ cat flap.  
 b. Ralph bought a bigger cat than George ~~bought~~ a ~~big~~ cat flap.  
 c. \*Ralph bought a bigger cat than George bought a ~~big~~ cat flap.  
 d. \*Ralph bought a bigger cat than George bought a big cat flap.  
 e. \*Ralph bought a bigger cat than George ~~bought~~ a big cat flap.  
 f. \*Ralph bought a bigger cat than George did ~~buy~~ a big cat flap.

Both the adjective (*big*) and the lexical verb (*buy*) have to be eliminated from the comparative subclause; this is possible either by eliminating the tensed lexical verb, as in (16b) or by deleting the lexical verb and leaving the auxiliary *do* bearing the tense morpheme intact, as in (16a). Since the verb and the adjective both have to be deleted, the examples in (16c)–(16f) are ungrammatical.

As Chapter 4 argued, this is because the degree expression in the subclause is not licensed to appear in a particular position within the extended nominal expression. In other words, the obligatory elimination of the adjective is not due to the fact that it is GIVEN; the overt presence of the attributive adjective is ungrammatical even if it is different from its matrix clausal counterpart:

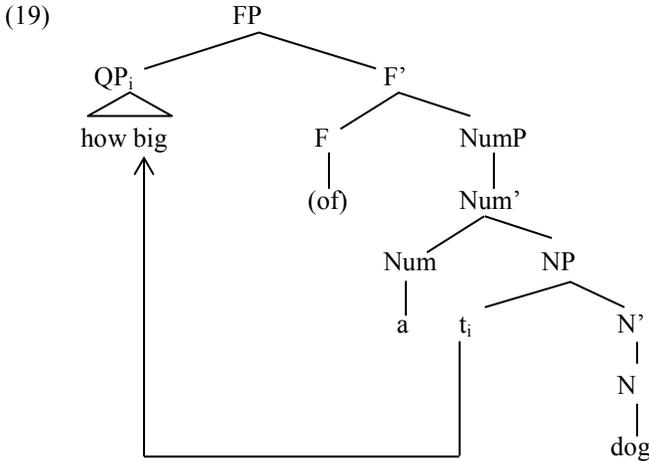
- (17) a. \*Ralph bought a bigger cat than George ~~bought~~ a wide cat flap.  
 b. \*Ralph bought a bigger cat than George did ~~buy~~ a wide cat flap.

On the other hand, the deletion of the lexical verb was shown to be required only if part of the DP is overt; in case the entire DP is eliminated, the lexical verb can stay overt:

- (18) Ralph bought a bigger cat than George bought ~~a big cat~~.

These phenomena raise a number of questions that were answered in Chapter 4 in detail. The major questions are why the adjective is not allowed to remain overt even if it is contrastive, why the verb is also affected and how the lexical verb and the adjective can be deleted, as they do not seem to be adjacent in (16a) and (16b). I adopted the proposal made by Kennedy and Merchant (2000) regarding the syntactic position of the quantified AP in the nominal expressions in structures like (16a) and (16b): according to this, the quantified AP moves to the left edge of the extended nominal projection and is hence adjacent to the lexical verb at PF. Chapter 4 also made the claim that the inversion option is available because in nominal expressions such as *a cat* there is no DP layer and the quantified expression may move to the [Spec,FP] position while in structures containing a DP layer the DP is a boundary

to such movement operations. Hence the structure for the quantified expression in the subclause of attributive comparative constructions is as follows:



I argued that the quantified AP has to be eliminated because of the overt requirement: the quantified AP moves to an operator position (the specifier of the FP projection) and, just as in the [Spec,CP] position, lexical material is licensed to appear here only if the operator is overt. Since this condition is not met in the case of the comparative operator in English, the AP has to be deleted; however, there is no separate mechanism that could carry it out and so a more general process has to apply, which is VP-ellipsis. Given that VP-ellipsis inevitably affects the lexical verb, it is explained why the verb has to be deleted.

In addition, Chapter 4 aimed at addressing the relation between Attributive Comparative Deletion and ordinary Comparative Deletion. I showed that the higher copy of the quantified DP is deleted in a [Spec,CP] position in attributive comparatives as well and hence attributive comparatives are not exceptional in this respect. On the other hand, the reason for the ungrammaticality of the quantified AP in the [Spec,FP] position of the extended nominal expression is due to the

same overtiness requirement that was claimed to be responsible for the obligatory elimination of the higher copy in the [Spec,CP] position.

Furthermore, I also took cross-linguistic differences into consideration, and it was shown that in Hungarian the full structure may be visible in the subclause:

- (20) Rudolf nagyobb macskát vett, mint amilyen  
 Rudolph bigger cat-ACC bought.3SG than how  
 széles macskaajtót Miklós vett.  
 wide cat flap-ACC Mike bought.3SG  
 ‘Rudolph bought a bigger cat than Mike did a cat flap.’

This was shown to be so because the comparative operator is visible in Hungarian and hence the entire quantified nominal expression can be overt, as also shown by (20).

Chapter 4 also pointed out that German does not allow Attributive Comparative Deletion either:

- (21) \*Ralf hat eine größere Wohnung als  
 Ralph has a-ACC.FEM bigger-ACC.FEM flat than  
 Michael ein Haus.  
 Michael a-ACC.NEUT house  
 ‘Ralph has a bigger flat than Michael a house.’

The reason for this is that German does not have the kind of inversion that English has within the extended nominal expression and hence the adjective is never located in a position that would cause ungrammaticality; in addition, it is not adjacent to the verb either. The non-adjacency of the adjective and the verb is also due to the fact that the VP is head-final in German and hence VP-ellipsis cannot apply at all in the way it does in English. The analysis presented in Chapter 4 is hence able to account for cross-linguistic differences as well since these differences are in fact reducible to more general properties of the respective languages.

In addition to synchronic variation, the dissertation also aimed at accounting for certain phenomena that are related to diachronic changes.

Chapter 5 was devoted to the examination of Comparative Deletion from a diachronic perspective and to investigating the issue of how the changes in the status of comparative operators led to changes in whether Comparative Deletion is attested in a given language or not. I argued that the difference between proform operators and those that take lexical APs (or NPs) also has a bearing on whether they could be reanalysed as complementiser heads, such that while operators without a lexical XP can be grammaticalised others cannot. This was linked to the nature of the formal features associated with the various operator elements: I also showed that similar phenomena are attested in other subordinate structures as well beside comparatives, conforming to the general mechanism of the relative cycle.

Though the main focus was on Hungarian historical data, the analysis was also applied to other languages, such as German and Italian. As was already highlighted in Chapter 3, the behaviour of German and Italian subclauses seems to be peculiar in that the operator-like elements do not show any parallelism with interrogative operators that have the same phonological form: Chapter 5 demonstrated that this is necessarily so since these elements have been reanalysed as complementisers in comparative subclauses. The mechanisms underlying these changes are essentially general principles of economy and hence the processes are far from being language-specific or exceptional.

The reason why Hungarian is particularly interesting is that cyclic changes can be observed multiple times in comparatives and they are also attested in other subordinate structures during the same period (that is, Old and early Middle Hungarian). The mechanisms allow for an adequate analysis for the change attested in Hungarian comparatives expressing inequality; as was pointed out, while in Modern Hungarian the comparative subclause is invariably introduced by the complementiser *mint* ‘than’, in Old Hungarian the complementiser was initially *hogy* ‘that’ and the subordinate clause also contained the negative element *nem* ‘not’:

- (22) Mert iob hog megfogódofuā algukmég  
 because better that PRT-catch-PTCP bless-SUBJ-3PL-PRT  
 vrat èlèuènèn **hog nè** mēghal'l'ōc  
 Lord-ACC alive that not PRT-die-SUBJ-1PL  
 ‘because it is better to bless the Lord if we are captured alive that not (= than) to die’ (BécsiK. 25)

Chapter 5 also showed that the change from the configuration in (22) into the Modern Hungarian ones, as for instance in (20), involved an intermediate step, when both *hogy* and *mint* were present (and initially also the negative element *nem*):

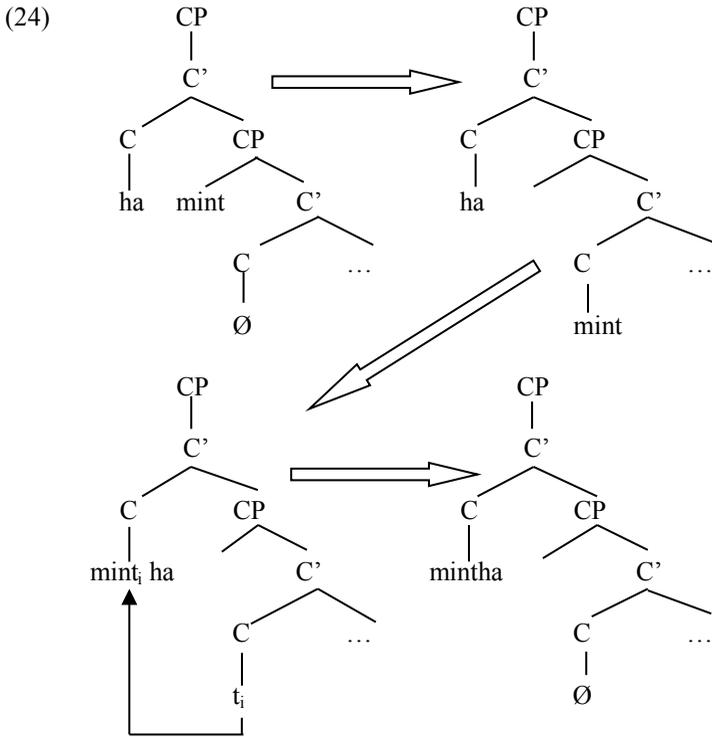
- (23) az mentól alsobykban is tōb angyal uāgon  
 the all-ABL lower-INE also more angel is  
**honnem mynth** az napnak feneben  
 that.not than the sun-DAT light-POSS.3SG-INE  
 ‘there are more angels in the basest one of them than in the sun’s light’ (SándK. 1v)

I argued that *mint* started to appear in configurations like (23) as a comparative operator, but since it was a proform (similarly to English *what*) that did not co-occur with lexical APs, it was later reanalysed as a C head. This first resulted in the presence of two overt complementiser heads in one left periphery; I also showed that this is possible in several languages, including the *als wie* ‘than as’ combination in certain dialects of German.

In addition, Chapter 5 demonstrated that complementiser combinations of the same type were quite frequent in Old and Middle Hungarian subordinate clauses; hence multiple complementisers were not restricted to appear in comparatives. The reason behind this is that some future complementisers started to grammaticalise from operators into C heads (by way of the relative cycle) later than others and therefore they occupied different positions for a while. Since ultimately all complementisers grammaticalised into higher C heads that mark the type of the clause and finite subordination at the same time, multiple complementisers disappeared from the language before the Modern Hungarian

period. However, morphological combinations that were originally formed via head adjunction could grammaticalise into complex C heads and these are still prevalent in the language.

These processes give altogether four configurations for the possible combinations of two C heads; using the example of *ha* ‘if’ and *mint* ‘as’, they are as follows:



As can be seen, there are four different structures that give two linear orders: *hamint* in the first two cases and *mintha* in the last two ones. The order *hamint* is the result of a higher C head combining either with an operator (which is the earlier stage) or with a lower C head (which happens when the operator is already a grammaticalised C head). The order

*mintha* is a complex C head that was first derived in the syntax by way of the lower C head moving up to the higher one; subsequently, the head is only morphologically complex and is base-generated as a single unit in the syntax. All the three steps in question follow from general principles of economy.

The reanalysis of *mint* into a comparative complementiser allowed for new operators to appear in the lower [Spec,CP] position: these appeared during the Middle Hungarian period (together with their interrogative counterparts) and they allowed for the co-presence of lexical projections; hence the possibility of strings like (20) in Modern Hungarian.

Finally, Chapter 6 aimed at accounting for optional ellipsis processes that play a crucial role in the derivation of typical comparative subclauses. These processes are not directly related to the structure of degree expressions and hence the elimination of the quantified expression from the subclause; nevertheless, they were shown to be in interaction with the mechanisms underlying Comparative Deletion or the absence thereof.

In English predicative structures this involves the elimination of the copula from subclauses such as the one (25b), as opposed to the one given in (25a):

- (25) a. Ralph is more enthusiastic than Jason is.  
 b. Ralph is more enthusiastic than Jason.

In nominal comparatives the lexical verb may be deleted:

- (26) a. Ralph bought more houses than Michael bought flats.  
 b. Ralph bought more houses than Michael did flats.  
 c. Ralph bought more houses than Michael did.  
 d. Ralph bought more houses than Michael.

Verb deletion may result either in a subclause without any verbal element, as in (26d), or the tense morpheme may be carried by the dummy auxiliary, as in (26b) and (26c). In addition, depending on whether the

object contains a contrastive noun or not, the object nominal expression remains overt, as in (26a) and (26b), or does not appear overtly, as in (26c) and (26d). A very similar pattern arises in attributive comparatives:

- (27) a. Ralph bought a bigger house than Michael did a flat.  
b. Ralph bought a bigger house than Michael did.  
c. Ralph bought a bigger house than Michael.

The main question was whether the deletion of the lexical verb is merely the deletion of the verbal head or whether there is VP-ellipsis at hand; in the latter case, the possibility of having overt objects (or parts of objects) must be accounted for. Using the analysis that was given in Chapter 4, Chapter 6 argued that gapping is an instance of VP-ellipsis, which proceeds from a left-to-right fashion at PF, and the starting point of it is an [E] feature on a functional *v* head, in line with Merchant (2001). The endpoint of ellipsis is a contrastive phrase, if there is any. I also showed that since the [E] feature can be present on a C head as well, the derivation of comparative subclauses at PF may involve ellipsis starting from an [E] feature either on a C or a *v* head. Since the final string may be ambiguous, one of the central questions is whether a uniform kind of ellipsis mechanism may account for these ambiguities; this was indeed shown to be possible.

On the other hand, the fact that reduced comparative subclauses also exist in Hungarian raises the question of how languages that have overt comparative operators exclusively may show the elimination of the entire degree expression, given that there is no Comparative Deletion in these languages. For instance, predicative comparatives in Hungarian show the following variation:

- (28) a. Mari magasabb volt, mint **amilyen** **magas** Péter  
 Mary taller was.3SG than how tall Peter  
**volt.**  
 was.3SG  
 ‘Mary was taller than Peter.’
- b. Mari magasabb volt, mint Péter.  
 Mary taller was.3SG than Peter  
 ‘Mary was taller than Peter.’

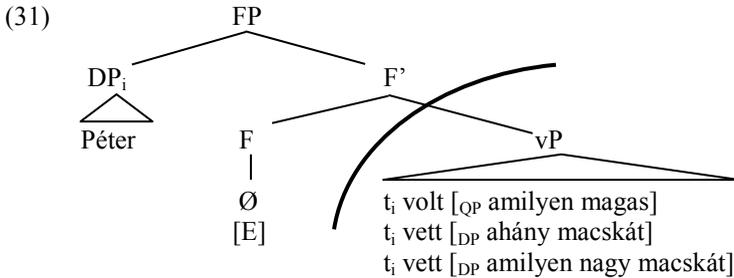
In (28a) the subclause contains all the elements overtly, while the degree expression and the verb are absent from (28b). The same can be observed in nominal comparatives:

- (29) a. Mari több macskát vett, mint **ahány**  
 Mary more cat-ACC bought.3SG than how.many  
**macskát** Péter **vett.**  
 cat-ACC Peter bought.3SG  
 ‘Mary bought more cats than Peter did.’
- b. Mari több macskát vett, mint Péter.  
 Mary more cat-ACC bought.3SG than Peter  
 ‘Mary bought more cats than Peter did.’

Finally, attributive comparatives also show this pattern:

- (30) a. Mari nagyobb macskát vett, mint **amilyen**  
 Mary bigger cat-ACC bought.3SG than how  
**nagy macskát** Péter **vett.**  
 big cat-ACC Peter bought.3SG  
 ‘Mary bought a bigger cat than Peter did.’
- b. Mari nagyobb macskát vett, mint Péter.  
 Mary bigger cat-ACC bought.3SG than Peter  
 ‘Mary bought a bigger cat than Peter did.’

In all of these cases the sentences of a given pair have the same meaning. The main research question was whether the deletion of the degree expression is independent from that of the verb or not. As Chapter 6 showed, these are not two independent processes, since the verb cannot be overt in the absence of an overt degree expression. I argued that this is so because it is ungrammatical to have an operator in its base position in Hungarian, but since there is no separate mechanism that would eliminate the degree expression, a more general ellipsis process has to apply, which is essentially VP-ellipsis. The ellipsis mechanism is fairly similar to the one attested in English and the differences were linked to the slightly different internal structure of the functional layers in the verbal domain in the two languages. Otherwise ellipsis is carried out by an [E] feature on the leftmost functional verbal head in Hungarian too; the ellipsis domain for the subclauses in (28b), (29b) and (30b) is given in (31):



As can be seen, both the verb (the copula or a lexical verb) and the quantified expressions (either a QP or a DP containing a QP) are located in the ellipsis domain, which is the complement of the F head: the FP itself is the leftmost projection in the functional vP-layer.

I also argued that in case the verb is contrastive, ellipsis is slightly different. If the contrastive verb is a copula, then the [E] feature can be located on the functional v head filled by the auxiliary and hence the ellipsis site is located lower. However, if the contrastive verb is a lexical verb, then the [E] feature cannot be located on a thematic v head that is otherwise headed by the lexical verb: in this case the verb has to undergo movement to the F head, and ellipsis takes place essentially in the way indicated in (31). However, due to an extra movement

operation, these structures are slightly marked, which is in keeping with the analysis presented in Chapter 6.

I also showed that the difference between English and Hungarian in terms of gapping effects is chiefly a result of the different prosody in the two languages: while the Intonational Phrase is right-headed in English, it is left-headed in Hungarian. Hence while contrastive elements are located at the right edge of the ellipsis domain in English, in Hungarian they are to the left of the functional head hosting the [E] feature or are themselves located in that head and consequently are not part of the ellipsis domain either. Chapter 6 also showed that since there is strong directionality in terms of ellipsis, in that it proceeds in a strict left to right fashion, this kind of ellipsis works only in head-initial phrases since the ellipsis domain (the complement) has to follow the head hosting the [E] feature. This accounts for why German does not have VP-ellipsis in the way English does: the German VP and all vP layers are head-final while in English all VP projections are head-initial. Cross-linguistic differences concerning optional ellipsis processes can thus be reduced to more general properties that hold in individual languages, and hence ellipsis processes are not construction-specific.

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Adopting a minimalist framework, the dissertation provides a radically new analysis for the syntactic structure of comparatives expressing inequality, focussing mainly on the derivation of the subclause. The proposed account explains how the comparative subclause is connected to the matrix clause, how the subclause is formed in the syntax, and what additional processes contribute to its final structure. While previous analyses concentrated almost exclusively on English, the present dissertation examines the most important theoretical questions cross-linguistically, taking both synchronic and diachronic differences into consideration; hence, although the main focus is on English, there is ample discussion devoted to other languages, such as German, Dutch, Italian, or Hungarian, among others. In this way, the specific properties of English comparatives can also be linked to general settings of the language, instead of having to resort to purporting construction-specific rules and mechanisms.

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