

**Júlia Bácskai-Atkári** *Parametric Variation and Comparative Deletion*<sup>\*</sup>

## **0 Introduction**

The aim of this paper is to refute the assumptions prevalent in the literature on Comparative Deletion (CD) in comparatives and to provide an alternative solution placing CD into a radically new perspective, within a generative framework, more precisely Principles and Parameters Theory. Traditional analyses consider CD to be universally principled, separating it from other deletion phenomena, and defining it on the basis of its being obligatory.

Based on cross-linguistic data, I will show that CD is subject to parametric variation and instead of describing it by virtue of its obligatoriness, I propose a functional definition based on the target site of CD, which may be better applied when accounting for the parametric variation in the subclause. Moreover, I will also prove that there are deletion processes other than CD that are specifically related to the structure of comparatives that cannot be explained by ordinary ellipsis.

In the first two sections I will briefly outline the structure of comparatives and the standard analysis of deletion phenomena. Sections 3–4 will deal with issues that strongly question the possibility of maintaining the standard analysis. Finally, in section 5 I will present an alternative proposal that is more appropriate to describe what comparative deletion is.

## **1 The structure of comparatives**

Before turning to the actual question of deletion phenomena in comparatives, let us first generally characterize their structure. Consider:

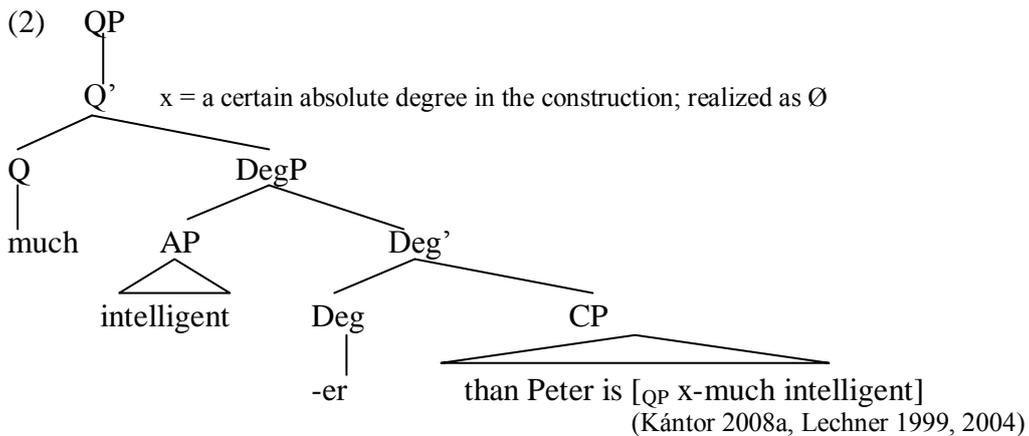
(1) Mary is more intelligent than Peter is.

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\* I would especially like to thank Gergely Kántor for his helpful remarks and encouragement while I was writing this paper. Earlier versions of the present article were first presented as part of my talk at the *Moscow Syntax and Semantics* (MOSS, 9–11 October 2009) conference, and subsequently at the *Budapest Phonology Circle and Linguistics Discussion Group* (BuPhoC, 2 December 2009). I owe many thanks to both audiences, especially to Artemis Alexiadou, Ingo Reich, Ivan Zakharyashev, and Mark Newson. For their helpful comments and suggestions on the written version, I am highly grateful to László Varga and to Krisztina Szécsényi.

The structure of comparatives consists of two major parts: in the matrix clause (*Mary is more intelligent*), the reference value of comparison is expressed in the form of a degree expression, within which the comparative subclause itself (*than Peter is*) expresses the standard value. Their relation can be described in the following way (based on Kántor 2008a: 97; see also Lechner 2004: 53–56; for the semantics of comparison, see Kennedy 2009).

The structure of the string *more intelligent than Peter is* is shown below<sup>1</sup>:



The reference value is expressed in the matrix clause by a DegP, headed by the Deg head *-er* in English and *-bb* in Hungarian, which – being a bound morpheme – morphologically merges with the adjective/adverb in the Specifier in morphological comparatives (e.g. *taller*; see also Abney 1987: 189–204; Corver 1990: 34) or moves up to the Q head in periphrastic comparatives (e.g. *more intelligent*; see Kántor 2008a: 100)<sup>2</sup>. The Specifier of the DegP hosts an AdjP/AdvP, which gives the semantic dimension of comparison (Kántor 2008a: 97; see also Lechner 1999: 25); the Complement of the Deg head expresses the standard value and is realized by the *than*-clause (see Bhatt–Pancheva 2004: 2–6), which is generally taken to be a CP in English (see Kántor 2008a: 101). The subclause also contains a QP, within which the comparative operator (here: *x-much*) is to be found.

The term ‘comparative operator’ refers to a subset of operators behaving quite similarly to ordinary relative operators but are found in comparative subclauses and may exhibit certain characteristics that are not shared by all

<sup>1</sup> For the structure of the functionally extended AP, see Corver (1990, 1997); Kennedy (1999); Izvorski (1995a).

<sup>2</sup> The existence of the QP layer is obviously necessary, as shown by periphrastic comparatives, where the element *-er* (the original Deg head) ultimately precedes the AP (see Kántor 2008a: 99–101).

operators, as will be shown in section 5. This operator is generally taken to be a null operator in English, see Kennedy–Merchant (1997: 5); I will indicate it by *x-much* (or *x-many*) throughout the paper, using the conventions of the relevant literature; still, it has to be stressed that since this is a null operator, *x-much* does not refer to any phonological content to be deleted.

## 2 The standard analysis of deletion processes in comparatives

The derivation of comparatives is traditionally claimed to involve an obligatory deletion process called Comparative Deletion (CD) and optionally also one called Comparative Ellipsis (CE). The two terms and their distinction derive from Bresnan (1973, 1975) and have been used since then; most of my argumentation will relate to the recent work of Kennedy and Merchant, who keep the distinction with certain modifications, as will be shown later on.

The traditional definition of CD would be that it is responsible for eliminating an adjectival, adverbial or nominal constituent from the subclause, after that constituent has moved to [Spec; CP] by ordinary *wh*-movement (Kennedy–Merchant 2000: 89–90; Kennedy to appear: 5; on *wh*-movement in comparatives, see Chomsky 1977: 87) in examples such as (3a)–(3d):

- (3a) Mary is taller than Peter is \_\_\_\_<sub>CD</sub>. (*predicative*)  
 (\_\_\_\_<sub>CD</sub> = *x-much* tall)
- (3b) The tiger ran faster than the man drove \_\_\_\_<sub>CD</sub>.  
 (\_\_\_\_<sub>CD</sub> = *x-much* fast)
- (3c) Susan has more cats than Peter has \_\_\_\_<sub>CD</sub>. (*nominal*)  
 (\_\_\_\_<sub>CD</sub> = *x-many* cats)
- (3d) Susan has bigger cats than Peter has \_\_\_\_<sub>CD</sub>. (*attributive*)  
 (\_\_\_\_<sub>CD</sub> = *x-much* big cats)

The target site seems to be rather different in the above cases: in predicative comparatives, such as (3a), an AP is elided, whereas in nominal and attributive comparatives, as in (3c) and (3d), it is a DP.

According to the standard assumption, CE is defined as an operation that may delete any other recoverable constituent from the subclause, resulting in structures like (4a)–(4d):

- (4a) Mary is taller than Peter \_\_\_\_<sub>CE</sub> \_\_\_\_<sub>CD</sub>.  
 (\_\_\_\_<sub>CE</sub> = *is*; \_\_\_\_<sub>CD</sub> = *x-much* tall)
- (4b) The tiger ran faster than the man \_\_\_\_<sub>CE</sub> \_\_\_\_<sub>CD</sub>.  
 (\_\_\_\_<sub>CE</sub> = *ran*; \_\_\_\_<sub>CD</sub> = *x-much* fast)
- (4c) Susan has more cats than Peter \_\_\_\_<sub>CE</sub> \_\_\_\_<sub>CD</sub>.  
 (\_\_\_\_<sub>CE</sub> = *has*; \_\_\_\_<sub>CD</sub> = *x-many* cats)

(4d) Susan has bigger cats than Peter \_\_\_\_<sub>CE</sub> \_\_\_\_<sub>CD</sub>.  
(\_\_\_\_<sub>CE</sub> = has; \_\_\_\_<sub>CD</sub> = x-much big cats)

The distinction between CD and CE in these analyses lies fundamentally in CD universally being the obligatory process in comparatives (Kennedy 2000, 2002; Lechner 1999, 2004; Bresnan 1973, 1975) and any other type of deletion ought to be considered optional and carried out in the same way as in other subordinate clauses, irrespectively of the fact that the structure is comparative. Languages, therefore, are invariably claimed to have [+CD], meaning that CD is obligatory, and [-CE], meaning that CE is optional.<sup>3</sup>

However, this analysis faces several problems in cross-linguistic terms, as will be shown in the following sections, and therefore a radical reconsideration of deletion phenomena is crucially needed.<sup>4</sup>

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<sup>3</sup> Throughout this paper, I will be using these formulas for the formal description of whether a certain operation is obligatory (hence marked by +) or optional (hence marked by -). Note that optionality is actually common among deletion processes; one such example is of course sluicing, described by Merchant (2001) as triggered by an [E] feature on the C head, in examples such as (i) – however, this feature may be absent, in which case no sluicing happens, as demonstrated by the full clausal counterpart of (i) in (ii):

(i) They wanted to meet her but she did not know why \_\_\_\_<sub>E</sub>.

(ii) They wanted to meet her but she did not know why they wanted to meet her.

The presence of [E] requires deletion to take place in a certain way, thus severely limiting the possibilities of what the final structure can be, see also Lipták–Craenenbroeck (2006), which also means that the feature can not be present in the full counterparts where there is no sluicing at all.

<sup>4</sup> For the present discussion, I will restrict myself to the types of comparatives shown in (3) and (4), and will not venture to examine structures where the standard value is ultimately represented by a definite quantity, such as in (i):

(i) Mary is taller than 170 cm.

Obviously, in the *than*-clause considerable material has to be deleted – not just the adjectival element but the verb as well: a sentence like (ii) does not converge, though the semantic analysis would justify this to be the underlying structure (see Bresnan 1973: 327–331, Heim 1985: 17–18).

(ii) \*Mary is taller than 170 cm is ~~x-much~~.

The phenomenon is found in other languages too, such as Hungarian; and since the [±CD] setting of these languages is otherwise different, as shown in section 3, I assume it to be subject to restrictions other than CD as well:

(iii) Mari magasabb volt, mint (\*amennyi) 170 cm (\*volt).

Mary taller was than x-much 170 cm was

‘Mary was taller than 170 cm.’

### 3 Comparative Deletion Reconsidered

Let us first turn to the question of Comparative Deletion. As mentioned above, CD is traditionally seen as the only obligatory deletion process occurring in comparatives. There are two logical possibilities that can be problematic for such an analysis: the existence of obligatory deletion phenomena in the subclause *other than* CD – and the optionality of CD. Setting aside the first issue for the moment, in this section I will show that CD is not always obligatory and thus there is an obvious need for a functional definition.

In English comparatives CD is indeed clearly obligatory, as shown by (5):

(5) \*I fed cats more often than Peter bathed pigs (\*often).

The deletion eliminating the adverb *often* is claimed to be an instance of CD precisely because it is obligatory and it deletes an adverbial expression from the subclause. Its obligatory nature can easily be captured by the fact that when *often*, corresponding to the quantified adverbial expression in the main clause, is not deleted, the sentence is clearly ungrammatical, whereas when this deletion takes place the structure is grammatical. The conclusion would be the same for other types of comparatives:

(6a) \*Mary is taller than Peter is tall.

(6b) \*Susan has more cats than Peter has cats.

(6c) \*Susan has bigger cats than Peter has big cats.

However, the English pattern is not universal: in Hungarian, for instance, CD is clearly not obligatory:

(7) Többször etettem macskát kaviárral, mint **ahányszor**  
more.often feed-1.Sg.Past.Ind. cat-Acc. caviar.with than **x-many times**  
Péter fürdetett malacot szivaccsal.  
Peter bathe-3.Sg.Past.Ind. pig-Acc. sponge.with  
'I fed cats more often with caviar than Peter bathed pigs with a sponge.'

The possibility of the overt comparative operator *ahányszor* 'x-many times' in the [Spec; CP] position, where it moves via ordinary operator movement, shows that in Hungarian the quantified adverbial constituent may not be deleted in the subclause (though it must be mentioned that it could be), and the same would apply to the other types of comparatives<sup>5</sup>:

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<sup>5</sup> In connection with the example in (8a), it is worth mentioning that predicative structures  
*The Even Yearbook 9 (2010), Department of English Linguistics, Eötvös Loránd University, Budapest*  
ISSN 2061–490X, <http://seas3.elte.hu/delg/publications/even>, © 2010, Júlia Bácskai-Atkári

- (8a) Mari magasabb, mint **amilyen magas** Péter.  
 Mary taller than **x-much tall** Peter  
 ‘Mary is taller than Peter is.’
- (8b) Zsuzsának több macskája van, mint **ahány**  
 Susan-Dat. more cat-Poss.3.Sg. be-3.Sg.Pres.Ind. than **x-many**  
**macskája** Péternek van.  
**cat-Poss.3.Sg.** Peter-Dat. be-3.Sg.Pres.Ind.  
 ‘Susan has more cats than Peter has.’
- (8c) Zsuzsának nagyobb macskája van, mint **amilyen nagy**  
 Susan-Dat. bigger cat-Poss.3.Sg. be-3.Sg.Pres.Ind. than **x-much big**  
**macskája** Péternek van.  
**cat-Poss.3.Sg.** Peter-Dat. be-3.Sg.Pres.Ind.  
 ‘Susan has a bigger cat than Peter has.’

Since in these sentences everything is overt, even the operator that cannot be seen in English, one can conclude that CD has not taken place. The possibility of these structures proves that CD is not obligatory in Hungarian. Based on this, it should be obvious that CD can no longer be considered a universally principled deletion process. This has two crucial implications. First, instead of a universal [+CD] pattern, there is evidence for the existence of a [±CD] parameter that distinguishes between languages having [+CD], such as English, and languages with [−CD], such as Hungarian.<sup>6</sup> Second, there is

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can be expressed in other ways in Hungarian. Most (though not all) of my native consultants judged the sentence in (i) to be grammatical, either with or without the optional sluicing of *magas* ‘tall’:

- (i) Mari magasabb, mint amennyire Péter (magas).  
 Mary taller than x-much Peter tall  
 ‘Mary is taller than Peter.’

Due to its different position in the QP, *amennyire* may move out on its own (i.e. without the adjective), whereas *amilyen* cannot (see also Kántor 2008b: 15–19). This latter restriction accounts for the fact that (ii) is acceptable (though not for all speakers) only if the adjective is elided:

- (ii) % Mari magasabb, mint amilyen Péter (\*magas).  
 Mary taller than x-much Peter tall  
 ‘Mary is taller than Peter.’

I will not attempt to analyse these differences in the present paper, nor do I wish to establish any correlation between the acceptance/rejection of one form and another. Suffice it to say that in all of these cases an overt QP can be seen in [Spec; CP], which explicitly shows that CD cannot be obligatory in Hungarian.

<sup>6</sup> The distinction in my analysis is basically that in [+CD] languages a [CD] feature is obligatorily present in the comparative subclause, which requires certain constituents to be deleted. This question will be dealt with in detail in section 5. The parameters [+CD] and

evidence that defining CD on the basis of its being obligatory is fundamentally flawed and therefore a functional definition is needed, to be based on the target site of CD. This demands a radical reconsideration of the traditional definition of CD, which was not only based on a purported obligatory nature but also on rather different possible target sites: recall that in the standard analysis a nominal, adjectival or adverbial constituent were all possible targets for CD (see Kennedy–Merchant 2000: 89–90), which seems scarcely sufficient when the obligatory nature of CD is removed from the theory.

Before turning to the proposed analysis for CD, let us first consider what other deletion phenomena are responsible for the derivation of comparatives.

#### 4 Comparative Ellipsis Reconsidered

As described in section 2, CE is generally taken to be optional and this seems to be valid if one considers examples such as (3) and (7), which show that English and Hungarian do indeed exhibit a [–CE] setting. In fact, since the definition of CE thus seems to be hardly more than stating what it is *not*, CE for some has become an umbrella term to cover various ellipsis phenomena that may apply regularly in, but are not specific for, comparatives (see for instance Lechner 2004: 5–7). On the other hand, CD was distinguished from any other type of deletion on the basis of its being the only obligatory one and thus anything else was considered to be some kind of ellipsis, and by definition optional (see Kennedy 2000). If, however, there exist other processes that have to be applied in the derivation, there is one more argument against defining CD on the basis of its alleged obligatoriness.

Taking the examples below, let us first briefly recall how CE is traditionally supposed to work in English:

- (9a) Luise goes to London more often than Mary goes to Oxford \_\_\_\_<sub>CD</sub>.  
(\_\_\_\_<sub>CD</sub> = x-much often)
- (9b) Luise goes to London more often than Mary \_\_\_\_<sub>CE</sub> to Oxford.  
(\_\_\_\_<sub>CE</sub> = goes)
- (9c) Luise goes to London more often than Mary \_\_\_\_<sub>CE</sub>.  
(\_\_\_\_<sub>CE</sub> = goes to London)
- (9d) Luise goes to London more often than \_\_\_\_<sub>CE</sub> to Oxford.  
(\_\_\_\_<sub>CE</sub> = she goes)

The structures in (9b)–(9d) are all derived from the one in (9a), which contains only CD but no CE (naturally, there are considerable changes in their

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[–CD] are descriptive parameters for distinguishing between types of languages, such as the parameters SOV, SVO etc.

meaning). It must be noted that in (9b)–(9d), the elided sequences are not constituents and thus these deletions seem to be regulated by PF (see Merchant (2001) on sluicing). In (9b), CE affects only the verb, whereas in (9c) it applies not only to the verb but also to the PP *to London*; in (9d), however, the verb and the subject DP are deleted. The target site and extent of CE thus seems to vary greatly and it would be hard to define CE more precisely than saying that it is an optional ellipsis phenomenon eliminating anything recoverable from the subclause. If, however, this is so, it should not be surprising that the literature on comparatives tends to regard such a process superfluous and having no features specific to comparatives (see Kennedy 2000; Lechner 1999, 2004).

Consider, however, the following examples of *che*-comparatives from standard Italian:

- (10) Luisa ama                                      più    Pietro \_\_\_\_<sub>CD</sub>    che (\*ami)  
       Luise love-3.Sg.Pres.Ind. more Peter                      that love-3.Sg.Pres.Subj.  
       Giorgio.  
       George  
       (\_\_\_\_<sub>CD</sub> = quanto ‘x-much’)  
       ‘Luise loves Peter more than she loves George.’

The sentence in (10) would be ungrammatical if it contained a finite verb besides the DP *Giorgio*. Interestingly, it is not only the finite verb that has to be deleted but everything except one constituent, which remains overt<sup>7</sup>:

- (11a) \*Luisa ama                                      più    Pietro \_\_\_\_<sub>CD</sub>    che Maria \_\_\_\_<sub>E</sub>  
       Luise love-3.Sg.Pres.Ind. more Peter                      that Mary  
       Giorgio.  
       George  
       (\_\_\_\_<sub>CD</sub> = quanto ‘x-much’; \_\_\_\_<sub>E</sub> = ami ‘love-3.Sg.Pres.Subj.’)  
       ‘Luise loves Peter more than Mary loves George.’

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<sup>7</sup> In the examples given in (11) I do not wish to specify what type of deletion would be there (if the structure were grammatical) besides CD, the chief reason being that these sentences are ungrammatical in the given dialect and hence there is actually no such process available in Italian. What is crucial for our discussion, then, is that the extent of CE clearly cannot be such as marked by E in these sentences.

- (11b) \*Luisa è fiera di Pietro più \_\_\_<sub>CD</sub> che  
 Luise be-3.Sg.Pres.Ind. proud-Fem.Sg. of Peter more that  
 Maria \_\_\_<sub>E</sub> di Giorgio.  
 Mary of George  
 (\_\_\_<sub>CD</sub> = quanto ‘x-much’; \_\_\_<sub>E</sub> = sia fiera ‘be-3.Sg.Pres.Subj. proud-Fem.Sg.’)  
 ‘Luise is prouder of Peter than Mary of George.’

As can be seen, standard Italian *che*-comparatives do not tolerate the presence of either two overt DPs, as in (11a), or of a DP and a PP, as in (11b). On the other hand, it must be emphasized that *che* may be followed by constituents other than DPs, such as APs or PPs (on the availability of various constituents after *che*, see Napoli–Nespor 1986):

- (12a) Maria è più bella \_\_\_<sub>CD</sub> che \_\_\_<sub>CE</sub>  
 Mary be-3.Sg.Pres.Ind. more beautiful-Fem.Sg. that  
 diligente.  
 diligent-Fem.Sg.  
 (\_\_\_<sub>CD</sub> = quanto ‘x-much’; \_\_\_<sub>CE</sub> = sia ‘be-3.Sg.Pres.Subj.’)  
 ‘Mary is more beautiful than she is diligent.’
- (12b) Viaggio più con Giorgio \_\_\_<sub>CD</sub> che \_\_\_<sub>CE</sub> con Sergio.  
 travel-1.Sg.Pres.Ind. more with George that with Sergio  
 ‘I travel more with George than with Sergio.’  
 (\_\_\_<sub>CD</sub> = quanto ‘x-much’; \_\_\_<sub>CE</sub> = viaggi ‘travel-1.Sg.Pres.Subj.’)
- (12c) Sergio vuole più ballare \_\_\_<sub>CD</sub> che \_\_\_<sub>CE</sub> lavorare.  
 Sergio want-3.Sg.Pres.Ind. more dance-Inf. that work-Inf.  
 ‘Sergio wants to dance more than he wants to work.’  
 (\_\_\_<sub>CD</sub> = quanto ‘x-much’; \_\_\_<sub>CE</sub> = voglia ‘want-3.Sg.Pres.Subj.’)

This indicates that *che*-comparatives cannot be considered phrasal comparatives but *che* is indeed followed by a clause, most parts of which, however, have to be deleted. This kind of ellipsis is specific to comparatives: in other Italian clauses introduced by *che* the full clause with a finite verb may remain (see also Rizzi 2002: 17):

- (13) Ho letto il libro che Giovanni  
 have-1.Sg.Pres.Ind. read-Past.Part. the-Masc.Sg. book that John  
 ha letto.  
 have-3.Sg.Pres.Ind. read-Past.Part.  
 ‘I have read the book John has read.’

This has two crucially important consequences. First, as there exists an obligatory deletion process in comparatives other than CD, it should be clear that CD can no longer be defined on the basis of its purported obligatoriness: not only because it is not universally obligatory, as was demonstrated in section 3, but also because it is not the only process that may be obligatorily applied in a given language. Second, Italian *che*-comparatives clearly show that there is at least one kind of deletion other than CD which can be obligatory and which is specific to comparatives; therefore, the analyses denying the existence of CE, an application eliding everything but one constituent, and seeking to explain it only by general deletion processes are fundamentally flawed.

Therefore, besides a [ $\pm$ CD] parameter, there is also a [ $\pm$ CE] parameter – and Italian is [+CE], as opposed to, for instance, Hungarian and English, which are [–CE]. This also suggests that the issue of deletion phenomena in comparatives is far more complex than the traditional analysis can capture and thus not only CD but the entire issue of deletion in comparatives has to be reconsidered.

## 5 The proposed analysis

The standard definition of Comparative Deletion, which considered it an obligatory process eliminating an adjectival, adverbial or nominal constituent from the comparative subclause (see Kennedy–Merchant 2000: 89–90; Kennedy to appear: 5), can no longer be maintained since, as I have shown, CD is not always obligatory and, on the other hand, there are other deletion processes specific to comparatives that apply obligatorily. There would thus be two major tasks: to define what CD is and to give a more accurate description of other deletion processes in the subclause – the latter question, however, falls out of the scope of the present study.

First of all, I propose a new, functional definition of CD: it is an operation responsible for eliminating the QP from the comparative subclause, if it is logically identical with the one in the matrix clause. Logical identity here means that the elided element must be recoverable at LF, for which it must have an appropriate antecedent in the structure; however, this does not require a *phonological* identity with its antecedent.<sup>8</sup> Clearly, a QP such as the English

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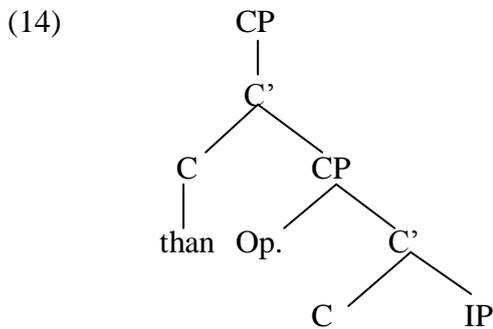
<sup>8</sup> This requirement is not specific to comparatives but it is valid for other deletion phenomena as well, such as for VP-ellipsis or sluicing, see Merchant (2001: 13–31). Examples include different verb forms, such as in (i), or the deletion of a pronoun with an R-expression antecedent, as in (ii):

(i) Susan bought a cat after Peter did ~~buy a cat~~.

(ii) He phoned Susan<sub>i</sub> although she<sub>i</sub> hoped that he wouldn't ~~phone her<sub>i</sub>~~.

*better* is not phonologically identical with its counterpart in the subclause, which would be *good*, but the latter is nevertheless recoverable on the basis of the former.

Second, let me describe briefly how this operation is supposed to work. As has already been said, CD involves the movement of an element to the [Spec; CP] position by way of ordinary *wh*-movement: adopting Rizzi's analysis for the cartographic approach for the Left Periphery<sup>9</sup>, I assume that this CP is the one below the CP headed by *than* (see for instance Lechner 2004: 12–14, 40–51; Kántor 2008c: 5):




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Note that in (ii), it must be the pronoun deleted, since the R-expression would be ungrammatical in that position, as it would be a Principle C violation (see Haegeman 1994: 206):

(iii) \*He phoned Susan<sub>i</sub> although she<sub>i</sub> hoped that he wouldn't ~~phone Susan<sub>i</sub>~~.

<sup>9</sup> According to Rizzi (1997: 297; 1999: 1; 2004: 237–238), the Left Periphery contains two CPs, between which Topics and Focus may also appear:

(i) [Force-CP [TopP [FocP [TopP [Fin-CP IP]]]]]

The higher, Force-CP head is 'the head expressing the clausal typing, the kind of information that must be readily accessible to an external selector' and the lower, Fin-CP head is 'the head differentiating finite and nonfinite constructions' (Rizzi 2004: 237). Italian data confirm the existence of this structure:

(ii) Credo che ieri QUESTO a Gianni avreste dovuto dirgli.  
 Force Top Foc Top IP  
 'I believe that yesterday THIS to Gianni you should have said.'

(iii) Penso a Gianni, di dovergli parlare.  
 Top Fin IP  
 'I think, to Gianni, to have to talk to him.'

(examples from Rizzi 2004: 237, ex. 44a–b)

Though Italian does not allow both C heads to be filled at the same time, this is not so in Welsh, as pointed out by Roberts (2004: 301–306) and Rizzi (2002: 14; 2004: 237):

(iv) Dywedais i [mai 'r dynion fel arfer a [werthith y ci]]  
 Sais I C the men as usual C will-sell the dog.'

(example from Rizzi 2004: 237, ex. 46)

The movement of the QP to [Spec; CP] is motivated as a *wh*-movement; on the other hand, I propose that CD takes place in this position and not where the QP is base-generated. The notion of movement in comparatives, and deleting material after movement have of course been present in the relevant literature (see Kennedy–Merchant 2000; Kennedy to appear; Chomsky 1977); however, the advantages of CD taking place after movement ought to be clarified. There are two main aspects here to be considered. First, the post-movement deletion approach will predict that in attributive and nominal comparatives the entire DP containing the QP will be deleted since in these cases the DP as such has to move to [Spec; CP] due to general restrictions on movement. This is crucially different from proposing that deletion takes place at the base position, which would have to assume that CD targets different constituents in predicative and in attributive/nominal comparatives, without the ability to account for why such a difference has to be made in syntax. Second, the fact that in subcomparatives there is overt material left in the base position can also be handled without having to treat these structures exceptional, simply by saying that CD does not take place in the base position and therefore the presence of the lower copies is again due to factors not specifically related to comparatives. I will elaborate on these issues in detail; before that, however, let me briefly describe how CD is supposed to work under the present proposal.

CD takes place if the lower C head is equipped with a [CD] feature; in languages with [+CD] parametric setting, the [CD] feature is always and obligatorily present on the lower C head, whereas in languages with [-CD] setting this feature is not necessarily present and therefore the comparative operators can be seen overtly in such languages, as demonstrated by the Hungarian examples.<sup>10</sup>

Whereas CD in [Spec; CP] is an operation taking place because of a syntactic feature, the deletion of the lower copy is carried out regularly by PF (see Chomsky 2005: 12; Bobaljik 2002): this can happen if the lower copy has an appropriate antecedent (see Merchant 2001: 23–37; Lipták–Craenenbroeck 2006: 257), the condition of which is fulfilled if the QP in the matrix clause is logically identical with it. This is possible in non-comparative subordinate structures as well:

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<sup>10</sup> In some languages, certain C heads may require their specifier to be empty, according to the Doubly Filled COMP Filter. This leads to the obligatory deletion of the *wh*-element in [Spec; CP] in English or in Italian, though no other constituent is required to be deleted; moreover, deletion is related to that particular position because if the *wh*-element moves further, it can remain overt. See Broekhuis–Dekkers (2000: 392–393), Haegeman (1994: 397–400).

(15) She thought that he would go abroad [<sub>PP</sub> before being asked to ~~go abroad~~].

Bearing this in mind, let me provide arguments in favour of my analysis for what Comparative Deletion is. There are three very important advantages: it is based on the target site (i.e. what CD has to delete and in which position); it pertains to all types of comparatives; and subcomparatives do not have to be treated as exceptional. I will elaborate on these in more detail, and show also that deletion after movement is preferable to deletion in the base position.

A definition based on the target site is universally applicable since it allows for the [ $\pm$ CD] parametric variation outlined in section 3. Taking the examples in (16), it can be shown that the target site of CD is the same in English and in Hungarian and the difference is indeed in their obligatory or optional nature, as defined by the parameter<sup>11</sup>:

(16a) \*Mary is taller than Peter is [<sub>QP</sub> tall].

(16b) Mary is taller than Peter is \_\_\_<sub>CD</sub>. (<sub>CD</sub> = [<sub>QP</sub> x-much tall])

(16c) Mari magasabb, mint [<sub>QP</sub> amilyen magas] Péter.

Mary taller than x-much tall Peter

‘Mary is taller than Peter.’

(16d) Mari magasabb, mint \_\_\_<sub>CD</sub> Péter. (<sub>CD</sub> = [<sub>QP</sub> amilyen magas])

Mary taller than Peter

‘Mary is taller than Peter.’

The standard analysis would account for the ungrammaticality of (16a) by stating that an obligatory deletion process does not take place, as opposed to (16b). However, it would not be able to explain how (16c) can be acceptable, if (16a) is clearly not; and the case can obviously not be that the same QP could not be targeted by CD in Hungarian, as shown by (16d).

In my analysis, as indicated, the target of CD is the same QP in both languages; the reason why it has to apply in English is that English is a [+CD] language, whereas Hungarian is [-CD] and so the sentences in (16c) and (16d) are both grammatical, irrespectively of the fact that only (16d) contains CD. In [+CD] languages the head of the CP hosting the operator is invariably equipped with the [CD] feature, whereas in languages with a [-CD] parameter

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<sup>11</sup> Note that here I restrict myself to standard English and standard Hungarian and, for the time being, I do not wish to examine dialectal differences. It is worth mentioning, however, that in certain American dialects CD may not be obligatory, as shown by Chomsky’s example, where the operator is left overt:

(i) John is taller than what Mary is.

(Chomsky 1977: 87, ex. 51a)

its presence is optional and therefore the QP moved to [Spec; CP] via ordinary *wh*-movement does not have to be deleted.<sup>12</sup>

The importance of a clearly defined target site is crucial for having a unified concept of CD not only with respect to different languages but also with respect to the various types of comparatives. Recall that the standard analysis considered CD as an operation that eliminates an adjectival, adverbial, or nominal constituent (Kennedy–Merchant 2000: 89–90), which suggests that the type of the comparative structure defines what the target site of the operation is. Obviously, the problem partly arises from the fact that such a definition takes into consideration only the lexical heads but not the entire phrases projected upon them, hence their syntactic similarities are blurred. On the other hand, as has been mentioned, bearing in mind that deletion takes places after movement will also shed light on why different constituents are deleted in different types, although the target is the same in all cases.

To start with predicative comparatives, it is true that the Adj and Adv heads are decisive for logical identity but it must be stressed that both are embedded in a QP. Thus in examples like (3a) and (3b), repeated here as (17a) and (17b), the target site of CD is the same, irrespectively of whether they contain an Adj or an Adv as a lexical head:

(17a) Mary is taller than Peter is \_\_\_\_<sub>CD</sub>.

(17b) The tiger ran faster than the man drove \_\_\_\_<sub>CD</sub>.

The structure of the two QPs deleted in (17) is shown below:

(18a) [QP x-much [<sub>DegP</sub> [<sub>AdjP</sub> tall]]]

(18b) [QP x-much [<sub>DegP</sub> [<sub>AdvP</sub> fast]]]

<sup>12</sup> The distribution of a feature like this should not be thought of as unique. It is a well-known fact that English does not permit multiple *wh*-movement: only one *wh*-constituent will be actually moved, whereas the other ones have to remain in situ:

(i) \*Who what said to whom?

(ii) Who said what to whom?

See also Simpson (2000: 97–103). This is, however, not so in all languages: Hungarian and Bulgarian, for instance, do allow multiple *wh*-fronting: however, this is not obligatory but some *wh*-elements may still remain in situ. See É. Kiss (2002: 99–104), Tasseva-Kurktchieva (2001: 5). The following pair of examples comes from Bulgarian:

(iii) Koj kakvo na kogo kaza?

who what to who said

‘Who said what to who?’

(iv) Koj kakvo kaza na kogo?

who what said to whom

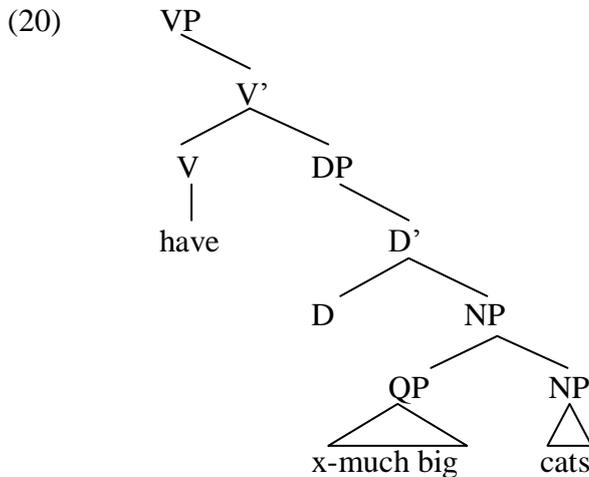
‘Who said what to whom?’

(Tasseva-Kurktchieva 2001: 4–5, ex. 10a, 12a)

Similarly, QPs are to be found in attributive comparatives as well: they are adjoined to an NP (see Kántor 2008b: 149; Kennedy–Merchant 1997: 19). Consider the sentence in (3d), repeated here as (19):

(19) Susan has bigger cats than Peter has [<sub>DP</sub> ~~x-much big~~ cats].

The representation of (19) is the following:



Based on my definition, CD, as in predicative comparatives such as (17a), targets the QP, here to be found adjoined to an NP. The only problem the analysis here has to face is that, as shown by (19), the entire DP has to be deleted, not just the QP – otherwise the structure is ungrammatical:

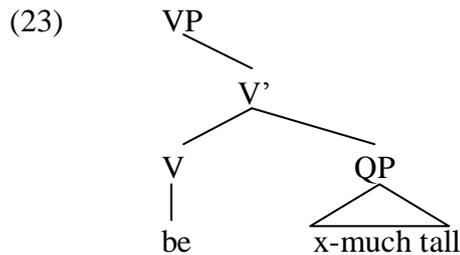
(21) \*Susan has bigger cats than Peter has \_\_\_<sub>CD</sub> cats. (\_\_\_<sub>CD</sub> = x-much big)

However, this can be explained without having to assume that CD would target the entire DP. As said before, CD involves the movement of the QP operator to the [Spec; CP] position. The movement of the QP in itself is not allowed in (19)–(21) due to island constraints: the movement of the QP out of a DP-island is prohibited (see Izvorski 1995b: 217; Kántor 2008b: 148–149; on the constraint, see Kayne 1983; Ross 1986; Bošković 2005; Grebenyova 2004). The only way for the QP to be moved is to move together with the DP containing it; this is not restricted to comparatives but can be seen in ordinary *wh*-movement as well (see Kennedy–Merchant 1997: 7):

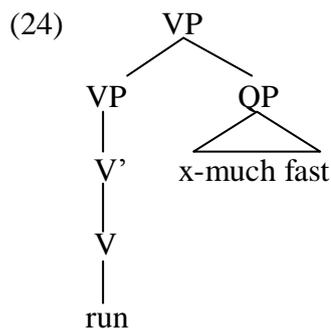
(22a) \*[<sub>QP</sub> How big]<sub>i</sub> does Susan have [<sub>DP</sub> [<sub>NP</sub> *t*<sub>i</sub> [<sub>NP</sub> cats]]]?

(22b) [DP [NP [QP How big] [NP cats]]]<sub>i</sub> does Susan have *t<sub>i</sub>*?

Obviously, this is merely related to the syntactic position of the QP: in predicative comparatives such as (17a), the QP is moved to [Spec; CP] on its own (see Kántor 2008b: 149) since it is not located within a DP there:



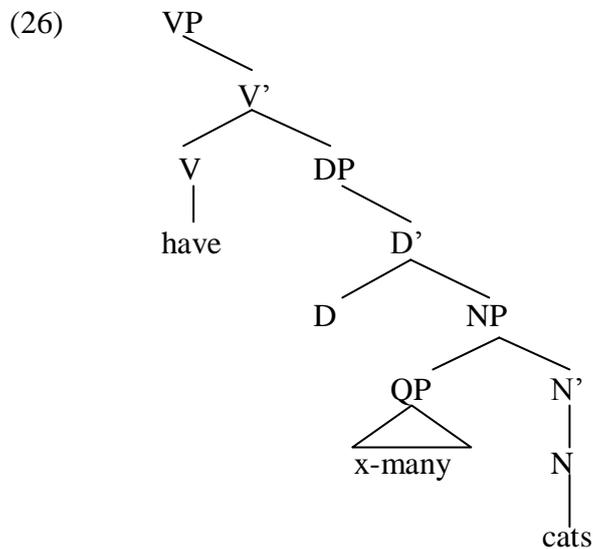
The same applies for the sentence in (17b), where the QP is not in a complement position but is a VP adjunct:



The argumentation presented for attributive can be extended to nominal comparatives as well, the only difference being that there QPs are generally taken to be post-determiners and located in a specifier, such as [Spec; NP] (Cook–Newson 2007: 108; see also Zamparelli 2000: 13–26). An example is shown below:

(25) Susan has more cats than Peter has [~~DP x-many cats~~].

The corresponding representation of (25) is given in (26):



Again, the phenomenon is not specifically related to comparatives:

(27a) \*[QP How many]<sub>i</sub> does Susan have [DP [NP *t<sub>i</sub>* cats]]?

(27b) [DP [NP [QP How many] cats]]<sub>i</sub> does Susan have *t<sub>i</sub>*?

It should be clear that attributive and nominal comparatives differ from predicative ones only in that the QP is within a nominal expression there; and since this difference can account for the deletion differences, as it follows from more general rules, it can be concluded that the target site of Comparative Deletion is indeed a QP in all types of comparatives. The fact that the entire DP will be deleted from [Spec; CP] should not be surprising because, as has been mentioned, CD always deletes the element moved to the [Spec; CP] position and if this has to be a DP, the entire DP will be deleted.

In fact, this is a point where an analysis claiming that CD takes place at the base position would fail to account for why the entire DP has to be deleted: what seems to be comparative-specific is rather the QP only and hence a DP as a target site for Comparative Deletion is highly problematic.

The last question I would like to examine is that of subcomparatives because, as I said, the proposed new analysis for CD does not have to treat them as exceptional. In subcomparatives, the relative quantities of different properties or entities are compared (see Kennedy 2000). Basically, the standard analysis has to face the problem of why CD does not seem to apply in them, although they are structurally akin to their ordinary predicative or nominal counterparts.

Consider the following pair of sentences:

(28a) The desk is longer than the office is ~~long~~.

(28b) The desk is longer than the office is wide.

In both sentences, the QP is in the complement position of the verb; however, it is only in (28a) that the adjective is deleted. This is not surprising since the new definition says that the QP is elided from the subclause if it is logically identical with the one in the matrix clause: in both cases, the QP in the matrix clause is *longer* and whilst the QP of the subclause in (28a) contains the adjective *long*, in (28b) there is *wide*, which is clearly not identical. Thus the fact that the adjective is not elided in (28b) is in accordance with the new definition and is not due to any exceptional rule specific to subcomparatives.

The other major type of subcomparatives resembles ordinary nominal comparatives:

(29a) Susan has more cats than Peter has ~~eats~~.

(29b) Susan has more cats than Peter has dogs.

Again, the problem the traditional analysis has to face is why *dogs* may remain overt in (29b), although structurally the target site of CD seems to be a DP, as indicated by (29a). The new definition, however, shows that the target site of CD is actually a QP and the movement of the entire DP to [Spec; CP] is just a consequence of more general requirements on movement and so the fact that *dogs* can remain is not contradictory to the application of CD.

The possibility of the overt presence of *wide* and *dog* is due to lack of identity, i.e. the following: whilst the material in [Spec; CP] is invariably deleted in syntax because of [CD], the lower copy of the quantified expression is only elided at PF if it is recoverable, i.e. it has an appropriate antecedent. For *long* and *cats* in (28a) and (29a), respectively, the appropriate antecedent – *longer* and *cats* – is given in the matrix clause and thus the regular deletion of the lower copy is carried out; however, in (28b) and (29b) *longer* and *cats* do not count as appropriate antecedents for *wide* and *dogs* and thus they cannot be elided. This restriction is again not due to an exceptional working of CD as such but can be traced back to more general requirements for deletion (see Lipták–Craenenbroeck 2006: 257).

In languages with [-CD] setting, such as Hungarian, the QPs (or DPs) can of course remain overt in both cases: since then CD does not apply at all, these XPs will be found in the [Spec; CP] position and the lower copies will naturally be deleted. In English, as far as the deletion in [Spec; CP] is concerned, CD does apply and thus subcomparatives are not exceptions to Comparative Deletion; the final structure is by definition different due to

recoverability effects. Again, if one were to postulate that CD takes place at the base-position, one would have to assume that it simply does not apply in subcomparatives, despite their structural identity with ordinary ones. Furthermore, whilst it is foreseeable that moving a deleted (hence  $\emptyset$ ) element to [Spec; CP] will not appear overtly there, it can be hardly argued for that moving an undeleted constituent will result in the appearance of the lower copy in the final structure; this would be contrary to the nature of PF operations, which delete lower copies and leave the highest ones.

Based on all these, it can be concluded that considering CD as an operation eliminating the QP from the comparative subclause, if it is (logically) identical with the one in the matrix clause, is favourable to the standard assumptions.

## **6 Conclusion**

The aim of this essay was to refute the standard assumptions about deletion phenomena in the comparative subclause, which define Comparative Deletion as a universally obligatory process and Comparative Ellipsis as an optional one. I showed that these views cannot be maintained, since the obligatoriness of CD is subject to parametric variation; on the other hand, CE is in fact obligatory in some languages. Based on these, I proposed that the QP in the comparative subclause should be considered the target site of CD and I also showed that this can be maintained not only cross-linguistically but also across the various types of comparatives. This definition is restricted enough for distinguishing CD from other types of deletion and the differences among the different types of comparatives can be accounted for by more general requirements.

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