ENGLISH COMPARATIVES AND PARAMETERS

1. The problem

The aim of the present article is to investigate the cross-linguistic status of English comparative subclauses, with particular attention to the phenomenon traditionally termed Comparative Deletion (CD) since Bresnan (1973, 1975). This aim is twofold: first, I would like to demonstrate that the behaviour of English in these structures shows a tendency that is universally possible even if it does not feature in all languages. Second, I will also show that though the notion of Comparative Deletion was applied for English in generative grammar, it can also contribute to the analysis of Hungarian historical data, thereby connecting the seemingly regional issues of Hungarian historical linguistics to the current findings of diachronic syntax. In this way, a substantial amount of the results to be presented may be applied in comparative analyses of various languages that are otherwise not connected to each other.

In a descriptive sense, one might say that Comparative Deletion is responsible for eliminating a quantified AP (adjective/adverb phrase) or DP (determiner phrase) from the comparative subclause, if it is logically identical to its antecedent in the matrix clause (cf. Kennedy and Merchant 2000), as illustrated below:

(1) The dog is bigger than the cat is x-big.
(2) Mary saw bigger cats than Peter saw x-big cats.

In (1), x-big is deleted from the subclause under logical identity with bigger in the matrix clause; x refers to the degree of Peter’s tallness, and is a zero operator in all structures. Similarly, in (2) it is possible to delete the DP x-big cats from the subclause, as it is identical with bigger cats in the matrix clause.

What is peculiar in terms of CD is that it is obligatory, at least in English. This raises three very important questions. First: where exactly does CD apply within the comparative subclause? Second: how does CD vary across languages? Third: how do parameters interact with each other?

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In the following, I will demonstrate that CD does not apply in the position where deleted material is base-generated but in a position right below than. I will also argue that CD is not universally obligatory but is subject to parametric variation – and also to parametric change.

2. The process of Comparative Deletion

As is known, comparatives involve movement of an operator to a specifier position of a CP (complementiser phrase), see e.g. Chomsky (1977); the basic structure of a comparative subclause is illustrated below:

\[
\begin{align*}
& CP \\
& \quad \downarrow \\
& \quad C' \\
& \quad \downarrow \\
& \quad C \\
& \quad \vert \\
& \quad \text{than} \\
& \quad \downarrow \\
& \quad OP \\
& \quad \downarrow \\
& \quad C' \\
& \quad \vert \\
& \quad IP \\
& \quad \vert \\
& \quad \emptyset
\end{align*}
\]

The representation follows the analysis by Rizzi (1997: 297) for the structure of the Left Periphery, which is given in (4):

\[(4) [CP [TopP* [FocP [TopP* [CP]]]]]\]

There are thus two CP layers\(^2\); in between, iterable topics and one focus may appear optionally. The upper C head is filled by the complementiser than; the lower CP has a zero head and its specifier hosts the operator, which moves there via ordinary \textit{wh}-movement.

One obvious reason in favour of operator movement comes from dialects of English, such as New England English, where the following sentence is perfectly grammatical:

\[(5) \% \text{John is taller than what Mary is.} \quad (\text{Chomsky 1977: 87, ex. 51a})\]

\[^2\text{In the analysis provided by Rizzi (1997), the upper C head is responsible for the Force of the clause, while the lower determines Finiteness. Since the present paper does not intends to touch upon the issue of either one, especially because in certain cases the distinction seems to be highly arbitrary, I will not indicate them in the representations to follow.}\]
In this case, what occupies the specifier position of the lower CP. Since there is wh-
movement involved, in structures like (1) and (2) there are altogether two copies to be
deleted. There are reasons to believe that CD targets the upper copy and the lower one is
regularly deleted as a lower copy.

Recall that the quantified AP (hence, a QP = quantifier phrase) or a DP containing a QP
in the subclause can be entirely eliminated under the condition that they are logically identical
with their antecedents in the matrix clause. Now in cases where the QP (or the DP) in the
subclause is not logically identical with its antecedent, it is the lower copy that remains:

(6) The dog is bigger than the doghouse is wide.

Since the subclause contains an operator (heading the QP \textit{x-wide}), there must be
operator movement and hence a higher copy of the QP. Under normal circumstances it should
be the higher copy remaining and the lower one undergoing deletion (see Bošković and Nunes
2007: 44–48; Chomsky 2005: 12; Bobaljik 2002); lower copies may be phonologically
realised if the pronunciation of the highest copy causes the derivation to crash at PF
(Bošković and Nunes 2007: 48). Consequently, in a structure like (6) there must be a reason
for why the lower copy remains and why the higher one has to be deleted.

The mechanism requiring the elimination of the higher copy is CD, which therefore
applies in the lower [Spec; CP] position (see Bacskai-Atkari 2010). In cases like (1) or (2), the
lower copy is deleted regularly as such, which is possible because it is recoverable from the
matrix clause. In cases like (6), however, the lower copy cannot be deleted because it would
not be recoverable: it is F-marked (focus-marked) as it contains new information in the
discourse.

The differences in the derivation of (1) and (6) are summarised below:

(7) The dog is bigger $\left[ \text{CP} \left\{ \text{QP x-big} \right\} \text{the cat is} \right\{ \text{QP x-big} \} \right]$.

(8) The dog is bigger $\left[ \text{CP} \left\{ \text{QP x-wide}_F \right\} \text{the doghouse is} \right\{ \text{QP x-wide}_F \} \right]$.

As can be seen, (8) differs from (7) only in that the lower copy of the QP remains
because it is F-marked, as opposed to the one in (7). In both cases, however, the higher copy
is eliminated by CD.
3. Parametric variation in attributive structures

One interesting issue in connection with English comparatives is what happens when the lower copy of a DP remains. Consider the following examples:

(9) Mary bought a bigger dog than Peter bought.

(10) Mary bought a bigger dog than Peter (did) a doghouse.

In (9), CD applies regularly to a DP containing a QP under logical identity with its matrix clausal counterpart, hence:

(11) Mary bought a bigger dog \( [\text{CP} \text{than} [\text{CP} \{\text{an x-big dog}\} \text{Peter bought} \{\text{an x-big dog}\}]] \).

The reason why the entire DP has to move and not just the QP comes from independent constraints in the grammar: modifiers cannot be extracted from a DP (cf. Kántor 2008: 148–149; Izvorski 1995: 217; Bošković 2005; Grebenyova 2004; Kayne 1983; Ross 1986). This is true for other constructions involving a \textit{wh}-modifier, which has to move. Consider:

(12) *How big did Mary see cats?

(13) How big cats did Mary see?

As can be observed, the QP \textit{how big} cannot move on its own, it has to move together with the entire DP \textit{how big cats}.

This becomes crucial when considering the example in (10), where the lower copy of \textit{a doghouse} remains – which is, however, only part of the entire lower copy since it does not contain the QP (\textit{x-big}). Moreover, the finite verb also has to be eliminated:

(14) *Mary bought a bigger dog than Peter bought a doghouse.

Hence there must be a mechanism that deletes the finite verb and the QP but leaves the rest of the DP intact. In this respect, there is considerable cross-linguistic difference, which can be traced back to the constraint on the QP moving out of the DP. Consider the following examples from Polish:

(15) Jak długą sztukę napisał Paweł?
    how long play wrote Paweł
    ‘How long a play did Pawel write?’

(Kennedy and Merchant 2000: 104, ex. 30a)
(16) Jak długą napisał Paweł sztukę?
   how long wrote Pawel play
   ‘How long a play did Pawel write?’

   (Kennedy and Merchant 2000: 104, ex. 30b)

As can be seen in (16), the QP *jak długą* may move out on its own, not only together with the entire nominal expression, as in (15). This shows that Polish – just as e.g. Czech – does not obey the constraint on modifier extraction from nominal expressions, which has already been found to be operating in English (cf. Kennedy and Merchant 2000: 104–106). Interestingly, Polish allows constructions like (14):

(17) Jan napisał dłuższy list, niż Paweł napisał sztukę.
   Jan wrote longer letter than Pawel wrote play
   ‘Jan wrote a longer letter than Pawel did a play.’

   (Kennedy and Merchant 2000: 104, ex. 31a)

As opposed to the English example in (14), a Polish comparative subclause may contain a lexical verb (*napisał*) and a noun (*sztukę*) even if the QP has been eliminated. Since in Polish the QP may move out from the nominal expression on its own, the lower copy of the QP may be deleted regularly:

(18) Jan napisał dłuższy list, niż *
  Pokaz x-
  długa
   Paweł napisał *
  Pokaz x-
  długa
   sztukę.

   The higher copy is thus deleted by CD and the lower one, since it is logically identical with *dłuższy* in the matrix clause, may regularly be deleted as a lower copy of a moved element.

   This is not the case in English, where the QP may move up only as part of the entire DP – hence, the lower copy of the QP will not have an appropriate antecedent for regular deletion because it is not a lower copy of a moved element, only a part thereof. Hence a derivation like the one for Polish would be illegitimate:

(19) *[CP than *[DP an *
  Pokaz x-
  big
   doghouse]_
   Peter bought [*[DP an *
  Pokaz x-
  big
   doghouse]F]_

   Since there is no separate QP-deletion rule in the grammar, the only possibility for the QP *x-big* in its base position is to be deleted as a result of some other process. This will be VP-deletion, which in this case eliminated the lexical verb and the QP following it but leaves the rest of the nominal expression intact. In order for this, the verb and the QP must be adjacent, which is satisfied because the QP moves up to a higher position in the DP, resulting in a structure where it actually precedes the determiner. Compare:
(20) *[A [how big] cat] did you see?
(21) [[How big] a cat] did you see?

The structure of the nominal expression in (21) is shown below (cf. Kennedy and Merchant 2000: 124–130):

(22)

\[
\begin{array}{c}
\text{FP} \\
\text{QP}_1 \\
\text{how big} \\
\text{F'} \\
\text{DP} \\
\text{D'} \\
\text{D} \\
\text{NP} \\
\text{a cat}
\end{array}
\]

Hence, the correct representation of (19) is as follows:

(23) \[\text{CP} \text{than} \left[\text{FP} \left[\text{QP}_1 \text{a doghouse}\right] \text{Peter bought} \left[\text{FP} \left[\text{QP}_1 \text{an doghouse}\right]\right]\right]\]

Since in this case the verb (*bought*) and the QP are adjacent, VP-deletion can now delete them together. This follows from the way how VP-deletion generally operates: it deletes a VP going from left to right and stops when it reaches an F-marked phrase – in (23), it is the DP (Bacskaia-Atkari 2011a).

Considering all this, it should be clear that the seemingly peculiar behaviour of English in attributive comparative subclauses is not a universal property of attributive structures but is defined by parameters – hence the difference between English and Polish.

4. More on parametric variation

The question arises how one can explain CD away in the first place. English clearly requires the elimination of the quantified expression (QP or DP) from the subclause. It is very unlikely, though, that the deletion of any element moved to the lower [Spec; CP] position in a *than*-clause would be either a universal requirement or a parameter on its own.

In order to find out how English relates to other languages in this respect, let us have a look at the following data from Hungarian:
(24) Mari magasabb, mint amilyen magas Péter.
    Mary taller than x-much tall Peter
    ‘Mary is taller than Peter.’

(25) Mari nagyobb macskákat látott, mint amilyen nagy macskákat Péter látott.
    Mary bigger cats saw than x-much big cats Peter saw
    ‘Mary saw bigger cats than Peter.’

    As can be seen, the Hungarian equivalent of than (mint) can be followed by an overt quantified element, such as the QP amilyen magas ‘x-much tall’ in (24) and the DP amilyen nagy macskákat ‘x-much big cats’ in (25). The fact that Hungarian allows these elements to be present in the specifier of the lower CP shows that CD cannot be obligatory in Hungarian.

    This is not restricted to Hungarian: Bulgarian, a completely unrelated language exhibits the same pattern too. Compare:

(26) Мери по-висока беше от колкото висок Питър беше.
    Mary taller was than x-much tall Peter was
    ‘Mary was taller than Peter was.’

(27) Мери по-голяма котка видя, от колкото голяма котка Питър къпеше.
    Mary bigger cat saw than x-much big cat Peter bathed
    ‘Mary saw a bigger cat than Peter bathed.’

    Since Bulgarian allows the same elements to be present in the possible site of CD, we can conclude that the English pattern is not universal. It seems that there is a parametric difference between languages that have obligatory CD and ones that do not have it.

    Moreover, there is an interesting issue in connection with English too. Recall the example in (5), repeated here as (28):

(28) % John is taller than what Mary is.
    (Chomsky 1977: 87, ex. 51a)

    It has already been pointed out that what in this case occupies the specifier position of the lower CP. Since that is exactly the position of the comparative operator, it follows logically that what in (28) is the comparative operator. This may lead one to the conclusion that CD is not obligatory in English either; yet, some factors have to be considered.

    First of all, the acceptability of (28) varies considerably among speakers and dialects: whereas in some American dialects it is perfectly grammatical, in others, including Standard English, it is only marginally acceptable or even unacceptable. Hence it would not be reasonable to claim that CD is not an obligatory process in English: in languages where CD is not obligatory, sentences including comparative operators are normally accepted.
Second, when comparing examples like (28) with ones like (24) and (25), it should be obvious that while operators in Hungarian appear together with a lexical AP or NP, the English what stands alone for an entire QP or DP. The latter case can be observed in sentences like (29):

(29) % I have a smaller room than what I expected.

Again, this phenomenon is not English-specific: German, which also has obligatory CD, likewise has proform operators standing for the entire QP or DP, which are marginally acceptable (cf. Bacskaí-Atkari 2011b: 114–115).

(30) % Die Welt ist mehr, als was wir sehen.
    the-Fem. world is more than what we see-1.Pl.
    ‘The world is more than what we see.’

(31) % Er ist besser als wie du.
    he is better than how you
    ‘He is better than you.’

In either case the comparative complementiser als ‘than’ is followed by an overt operator – was ‘what’ or wie ‘how’. However, in neither case can the operator appear together with a lexical AP or NP, unlike Hungarian or Bulgarian.

Last but not least, such proform comparative operators are insensitive to the subtype of comparative they introduce, whereas comparative operators in languages without CD do vary according to what elements they combine with. Consider the following sentence from Hungarian, which is an example for nominal comparatives:

(32) Mari több macskát láttott, mint ahány macskát Péter láttott.
    Mary bigger cats saw than x-many cat Peter saw
    ‘Mary saw more cats than Peter.’

The comparative operator in this case is ahány ‘x-many’, which (as a QP) in nominal comparatives combines directly with an NP within a DP – unlike amilyen in (24) and (25), which combines with APs to form QPs. This type of sensitivity is not to be observed in English, where nominal comparatives have what as a comparative operator (if at all), just as could be observed in predicative and attributive structures in (28) and (29). Compare:

(33) % She gave me more money than what I expected.
This point to an important generalisation, namely that if a language has only proform operators in comparative subclauses that do not allow the co-presence of a lexical AP or DP, then that language will normally have a parametric setting such that CD is obligatory.

Though this is a fairly good descriptive generalisation, one must also account for the reasons behind it, in order to justify the claim itself. In order to do this, let us first compare the following examples from English, German, Hungarian, and Bulgarian, respectively:

(34) Mary is taller than \(x\)-tall Peter is.
(35) Maria ist größer als \(x\)-groß Peter ist.
    ‘Mary is taller than x-tall Peter is’
(36) Mari magasabb, mint amilyen magas Péter.
    ‘Mary is taller than x-much tall Peter’
(37) Мери по-висока беше от колкото висок Питър беше.
    ‘Mary was taller than x-much tall Peter was.’

All the above are examples of predicative comparatives, involving a QP moved to [Spec; CP] in the subclause. Recall that English and German have obligatory CD, whereas Hungarian and Bulgarian do not. There is an important difference to be observed with respect to the operators: English and German have zero operators (\(x\)), whereas Hungarian and Bulgarian have overt ones (e.g. \(amilyen\); \(kolkoto\)). Thus there seems to exist a correspondence between the morphological/phonological nature of the operator and the parametric setting of the language: if there is an overt comparative operator available in the language, which can combine with a lexical AP (or NP), then the language will not need CD.

Comparative operators are a subtype of relative operators; this also means that they have relative features, and they move to a [Spec; CP] position to check these [+rel] features. There they agree with the C head, which is [+rel] in ordinary relative clauses but has an additional comparative feature in comparative subclauses – hence a comparative C head to agree with is [+rel] and [+compr]. Now in Hungarian and Bulgarian the operator is [+rel] and [+compr]; since there is no mismatch between the operator and the C head, the operator is not deleted: hence there is no obligatory CD in the language. On the other hand, in English and German the operator is [+rel] and [−compr]; since there is a mismatch between the [+compr]
C head and the \([-\text{compr}\)] operator, the operator must be deleted: hence there will be obligatory CD in these languages.

The reason why the zero Q head cannot bear a \([+\text{compr}]\) feature is quite obvious: the zero Q head in English marks the absolute, not the comparative degree. Note that this does not necessarily have to be so: in Chinese, for instance, the zero marks the comparative degree (Krasikova 2008: 266; Chen 2009):

(38) Zhangsan gao.
    Zhangsan tall
    ‘Zhangsan is taller.’

Although the above construction contains the adjective *gao* in its base form, its interpretation is not absolute but comparative: it means that Zhangsan is taller than someone in the context, or taller than the average etc. In order for a Chinese adjective to receive absolute interpretation, it must be marked so or modified (see Chen 2009).

Hence the fundamental reason for CD is to overcome the problem of feature mismatch. However, what may also happen in languages having obligatory CD is that proforms appear: in this case, what happens is that some \([+\text{rel}]\) elements might bear the \([+\text{compr}]\) feature too. The reason for marginal acceptability is of course that though for some speakers and in some dialects these elements may take on a \([+\text{compr}]\) feature in addition to the \([+\text{rel}]\) feature, this does not necessarily happen and CD is preferred.

5. **Parametric change**

The importance of detecting CD on the basis of positive evidence becomes crucial when there is no possibility of relying on native judgements. In all the cases discussed above, the fact that a given language has obligatory CD can obviously be manifested by negative data, i.e. ungrammatical sentences containing overt comparative operators. Naturally, a language tolerating the same overt operators will lack obligatory CD. When ones comes to examine historical data, however, the answer is far less straightforward. If the data contain instances of true comparative operators, then there is of course no obligatory CD; but the absence of such operators does not necessarily mean that these operators could not have been there. Even in Modern Hungarian, examples containing deletion are generally preferable. Compare:
(39) Mari magasabb, mint amilyen magas Péter.
\hspace{1cm} Mary taller than x-much tall Peter
\hspace{1cm} ‘Mary is taller than Peter.’

(40) Mari magasabb, mint Péter.
\hspace{1cm} Mary taller than Peter
\hspace{1cm} ‘Mary is taller than Peter.’

Since the QP in the subclause is redundant in (39), the version without it is preferred in Modern Hungarian. Still, this does not change the fact that (39) is grammatical – but we can expect more examples of type (40) to occur in any corpus than of type (39).

Theoretically, the absence of such comparative operators in Old and Middle Hungarian could hence be derivable to a preference like this, and since there are no examples of writers producing ungrammatical sentences for the sake of reflecting on their ungrammaticality, one has to arrive at the conclusion that absence does not equal negative evidence. However, if there are proform operators like the ones in English or German, the presence of CD can be detected.

This is indeed the case in Old Hungarian, where the comparative subclause was initially introduced by hogy ‘that’, and contained the negative element nem ‘not’ as well (Haader 2003a: 515):

(41) mert emberi elme, mindenkoron kezzebb az gonozra, hogy nem az iora because human mind always readier the evil-Subl. that not the good ‘because the human mind is always readier for evil than for good’
\hspace{1cm} (BodK. 2r)

Later mint ‘than’ could also appear in the structure, typically in the sequence hogy nem mint ‘that not than’; this construction appeared already in the late Old Hungarian period but became characteristic of Middle Hungarian (Haader 2003a: 515, 2003b: 681):

(42) az mentől alsobykban is tob angýal uagon honnem mýnth az napnak the more down-Ine. also more angel is that.not than the sun-Dat.
\hspace{1cm} feneben light-Poss.
\hspace{1cm} ‘there are more angels in the basest one of them than in the sun’s light’
\hspace{1cm} (SándK. 1v)

Later on, the negative element nem could also be left out, rending the sequence hogy mint (Haader 2003a: 515):
These are the main stages in the development of Hungarian comparative subclauses, the final one of course being a situation where the subclause is introduced only by mint ‘than’.

The main question is of course why and how mint could appear in the structure. As described by Bacsik-Atkari (2011b), the initial structure was the following:

As can be seen, the comparative subclause was introduced by hogy ‘that’, which occupied the higher C head position and at this stage the comparative operator was subject to obligatory CD. The fact that the C head introducing comparatives corresponds to that, a general finite declarative complementiser, is not unique cross-linguistically. For instance, it is quite frequent in Latinate languages, such as Italian or French: Italian che or French que introduce not only comparative subclauses but also ordinary relatives clauses and that-clauses (see Rizzi 1997; Rowlett 2007: 147–148). The comparative clauses introduced by them are shown below:

Turning now back to the representation in (44), the structure slightly changed with the appearance of the operator mint in the lower [Spec; CP] position (cf. Bacsik-Atkari 2011b):
The fact that mint ‘than’, which later became a C head, first appeared as an operator is not unprecedented: this is how all Hungarian complementisers developed in the Old and Middle Hungarian periods, which also lead to the development of complex complementisers in the same way and had parallels also in hogy + operator combinations in relative clauses (cf. Bacskaï-Atkari 2011c). The changes in the status of mint are summarised below:

The same processes were observed by van Gelderen (2009) to have been at work in the development of the English *that*. The first stage (i.e. from operator to lower C head) corresponds to the relative cycle, whereby an original determiner becomes first a relative operator, and subsequently the relative operator is reanalysed as a C head (Roberts–Roussou 2003: 119, van Gelderen 2009). Subsequently, the lower C head can be reanalysed as the higher one; naturally, when mint reached this stage, hogy had to disappear from the structure.

As an operator, mint in Old Hungarian did not show any sensitivity to the subtype of comparative it appeared in, just as it was case in English or German. The fact that Old Hungarian did not have operators combining with a lexical AP or NP is not surprising inasmuch as even in late Old Hungarian, the relative pronouns *milyen/milyen* ‘how’, *mekkoralamekkora* ‘how big’ were still missing (see G. Varga 1992: 525), which would
otherwise readily be combined with lexical APs or NPs in Modern Hungarian. In this way, a general proform operator could readily be used; unlike English and German, however, mint was not only marginally acceptable, since it appeared frequently in the documents. Hence the appearance of mint already changed the status of CD in Old Hungarian.

On the other hand, as mint could not combine with lexical APs or NPs, in order for true comparative operators to appear – and for CD to be lost as an obligatory requirement – mint had to be reanalysed as the comparative complementiser. This change is not unlikely because, as we have seen, both the C head and the operator have the same features: [+rel] and [+compr].

This shows that CD does not entirely work in a purely +/- basis: its presence is defined by parameters of a given language, but as CD is linked to the presence/absence of certain features, any change must happen along these lines and hence cannot be abrupt. There also seems to be an interesting parallel between Old Hungarian and Modern English, in that both have obligatory CD with the possibility of a proform operator – but while in English this operator is only marginally acceptable, in Hungarian its presence actually lead to the development of a new comparative complementiser.

**Conclusion**

The aim of the present article was to investigate the issue of Comparative Deletion (CD), showing how the English pattern can be related to phenomena found in other languages. Instead of treating CD either as a universal or as an English-specific process, I demonstrated that its presence and exact mechanism are determined by given parameters of a language.

There were two issues examined in connection with variation. The first one concerns the type of deletion in attributive structures: it was found that the elimination of the lexical verb in English can be traced back to the impossibility of moving modifiers out of the nominal expression, as opposed to Polish, where that is allowed and where is thus no requirement on the deletion of the verb. On the other hand, CD itself was shown to be sensitive to parametric settings, and related closely to the phonological/morphological properties of the operator: in languages where the features of the operator perfectly match those of the complementiser head, there is no CD required (e.g. Hungarian), while in CD is obligatory in languages where there is a mismatch (e.g. English).
Basing parametric differences on features had an additional advantage as marginally acceptable operators could also be taken into the system; moreover, the same feature variations and changes could be observed in terms of diachronic change: the example of Hungarian demonstrates that a language with obligatory CD could change into one that has proper overt comparative operators.

This all points to the conclusion that the formation of English comparative subclauses is best understood in a cross-linguistic context as the observation of surface differences between languages may ultimately lead to an explanation for the underlying causes.

References


