Reanalysis in Hungarian Comparative Subclauses[1]

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Abstract

My paper presents a diachronic study of the Left Periphery of Hungarian comparative subclauses, primarily focussing on the development of the complementisers and the operator. Adopting a cartographic approach, I will show that there were two main interrelated processes at work in the development of these subclauses, changing the initial configuration of *hogy* 'that' as a complementiser to a new one having *mint* 'than' as a C head, possibly followed by an overt operator. These two processes involve the reanalysis of *mint* from an operator to a complementiser by way of the relative cycle, and the appearance of new overt comparative operators due to a change in the deletion of the operator (Comparative Deletion).

1. Introduction

The aim of this paper is to present a diachronic study of the Left Periphery of Hungarian comparative subclauses,[2] primarily focussing on what changes led to the syntactic structure

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[2] Throughout this paper I will restrict myself to the analysis of clausal comparatives expressing inequality. The reason for this is that the syntactic behaviour of clausal comparatives expressing equality is crucially different.

characteristic of Modern Hungarian and what parametric differences can be traced between Old/Middle and Modern Hungarian. I will be using a cartographic approach to the left periphery of the (sub)clause; furthermore, the analysis presented here will also be in line with minimalist assumptions, though the claims made here will not necessarily be specific for a minimalist framework. There are two main issues to be investigated here. First, the diachronic relation of the comparative complementiser and the comparative operator will be examined; second – strongly related to this – the obligatoriness/optionality in the deletion of the comparative operator will be investigated.

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* 'x-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.

In the next section of the article I will provide the relevant theoretical background by briefly presenting the structure of comparative subclauses, to be followed by a description of deletion phenomena provided in the third section. Section 4 will then give an overview of the data necessary for the present discussion from the Old Hungarian – and partly from the

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On the other hand, phrasal comparatives (i.e., where the subclausal CP is replaced by a DP) would be even more demanding to analyse here.

Middle Hungarian – period. Finally, in section 5 I will provide my analysis for the parametric

changes in question.

2. The structure of the left periphery in comparative subclauses

Let us consider the following example from Modern Hungarian in (1):

(1) *Anna   ma   több-ször   telefonált-t-ø   Moszkvá-ba,   mint*
    Ann   today   more-times   phone-PST-3SG   Moscow-ILLATIVUS   than

      a-hány-szor   Miki   szok-ott-ø.
      x-many-times Mike   do-PST-3SG

'Ann phoned Moscow more times today than Mike usually does.'

A comparative construction contains two semantic elements: the reference value and the

standard value of comparison. The reference value is expressed in the form of a QP

(Quantifier Phrase) in the matrix clause (in (1), this is *többször* 'more times'), whereas the

standard value is expressed by the comparative subclause itself (here: *mint ahányszor Miki*

szokott 'than x-many times Mike usually does').[3]

The comparative subclause is a CP (Complementiser Phrase), which is introduced by

the C head *mint* 'than' in Modern Hungarian (see Kenesei 1992), representing comparative

Force (see Rizzi 1999).[4] There is yet another CP under the one headed by *mint*; and the

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[3] The comparative subclause is generally taken to be the argument of the degree head in the QP of the matrix

clause (cf. Lechner 2004). Since the main scope of this paper is the subclause itself, I will leave the question

open of how it is connected to the matrix clause.

[4] Though Rizzi calls this "illocutionary Force", and distinguishes among declarative, interrogative, relative etc.

types, this has very little to do with the notion of illocution in the sense of Austin and Searle, since the ones

specifier of this lower CP hosts the comparative operator moving there by regular operator movement (Chomsky 1977; Kennedy & Merchant 2000); the comparative operator can be overt or covert, as will be discussed later on. The structure is schematically represented below in Figure 1:[5]
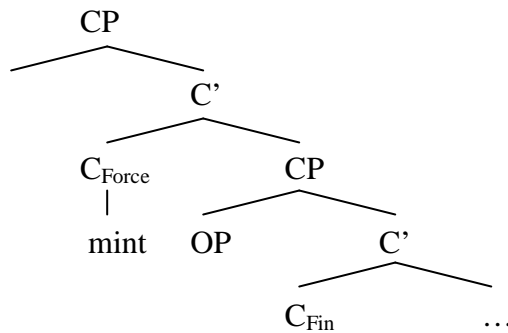
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              CP
            /
            C'
          /      \
      C_Force      CP
        |         /   \
      mint      OP      C'
              /         /   \
           C_Fin           …
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Figure 1: The left periphery of comparative subclauses

As can be seen in Figure 1, in Modern Hungarian *mint* is generated in the upper C head position, while the operator moves to the specifier of the lower CP via ordinary operator movement (see Kántor 2008a). Note that in Hungarian the position of relative operators (including the comparative operator) is different from that of interrogative (*wh*) operators, which move to [Spec; FocP] – among other reasons, this is evident from the fact that while interrogative operators cannot co-occur with other foci, relative operators can, cf. É. Kiss (2002: 98–99).

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discussed by Rizzi are not performative sentence types. In order to avoid any possible terminological confusion, I will restrict myself to calling it "Force", as is normally done in the literature.

[5] My representation follows Rizzi's analysis of the Left Periphery, which claims that there are two CP projections, the upper one being responsible for Force and the lower for Finiteness, and in between the two optional Topic and Focus phrases can be found (topics are iterable), if there are any (Rizzi 1997: 297; 2004: 237–238):

    (i)   [CP [TopP* [FocP [TopP* [CP]]]]]

In fact, the operator can be overt, as shown by (1) or by (2) below:

(2) *Mari-nak több macská-ja van, mint **a-hány macská-ja** Péter-nek van.*
     Mary-DAT more cat-3SG.POSS is   than x-many cat-3SG.POSS Peter-DAT is
     'Mary has more cats than Peter has.'

It is worth mentioning that in Modern Hungarian only the higher C head is filled by complementisers – that is, *mint* 'than', *hogy* 'that', *mert* 'because' and *ha* 'if'; the lower C head is zero. This is due to the fact that all of these complementisers had developed into higher C heads before the Modern Hungarian period and hence there is nothing that could potentially appear in the lower C head overtly; cf. Bacskai-Atkari (2012a, 2012b). In this respect, Hungarian is similar to standard Italian, as described by Rizzi (1997). This is not necessarily so, as shown by Welsh, which does allow two filled C heads:

(3) *Dywedais, i **mai** 'r dynion fel arfer **a** werthith y ci.*
     say   I that the men   as usual that sell   the dog
     'I said that it's the men who usually sell the dog.'
                                                        (ex. from Roberts 2005: 122)

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.[6]

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[6] 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 described above.

3. Parametric variation concerning Comparative Deletion

Before turning to the description of Old Hungarian comparatives, let us first examine one of the most important deletion processes specific to comparatives, namely Comparative Deletion (CD), which is subject to parametric variation with respect to its obligatoriness.

CD is an operation responsible for eliminating the QP from the comparative subclause in the [Spec; CP] position – if it is logically identical with the one in the matrix clause (Bacskai-Atkari 2010a: 10).[7] English is a language in which this operation is obligatory.[8] Consider:

(4)   a.   *Ann is more enthusiastic than Peter was enthusiastic.*

       b.   *Ann is more enthusiastic than Peter was ___ .*

The reason for the ungrammaticality of (4a) is that the QP in the subclause (*x-much enthusiastic*, which appears only as *enthusiastic* overtly) does not move up to [Spec; CP] and hence cannot be deleted there by CD; however, since CD is obligatory in English, the result is

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[7] I will not examine further how significant a role logical identity plays in the deletion process: naturally, deletion is licensed only if the elements to be deleted are recoverable (cf. Merchant 2001). CD deletes material (that is, the upper copy of the moved element) in the [Spec; CP] position in any case. The lower copy is then regularly deleted by PF if it is recoverable (see Bošković and Nunes 2007: 44–48; Chomsky 2005: 12; Bobaljik 2002) – if not, this copy can (and, in fact, has to) remain:

(i)   *The dog is bigger than the doghouse is wide*.

Note that it is not exceptional for the lower copy to remain overt in this case: as established by Bošković and Nunes (2007: 48), lower copies may be phonologically realised if the pronunciation of the highest copy causes the derivation to crash at PF. For further details on how constructions like (i) are formed, see also Bacskai-Atkari (2010a: 17–19).

[8] For details on how the actual process works, see Bacskai-Atkari (2010a).

clearly ungrammatical.[9] On the other hand, (4b) is perfectly acceptable, since movement and deletion take place.

Note that although in examples such as (4) above, operator movement cannot be seen overtly, there is evidence that operator movement takes place in comparative subclauses. First, there are languages that have overt operators in the [Spec; CP] position, as will be shown in connection with Hungarian in this section and in connection with certain English and German dialects in section 5. Second, even examples with no overt operators obey island constraints: extraction of the comparative operator is not permitted out of a *wh*-island or a complex NP.[10]

The derivation of the subclause in (4b) is given in Figure 2:

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[9] The movement of the operator out of the QP, that is, leaving the AP behind, is not available either. Consider also:

    (i)   *How is Peter enthusiastic?*
    (ii)   *How enthusiastic is Peter?*

The only option for the structure to converge is to move the entire QP; the extraction of the operator *how* is prohibited. This shows that the constraint is not restricted to comparatives and hence the fact that the zero operator is not supposed to move out on its own should not be surprising.

[10] Consider the following examples for extraction out of a *wh*-island:

    (i)   **John killed more dragons than OP$_x$ Mary wondered whether to kiss* [t$_x$ ~~dragons~~].
    (ii)   *John killed more dragons than OP$_x$ Mary wanted to kiss* [t$_x$ ~~dragons~~].

Likewise, the operator cannot be extracted out of a complex NP island:

    (iii)   *John killed more dragons than OP$_x$ he had outlined a plan to kill* [t$_x$ ~~dragons~~].
    (iv)   *John killed more dragons than OP$_x$ he planned to kill* [t$_x$ ~~dragons~~].

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              CP
              |
              C'
         /         \
        C            CP
        |         /       \
      than   QP̶ᵢ          C'
          /|\          /     \
     x̶-̶e̶n̶t̶h̶u̶s̶i̶a̶s̶t̶i̶c̶    C       IP
                     |      /\
                     Ø   Peter was tᵢ
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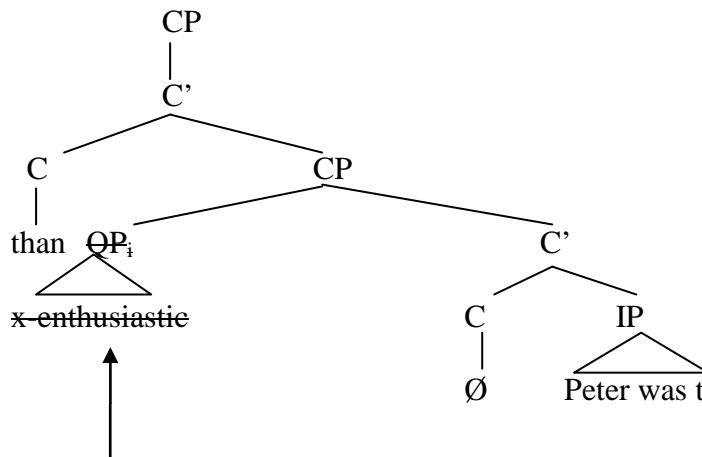
Figure 2: Comparative Deletion in English

It has to be mentioned that in some cases the QP is contained within a DP (Determiner Phrase); if so, the entire DP moves up and is deleted, otherwise there would be a DP island violation (see Izvorski 1995: 271; Kántor 2008b: 148–149; on the constraint itself, see Kayne 1983; Ross 1986; Bošković 2005; Grebenyova 2004).[11] This is illustrated below in (5):

(5) a. *Susan has bigger cats than Peter has cats.*
     b. *Susan has bigger cats than Peter has ___ .*

Note that the derivation of (5b) is in line with the representation given in Figure 2: the only difference is that in (5b) a DP is moved to the [Spec; CP] position.

Unlike English, Modern Hungarian has no CD, as demonstrated by the following examples (see also (1) and (2) above):

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[11] This phenomenon can also be observed in other DPs containing a *wh*-QP modifier in English. Compare:

(i)   *How big did Mary see a cat?*

(ii) *How big a cat did Mary see?*

As can be seen, the extraction of the QP *how big* on its own leads to an ungrammatical configuration: the entire DP has to be moved, as shown in (ii).

(6) a. *Anna lelkes-ebb, mint **a-milyen lelkes** Miki volt.*
Ann enthusiastic-er than x-much enthusiastic Mike was
'Ann is more enthusiastic than Mike was.'

b. *Zsuzsá-nak nagy-obb macská-i van-nak, mint **a-milyen nagy***
Susan-DAT big-er cats-3SG.POSS be-3PL than x-much big

***macská-i** Péter-nek van-nak.*
cat-3SG.POSS Peter-DAT be-3PL

'Susan has bigger cats than Peter.'

Since (6a) and (6b), the Hungarian counterparts of (4) and (5), are grammatical without the deletion of the operator, it can be concluded that Modern Hungarian has clearly no (obligatory) CD.[12] The derivation of (6a) is given below in Figure 3 – as can be seen, the only crucial difference from the one in Figure 2 is that the higher copy of the QP remains overt:

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[12] Hungarian is far from being exceptional in this respect; Bulgarian, a completely unrelated language, exhibits the same pattern. On the other hand, the fact that there is no obligatory CD in these languages does not mean that the operator always has to surface: it can naturally be eliminated by other processes. For instance, the following sentences would be equally grammatical but (i) would be preferable to (ii):

(i) *Anna lelkes-ebb, mint Miki.*
Ann enthusiastic-er than Mike
'Ann is more enthusiastic than Mike.'

(ii) *Anna lelkes-ebb, mint a-milyen Miki.*
Ann enthusiastic-er than x-much Mike
'Ann is more enthusiastic than Mike.'

Note that the apparent absence of the verb in both cases is simply due to the fact that the 3rd person singular copula in the present tense is realised as zero in Hungarian. The further investigation of how operators can be eliminated in languages without CD falls outside the scope of the present investigation.
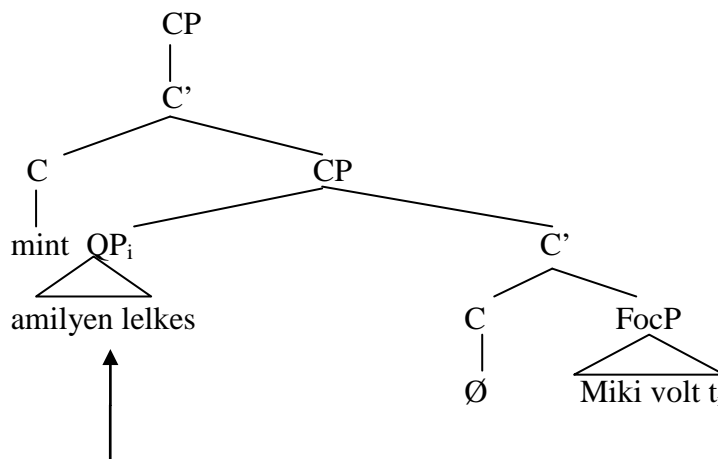
Figure 3: The absence of Comparative Deletion in Hungarian

Again, the derivation of (6b) would be fundamentally the same, the only difference being that in (6b) a DP moves to the [Spec; CP] position.

The question arises whether the situation was similar in Old Hungarian, too. Of course, there are obvious methodological difficulties concerning this: whereas the (systematic) appearance of an overt operator does in fact signify that the given language has no CD, this is not true vice versa because the absence of an overt operator may well be due to optional ellipsis and not to the application of CD. Furthermore, assuming that the sentences found in the written texts from earlier periods are grammatical ones, there is no direct evidence for what was ungrammatical. Yet, as will be shown in section 5, there are some ways of finding reasons for an obligatory CD pattern in Old Hungarian as well.

4. Diachronic change in Hungarian – an overview

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')[13] as well (Haader 2003a: 515):

(7) a. *Mert   io-b   hog   megfoǵdoʃ-uā   alg-uk-mėǵ   vr-at*
         because good-er that caught-PST.PTCP bless-3PL.SBJV-PREV Lord-ACC

         èlèuèn-èn   hog nė   mėghal'-l'ōc
         alive-PST.PTCP that not   die-3PL.SBJV

         'because it is better to bless the Lord if we are captured alive than to die'
                                                                  (BécsiK. 25)

     b. *mert   emberi elme, mindenkoron kezz-ebb az gonozra,   hoǵ*
         because human   mind always   ready-er the evil-SUBLATIVUS that

         nem az io-ra
         not   the good-SUBLATIVUS

         'because the human mind is always readier for evil than for good'
                                                                  (BodK. 2r)

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[13] The differences between *nem* and *sem*, as well as the status of negation in the comparative subclause, will be discussed later. 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 pf whether the language has CD or not.

c. | *Hog* | *ha* | *te* | *iog* | *ʒèm-èd* | *meg-gonoʒbeit-and-ø* | *teged-et* |
|------|-----|-----|------|----------|---------------------|-----------|
| that | if | you | right | eye-2SG.POSS | PREV-offend-FUT-3SG | you-ACC |

ve-d	*ki*	*ǫt-èt*	*&*	*veʃ-d*	*èl*	*te-tǫllèd* /
take-2SG.IMP	out	it-ACC	and	cast-2SG.IMP	away	you-ABL

mert	*io-b*	*tenèked*	*hog*	*eg*	*èl-uèʒ-ien-ø*	*te*
because	good-er	you-DAT	that	one	PREV-perish-3SG.IMP	you

tag-id	*kǫʒʒǫl* /	**hog**	**nē**	*mend*	*te*	*tèʃt-ed*
member-2SG.POSS.PL	among	that	not	all	you	body-2SG.POSS

èrèʒtèʃ-ʃec	*pokol-ba*
cast-3SG.IMP	hell-ILLATIVUS

'And if thy right eye offend thee, pluck it out, and cast it from thee: for it is profitable for thee that one of thy members should perish, and not that thy whole body should be cast into hell.'

(MunchK. 11rb–11va)

d. | *Ha* | *az-ert* | *te* | *yob* | *zǫ́m-ǫ́d* | *meg* | *tantoroyth-ø* | *teeghed-et,* |
|------|----------|------|-------|-----------|--------|----------------|---------------|
| if | that-FINALIS | you | right | eye-2SG.POSS | PREV | tempt-3SG | you-ACC |

vay-th	*ky*	*hewtet,*	*es*	*vesd*	*el*	*thwled,*
cut-2SG.IMP	out	it-ACC	and	cast-2SG.IMP	away	you-ABL

mert	*yncab*	*yllyk-ø*	*teneked*	*hoǧ*	*el*	*vezyen*	*egik*
because	rather	fit-3SG	you-DAT	that	PREV	perish-3SG.IMP	one

tag-od,	**hon-nem**	*te*	*tellyes*	*test-ed*
member-2SG.POSS.SG	that.not	you	entire	body-2SG.POSS

vettes-seg	*pokor-ra*
cast-3SG.IMP	hell-SUBLATIVUS

'And if thy right eye offend thee, pluck it out, and cast it from thee: for it is profitable for thee that one of thy members should perish, and not that thy whole body should be cast into hell.'

(JordK. 367)

The parallel clauses in (7c) and (7d) 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 in the next section 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 (8):[14]

(8) a. *mert mastan kózel-b-en vagÿon a"-mÿ Idwesseeg-w̋nk*
for   now   near-er-Superessivus   is   the-our   salvation-3PL.Poss

honnem mÿnt eleeb hÿt-t-ók
that.not   than   before think-Pst-3PL.

'because now our salvation is nearer than we thought before'

(ÉrdyK. 3b)

  b. *az men-tól also-bÿk-ban is tọb angÿal uag̋on honnem*
the   all-ABL   down-er-Inessivus also more angel   is   that.not

mÿnth az nap-nak fen-e-ben
than   the   sun-DAT light-Poss-Inessivus

'there are more angels in the basest one of them than in the sun's light'

(SándK. 1v)

  c. *S mi-t haʒznal-ɸ ʒegeń-ek-nek oʒta-ni es*
and   what-ACC use-3SG   poor-PL-DAT   distribute-Inf and

ʒegèǹ-e lẽ-ni, ha nauala-s lelek keuel-b leʒ-en
poor-Translativus be-Inf if   wretch-ed soul   proud-er be-3SG

kaʒdak-ʃag-ot meg vtal-uã: hoġ nem mĩt volt ɵ-tet
rich-ness-ACC   PREV hate-PRS.PTCP that not   than   was   it-ACC

bír-uan
possess-PRS.PTCP

'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)

The following examples show *hogy sem mint*:

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[14] Note that it is possible for the comparative operator to move long distance, as, for example, in (8a): in these cases, the only difference from the structures given in Figure 2 and Figure 3 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 (2010b: 28–30).

(9) a. *több-et tulaidonet-ot-ø effele ir-ot kep-ek-nec, **hogy***
more-ACC attribute-PST-3SG such write-PST.PTCP picture-PL-DAT that

    sem mint *az iras-nac*
    neither than the writing-DAT

'he attributed more to such carved pictures than to writing'

(Pécsi Lukács: De Cvltv Imagunim)

b. *merth Ferencz wr-am (ez-th en pedeglen sem*
because Francis lord-1SG.POSS this-ACC I however neither

    ÿreghseg-bewl sem bozzwsag-[bol] nem ÿr-om)
    envy-ELATIVUS neither annoyance-ELATIVUS not write-1SG

    thewb-zer wacharal-th-ø az warban az kÿralne
    more-times supper-PST-3SG the castle-INESSIVUS the queen

    *azz[ony] leanÿ-wal, Borbara azzan-nal, **hogh sem***
    woman daughter-COM Barbara woman-COM that neither

    mÿnth *waras-ban az wr-ak kezewth*
    than town-INESSIVUS the lord-PL 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):

(10) *edesseg-et erz-e-ø nagÿ-ob-an **hogÿmint** an-nak*
sweetness-ACC feel-PST-3SG big-er-INESSIVUS that.than that-DAT

    eḷǫtt-e
    before-3SG.POSS

'(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*:

(i)   hogy nem

(ii)   hogy nem mint

(iii)   hogy mint

(iv)   mint

Before turning to the analysis and explanation of the phenomenon, let us consider Table 1, 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):

Codex	Date	*hogy nem*	*hogy nem mint*	*mint*
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	

Table 1: Some data from the Old Hungarian corpus

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 were some which apparently included 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.

5. Reanalysis and parametric change

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 the deletion of the comparative operator.

5.1. The initial setup

Initially, as has already been mentioned, the comparative subclause was introduced by the C_{Force} head *hogy* 'that'. At this stage, the comparative operator was subject to obligatory Comparative Deletion.[15] 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 below in Figure 4:

Figure 4: The initial setup

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.

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[15] How this can be proved will be explained later on; for the time being, let us focus on the description of the initial pattern.

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* was already a complementiser and not a relative pronoun. 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' (Bacskai-Atkari 2012a, 2012b) – 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 can be found in other (finite) subclauses as well – can be observed in other languages as well, 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 relatives clauses and *that*-clauses, and both are C_{Force} heads (see Rizzi 1997; Rowlett 2007: 147–148). The comparative clauses introduced by them are shown below, the Italian pattern by (11a) and the French one by (11b):

(11) a. *Maria mangi-a più* **che** *Paolo*.
Mary eat-3SG more that Paul
'Mary eats more than Paul.'

b. *Anne est plus fatigué-e* **que** *Marie*.
Ann is more tired-F that Mary
'Ann is more tired than Mary.'

To conclude, it seems that the representation in Figure 4 is supported also by cross-linguistic data and will be used in the present paper as the basis of representing the structures found in Old Hungarian.

5.2. The relation of "hogy" and "hogy nem"

Let us now briefly turn to the status of the negative element, though this is – as said before – not going to be a central question of this essay. First of all, the presence of a negative element is familiar from other languages as well (see Salvi & Vanelli 2004: 283–285; Seuren 1973: 532–537), far from attempting to provide a complete list, let us consider the following Italian and French examples:[16]

(12)   a.   *Maria mangi-a più   che **non** Paolo.*
             Mary eat-3SG   more that not   Paul
             'Mary eats more than Paul.'

        b.   *L'-example touch-e   plus   que **ne** fai-t   la   menace.*
             the-example touch-3SG more that not   do-3SG the(F) threat
             'Examples touch more than threat does.' (Corneille)

        c.   *Jean   est plus grand-ø que je   **ne**   pens-ai-s.*
             John   is   more tall-M   that I   not   think-PST-1SG
             'John is taller than I thought.'

                                                    (ex. from Seuren 1973: 535, ex. 44)

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 (11a) and (12a), where the latter 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

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[16] A similar phenomenon can be traced in Cockney English, as described by Seuren (1973: 535). Consider:

(i)   *She did a better job than what I never thought she would.*   (ex. from Seuren 1973: 535, ex. 48)

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:

(ii)   *She would rather die than lift a finger*.

Negative polarity items, such as *lift a finger* in (ii), can appear only in clauses that have negative polarity and they are perfectly acceptable in comparative subclauses.

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*. Still, as they do not express true negation in comparatives[17] but rather negative polarity (cf. also Gergel 2010) they head not a NegP but a MoodP.[18]

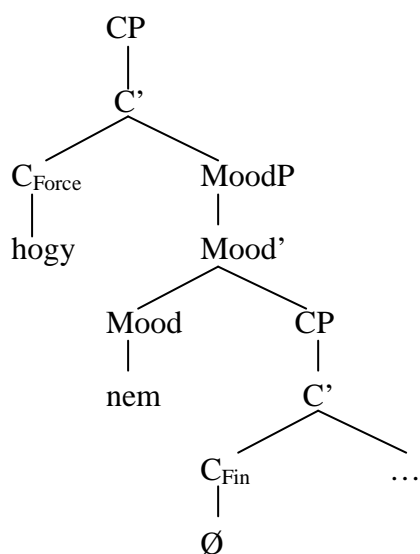The structure of *hogy nem* is shown in Figure 5:

Figure 5: The position of the negative element

With respect to the status of *hogy nem*, however, there is one more important question: namely that *nem* could actually cliticize onto *hogy*. This process could be accompanied by a phonological change from *hogy nem* to *honnem*, pronounced as [hon:ɛm] instead of [hoɟnɛm]:

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[17] On the (optional) presence of negative elements in comparatives and on the possible semantic reasons thereof, see also Matushansky (2011).

[18] Note that the negative element cannot be in a FocP: it can co-occur with foci, such as *Paolo* in (12a) and these foci follow the negative element, hence the negative cannot be the head of FocP either.

(13) *ez vilagÿ-ak-rol kÿnn-eb embǫrnek eerteekǫz-nÿ-e **honnem** az*
     this mundane-PL-DELATIVUS easy-er man-DAT dispute-INF-3SG that.not the

     menÿeÿ-ek-roǫl
     heavenly-PL-DELATIVUS

    'it is easier for man to talk about mundane than about heavenly matters'

(SándK. 1r)

As has already been mentioned, it was also possible to have the negative element *sem* 'neither' in the subclause. This occupied the same position as *nem*, hence the one indicated in Figure 5. However, it did not cliticize onto *hogy* but was kept as a separate head.[19]

5.3. The relative cycle as a grammaticalization process

For the analysis of the diachronic change in question, it is necessary to present a grammaticalization process called the relative cycle, which will be claimed to be one of the key factors inducing changes in Old Hungarian comparatives.

The relative cycle is basically a process where an original determiner first becomes a relative operator, and subsequently the relative operator is reanalysed as a C head (Roberts & Roussou 2003: 119, van Gelderen 2009). This kind of change happened to the English *that* during the Old English period: it was originally a determiner (this function is preserved in the D head in Present-day English as well) but was used also as a relative pronoun. However, the relative pronoun moving to [Spec; CP] came to be analysed later as part of the CP, that is, as a

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[19] The difference between *nem* and *sem* in this respect is also shown by the fact that while *sem* could invert with *hogy* via head movement (i.e., the movement of *sem* into C_{Force} via head movement), resulting in *semhogy*, this option was not available for *nem*, hence there was no **nemhogy* in comparatives.

C head. First *that* was interpreted as a C$_{Fin}$ head but later it was reanalysed from the C$_{Force}$ head, as shown by van Gelderen (2009: 107).[20]

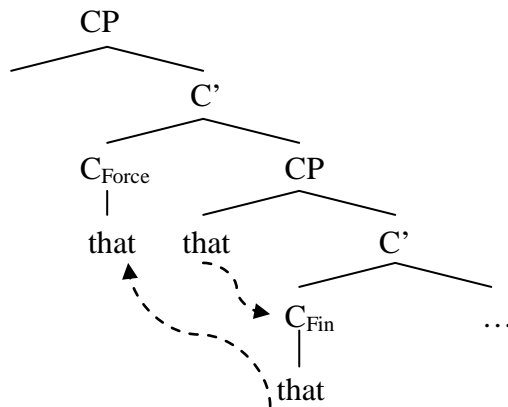The processes described above are schematically drawn below in Figure 6:

Figure 6: The relative cycle

As can be seen, the element *that* first occupied the specifier position of the lower CP, then it was reanalysed as the head thereof, and finally was base-generated as the head of the higher CP. Both steps are induced by economy, which can be understood in terms of two major principles: the Head Preference Principle (HPP) and the Late Merge Principle (LMP), as described by van Gelderen (2009: 136; 2004). The Head Preference Principle says that being a head is preferable to being a phrase (which follows from a preference for merge over move, see also Chomsky 1995), hence the change from an operator moving to [Spec; CP] to a

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[20] Note that by assuming that Hungarian comparatives developed according to the relative cycle, the changes observed in these have possible parallels not only in comparatives in other languages but also in other clause types: the phenomena presented here are thus not unique to Hungarian but follow from more general rules. Furthermore, other Hungarian complementisers also developed via the relative cycle, cf. Bacskai-Atkari (2012a, 2012b); moreover, the relative cycle has been attested in comparatives in other languages as well, for example, in German, see Jäger (2010). It is precisely because of this general nature of the processes in question that I prefer to label them as "relative cycle" and not as "comparative cycle", contrary to Jäger (2010) since I do not wish to suggest that these grammaticalisation processes would be specific to comparatives.

C head. The Late Merge Principle establishes that merge (i.e., the insertion of new elements into the structure) should happen as late as possible, hence the preference for the C$_{Force}$ position over C$_{Fin}$.

5.4. The appearance of "mint"

The appearance of *mint* in Old Hungarian comparative subclauses has an interesting parallel phenomenon in relative clauses, which is not quite unprecedented as comparatives generally tend to have an analogous structure with ordinary relatives. 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 but especially in Middle Hungarian, relative clauses were frequently introduced by the string *hogy* + a relative pronoun (see Galambos 1907: 14–18; see also Haader 1995; Dömötör 1995), resulting in combinations such as *hogy ki* 'that who' or *hogy mi* 'that what'.[21] The structure of these configurations is illustrated in (14):

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[21] Interestingly, this kind of construction was possible even with the complementiser *ha* 'if':

(i) *kÿ tegǫd-ø zereth-ø. az nem epedh-ø: **ha kÿ** keserg-ø akkor wÿgad-ø*
     who you-ACC love-3SG that not long-3SG if who moan-3SG then rejoice-3SG
     '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 article and therefore I will leave this question open here. On the other hand, 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

(14) *olÿaa-t   tez-ǫk   raÿt-ad   **hog kÿ-tǫl**   *fel-z*
     such-Acc do-1Sg   you-Superessivus that what-Abl   fear-2Sg
     'I will do such on you that you fear.'

<div align="right">(SándK. 14v)</div>

In (14), the complementiser *hogy* is followed by the relevant form of the pronoun *ki*. 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).

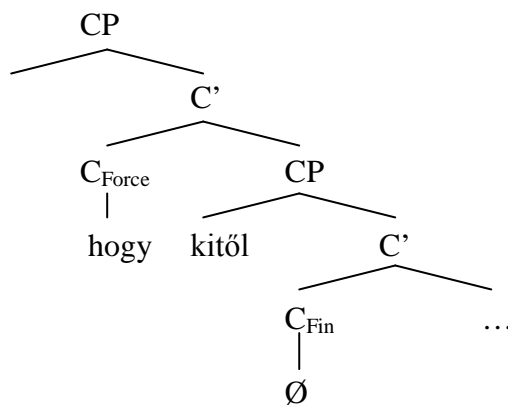The structure of the Left Periphery of the subclause in (14) is shown in Figure 7:

Figure 7: Relative clauses with complementisers

As can be seen, the higher CP is headed by *hogy*, while the lower CP has a zero head and a relative operator (e.g., *kitől*) 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

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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.

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 like the following:

(15)   *az   men-tól also-bÿk-ban   is   tob   angÿal uagon **honnem mÿnth** az*
           the   all-ABL   down-er-INESSIVUS   also   more angel is   that.not   than   the

           nap-nak   fen-e-ben
           sun-DAT   light-POSS-INESSIVUS

'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 the fact 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* is not exceptional.

The structure is shown in Figure 8:

```
            CP
             |
             C'
         ___/ \___
    C_Force        CP
      |          __/ \__
    hogy    mint       C'
                    ___/ \___
                 C_Fin        …
                   |
                   Ø
```
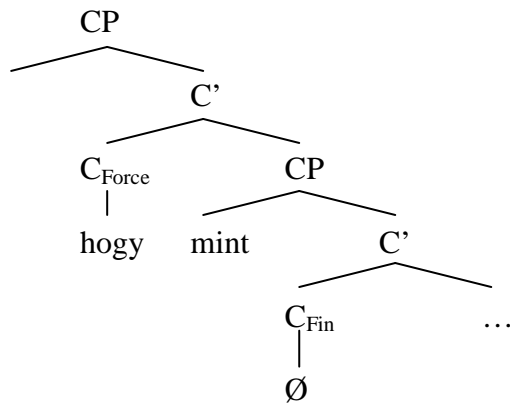
Figure 8: The appearance of "mint"

Thus the upper 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 Figure 7 and Figure 8 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 appearance of *mint* was possible because there was no other operator available in comparatives; a similar phenomenon can be traced in other languages normally exhibiting CD, as illustrated below by English in (16a) and (16b) and by German in (16c) and (16d):

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

  b. % *I have a smaller room **than what** I expected.*

  c. % *Die   Welt   ist   mehr, **als   was**   wir seh-en.*
      the(F) world is   more   than   what we   see-1PL
      'The world is more than what we see.'

  d. % *Er   ist   besser **als   wie**   du.*
      he   is   better   than   how   you
      'He is better than you.'

The constructions, as indicated, are only marginally acceptable, though in some dialects they can be perfectly grammatical (e.g., (16a) and (16b) are so in New England English, whereas they would be very marked in Standard British English). What can be seen is that the C head *than* and its German equivalent *als* can be followed by relative operators such as *what* and *was* or *wie*. This is exactly the case for Old Hungarian *mint*, with the only difference that it seems not to have been marginal in late Old Hungarian and Middle Hungarian, as shown by its frequent appearance in the texts.

These operators, including *mint* in Old and Middle Hungarian, do not show any sensitivity to the subtype of comparative they appear in, whereas in Modern Hungarian there is rich morphological variety in comparative operators with respect to the type of comparative (i.e., whether it is predicative or attributive, cf. the difference between (6a) and (6b) above). Operators like Old Hungarian *mint* or English *what* are proforms standing for the entire QP or DP, which also means that these QPs and DPs do not include a lexical AP (Adjective/Adverb Phrase) or NP (Noun Phrase),[22] as would be possible in present-day Hungarian (see the examples in (6) for this), which is a language without CD. This is not surprising inasmuch as even in late Old Hungarian, the relative pronouns *milyen*/*amilyen* 'how' 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 had obligatory CD too.

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[22] Note that here I am only concerned with *what* in comparatives and not with ordinary determiner *what* (e.g., in *what book*, *what time* etc.) since in this latter type *what* is clearly not a degree element.

5.5. The reanalysis of "mint"

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 C_{Fin} head, while the C_{Force} head still contained the complementiser *hogy* (and the negative element *nem*/*sem* was possibly still present). This was possible because Old and Middle Hungarian allowed the co-presence of two C heads in one Left Periphery, unlike Modern Hungarian (Bacskai-Atkari 2012a, 2012b).

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.

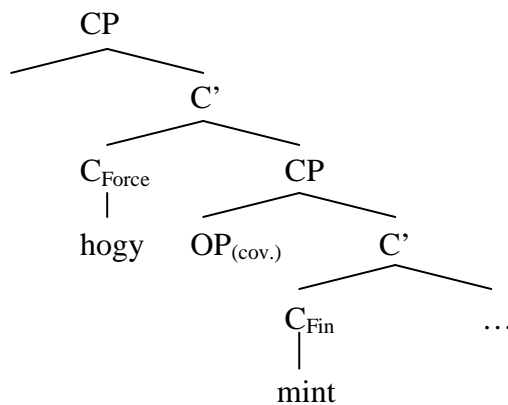The structure was thus the one given in Figure 9:

Figure 9: The reanalysis of "mint"

As can be seen, there were two C heads filled, the upper by *hogy(nem)*, 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.[23]

5.6. Reanalysis in terms of the two C heads

The final step concerns the development of *mint* into a C_{Force} head: this process involved the reanalysis of *mint* from C_{Fin} to C_{Force}, and happened simultaneously with the disappearance of

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[23] The Doubly Filled Complementiser Filter is essentially an economy principle that rules out the co-presence of two overt elements that have largely overlapping functions (e.g., a comparative operator and a comparative complementiser that are both equipped with [+compr] and [+rel] features). As such, it has parallels in other constructions as well; in Hungarian, 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* '-s') is assumed to be the head of a NumP (Numeral Phrase), which dominates the NP; by contrast, the numeral (e.g., *két* 'two', *nehány* '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'.

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 upper C head as an element base-generated there.

It is worth mentioning that the entire loss of *hogy (nem) mint* was also due to a more general parametric change: the language no longer allowed the co-presence of two separate C heads in a clause (Bacskai-Atkari 2012a, 2012b).[24]

By *mint* appearing in the upper 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

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[24] As noted by Bacskai-Atkari (2012a, 2012b), this is true for all such complementiser combinations besides *hogy mint*, that is, *ha-mint* 'if as', *hogy-mert* 'that because' and *ha-hogy* 'if that'. The only way for complex complementisers to remain in the language was grammaticalization: lower C heads could move up to the higher C position even if that was already filled by another complementiser; in this case, the two heads fused via adjunction invariably in the reverse order, due to Kayne's Linear Correspondence Axiom (Kayne 1994). In comparatives, this lead to the appearance of *mint-hogy* 'than that':

(i)   *semi*   *nag-ob*   *nem*   *mond-at-hat-ik:*   **mint hogh**   *le-g-ǫn*   *isten-ek*
     nothing   great-er   not   say-CAUS-COND-3SG   than that   be-SBJV-3SG   God-DAT

         an-ia
         mother-3SG.POSS

'nothing can be said to be greater than that she be the mother of God'

                                                             (TihK. 143)

Such combinations could eventually be fully grammaticalized and hence even Modern Hungarian has the combinations *mint-hogy* 'than that', *mint-ha* 'as if', *mert-hogy* 'because that' and *hogy-ha* 'that if'. The same difference applies to combinations involving a negative element: hence *hogy-sem-mint* 'that neither than' disappeared, as opposed to *mint-sem-hogy* 'than neither that'. In the case of the negative element *nem*, as already mentioned, *nem* was a clitic and hence there emerged no *mint-nem-hogy 'than not that'; *hogy-nem-mint* 'that not than', however, did actually disappear regularly, as previously mentioned.

relative cycle. This time, however, operators were proper relative pronouns (such as *amennyi* 'x- many, *ahányszor* 'x-many times' and *amilyen* 'x-much') and this can be attributed to analogy with ordinary relative clauses. These do allow the co-presence of a lexical AP or NP, and the language no longer has CD.[25]

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 Figure 10:

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[25] The scope of the present article does not allow the provision for a complete analysis of the parametric setting that would show which languages have CD and which do not. My hypothesis is that this is primarily a morphological difference: if a language has an overt comparative operator that is equipped with both a comparative and a relative feature, that is, [+compr] and [+rel], that language will not exhibit CD while ones that lack such an overt element will have obligatory CD taking place in the lower [Spec; CP] position. It must be noted that overt comparative operators may differ in terms of whether they allow the co-presence of a lexical AP or an NP (e.g., present-day Hungarian operators) or not (e.g., Old Hungarian *mint* or English *what*); still, CD is primarily related to deletion of material in the lower [Spec; CP] and not to the overt presence of lexical APs and NPs.
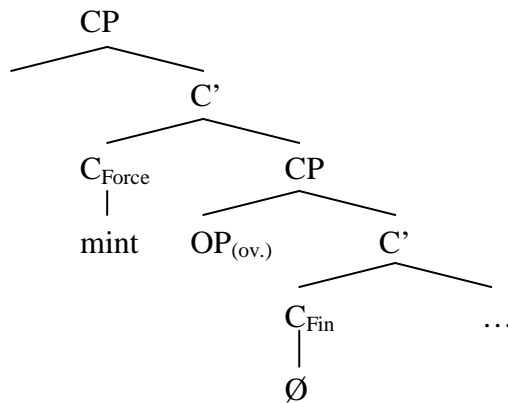
```
                CP
              /    \
                    C'
                  /    \
          C_Force       CP
            |          /   \
          mint    OP_(ov.)    C'
                            /    \
                        C_Fin     …
                          |
                          Ø
```

Figure 10: The final stage

Showing the present-day configuration, Figure 10 highlights that *mint* is located in the upper C head, the lower CP being headed by a zero complementiser, with its specifier optionally hosting an overt comparative operator.

Conclusion

The aim of this research was to investigate the development of Hungarian comparative subclauses, with special attention to the complementiser(s) and the operator. As was shown, the history of the complementiser and that of the operator are two interrelated processes, so much so that the present-day C head derives from the first overt operator. One of the most important aspects was that the changes can be analysed in terms of the relative cycle, which caused *mint* to be reanalysed as a complementiser. Second, the appearance of the operator itself is strongly connected to the processes going on in ordinary relative clauses, as several steps in the development of comparatives can be attributed to analogy with relative clauses. Last but not least, there was also a change in the deletion of the operator: from obligatory deletion to fully acceptable overt operators.

Bearing all these aspects in mind, even though the Old Hungarian comparative structure seems to be considerably different from the one in Present-day Hungarian, it can be shown that the latter derives from the former in a predictable way.

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