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Degree Semantics, Polarity, and the Grammaticalisation of Comparative Operators into Complementisers

0. Introduction

two kinds of comparative degree clauses:

- equatives (AS-clauses)

- comparatives proper (THAN-clauses)

English:

(1) a. Ralph is as tall **as** Peter (is).

  b. Ralph is taller **than** Peter (is).

but: no rigid split between AS-clauses and THAN-clauses

● Modern German: partial overlap in the complementiser (dialects)

AS-clauses: introduced by *wie* 'as'

(2) Ralf ist so groß **wie** Peter.
  Ralph is so tall as Peter
  'Ralph is as tall as Peter.'

THAN-clauses: introduced by *als* 'than' in Standard German/northern dialects, but *als wie* (e.g. Alemannic, Hessian) or *wie* (southern, e.g. Bavarian) also possible

  cf. Jäger (2010), Eggs (2006), Lipold (1983), Weise (1918)

(3) a. Ralf ist größer **als** Peter.
  Ralph is taller than Peter
  'Ralph is taller than Peter.'

  b. % Ralf ist größer **als** **wie** Peter.
   Ralph is taller than as Peter
  'Ralph is taller than Peter.'

  c. % Ralf ist größer **wie** Peter.
   Ralph is taller as Peter
  'Ralph is taller than Peter.'

the innovative pattern is *wie* → southern dialects and AS-clauses more innovative

  historically: *als* and *als wie* also in AS-clauses (see Jäger 2010)

→ question: why AS-clauses seem to be more innovative than THAN-clauses

● Modern Hungarian: overlap in the complementiser, but differences in its overtness

complementiser: *mint* 'as/than'

overt operators allowed, also with lexical XPs (cf. Kenesei 1992, Bacskai-Atkari 2014a)

AS-clauses:

(4) a. Mari olyan magas, **mint amilyen (magas)** Péter.
       Mary so   tall   as   how.REL tall   Peter
       'Mary is as tall as Peter.'

    b. Mari olyan magas, **mint** Péter.
       Mary so   tall   as   Peter
       'Mary is as tall as Peter.'

    c. Mari olyan magas, **amilyen (magas)** Péter.
       Mary so   tall   how.REL tall   Peter
       'Mary is as tall as Peter.'

THAN-clauses:

(5) a. Mari magasabb, **mint amilyen (magas)** Péter.
       Mary taller   as   how.REL tall   Peter
       'Mary is as tall as Peter.'

    b. Mari magasabb, **mint** Péter.
       Mary taller   as   Peter
       'Mary is as tall as Peter.'

    c. *Mari magasabb, **amilyen (magas)** Péter.
        Mary taller   how.REL tall   Peter
       'Mary is as tall as Peter.'

operators may suffice as overt elements in the CP-periphery in AS-clauses ↔ THAN-clauses

→ question: what makes the presence of the overt complementiser necessary in THAN-clauses

proposal:

    ● THAN-clauses are negative polarity environments (Seuren 1973) ↔ AS-clauses

    ● negative polarity follows from comparative semantics – no true negation

    ● negative polarity has to be encoded by an overt functional head (no negative operator)

    ● an operator can replace the overtness of a THAN-head only if is a C head itself

1. Comparative and equative complementisers in German

● Old High German (see Jäger 2010: 470–471)

AS-clauses introduced by *so* and other elements containing *so*, e.g. *also* (> *als*)

(6) it sô giuuerðan mugi,   **sô** thu mid thînun   uuordun   gisprikis
     it so happen   can.SBJV.3SG as you with your.N.PL.DAT words.DAT say.2SG
     'may it happen as your words say' (*Heliand* 2.158; first half of 9th century)

THAN-clauses introduced by *denn*(/*dann*/*thanne*)

   dann/*denn* etymologically related to English *then*/*than*, Dutch *dan* (Rutten 2012)

      → regular West Germanic pattern

   also a negative version: *wan*

      (→ negative *wan* and *weder* in Swiss German, see Friedli 2005)

(7) that he sî   betara **than** uui
     that he is.SBJV better than we
     'that he is better than we are' (*Heliand* 3.212; first half of 9th century)

Middle High German mostly like Old High German (Jäger 2010: 471–472)

● changes from Early New High German onwards (Jäger 2010: 472–475)

   especially from the second half of the 16th century

AS-clauses: *wie* replacing *als*

THAN-clauses: *als* replacing *denn* (analogy from AS-clauses)

wie appearing as an operator (interrogative operator in Old High German) ↔ *als*

   co-occurrence with *als* also possible

(8) Da steh   ich nun, ich armer Tor! Und bin so klug **als** **wie** zuvor
     there stand.1SG I now I poor.M fool and am so wise than as   formerly
     'Here now I stand, poor fool, and see I'm just as wise as formerly.' (Goethe, *Faust* I.4)

changes in AS-clauses:

(9) als → als (wie) / (als) wie → wie

status of *wie*: may be both an operator and a lower complementiser in the middle stage

   last stage: must be a complementiser (not permitting former higher C head *als*)

wie also appearing in THAN-clauses – later, dialectal variation (south of Braunschweig–Berlin line, see Jäger 2010)

changes in THAN-clauses:
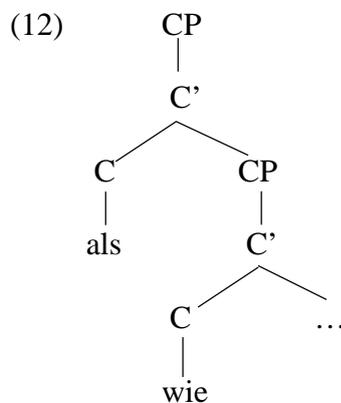
(10)   als → als (wie) → als (wie) / (als) wie → wie

status of *wie*: must be a complementiser if it can replace *als*, AND mist also encode polarity

evidence for the C status of *wie* in Modern German: cannot take AP in [Spec,CP]

    ↔ interrogatives (cf. Bacskai-Atkari 2014a, 2014b)

(11) a. Der   Tisch ist so lang **wie** das   Büro breit ist.
          the.M table is so long as   the.N office **wide** is
          'The table is as long as the office is wide.'

    b. *Der   Tisch ist so lang   **wie breit** das   Büro ist.
         the.M table is so long   as   wide the.N office is
         'The table is as long as the office is wide.'

    c. % Der   Tisch ist länger **als wie** das   Büro **breit** ist.
          the.M table is longer than as   the.N office wide is
          'The table is as long as the office is wide.'

    d. *Der   Tisch ist länger **als wie breit** das   Büro ist.
         the.M table is longer than as   wide the.N office is
         'The table is as long as the office is wide.'

structure (Bacskai-Atkari 2014b, cf. Jäger 2010):

(12)
```
          CP
          |
          C'
         /  \
        C    CP
        |     |
       als    C'
             /  \
            C    …
            |
           wie
```

AS-clauses: *wie* overtaking *als* earlier

2. Diachronic developments in Hungarian

Old Hungarian: 9th–16th centuries

original equative/comparative complementiser: *hogy* 'how, that' (cf. Haader 2003)

THAN-clauses: *hogy* followed by the negative Pol head *nem* 'not' (or: *sem*)

→ *hogy nem* also fusing into *honnem* (Bacskai-Atkari 2014a, 2014b)

appearance of *mint* 'how, as' in Old Hungarian: as an operator (cf. Haader 2003)

● patterns in AS-clauses

hogy as an operator/complementiser already in the earliest texts:

(13) furiſcte muſia!‖ etetý ýmletí.   ug **hug** ana   ſciluttet.
      bathes washes feeds breastfeeds so how mother child.POSS.ACC
      'she bathes, washes, feeds and breastfeeds him as a mother does her child'
          (Königsberg Fragment, beginning of the 13th century)

the combination of *hogy* and *mint*:

(14) mínd anne   bọsegọs kọńhullatasoc mene   a vízeknec
      all   so.much plenty   crying.PL   as.much the waters.DAT

      sokassaghí   sem   volnanac   en elọttem   kellemetọsek/ Auaǵ
      multitude.POSS.PL   neither   be.COND.3PL   I   before.1SG   pleasant.PL   or

      foganatosoc **hoǵ mint** akki zọnetlen   a   kereztfanac ọ
      effective.PL   that   as   who   incessantly   the   rood.DAT   he

      keserúseget   ⱱ   testeben   víselí
      bitterness.POSS.ACC he body.POSS.INE bears

   'not even as much crying as the multitude of waters would be as pleasant and touching
      to me as the one who incessantly bears the bitterness of the rood in his body'
      (Nagyszombat Codex 40–41, 1512/1513)

*mint* as an operator/complementiser (operator use already in the earliest texts):

(15) Ez   oz ýſten **mynt**evt   eſmeríuc!
      this the God   how.he.ACC   know.1PL
      'this is God as we know him' (Königsberg Fragment, beginning of the 13th century)

changes in AS-clauses:

(16)   hogy → hogy (mint) / (hogy) mint → mint

mint replacing *hogy* early on with respect to overt marking

structures:

(17)

```
        CP                                    CP
        |                                     |
        C'                                    C'
       /  \                                  /  \
      C    CP                               C    CP
      |   /  \                              |   /  \
         Op.  C'                               Op.  C'
          |  /  \                               :  /  \
          C      ...                            C      ...
          |                                     |
          Ø

    hogy    (mint)                         hogy    (mint)
   (hogy)    mint                          mint    (new overt operators)
```
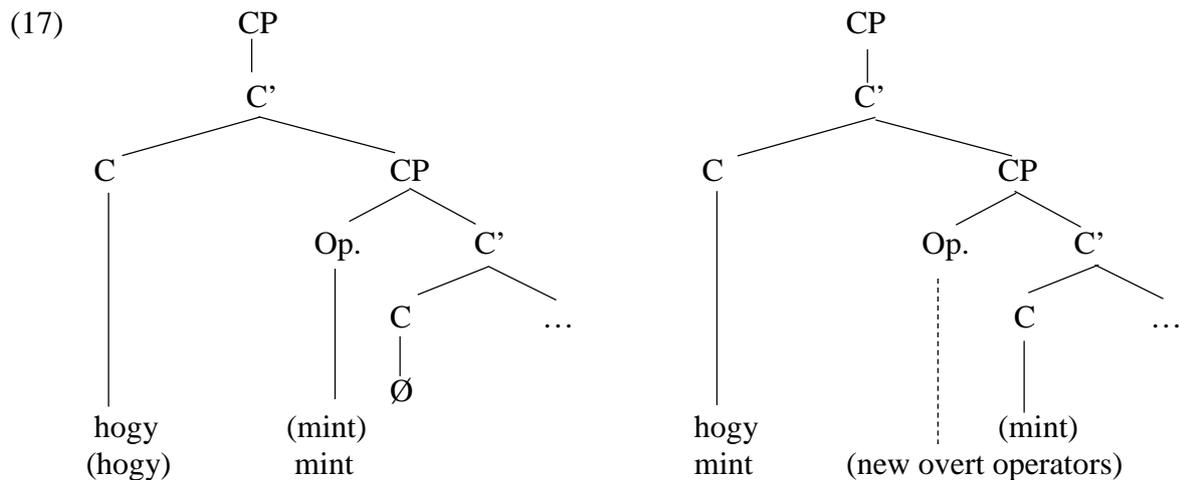
● patterns in THAN-clauses

the C head *hogy* and the negative polarity marker *nem* (earliest pattern):

(18)   Zǭnėkm̄g   te   meltatlākodatod   mv̇   èllènǫc   mėt   iob
       cease.SBJV.3SG.PRT you   indignance.POSS.2SG   we   against.1PL because better

       hog èlèuènėn zolgallonc   Nabuhodonozor   nag   kiralnac   &
       that alive   serve.SBJV.1PL Nebuchadnezzar great king.DAT   and

       alazkoggonc   te   nėkėd   **hog nē** meghaluāc   mv̇
       cringe.SBJV.1PL you   you.DAT   that not   PRT.dying.1PL   we

       vèzèdelmǭcbèn   mv̇nmagonc   mv̇   zolgalatōknac
       peril.POSS.1PL.INE   ourselves   we   service.POSS.1PL.DAT

       karat   zènuèggv̇c
       damage.POSS.ACC   suffer.SBJV.1PL

   'cease to be indignant towards us because it is better for us to serve the great king
       Nebuchadnezzar alive and to cringe before you that not (=than) to suffer the damages
       of our service dying' (Vienna Codex 14, after 1416)

the C head *hogy* + the negative polarity marker *nem* + the operator/complementiser *mint*:

(19) Te   igyekevzeted   az   isteny   zolgalatban   jnkab   léǵen   arra
     you   diligence.POSS.2SG   the   divine   service.INE   rather   be.SBJV.3SG   that.SUB

    hog   az   zent   irasnak   igy   ebevl   lelky   ertelmet
    that   the   sacred   writing.DAT   thus   this.ELA   spiritual   sense.ACC

    vegy   es   aytatossagnak   keuansagat   **hog   nem   mynt**
    take.SBJV.2SG   and   prayer.DAT   desire.POSS.ACC   that   not   than

    vduarlokeppen   eneklesnek   mogyat   tegyed
    courting   singing.DAT   mode.POSS.ACC   do.SBJV.2SG

  'your diligence in serving God should be directed at gaining a spiritual understanding of the Scripture and a desire for prayer, rather than at taking the opportunity to sing for courting' (Horvát Codex 138v–139r, 1522)

the C head *hogy* and *mint*, without the negative polarity marker *nem*:

(20) edesseget   erze   nagyoban   **hogymint**   annak   elǫtte
     sweetness.ACC   felt.3SG   greater   that-than   that.DAT   before.3SG
     '(s)he felt sweetness even more than before' (Lázár Codex 71r, after 1525)
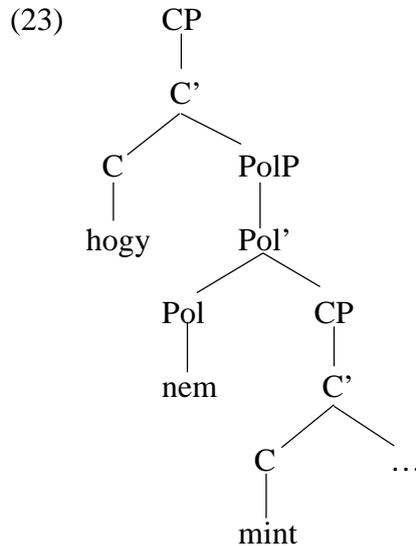
the C head *mint*:

(21) Es   parāčola   hog   a   kèmencè   hètzer   inkab   gerièztètnec
     and   commanded.3SG   that   the   furnace   seven.times   rather   heat.CAUS.COND.3SG

    mēt   zokotvala   gerièztètni
    than   use.PERF.be.PST   heat.PASS.INF

  'and he commanded that they should heat the furnace one seven times more than it was wont to be heated' (Vienna Codex 127, after 1416)

changes in THAN-clauses:

(22) hogy nem → hogy nem (mint) → hogy nem (mint) / hogy (nem) mint → (hogy) mint

structure (cf. Bacskai-Atkari 2014a, 2014b, Bacskai-Atkari and Dékány 2014):

(23)

```
              CP
              |
              C'
           ┌──┴──┐
           C    PolP
           |     |
          hogy  Pol'
             ┌───┴───┐
            Pol      CP
             |        |
            nem      C'
                  ┌───┴───┐
                  C      …
                  |
                 mint
```

in (23) *mint* is already a C head, but negative polarity is marked by *nem* still

    hogy becomes optional only if *nem* is already absent – no *nem mint

asymmetry in the data:

    constructions like (19) even in Middle Hungarian, single *mint* sporadic in THAN-clauses

    single *mint* available in AS-clauses early on

3. Comparative semantics and negative polarity

● the THAN-clause is a negative polarity environment (Seuren 1973)

negative polarity items licensed:

(24)   She would rather die than **lift a finger** to help.

explicit negative elements in e.g. Italian (Seuren 1973: 535, exx. 45 and 46):

(25) a. Giovanni è più alto che **non** pensassi.
      John   is more tall.M that not thought.SBJV.1SG
      'John is older than I thought.'

     b. Giovanni è più alto che pensavo.
      John   is more tall.M that thought.1SG
      'John is older than I thought.'

French: *ne* appears with finite verbs (Seuren 1973: 535, ex. 44):

(26) Jean est plus grand que je **ne** pensais.
    John is more tall.M that I not thought.1SG
    'John is taller than I thought.'

negative polarity does not imply true negation

    explicitly negative-like element is often absent

    French: polarity marker is *ne*, but negation carried rather by *pas* otherwise

● comparative semantics:

(27) a. *x* is as tall as *y*: $\exists d \exists d'[\text{TALL}(x,d)\ \&\ \text{TALL}(y,d')\ \&\ \mathbf{(d=d')}]$

    b. *x* is taller than *y*: $\exists d \exists d'[\text{TALL}(x,d)\ \&\ \text{TALL}(y,d')\ \&\ \mathbf{(d>d')}]$

    c. *x* is less tall than *y*: $\exists d \exists d'[\text{TALL}(x,d)\ \&\ \text{TALL}(y,d')\ \&\ \mathbf{(d<d')}]$

d carried by the degree expression (DegP) in the matrix clause (**as** tall, tall**er**, **less** tall)

d′ associated with the comparative operator

relation between the two degrees encoded by the matrix Deg and partially by the subclause:

    AS-clauses

        Deg (*as*) and AS-CP both encode equality (*d=d′*)

    THAN-clauses

        Deg encodes superiority (*-er*/*more*) or inferiority (*less*), hence *d>d′* or *d<d′*

        THAN-CP encodes merely inequality (*d≠d′*) → negative polarity

    evidence: matrix degree determines choice between AS and THAN, but no subtype according to *more*/*less*

● relevant features in AS-clauses and THAN-clauses

[compr]: responsible for marking the comparative nature of the clause

    has to be overt but can be carried either by a C head or an operator

        interpretable on both

        note: operator is a relative operator, has to move because not licensed in situ

    → makes sure that some C-element is overt

[sub]: responsible for marking the subordinate nature of the clause

    does not have to be overt, carried by a C head

[pol:neg]: responsible for the marking of the negative polarity of the clause (in THAN-clauses)

    has to be overt – negative polarity/negation marked morphologically, unlike e.g. yes-no interrogatives, where intonation may suffice, cf. Dryer (2013)

    has to be carried by a functional head (C or Pol) – no negative operator to check the uninterpretable [pol:neg] feature of a null head

reason for the double CP in comparatives: marking of [compr]

    operator movement triggered by an uninterpretable [compr] feature on a null C head

    if the C head is filled, the [compr] is interpretable → no trigger for operator movement

        but: the relative operator is no licensed in situ

        moving to a higher CP would violate the Minimal Link Condition (Chomsky 1995)

    → two CPs: overt + null, operator always follows the overt C

    two overt C heads: lower one moves as an operator and re-merges as a C head

        dual status of head-sized phrases (see Bayer and Brandner 2008 for interrogatives)

→ reanalysis of an original operator into a comparative C head: features passed on from higher C head (and possibly a separate Pol head, if any)

AS-clauses: [compr] carried by the operator anyway, [sub] no necessarily overt

    → an operator may mark the clause on its own as soon as it is overt

THAN-clauses: [pol:neg] has to be passed on

    → reanalysis has to take place

continued use of higher C together with lower C already potentially associated with [pol:neg]

    grammaticalisation takes place over time – variation

    higher C marking [sub]

        cf. Jäger (2010) for German *als*

        hogy 'that' optional [sub] marker in ordinary relative clauses in Old/Middle Hungarian (Bacskai-Atkari 2014a, 2014b, Bacskai-Atkari and Dékány 2014)

inventory of [pol:neg] markers across languages:

Types		Examples
(I)	separate Pol head	● Old Hungarian *nem*/*sem* ● optional Italian *non* ● French *ne*
(II)	incorporated negative C head	● English dialectal *nor* ● Old/Middle High German *wan* ● Swiss German dialectal *wan*/*weder* ● Czech *než* ● Polish *niz* ● Serbo-Croatian *nego*/*no*
(III)	THAN-C head	● English *than* ● German *als* ● Old High German *denn* ● Dutch *dan* ● Russian *chem*
(IV)	comparative C head	● German dialectal *wie* ● Hungarian *mint*
(V)	more general C head	● Italian *che* ● French *que*

asymmetric behaviour of AS-clauses and THAN-clauses attested in other languages as well

Conclusion

synchronic and diachronic asymmetries between AS-clauses and THAN-clauses

    e.g. German and Hungarian

THAN-clauses are negative polarity environments ↔ AS-clauses

    ● negative polarity follows from comparative semantics

    ● negative polarity has to be encoded by an overt functional head

    ● an operator can replace the overtness of a THAN-head only if is a C head itself

→ operators are more readily available as overt markers in AS-clauses

→ the absence of negative polarity facilitates the grammaticalisation processes in AS-clauses

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