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 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


(3) a. Ralf ist größer als Peter.
    ‘Ralph is taller than Peter.’

    b. % Ralf ist größer als wie Peter.
        ‘Ralph is taller than as Peter.’

    c. % Ralf ist größer wie 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, Bacskaï-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.’

    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 giuerðan mugi, sô thu mid thinun 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 dann/(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 must 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.’


(12) \[
\begin{array}{c}
\text{CP} \\
\text{C'} \\
\text{C} \\
\text{als} \\
\text{C'} \\
\text{C} \\
\text{wie}
\end{array}
\]

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) *furícte muśia!*|| etetý ýmletí. ug *hug* ana fêiluttet.

‘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 bo̗ sego̗ s kó̗ nhullatasoc mene a vízeknec

all so.much plenty crying.PL as.much the waters.DAT

sokassaghí sem volnanac en elôttem kellemeto̗ sek/ Auag

multitude.POSS.PL neither be.COND.3PL I before.1SG pleasant.PL or

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

keserúseget ŝ testeben vîseli

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 ýftén *mynte*vь efemerʉć!

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    ...  C  ...
           Ø

hogy  (hogy)  (mint)  mint  hogy  (mint)  (new overt operators)

● patterns in THAN-clauses

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

(18) Zônêkm̄g  te meltatlēkodatod  mî  ēllēnōc  mēt  iōb
    cease.SBJV.3SG.PRT  you  indignance.POSS.2SG  we  against.1PL  because  better
    hoge  ēlēuēnēn  zolgallonc  Nabuhodonozor  nag  kiralnac  &
    that  alive  serve.SBJV.1PL  Nebuchadnezzar  great  king.DAT  and
    alazkoggonc  te  nēkēd  hoge  nē  meghaluac  mî
    cringe.SBJV.1PL  you  you.DAT  that  not  PRT.dying.1PL  we
    vēzēdelmōćbēn  mēnymagonc  mî  zolgalatōknac
    peril.POSS.1PL.INE  ourselves  we  service.POSS.1PL.DAT
    karat  zēnuēggûc
    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 légen arra
you diligence.POSS.2SG the divine service.INE rather be.SBJV.3SG that.SUB
hogy az zent irasnak igy ebevl lelky ertelmet
that the sacred writing.DAT thus this.ELA spiritual sense.ACC
vegy es aytatossagnak keuansagat *hogy nem mint*
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 *hogy mint* annak elotte
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 kemencê hetzer inkab gerièztêtnec
and commanded.3SG that the furnace seven.times rather heat.CAUS.COND.3SG
miêt zokotvala gerièztêtni
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*

\[
(23) \quad \begin{array}{c}
\text{CP} \\
\mid \text{C'} \\
\mid \text{C} \\
\mid \text{PolP} \\
\mid \text{hogy} \\
\mid \text{Pol'} \\
\mid \text{Pol} \\
\mid \text{nem} \\
\mid \text{C'} \\
\mid \text{mint} \\
\end{array}
\]

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*: \[\exists d \exists d'[\text{TALL}(x,d) \& \text{TALL}(y,d') \& (d=d')]\]

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

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

\(d\) carried by the degree expression (DegP) in the matrix clause (as tall, taller, 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 (\(d\neq d'\)) \(\rightarrow\) 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

\(\rightarrow\) 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:

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


