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Towards a Cross-Linguistic Typology of Marking Polarity in Embedded Degree Clauses

0. Introduction

embedded degree clauses: AS-clauses and THAN-clauses

(1)   a. Ralph is as tall **as** Mary is.
      b. Ralph is taller **than** Mary is.

THAN-clauses: negative polarity environment (Seuren 1973)

   negative polarity items, *any* licensed

(2)   a. He would rather continue complaining than **lift a finger** to improve his life.
      b. Ralph has spent more time travelling than **any** other professor (has).

note: subclause often reduced to a single focussed remnant – reduced clauses

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

reason follows from comparative semantics

   AS-clauses: degree equality (d=d')

   THAN-clauses: degree inequality (d≠d')

(3)   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*: $\exists d \exists d'[\text{TALL}(x,d) \, \& \, \text{TALL}(y,d') \, \& \, \mathbf{(d<d')}]$

but: negative polarity does not imply clausal negation

   degree negated, not the lexical predicate

→ no negative operator, hence negative polarity has to be marked on a functional head

   negation, negative polarity always marked morphologically (see Dryer 2013)

question: which head can be responsible for marking negative polarity

proposal: either a separate Pol head or a comparative C head (various subtypes)

even overt comparative operators cannot take overt this function

→ operators first have to acquire head status – doubling or radical replacement

1. Negative polarity heads

Italian (Seuren 1973: 535, exx. 45 and 46):

(4) 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):

(5) 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 not the same as clausal negation

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

also in Old Hungarian: C head *hogy* 'that' + polarity marker *nem* 'not'

see Bacskai-Atkari (2014a, 2014c)

(6) Zǫ̇nėkm̄g   te meltatlākodatod   mṿ èllènǭc   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   mṿ
     cringe.SBJV.1PL you you.DAT that not PRT.dying.1PL we

     vèzèdelmǭcbèn   mṿnmagonc mṿ zolgalatōknac
     peril.POSS.1PL.INE ourselves we service.POSS.1PL.DAT

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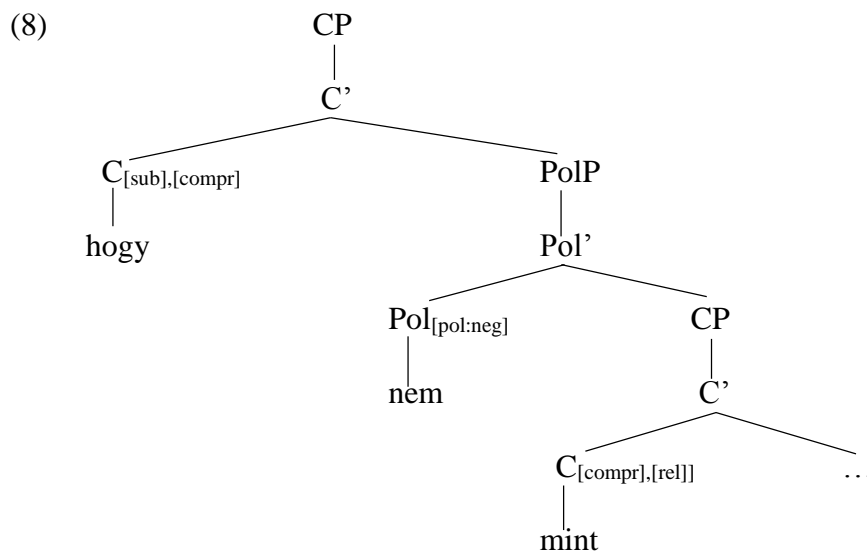   damage.POSS.ACC suffer.SBJV.1PL

     '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)

later configuration: *mint* 'as' also appears as an overt operator (later lower C head):

(7) Te   igyekevzeted   az   isteny   zolgalatban   jnkab   légen   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)

structure:

(8)

comparative and relative: Force in Rizzi (1997, 2004)

features marked on separate heads

> [sub]: marking finite subordination; does not have to be overt; encoded by a functional C head

> [compr]: marking the comparative nature of the clause; has to be overt; encoded either by a functional C head or by an operator (operator movement to the specifier of the lower CP)

> [rel]: marking the relative nature of the clause; does not have to be overt (language-specific); encoded either by a functional head or an operator; ensures that the comparative operator moves to the left periphery (cf. Chomsky 1977, Kennedy 2002 on comparative operators being relative operators)

> [pol:neg]: marking the negative polarity of the clause in the absence of clausal negation; has to be overt; encoded by a functional head

cases above: separate Pol head

but: Pol head not universally attested

> also: Pol head not always overt in Italian, French

> Hungarian: Pol head gradually disappeared (cf. Bacskai-Atkari 2014a, 2014c)

2. The overtness of comparative C heads

encoding of [compr]: can be carried out either by a C head or an operator
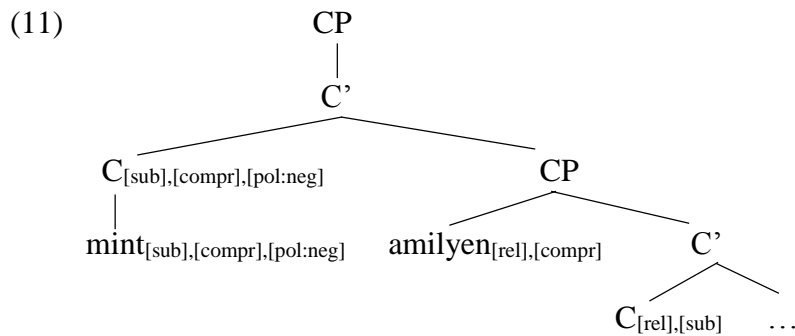
possible patterns in Modern Hungarian AS-clauses:

(9)   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.'

but: *mint* cannot be absent in THAN-clauses:

(10) 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.'

structure for comparatives like (10a):

(11)

```
                        CP
                        |
                       C'
              _____/  _____
         C[sub],[compr],[pol:neg]       CP
              |                    ____/  \____
      mint[sub],[compr],[pol:neg]  amilyen[rel],[compr]   C'
                                              __/  \__
                                        C[rel],[sub]   …
```

elliptical structure like (10b): lower CP absent

> → no operator movement to the left periphery, but the [rel] element is not licensed in situ, hence ellipsis has to occur (see Bacskai-Atkari 2014a; Bacskai-Atkari and Kántor 2011, 2012)

structure in (10c): higher CP absent → [pol;neg] fails to be encoded, but would be required by the matrix clausal degree head (-*bb* '-er')

> ↔ equatives like (9c): no [pol:neg] required anyway

→ evidence that [pol:neg] has to be marked by an overt functional head, which can also be C

similar patterns is Czech:[1] behaviour of operator *jak* 'how'

AS-clauses in Czech with the operator *jak*:

(12) a. Ten stůl   je stejně dlouhý, **jak siroká** je ta kancelář.
       the table is same long as wide is the office
       'The table is longer than the office is wide.'

    b. Ten stůl   je stejně dlouhý, **jak** je ta kancelář **siroká**.
       the table is same long how is the office wide
       'The table is longer than the office is wide.'

operator *jak* can move together with AP, AP may be stranded

similar pattern in Polish[2] (see Borsley and Jaworska 1981)

THAN-clauses also allow the operator *jak*:

(13) a. ?Ten stůl   je delší,   **než jak široká** je ta kancelář.
       the table is longer than how wide is the office
       'The table is longer than the office is wide.'

    b. Ten stůl   je delší,   **než jak** je ta kancelář **široká**.
       the table is longer than how is the office wide
       'The table is longer than the office is wide.'

    c. *Ten stůl   je delší,   **jak široká** je ta kancelář.
       the table is longer how wide is the office
       'The table is longer than the office is wide.'

    d. *Ten stůl   je delší,   **jak** je ta kancelář **široká**.
       the table is longer wide is the office wide
       'The table is longer than the office is wide.'

C head *než* 'than': incorporated negative element

similar: Polish *niz*, Serbo-Croatian *nego/no*

overtness of comparative C heads follows from marking [pol:neg]

but the C head does not have to be negative-like, though it can be

negative C heads differ from Pol heads: Pol heads co-occur with a real C head

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3. Multiple C heads

double CPs attested in Hungarian comparatives historically – *hogy* 'that' + *mint* 'as'

> lower C head taking over: passing on features, including [pol:neg]

patterns in German THAN-clauses (cf. Jäger 2010, Eggs 2006, Lipold 1983, Weise 1918):
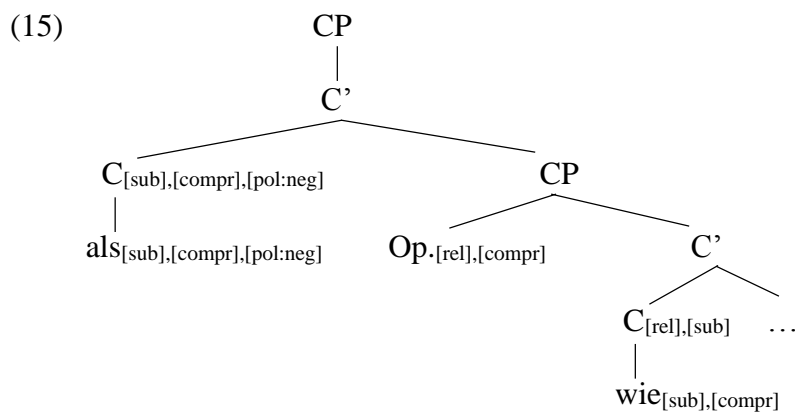
> ● Standard German/northern dialects: *als* 'than'

> ● certain dialects (e.g. Alemannic, Hessian): *als wie* 'than as'

> ● southern dialects (e.g. Bavarian): *wie* 'as'

(14) 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.'

wie in embedded degree clauses: a C head

> no longer operator, cf. Jäger 2010, Bacskai-Atkari 2014a, 2014c

structure:

(15)

```
                        CP
                        |
                        C'
             _____/ _____
          C[sub],[compr],[pol:neg]        CP
             |                      ____/  \____
         als[sub],[compr],[pol:neg]  Op.[rel],[compr]   C'
                                              ___/ \___
                                          C[rel],[sub]   …
                                              |
                                          wie[sub],[compr]
```

feature specification of lower C head:

> zero heads: [rel] and [sub], see (11) – uninterpretable [rel] feature on the C head triggers the movement of the operator

> reanalysis of an operator into a C head: accompanied by the loss of [rel]

>> → [rel] encoded by a zero operator (↔ Hungarian has no zero operator)

→ feature specification of the lower C element *wie* more similar to the higher C head, except for [pol:neg] in comparatives (but not in equatives)

→ further step: higher C head filled either by *als* or *wie* moves up

> *als* interpreted as a mere functional head (subordinator), *wie* as a polarity marker

note: *als* contains no incorporated negative element (↔ Czech, Polish, Slavic)

multiple C heads also in Serbo-Croatian[3]

> equative complementiser or *wh*-like relative complementiser co-occurring

basic pattern with *nego* 'than' or *no* 'than':

(16) a. Pavao   je   viši   **nego**   Petar.
       Paul   is   taller   than   Peter
       'Paul is taller than Peter.'

     b. Pavao   je   viši   **no**   Petar.
       Paul   is   taller   than   Peter
       'Paul is taller than Peter.'

nego and *no* behave in the same way (examples below with *nego*)

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[3] I owe many thanks to Boban Arsenijević for the Serbo-Croatian data.

lower C heads:

(17) a. Pavao je viši **nego što** je Petar.
     Paul is taller than what is Peter
     'Paul is taller than Peter.'

    b. ?Pavao je viši **nego koliko** je Petar.
      Paul is taller than as is Peter
      'Paul is taller than Peter.'

lower C head *što*: merely a relative head – no real doubling since [re] not marked on the higher C head anyway

lower C head *koliko*: specified for [compr] – doubling → markedness

markedness would disappear if the higher C head lost [compr] specification

[pol:neg] cannot be interpreted as present on lower C with *nego*/*no* in the higher C

nego/*no* contain incorporated negative element morphologically

→ feature reinterpretation hindered

4. Radical replacement and Chain Uniformity

recall: Czech *jak* 'how' cannot replace *než* 'than' as an operator:

(18) a. ?Ten stůl je delší, ***(než) jak široká** je ta kancelář.
     the table is longer than how wide is the office
     'The table is longer than the office is wide.'

    b. Ten stůl je delší, ***(než) jak** je ta kancelář **široká**.
     the table is longer than how is the office wide
     'The table is longer than the office is wide.'

but: *jak* is possible in THAN-clauses as a C head iff the clause is elliptical:

(19) a. Marie je vyšší, **jak** (*je) Karel.
     Mary is taller how is Charles
     'Mary is taller than Charles.'

    b. Renault stojí víc **jak** (*stosí) Dacia.
     Renault costs more how costs Dacia
     'A Renault costs more than a Dacia.'

hence: *jak* seems to occupy a higher C position, fulfilling the marking of [pol:neg]

proposal: *jak* base-generated as an operator but moves to a C head position

similar phenomena in Alemannic and Bavarian relative clauses with head-sized *wh*-phrases, see Bayer and Brandner (2008)

regular pattern in Alemannic/Bavarian: *wh*-phrase + *dass* 'that' in the C head position

    Doubly Filled COMP effect

    but: not with head-sized *wh*-element – complementary distribution with *dass*

Bayer and Brandner (2008: 88, ex. 5a):

(20) I woass aa ned, **wer (*dass)** allas am Sunndoch in da Kiach gwen is.
      I know too not who that all at Sunday in the church been is
      'I don't know either who all has been to church on Sunday.'

question of Chain Uniformity (cf. Chomsky 1995)

    phrase moving to a head position

    Bayer and Brandner (2008): dual status of head-sized phrases

but: in embedded questions the operator moves to a head position of the same CP that hosts operators otherwise

↔ comparatives: *jak* has to move to a C head responsible for [pol:neg] not for [rel]

    otherwise *jak* would be preceded by a separate head (*než*)

    reason: lower CP not generated (similar to Hungarian elliptical comparatives)

      but: the [pol:neg] CP not filled by merging *než* but by moving *jak*

ellipsis: the visible base-generation site of *jak* would cause an operator interpretation

    mismatch, [rel] not available in situ (↔ *wh*)

radical replacement of complementiser by operator: dual status, not grammaticalisation

Conclusion

marking of polarity in embedded degree clauses

THAN-clauses negative polarity environments (↔ AS-clauses)

cross-linguistic typology of polarity marking:

Types		Examples
(I)	separate Pol head	● Old Hungarian *nem*/*sem* ● 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*

double CP layer – [rel] and [pol:neg] marked separately

operators are not licensed to mark [pol:neg] in an operator position

    reanalysis, double complementiser and overtaking – e.g. German

    dual status and replacement – Czech

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