1 **Introduction**

Gradable predicates, such as *tall* (1-3a), can occur in the comparative (1-3b) and superlative (1-3c) constructions, which express **comparison**:

(1)  
- a. Anna is tall.  
- b. Anna is taller than John /than him.  
- c. Anna is the tallest.

(2)  
- a. Anna jest wysoka. (Polish)  
  Anna is tall  
- b. Anna jest wyższa niż Jan /od Jana.  
  Anna is taller than Jan.Nom /from Jan.Gen  
- c. Anna jest najwyższa.  
  Anna is tallest

(3)  
- a. Anna е visoka. (Bulgarian)  
  Anna is tall  
- b. Anna е po-visoka ot Ivan /от него.  
  Anna is taller from Ivan from him  
- c. Anna е naj-visoka.  
  Anna is tallest

Debate in the formal approaches to the semantics of comparatives and superlatives: **what is compared?**

- **Individuals?** (e.g. Anna and John/other people in terms of their height)  
- **Degrees?** (e.g. Anna’s height and John’s/other people’s height)

- We will review some empirical arguments that both "**modes of comparison**" (Kennedy 2007) are available in Polish and Bulgarian.  
- In comparatives degrees are compared (in both clausal and phrasal comparatives).  
- In superlatives either degrees or individuals can be compared, which can be diagnosed by the relationship with focus.

The superlative (1-3c) can be paraphrased in terms of the comparative ‘Anna is taller than anybody else’ but it is an open question how the meaning component 'than anybody else' is understood in a given context.

- I will present arguments that **focus** plays a crucial role.

2 **Comparatives**

2.1 **Explicit comparison with a degree:**

(4) Anna weighs more than 50kg.
(5) Anna waży więcej niż 50kg.
Anna weighs more than 50kg

Anna weighs more than how-much weighs Jan
‘Anna weighs more than Jan does.’
b. *Anna waży więcej od ile Jana.
Anna weighs more from how-much Jana.Gen

(7) Anna e po-visoka ot (-kolkoto e) Ivan. (Bulgarian)(Pancheva 2006)
Anna is taller from (-how-much is) Ivan
‘Anna is taller than Ivan is.’

2.2 Clausal and phrasal comparatives

The Slavic languages clearly mark the distinction between clausal comparatives (“comparative deletion” Bresnan 1973) and phrasal comparatives, Pancheva (2006):

- In Polish clausal comparatives (CCs), the counterpart of than is niż. Its complement is a clause that may be partially or maximally elided up to a single remnant. There is no case-dependency between niż and any DP remnant (like Anna).
- In Polish phrasal comparatives (PCs), the counterpart to than is od, the preposition from. At most one DP may follow od, and this DP is case-marked genitive by od.
- In Bulgarian, the same preposition ot ‘from’ is the counterpart to than in clausal and phrasal comparatives. A degree wh-word kolkoto ‘how many/much’ is obligatory in clausal comparatives:

(8) a. Tja e po-visoka ot-kolkoto e toj CC
she is taller from-how.much is he_nom
‘She is taller than he is.’
b. Tja e po-visoka ot nego. PC
she is taller from him_acc
‘She is taller than he him.’

• Do we have two kinds of than such that one involves degree comparison, one comparison of individuals?

2.3 Underlying syntax of ‘than-…’

Broad consensus on the syntax of the complement to than in CCs:

(9) He visited more cities than she did. CC
... than [cp wh she did [vP visit d-many cities ]]

The syntax of the complement to than in PCs remains controversial:

(10) He visited more cities than her. PC
a. ... than [cp wh-case she [TP past visit d-many cities ]] reduction analysis
b. ... than [dp her] direct analysis
c. ... than [predP she wh visit d-many cities ] small clause analysis

2.4 Small clause analysis for phrasal comparatives

In Polish phrasal comparatives do not allow the presence of the wh-element ile ('how much'), which argues against the reduction analysis, (10a). Pancheva (2009) proposes the small clause analysis on the basis of the generalization in (11):

(11) "In the Slavic languages, a more-NP cannot be an underlying subject (an external argument) in phrasal comparatives.” (Pancheva 2009)

The generalization is, in fact, more general:
- Greek, Hungarian, Bulgarian, Serbian/Croatian, Slovenian are like Polish (wh-fronting languages)
- Korean, Japanese, Turkish and Hindi allow PCs with more-NP subjects (non-wh-fronting languages)

More is part of an external argument subject (?/*: variability between and within speakers; gradient acceptability):

(12) a. ??/* Więcej uczniów zwiedziło Czechy od Słowacji. PC
more students visited Czech R. from Slovakia
'More students visited the Czech Republic than Slovakia.'

b. Więcej uczniów zwiedziło Czechy niż Słowację. CC
more students visited Czech R. than Slovakia
'More students visited the Czech Republic than visited Slovakia.'

More is part of a predicative adjective:

(13) a. Czechy są większe od Słowacji. PC
Czech R. are bigger from Slovakia
'The Czech Republic is bigger than Slovakia.'

b. Czechy są większe niż Słowację. CC
Czech R. are bigger than Slovakia
'The Czech Republic is bigger than Slovakia is.'

More is part of an attributive adjective:

(14) a. Jan kupił większy dom od Agnieszki. PC
Jan bought bigger house from Agnieszka
'Jan bought a bigger house than Agnieszka.'

b. Jan kupił większy dom niż Agnieszka. CC
Jan bought bigger house than Agnieszka
'Jan bought a bigger house than Agnieszka did.'

More is part of an adverb:

(15) a. Marek zwiedził Czechy wcześniej od Słowacji. PC
Marek visited Czech R. earlier from Slovakia
'Marek visited the Czech Republic earlier than Slovakia.'

b. Marek zwiedził Czechy wcześniej niż Słowację. CC
Marek visited Czech R. earlier than Slovakia
'Marek visited the Czech Republic earlier than he visited Slovakia.'

More is part of an object:

(16) a. Marek zwiedził więcej miejsc od Anny. PC
Marek visited more places from Anna
'Marek visited more places than Anna.'
‘Marek visited more places than Anna.’

b. Marek zwiedził więcej miejsc niż Anna.  
Marek visited more places than Anna.

‘Marek visited more places than Anna did.’

- In sum: a **subject restriction** in phrasal comparatives

- Formal analysis (Pancheva 2009):
  Wh-movement in the (small) clause from a position parallel to that of *more* in the matrix. This movement is constrained by locality considerations (Abels 2003 a.o.). In (20) the movement is too local.¹

(17) ‘Marek visited more places …’
  \[\text{\ldots niż \, [\text{CP wh-\textbf{many}}_1 \, [\text{FP Anna}_2 \, \text{TP t}_2 \, \text{zwiedziła d}_1\text{-miejsc}]]}] \text{CC, more-object} \]
  than Anna\text{-nom} visited places

(18) ‘More students visited the Czech Republic …’
  \[\text{\ldots niż \, [\text{CP wh-\textbf{many}}_1 \, [\text{FP Slovácię}_2 \, \text{TP d}_1\text{-studentów} \, \text{TP t}_3 \, \text{zwiedziło t}_2]]}] \text{CC, more-subject} \]
  than Slovak\text{-acc} students visited

(19) ‘Marek visited more places …’
  \[\text{\ldots od \, [\text{FP Anna}_2 \, \text{vP wh-\textbf{many}}_1 \, \text{vP t}_2 \, \text{zwiedziła d}_1\text{-miejsc}]]}] \text{PC, more-object} \]
  from Anna\text{-gen} visited places

(20) ‘More students visited the Czech Republic …’
  \[\text{\ldots od* [\text{FP Slovácię}_2 \, \text{vP wh-\textbf{many}}_1 \, \text{vP d}_1\text{-studentów} \, \text{zwiedziło t}_2]]}] \text{PC, more-subject} \]
  from Slovak\text{-gen} students visited

The small clause analysis is the only one that can explain the empirical facts, i.e. predict gradient acceptability.

On the reduction analysis and direct analysis all *od*-comparatives should be degraded.

### 2.5 Testing the generalization (Pancheva and Tomaszewicz 2011)

- **Experiment:**
  off-line acceptability-rating study, comparing phrasal and clausal comparatives with *more* in subject and object position.
- 2 (position of *more: subject* vs. *object*) x 2 (type of comparative: *niż* vs. *od*)
- transitive predicates, perfective aspect
- 24 items (sets of 4 sentences), distributed in 4 questionnaires; 48 fillers.
- 56 participants

A sample item:

(21) a. Jak dotąd więcej moich kolegów przeczytało Trylogię niż Lalkę.
   b. Jak dotąd więcej moich kolegów przeczytało Trylogię od Lalki.
   as till-now more my friends read Trilogy than Lalka
   ‘So far, more of my friends have read the Trilogy than the novel Lalka.’

¹ For Pancheva (2009) the restriction on subjects on the small clause analysis is due to a combination of an island effect (sub-extraction from subjects) and an anti-locality effect constraining wh-movement.
c. Jak dotąd Justyna przeczytała więcej obowiązkowych lektur niż Iwona.
d. Jak dotąd Justyna przeczytała więcej obowiązkowych lektur od Iwony.

‘So far, Justina has read more of the obligatory readings than Ivona.’

Summary of results:
- 54 participants, repeated measures ANOVA, z-scores²

<table>
<thead>
<tr>
<th>condition</th>
<th>subject od</th>
<th>subject niż</th>
<th>object od</th>
<th>object niż</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>M = -.48</td>
<td>M = .16</td>
<td>M = -.07</td>
<td>M = .38</td>
</tr>
<tr>
<td>std. error</td>
<td>SE = .07 / .10</td>
<td>SE = .06 / .07</td>
<td>SE = .05 / .14</td>
<td>SE = .05 / .06</td>
</tr>
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<tr>
<th>Main effects</th>
<th>Interaction</th>
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<tr>
<td>type of than</td>
<td>position of more</td>
</tr>
<tr>
<td>F₁ (1,53) = 37.77, p &lt; .001</td>
<td>F₁ (1,53) = 38.33, p &lt; .001</td>
</tr>
<tr>
<td>F₁ (1,53) = 3.88, p = .054</td>
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</table>

Main effect of type of than: phrasal comparatives overall are less acceptable than clausal ones (cf. Czech)

Main effect of position of more: movement of more and wh-operator is less acceptable from subject than from object position.

Interaction approaching significance: the lowest mean for subject od is not entirely cumulative (after trimming outliers – significant interaction p = .048). We take this as evidence for the subject restriction in phrasal comparatives.

Histograms for the 4 conditions:

²Z-score = (original score - mean)/st.dev.
The **small clause analysis predicts this result**, and thus receives support from the experimental findings. The alternative theories predict a lack of interaction since, in the absence of a subject-island violation, 'subject od' comparatives should only show the linear additive effect of the two main factors: *od* being less acceptable than *niż* and subject comparatives being less acceptable than object ones.

Conclusions in Pancheva (2009), Pancheva and Tomaszewicz (2011):

- The small clause analysis, like the reduction analysis, involves non-overt syntactic structure involving wh-movement. This movement creates an abstraction over the degree argument, just like in clausal comparatives.
- The denotation of the *than*-clause is the same in clausal and phrasal comparatives in Slavic – a predicate over degrees.
- **The comparative morpheme is a degree quantifier.**

### 3 Superlatives

#### 3.1 Superlative ambiguities: absolute and relative reading

(Heim 1985, Szabolcsi 1986, Gawron 1995, a.o.)

(22) John climbed the highest mountain.

a. ‘John climbed a mountain that is higher than all (relevant) mountains.’ **Absolute**

(E.g. Mt. Blanc in the Alps)

b. ‘John climbed a higher mountain than any other (relevant) person did.’ **Relative**

(E.g. John climbed the Matterhorn, 4478 m; Mary climbed Zinalrothorn, 4221 m; Bill climbed Strahlhorn, 4190 m; and nobody climbed Mt. Blanc, 4810 m, as shown in the diagram below.)

\[ \text{\textcopyright Bill} \quad \text{\textcopyright Mary} \quad \text{\textcopyright John} \]

(23) Scenario 1:

A: Who climbed the highest mountain? **Absolute**

B: Nobody.

(24) Scenario 2:

A: Why is John happy and Mary and Bill are not?

B: John climbed the highest mountain. **Relative**

#### 3.1.1 Superlatives and focus

Even though in English a sentence containing a superlative adjective can always receive the absolute reading, the placement of focus clearly facilitates relative readings (Ross 1964, Jackendoff 1972, Szabolcsi 1986, Heim 1999, Farkas and É. Kiss 2000, Sharvit and Stateva 2002, a.o.).

Prosodic focus favors two different relative readings in (25a) and (b), as indicated by the paraphrases:

(25) a. John gave [Mary], the most expensive gift.
'John gave Mary a more expensive gift than he gave anybody else.'

b. \([\text{JOHN}]_F \text{ gave Mary the most expensive gift.}\)

'John gave Mary a more expensive gift than anybody else gave her.'

In cases such as (25) -est can be said to associate with focus similarly to focus sensitive particles such as only whose truth-conditional effect, when applied to a proposition, depends on the constituents in focus:

(26) a. John only gave [M\text{Ar}y]_F a cheap gift.

b. John only gave Mary a \([\text{CHEAP}]_F\) gift.

Assuming that semantic focus is assigned to constituents as a feature that is visible to syntax and then prosody, it is surprising that in (27a-b) elements that are not prosodically prominent can determine the comparison class, such as who (or its trace) (27a), or a non-overt constituent such as PRO (27b).

(27) a. We should console the girl who got the fewest [L\text{Et}ters]_F. (Szabolcsi 1986)

b. One can win this contest by PRO putting the largest [PL\text{ANT}]_F on the table. (Heim 1999)

### 3.1.2 Additional relative readings in Polish and Bulgarian – definiteness and focus

Pancheva and Tomaszewicz (2012):

(28) a. Jan met the youngest students from London.

\[
\text{Jan met najmłodszych studentów z Londynu.}
\]

Jan met youngest students from London

(29) a. Ivan climbed the highest mountain.

\[
\text{Ivan izkači najvisoka ta planina.}
\]

Ivan climbed est-high-the mountain

(30) a. Ivan climbed the highest mountain.

\[
\text{Ivan izkači najvisoka planina.}
\]

Ivan climbed est-high mountain

(31) a. Ivan bought the most expensive tomatoes.

\[
\text{Ivan kupi najskupi-te domati}
\]

Ivan bought est-expensive-the tomatoes
(32) a. Ivan bought the most expensive tomatoes.
   b. Ivan kupił najskup domatí

   Ivan bought est-expensive tomatoes

   'Jan bought the tomatoes that were more expensive than any other tomatoes in the store.'
   'Jan bought more expensive tomatoes than anyone did.'
   'Jan bought more expensive tomatoes than any other thing he bought.'

   The relative reading can also be established with respect to the noun phrase itself Tomaszewicz (2013):

(33) a. Jan bought the most tomatoes.
   b. Jan kupił najwięcej pomidorów. (Polish)

   Jan bought most tomatoes

   'Jan bought the plurality of tomatoes that was more numerous than any other plurality of tomatoes in the store.'
   'Jan bought more tomatoes than anyone else did.'
   'Jan bought more tomatoes than any other thing he bought.'

3.1.3 Dedicated focus position (Tomaszewicz 2013)

(34) a. Jan bought the most expensive tomatoes.
   b. Najdroższe Jan kupił t₁ pomidory. (Polish)

   most-expensive Jan bought tomatoes

   'Jan bought the tomatoes that were more expensive than any other tomatoes in the store.'
   'Jan bought more expensive tomatoes than anyone did.'
   'Jan bought more expensive tomatoes than any other vegetable he bought.'

Prosody:

(35) a. [Drogie₁ Jan kupił t₁ pomidory]₁

   expensive Jan bought tomatoes

b. [[DG]₁-Focus [Jan kupił pomidory]-Given]₁

   H*L

   \rightarrow c. [[DG]₁-Topic (toɾopPn) ]₁ [Jan kupił [pomiDory]-Focus]₁

   LH*

   Prosody:

(36) Kontext: Marek, Jan i Piotr kupili różne gatunki drogich egzotycznych pomidorów.

   Context: Marek, Jan and Piotr bought different kinds of expensive exotic tomatoes.

   a. #Najdroższe₁ Jan kupił t₁ pomidory. (Polish)

   most-expensive Jan bought tomatoes


   most-expensive tomatoes bought Jan

   c. Jan kupił najdroższe pomidory.

   Jan bought most-expensive tomatoes
In (37) where 'Jan' is in a dedicated focus position, the continuation in (37b) is infelicitous, indicating that in (37b) -est obligatorily associates with focus.

(37) Spośród Giewonta, Kasprovego i Rys, najwyższą górę wybrał JANEK....

Among Giewont, Kasprowy and Rys, highest mountain chose Janek.

'Among K. (1987 m), G. (1894 m), R. (2503 m), Janek chose the highest mountain.'

a. ... Janek wybrał Kasprowy, a wszyscy inni wybrali Giewont.

'Janek chose Kasprowy, and everyone else chose Giewont.'

b. ... #Janek wybrał Kasprowy, którego również Marek.

'Janek chose Kasprowy, which was also chosen by Marek.'

(38) Najdroższe pomidory kupił wieczorem [Jan]f.

most-expensive tomatoes bought evening Jan

√ 'Jan bought more expensive tomatoes in the evening than anyone else did.'

* 'Jan bought tomatoes more expensive in the evening than at any other time of the day.'

* 'In the evening Jan bought tomatoes more expensive than any other vegetable he bought.'

* 'In the evening Jan bought the tomatoes that were more expensive than any other tomatoes in the store.'

3.1.4 Comparison of degrees vs. individuals

The ile-relative clause (= degree relative clause) can function as overt specification of the comparison class ('than other things') (with relative readings blocked):

(39) Jan kupił najwięcej pomidorów, ile było dozwolone.

Jan bought most tomatoes how-much was allowed

'Jan bought the largest amount of tomatoes that was allowed.'

(40) Jan kupił Marii najwięcej pomidorów, ile pro mógł kupić.

Jan bought for-Maria most tomatoes how-many could buy

'Jan bought Maria the most tomatoes he could buy.'

(41) Jan kupił Marii tyle pomidorów, ile pro mógł kupić.

Jan bought for-Maria DEM tomatoes how-many could buy

'Jan bought Maria as many tomatoes as he could buy.'

Degree relatives are incompatible with relative readings when focus targets an individual denoting NP:


Jan bought for-Maria most tomatoes how for-anyone bought

'Jan bought Maria the most tomatoes he bought anyone.'


for-Maria Jan bought most tomatoes how for-anyone bought

'Jan bought Maria the most tomatoes he bought anyone.'

(43) [JAN]f kupił najwięcej pomidorów, *ile jego koledzy kupili.

Jan bought most tomatoes how-much his friends bought

'Jan bought more tomatoes than his friends did.'
Relative readings on which the amount is explicitly modified are compatible with *ile-clauses* – focus obligatorily falls on the superlative quantifier:

Jan bought most tomatoes how-much was allowed
‘Jan bought the largest amount of tomatoes that was allowed.’

(45) (=40) Jan kupił Marii [najWIĘcej]$_F$ pomidorów, ile pro mógł kupić.
Jan bought for-Maria most tomatoes how-many could buy
‘Jan bought Maria the most tomatoes he could buy.’

3.1.5 Conclusions:

Focus derives a relative reading in Polish and Bulgarian that is unavailable in English (for a formal account of the contribution of focus and definiteness see Pancheva and Tomaszewicz 2012).

When an individual denoting NP is focused (resulting in the relative reading of the superlative), the *ile*-relative clauses, explicitly calling for modification of amounts (degrees), are unavailable.

Comparison of amounts/degrees is available when the superlative expression (quantifier) is in focus.

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