Binding into relative superlative descriptions

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May 20, 2018: SALT 28, MIT

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Superlative ambiguities

Superlative adjectives often associated with two kinds of readings

(1) Who here owns the newest iphone?

   a. Who here owns an iphone X?  [Absolute]

   b. Who here owns an iphone newer than any iphone owned by anyone else?  [Relative]

**Question** Is this a matter of domain underspecification or compositional ambiguity?
Domain restriction

On the one hand, quantificational domains known to be rampantly underspecified

(2) When I walked into my class today, everyone$_C$ was really quiet

   a. everyone in the school
   b. everyone in my class

(3) Which student visited the largest$_C$ New England city?

John ···→··· Manchester
Sue ···→··· Amherst
Mary ···→··· Providence
Bill ···→··· New Haven

   a. Abs: No one (...Boston)
       ▷ $C = \{x \mid \text{NE-city } x\}$
   b. Rel: Mary (...the largest visited city)
       ▷ $C = \{x \mid \text{NE-city } x, \text{ visited } x\}$
Scope

On the other hand, degree quantifiers known to take variable scope

(4) John read a longer play ...
   a. ... than Macbeth
   b. ... than Mary

(5) Which student visited the largest New England city?
   John \[\rightarrow\] Manchester
   Sue \[\rightarrow\] Amherst
   Mary \[\rightarrow\] Providence
   Bill \[\rightarrow\] New Haven
   a. \textbf{Abs}: student visit \[\rightarrow\] city
      \[\rightarrow\] No one (visited Boston)
   b. \textbf{Rel}: student \[\rightarrow\] city
      \[\rightarrow\] Mary (out-visited the others)
Any analysis should contend with the fact that relative readings associate with focus.

Jackendoff (1972)

(6) a. Of the three men, John hates \{BILL, *MARY\} the most.
   b. Of the three men, \{JOHN, *MARY\} hates Bill the most.

Szabolcsi (1986)

(7) a. When did JOHN get the fewest letters from Peter?
   ▷ John got fewer Peter letters than anyone else got.
   
   b. When did John get the fewest letters from PETER?
   ▷ John got fewer Peter letters than letters from anyone else.
Reference analysis: Scope

With this in mind, take the following hypothesis from Heim 1999

- ‘est’ scopes over sentence; compares the degrees the focus achieves to the degrees its competitors achieve

\[
\llbracket \text{est} \rrbracket = \lambda C \lambda P. \forall Q \in C. Q \neq P \implies Q \subset P
\]

(8) JOHN heard the best drummer

\[\text{est}_C \quad \sim C \quad \lambda d. \text{John} \quad \text{heard a } d\text{-good drummer},
\lambda d. \text{Mary} \quad \text{heard a } d\text{-good drummer},
\lambda d. \text{Bill} \quad \text{heard a } d\text{-good drummer},
\vdots\]
Reference analysis: Restriction

And the other following hypothesis from Heim 1999

- ‘est’ compares witnesses for the description restricted to those that satisfy the description’s local context

\[
[[\text{est}]] = \lambda C \lambda R \lambda x. \exists d. \{x\} = R d \cap \bigcup C
\]

(8) JOHN heard the best drummer

\begin{align*}
\lambda d. \text{good drummer} \\
\lambda x. \text{John} \text{ heard } x, \\
\lambda x. \text{Mary} \text{ heard } x, \\
\lambda x. \text{Bill} \text{ heard } x, \\
\vdots
\end{align*}
Immediate predictions: Ties

(9) JOHN climbed the highest mountain

a. John and Mary climbed the same highest climbed mountain

   ✔️  ❌

b. John out-climbs everyone else, by climbing two equally high mountains

   ❌  ✔️

▷ Judgments appear to be mixed ...
Immediate predictions: Split-scope

Heim (1999)

(10) MARY needs to climb the highest mountain

<table>
<thead>
<tr>
<th></th>
<th>Restr</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Sue</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Mary</td>
<td>❌</td>
<td>✔️</td>
</tr>
</tbody>
</table>

a. Mary’s mountain-climbing requirements exceed everybody else’s

Data widely accepted, but whether this is a real undergeneration issue for restriction theories is disputed (Sharvit & Stateva 2002, Coppock & Beaver 2014)
Sloppiness in relative readings

As with ‘only’, if the focus binds a pronoun, an ambiguity arises depending on whether the pronoun covaries with alternatives or not.

Gawron (1995)

(11) Mary gave her sister the most expensive book

a. **Absolute:**
   Of all the books, Mary gave the most expensive to Mary’s sister

b. **Strict Relative:**
   Of all the **people** to give Mary’s sister a book, Mary gave her the most expensive

c. **Sloppy Relative:**
   Of all the **people** to give their sister a book, Mary gave her’s the most expensive
Scope theories of the superlative predict both relative readings:

\[
\left\{ \lambda d. \ M \ \text{gave} \ \frac{M}{M}\text{'s sister a } \ d\text{-expensive book,} \\
\lambda d. \ J \ \text{gave} \ \frac{J}{J}\text{'s sister a } \ d\text{-expensive book,} \\
\lambda d. \ S \ \text{gave} \ \frac{S}{S}\text{'s sister a } \ d\text{-expensive book} \right. 
\]

:::
Sloppiness: Restriction analysis

As do restriction theories:

\[ \lambda x. \text{Mary} \text{ gave } \text{Mary}'s/M's sister } x, \]
\[ \lambda x. \text{J} \text{ gave } \text{J}'s/M's sister } x, \]
\[ \lambda x. \text{S} \text{ gave } \text{S}'s/M's sister } x \]

\[ \lambda x. \text{gave her } y/m \text{ sister } x \]
The trouble: Sloppiness in relative descriptions

(12) Who played the highest card of their suit?

a. **Absolute**: No one

b. **Strict Rel**: Dina, Sam

c. **Sloppy Rel**: Harry
(13) HARRY played the highest card of his suit

\begin{align*}
\forall Q \in C. \ Q = H \lor Q \subset H
\end{align*}

a. **Strict:** Harry played a higher heart than anyone else played

\[
\lambda d. \begin{cases}
\lambda C \uparrow \vdash \text{d-high card of } h \text{'s suit} \\
\lambda D \uparrow \vdash \text{d-high card of } h \text{'s suit} \\
\lambda H \uparrow \vdash \text{d-high card of } h \text{'s suit} \\
\lambda S \uparrow \vdash \text{d-high card of } h \text{'s suit}
\end{cases}
\]
(13) HARRY played the highest card of his suit

b. √Sloppy: Harry played a higher heart than Cleo a club, Dina a diamond, Sam a spade

∀Q ∈ C. Q = H ∨ Q ⊂ H
(14) HARRY played the highest card of his suit

a. ✔ **Strict**: Harry played a higher heart than anyone else played

\[
\begin{align*}
&\lambda y. \exists d. \{ y \} = R d \cap \bigcup C \\
&\lambda x.
\end{align*}
\]
(14) HARRY played the highest card of his suit

b. × Sloppy: Harry played a higher heart than Cleo a club,
    Dina a diamond,
    Sam a spade

\[
\begin{align*}
\lambda y. \exists d. \{y \} &= Rd \cap \bigcup C \\
\lambda x. C^\bullet \text{played } x \\
\lambda x. D^\diamond \text{played } x \\
\lambda x. H^\heartsuit \text{played } x \\
\lambda x. S^\spadesuit \text{played } x
\end{align*}
\]
Two nonstarters

- Scope the focus
  → Harry λz
  → [ the est\(_{C}\) λ\(d\) [ \(d\)-high ... his\(_z\) ... ] ]
  → [ ~ \(C\) [ λ\(x\) \(z\)_\(F\) play \(x\) ] ]

▷ No problem, but this is just the strict reading

- Unscope the superlative DP
  ~ \(C\) [ Harry\(_{F}\) λ\(z\) \(z\) play [ the est\(_{C}\) λ\(d\) [ \(d\)-high ... his\(_z\) ... ] ]]

▷ Possibly incomprehensible, probably unusable
Reconstruction?

A more promising option: unscope just the part of the superlative DP that is bound into

\[ \text{the } \text{est}_C \lambda d \left[ \text{d-high card of his}_z \text{suit } \right] \]
\[ \left[ \sim C \left[ \lambda x \text{Harry}_F \lambda z \ z \text{ play } \left[ x \left[ \text{card of his}_z \text{suit } \right] \right] \right] \right] \]

Correct truth conditions!

- But looks like a *roofing violation* (Brasoveanu & Farkas 2011); cf. ‘No boy submitted a paper he wrote’ (Schwarz 2001);
- Also compromises recent motivations for restriction analyses based on failure to associate with superlative-internal focus (Tomaszewicz 2015)
Sloppy binding into the superlative adjective phrase

Sloppy readings also available for adjective-internal pronouns

(15) JOHN climbed the mountain closest to his house

  a. **Abs**: mntn closer to J’s house than any other mntn
  b. **Strict**: J was closer to J’s house than anyone else to J’s house
  c. **Sloppy**: J was closer to J’s house than anyone else to their house

```
\[ \text{the} \overset{C}{\text{est}} \overset{\lambda d}{\text{mntn}} \overset{d-\text{close to}}{\text{his}_z \overset{\text{house}}{\text{}}} \]
\[ \overset{\sim C}{\overset{\lambda x}{\text{John}_F}} \overset{\lambda z}{\overset{\text{climb}}{\text{}}} \overset{x}{\overset{\text{mntn}}{\overset{d-\text{close to}}{\text{his}_z \overset{\text{house}}{\text{}}}}} \]
```

- Yet, reconstruction impossible here, because the two arguments of the adjective are bound by conflicting operators
Give up on focus-sensitivity?

What if we were completely free to choose the right value for $C$, independent of the mechanics of association with focus?

Harry played the est $C$.

$\lambda d \text{ d-high card of his suit}$

The problem is that the superlative’s arg only measures hearts

$$[[\text{est}}](C)(R) = \lambda y. \exists d. \{y\} = \text{d-high heart } \cap \bigcup C$$

$$= \lambda y. \exists d. \{y\} = \text{d-high heart played by Harry}$$

▷ # Harry played the highest heart that he played
Give up on the noun phrase?

It seems to be that as long as the noun phrase is in the scope of the superlative, the comparison will be too narrow for sloppiness.

- Bracket off the NP? the \([\text{est}_C \text{ high}] \ [\text{card of his}_h \text{ suit}]\]

  - Would make the NP non-restrictive:
    ‘Of all the things in the closet, John picked out the biggest chair’
    #the \([\text{est}_{\text{closet-thing}} \text{ big}] \ [\text{chair}]\)

- Ignore the NP? the \([\text{est}_C \text{ high}] \ [\text{card of his}_h \text{ suit}]\)

  - That’d work! But then why is the comparison class necessarily restricted to cards?
(16) MARY needs to climb [the highest mountain]
   a. ✓ Mary’s mountain-climbing requirements exceed everybody else’s

(17) MARY climbed [the highest mountain on her list]
   a. ✓ Mary climbed a higher mountain from her list than anyone else did from their list

▷ Sloppy descriptions, like *de dicto* descriptions, appear to require the superlative to take scope outside of its description.


Schwarz, Bernhard. 2001. Two kinds of long-distance indefinites. Unpublished manuscript, University of Texas at Austin.

