Deriving Ambiguity in Phrasal Comparatives

Ai Matsui
Michigan State University

1 Introduction

1.1 Data

(1) Watashi-wa John-yori neko-o aishiteiru
I-TOP John-than cats-ACC love.NONPAST
‘I love cats more than John.’ (2a) / (2b)

(2) The two meanings:
  a. The degree of my love of cats is greater than the degree of
     John’s love of cats.
  b. The degree of my love of cats is greater than the degree of
     my love of John.

(3) Watashi-no-hoo-ga John-yori neko-o aishiteiru
I-GEN-hoo-NOM John-than cats-ACC love.NONPAST
‘I love cats more than John does.’ (2a) / *(2b)

(4) Watashi-wa John-yori neko-no-hoo-o aishiteiru
I-TOP John-than cats-GEN-hoo-ACC love.NONPAST
‘I love cats more than John.’ *(2a) / (2b)

1.2 Goals for today

- Derive the two truth-conditionally different meanings in (1).
  → Two different LF structures by movement (section 3.1)
- Explain why (3) and (4) cannot be ambiguous like (1).
  → Hoo is an overt marker of the movement (section 3.2)
- Explore the semantic/syntactic nature of hoo.
  → How does it interact with gradable predicates? (section 4)

2 Assumptions and formal tools

2.1 The ‘standard’ view

- Gradable predicates express relationship between individuals and
degrees.

(5) a. \([\text{tall}] = \lambda d \lambda x. x \text{ is tall to degree } d\)
    b. \([\text{interesting}] = \lambda d \lambda x. x \text{ is interesting to degree } d\)
- The comparative morpheme \(-er/more\) and \(\text{than}\)-phrases form a constituent at some point in the derivation, followed by the extraposition of \(\text{than}\)-phrase.

(6) a. 

    \[
    \begin{array}{c}
    \text{-er}
    \\
    \text{more}
    \end{array} \quad \begin{array}{c}
    \text{tall}
    \\
    \text{interesting}
    \end{array}
    \begin{array}{c}
    \text{than Mary is}
    \end{array}
    \]

    b. 

    \[
    \begin{array}{c}
    \text{-er}
    \\
    \text{more}
    \end{array} \quad \begin{array}{c}
    \text{tall}
    \\
    \text{interesting}
    \end{array}
    \begin{array}{c}
    \text{than Mary is}
    \end{array}
    \]

2.2 The Direct Analysis

The Direct Analysis for phrasal comparatives (Heim 1985, Bhatt & Takahashi 2007, 2008, Xiang 2005): the comparative morpheme \(-er/more\) takes three arguments, i.e. two individuals \((x, y)\) and one
gradable predicate \(g\), to roughly mean ‘\(x\) is more \(g\) than \(y\)’.

(7) \([-er] = [\text{more}] = \lambda y \lambda g_{<d,et>} \lambda x. \max \{d \mid g(d)(x) = 1\} > \max \{d \mid g(d)(y) = 1\}\)
 Where \(g\) is a gradable predicate e.g. \(\text{tall}\) and \(\text{interesting}\).
The preposition *than* in English is assumed to be semantically vacuous.

### 2.3 Application to Japanese comparatives

Kennedy (2007), Sawada (to appear)

\[ \text{yori} = \text{-er} = \text{[more]} \]

\[ \lambda y \lambda d \lambda x. \max \{d | g(d)(x) = 1\} > \max \{d | g(d)(y) = 1\} \]

No bound comparative morpheme like -er in Japanese. The preposition *yori* does the job.

(10) a. John-wa kashikoi.
    John-TOP smart.NONPAST
    ‘John is smart.’

b. John-wa Mary-yori kashikoi.
    John-TOP Mary-than smart.NONPAST
    ‘John is smarter than Mary.’

(11) John-wa kashikoi.
     John-TOP smart.NONPAST
     ‘John is smart.’

The LF structure for (1) with the meaning (2)a

\[ \lambda x. \left[ \max \{d | g(d)(x) = 1\} > \max \{d | g(d)(John) = 1\} \right] \]

3. **Analysis**

#### 3.1 Deriving the ambiguity

(12) The LF structure for (1) with the meaning (2)b

\[ \max \{d | I \text{ love cats} \text{ -much} \} > \max \{d | John \text{ loves cats} \text{ -much} \} \]

(13) The LF structure for (1) with the meaning (2)b

\[ \lambda x. \left[ \max \{d | love(x)(d)(I) = 1\} > \max \{d | love(John)(d)(I) = 1\} \right] \]

#### 3.2 Explaining the disambiguation

Claim: *Hoo* phrases obligatorily scope over *yori* phrases.

\[ \text{Tense, topic marker, and case particles are omitted in the representation hereafter.} \]

---

\[ ^1 \text{For an alternative, Beck et al. (2004). But see Kennedy (to appear).} \]

\[ ^2 \text{Tense, topic marker, and case particles are omitted in the representation hereafter.} \]
4 Discussion Questions

4.1 Syntactic Derivation

There are some concerns in deriving the structures in the previous section. How does the than/yori-phrase come into the right position? Presumably after the movement of noun, but how?

4.1.1 Parasitic Scope

(16) Two-step process (English comparatives) 
(Kennedy 2007, Kennedy & Stanley to appear):

Step 1: QR cats

Step 2: Raising of the than-phrase

‘Parasitic Scope’ (Barker 2007):

Explains the ‘internal’ reading of same, which appears when there is another scope taking elements in the sentence but which doesn’t when there is no other such elements. (Also in Kennedy (2007), Kennedy & Stanley (to appear), Sawada (to appear))

(17) a. The same waiter served John. →Only the deictic reading
(The same waiter salient in the context served John.)

b. The same waiter served everyone.
(There was a waiter who served all the people.)

(18) a. everyone λx

b. everyone

‘The reason I call this parasitic scope is that the scope target for same does not even exist until everyone has taken scope. The adjective then hijacks the scope of everyone, intervening between the quantier and what would otherwise be its semantic argument.’ (Barker 2007:pp.430)
4.1.2 Late Merge

(19) Two-step process (Japanese):
Step 1: $hoo$-phrase movement

\[
\begin{align*}
\lessdot & \ e.t \ greater \ than \ \lambda x \\
\text{cats-} & \ hoo \\
\text{I love} & \\
\text{watashi} & \ \lambda x \\
\end{align*}
\]

Step 2: Combining $yori$-phrase

\[
\begin{align*}
\lessdot & \ e.t \ greater \ than \ \lambda x \\
\text{cats-} & \ hoo \\
\text{I love} & \\
\text{watashi} & \ \lambda x \\
\end{align*}
\]

'Late Merge' of than-phrases (Bhatt & Pancheva 2004):
Explains the obligatory extraposition of than phrases, while maintaining the relationship between the comparative morpheme and than-phrases.

(20) a. 
\[
\begin{align*}
\lessdot & \ e.t \\
\text{John} & \ \lambda x \\
\end{align*}
\]

b. 
\[
\begin{align*}
\lessdot & \ e.t \\
\text{John} & \ \lambda x \\
\end{align*}
\]

4.1.3 Tentative Conclusion

Either we take the view of Parasitic Scope or of Late Merge, what seems to matter is that the structural position of (and hence the interpretation of) $yori$-phrases depends on the $hoo$-phrase movement.

4.2 On the Nature of Hoo

Is it enough to say that $hoo$ indicates movement?

4.2.1 Comparison with Focus Movement

(21) From Rooth (1992):

\[
\begin{align*}
& \text{a. [She]} \text{beats me more often than Sue.} & \text{(22)a} / \text{*(22)b} \\
& \text{b. She beats [me]} \text{more often than Sue.} & \text{*(22)a} / \text{(22)b}
\end{align*}
\]

(22) a. Meaning 1: She beats me more often than Sue beats me.

b. Meaning 2: She beats me more often than she beats Sue.

Compare this with the disambiguation in (3) and (4) repeated below.

(23) a. Watashi-no-$hoo$-ga John-yori neko-o aishiteiru
\text{I-GEN-$hoo$-NOM John-than cats-ACC love.NONPAST}
'I love cats more than John does.' \text{(24)a} / \text{*(24)b}

b. Watashi-wa John-yori neko-no-$hoo$-o aishiteiru
\text{I-TOP John-than cats-GEN-$hoo$-ACC love.NONPAST}
'I love cats more than John.' \text{*(24)a} / \text{(24)b}
a. Meaning 1: The degree of my love of cats is greater than the
degree of John’s love of cats.
b. Meaning 2: The degree of my love of cats is greater than the
degree of my love of John.

4.2.2 Hoo as a focus marker?

Questions: Assuming focus movement (e.g. Drubig (1994))...
1) Is hoo movement parallel to focus movement?
2) If so, is hoo merely a focus marker?

My Answer: 1) Maybe yes. 2) No.

Reason: 1) Hoo movement shows standard locality constraints as Drubig
(1994) show them for the focus movement.3

[[Mary-GEN-hoo-NOM made] cake]-TOP John-than delicious

Intended: ‘The cake Mary made is more delicious than the one John made.’

(26)

Reason: 2) If hoo is merely a focus marker, then it should be used wherever
the sentence needs focus, which is not the case.

(27) Focus in Question-Answer pairs:
   a. Q: Who ate the cake?
   b. A1: [John]-GEN ate.
   c. A2: #John ate [the cake]-GEN.

(28) a. Q: Dare-ga keeki-o tabeta no?
    Who-NOM cake-ACC ate Q
    ‘Who ate the cake?’
    [John]-GEN-hoo-NOM cake-ACC ate
    ‘John ate the cake (more than who?? rather than who??)’
    Intended: ‘(It is) John (who) ate the cake.’ (as in (27)A1)

Hoo introduces comparative meanings.

(29) a. Warashi-ga taberu.
    I-NOM eat.NONPAST
    ‘I eat.’
b. Warashi-no-hoo-ga taberu.
    I-GEN-hoo-NOM eat.NONPAST

4.2.3 Tentative Conclusion

The following gives us the movement but does NOT ensure the degree sensi-
tivity of hoo. So this is NOT sufficient.

(30) [hoo] = \lambda x \lambda y f_{<e,t>} [f(x) = 1]

Hoo has some additional presupposition? For example...

(31) [hooC] = \lambda x \lambda y f_{<e,t>} : x is one of the two individuals salient in
    the context C that we are comparing [f(x) = 1]

5 Summary

- Why phrasal comparatives like (1) are ambiguous?
  → Two different LF structures possible via movement (section 3.1)
- Why hoo sentences (3) and (4) cannot be ambiguous like (1)?
  → Hoo overtly marks the noun that moves (section 3.2)
- The semantic/syntactic nature of hoo?
  → May be compatible with Late Merge or Parasitic Scope (section 4.1)
  → Hoo is sensitive to comparative meaning (section 4.2)

3See also Reinhart (1991) for this kind of locality effect in comparatives.
References


Bhatt, Rajesh & Shoichi Takahashi. 2008. ‘When to reduce and when not to: Crosslinguistic variation in phrasal comparatives’. Paper presented at GLOW XXXI.


Drubig, Hans Bernhard. 1994. ‘Island constraints and the syntactic nature of focus and association with focus’. In Sparachtheoretische Grundlangen fur die Computerlinguistik.

Heim, Irene. 1985. ‘Notes on comparatives and related matters’.


Kennedy, Christopher. To appear. ‘Modes of comparison’. In CLS43.


