Constructions for measurement and comparison in Japanese and English

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Cross-linguistic constructions

- How to compare constructions across languages?
  - By similarity in form?
  - By similarity in meaning?
  - Covariation in both form and meaning?

- How to know when you've got things you can even start to compare? (Fried & Östman 2004; Boas and Weilbacher, 2006; Fujii 9/26)
A preview

- A measurement expression in English: Value+Dimension
  - [Two meters] [deep], [three feet] [wide], [an inch] [thick], [thousands of pages] [long]

- A superficially-identical expression in Japanese:
  - [100 peeji] [nagai], [5 kilo] [omoi]
  - [100 pages] [long], [5 kg] [heavy] ← gloss
  "100 pages longer" "5 kilograms heavier"

- What can we say about this?
Constructions cross-linguistically

• What we did:

1. Select a semantic domain likely to be expressed across multiple languages, with identical or nearly-identical primitives. (so, not social-interactional emotions).
   - Measurement and comparison, especially of physical dimensions – concrete units of measurement

2. Assemble sentences in languages of interest that express these semantic notions.

3. See what happens.
Theoretical Tools

- Cross-linguistic comparison ("xl-comparison")
- FrameNet-style frame semantics
  - Potential for cross-linguistic applicability
  - Well-established method for diagnosing semantic elements
- Construction grammar
  - Flexible but formal(izable) specification of form
  - Meshes well with frame semantics
  - Evaluate cross-linguistically FrameNet-style annotation as extended to constructional analysis
Theoretical Tools: a history

• FrameNet-style frame semantics
  – from Case Grammar: word-centered, basic roles
  – via a switch to a scene/frame-centered view
  – with frame-specific roles

• Construction grammar
  – a model of linguistic form—lexical, phrasal, etc.
  – with frames as a model of meaning
  – And: all types of constructions may evoke frames
Semantic bases: Measurement

- Frame elements:
  - Item
  - Dimension (scalar)
  - Value

- An Item (e.g., a desk) has a dimension (e.g., height, depth, width) which can be measured on a scale of appropriate units (inches, meters, etc).

- Applicable to non-linear dimensions (intelligence, weight, beauty).
Measurement-evoking cxns

• What evokes Measurement? Particular constructions:

• English:
  - [value]+[dim-adj]: two feet wide; 100 pages long
  - [value] in [dim-noun]: two feet in width
  - Have a [dim-noun] of [value]: have a width of two feet

• Japanese
  - [dim-n]+[value]: nagasa 100 peeji; futosa 2 meetoru
  - [value]+aru/da (dimension implicit): 100 peeji da/aru
Consider [value]+[dimension] again.

In English, only age- and linear-dimension-denoting adjectives are licit (*two pounds heavy, *105 IQ points intelligent). Only “neutral” adjectives are licit (*two feet short)

Japanese [value]+[dimension] structures do not have these restrictions, but they have different semantics and evoke different frames (Comparison, rather than Measurement)

- 2 meetoru hikui: “2 meters shorter”
- 2,000 en takai: “2000 yen more expensive”
Semantic bases: Comparison

- Goal: compare English and Japanese expressions of **Comparison**
- FEs: Item, Standard, Scale, Value (Difference, Extent)
- An Item and a Standard have Values on a Scale. These Values are compared for their relative value (greater than, equal to, etc.).
- We can now consider what constructions evoke the **Comparison** frame.
### Comparatives: English

<table>
<thead>
<tr>
<th>Construction Elements</th>
<th>Frame Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>She</strong></td>
<td><strong>Item</strong></td>
</tr>
<tr>
<td><em>is</em></td>
<td><em>support verb</em></td>
</tr>
<tr>
<td><strong>six inches</strong></td>
<td><strong>Extent</strong></td>
</tr>
<tr>
<td><em>tall</em></td>
<td><strong>Base</strong></td>
</tr>
<tr>
<td><em>-er</em></td>
<td><strong>Marker</strong></td>
</tr>
<tr>
<td><em>than her father</em></td>
<td><strong>Complement</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Standard</strong></td>
</tr>
</tbody>
</table>
Interlude: Construction Elements

• Inner elements: canonical or idiosyncratic juxtaposition of words/phrases.
  – [[tall] [er]], [[[less] [tidy]]
  – [[fifty miles] [a gallon]]
  – The result: something like a lexical item

• Outer elements: the “valence” of the construct.
  – Correspond to Frame Elements
  – [my car] gets [[fifty miles] [a gallon]]
## Comparative: Japanese

<table>
<thead>
<tr>
<th>Construction Elements</th>
<th>Frame Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>kono hon no-hoo wa</em></td>
<td>External</td>
</tr>
<tr>
<td>this book MRKR TOP</td>
<td>Item</td>
</tr>
<tr>
<td><em>ano hon yori</em></td>
<td>Complement</td>
</tr>
<tr>
<td>that book MRKR</td>
<td>Standard</td>
</tr>
<tr>
<td><em>hyaku peeji</em></td>
<td>Specifier</td>
</tr>
<tr>
<td>100 page</td>
<td>Extent</td>
</tr>
<tr>
<td><em>motto nagai</em></td>
<td>Base+mrkr</td>
</tr>
<tr>
<td>more long</td>
<td>Scale+direction</td>
</tr>
</tbody>
</table>
Japanese Comparison: variations

• Three classes of markers (indicators, constructional evokers) of Comparison exist:
  – The Item marker *no hoo* (outer element)
  – The Standard marker *yori* (outer element)
  – Adverbs: *motto* ‘more’, *haruka ni* ‘by far’, *wazuka* ‘a little’ (inner element)

• The Item and Standard need not be of the same type (we’ll get to that later).

• But recall that no marker need be present to evoke Comparison
Markerless Comparatives

- Japanese must have a construction to license [Measure]+[Adj] constructs like *100 peeji nagai*
- This syntactic juxtaposition may be motivated, but the interpretation is unexpected.
- Key indicator of **Comparison**: null Standard
  - *kono hon wa nagai* ‘this book is long (for a book)’
  - *...wa 100 peeji nagai* ‘this book is 100 pages longer (than that other thing we’ve been talking about)’
  - cf *That book is (100 pages) longer*
Formal xl-comparison: part 2

• Reconsider *taller than six feet*
  – There is no formal parallel in Japanese:
    (1) *Taroo-wa 6 fiito-yori se-ga takai*
    Taroo-TOP 6 feet-MRKR height-NOM tall
    (2) *Taroo-wa 6 fiito ijoo aru*
    Taroo-TOP 6 feet more.than have

• Not a Framal distinction, but a Constructional one: Standard_value is an element in the English Comparative cxn, but not the Japanese one. Japanese has other means to express the same idea.
Formal xl-comparison: part 3

- The English Comparative allows for comparison of degrees on different (but commensurate) scales
  - the pool is deeper than it is long
  - his prose is duller than his theory is laughable
This seems to be prohibited in Japanese

- *kono puuru-wa nagai-yori fukai
  this pool-TOP long-MRKR deep
  'This pool is deeper than it is long

- Kono puuru-wa nagasa-yori fukasa-no-hoo-ga fukai/nagai
  this pool-TOP length-MRKR depth-MRKR-NOM deep/long

Less clear if this is a construction- or frame-based difference
Japanese allows an Item/Standard asymmetry not found in English (Hirose 2007)

(1) nihon-no jinkoo-wa kankoku-yori ooi
Japan-GEN population-TOP Korea-mrkr numerous
‘Japan has a greater population than Korea’

(2) Taroo-no uchi wa Ziroo yori ookii
T.-GEN house-TOP Z.-mrkr large
'Taroo has a larger house than Jiroo'
Semantic composition

• We’ve got **Comparison**
  – Item, Standard, Scale, Value(s)
• and a Comparative construction
  – Specifies realization of Item (as External), Standard (as NP, clause, in the same or different mental space, etc.)
  – Provides (in English) possibility for Standard_value, multiple scales
  – Provides (in Japanese) possibility for Item/Attribute asymmetry
Semantic composition

• Composition of *longer*
  – *long* evokes **Measurement**; *er* evokes **Comparison**
  – **Measurement** has FEs Item, Scale, Value; *long* specifies that Scale = “length” (“incorporation”)
  – **Comparison** has FEs Item, Scale, Standard, Direction; *-er* specifies Direction= “greater”
  – Comparative construction sets Measurement.Value to be greater than (that of) the Standard; it also sets the Compared Item to be identical the Measurement Item.
Summing up

- Japanese and English have superficially-similar comparative constructions, which express various parts what we believe is the same underlying **Comparison** frame.
- Other, formally-distinct constructions also evoke the **Comparison** frame.
- Some formally similar constructions actually evoke rather different frames.
- So keep comparing!
Thank you!

Thanks to the presenters, attenders, and particularly the organizers of ICCG-5!

Slides and paper to be available at http://socrates.berkeley.edu/~hasegawa
English comparative: variations

- The Extent need not be expressed.
- An approximation (*much, a bit*) or multiplicative (*several times*) may be expressed.
- The marker may indicate equality (*as*) or inequality, either as -*er, more, or less*.
- Some dependencies exist
  - Extent is not possible for comparisons of equality
  - The semantics of Standard_value in comparisons of equality is unpredictable (*as tall as six feet*)
English Comparatives: variations

- The Standard may also be clausal
  - *She is taller than her father is*
- or indicate an entity in another mental space
  - *She is taller than she thinks*
- or indicate another dimension
  - *The door is taller than it is wide*
- or indicate a precise value
  - *She is taller than six feet* (nb: *than six feet is*)