A Corpus-based Account of Fictive Motion Sentences in Japanese FrameNet

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Abstract

• Frame-semantic analyses of corpus data in **Japanese FrameNet (JFN)** led to the following:
  – To account for the occurrences of Japanese Fictive Motion (FM) sentences, in comparison with those of English, **new distinctions on Motion-related frames** are needed.
  – The proposed framal distinctions based on image schema differences help **refine the existing conditions on FM sentences** by Yo Matsumoto (1996).
Outline

1. Background
   1) Fictive Motion
   2) Previous Analyses
   3) Japanese FrameNet

2. Analysis
   1) Purpose of the Study
   2) Method
   3) Results

3. Discussion

4. Conclusion
1. Background

1) Fictive Motion

**Actual Motion**

(1) a. *The dog ran into the kitchen.*
(2) a. *The children went from one kennel to another.*

**Fictive Motion (Subjective Motion)**

(1) b. *The highway runs through the mountains.*
(2) b. *The mountain range goes from Canada to Mexico.*

Only “**Coverage Path**” FM expressions in this paper

“(the linear entities are) conceptualized as having a leading edge that is in virtual motion, or as being scanned along its length by one’s focus of attention”

(Talmy 1983:236)
2) Previous Analyses

Ruppenhofer 2006
Frequency of Fictive Construal in English:
Relatively rare for Location-Oriented Motion (LOM) verbs (*arrive, leave, cross*) compared to *path_shape* verbs (*zigzag, meander*)

i) Counts (from BNC)

ii) The NP *the road* as the subject of a motion verb (from BNC)

iii) NP ellipsis of Location NP is rare for LOM verbs in fictive contexts (from Google)
Matsumoto 1996

FM expressions in English and Japanese are subject to:

- **The Path Condition**
  - Some property of the *path of motion* must be expressed

- **The Manner Condition**
  - No property of the *manner of motion* can be expressed unless it is used to represent some correlated property of the path
3) Japanese FrameNet (JFN)

Frame-Semantic Analysis

- JFN Corpus: 200 million words (Newspaper, Novels)
- Frame semantics: Each word is described in terms of the conceptual “frame” it evokes

(In Collaboration with English FrameNet)

http://jfn.st hc keio.ac.jp/
2. Analysis

1) Purpose of the Study

• To investigate the occurrences of fictive construal of Japanese motion verbs, in comparison with that of English motion verbs by Ruppenhofer 2006

• To examine Matsumoto’s Path and Manner Conditions with respect to corpus data
2) The JFN Method

• Self-motion frame: The **Self_mover**, a living being, moves under its own power in a directed fashion, i.e. along what could be described as a **Path**, with no separate vehicle.

(3) a. Actual Motion

\[
\text{syoonen ga trakku o hasiru.}
\]
\[
\text{boy \hspace{1cm} NOM \hspace{1cm} track \hspace{1cm} ACC \hspace{1cm} run}
\]

‘The boy runs the track.’

b. FM

\[
\text{kokudoo wa ugan o hasiru.}
\]
\[
\text{national-road \hspace{1cm} TOP \hspace{1cm} right-bank \hspace{1cm} ACC \hspace{1cm} run}
\]

‘The national road runs (along) the right bank.’
Traversing frame: A **Theme** changes location with respect to a salient **Path** location.

(4) a. Actual Motion

\[
\text{kazokuzure ga sakura namiki o tooru.}
\]

family NOM cherry.blossom trees ACC pass

‘Families go through the cherry blossom trees.’

b. FM

\[
\text{kokudoo wa minato o tooru.}
\]

national-road TOP harbor ACC pass

‘The national road goes past the harbor.’
### 3) Results

#### i) Frequency of Fictive Construal of Japanese motion verbs (from JFN Corpus)

<table>
<thead>
<tr>
<th>Verb Type (Frame Name)</th>
<th>Verb lemma</th>
<th>English gloss</th>
<th># of fictive (% of fictive)</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self_motion</td>
<td>hasiru</td>
<td>&quot;run&quot;</td>
<td>4 (3.8)</td>
<td>105</td>
</tr>
<tr>
<td>LOM: Arriving</td>
<td>itaru</td>
<td>&quot;reach&quot;</td>
<td>4 (4.0)</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>tuku</td>
<td>&quot;arrive&quot;</td>
<td>0 (0.0)</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>hairu</td>
<td>&quot;enter&quot;</td>
<td>0 (0.0)</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>kuru</td>
<td>&quot;come&quot;</td>
<td>0 (0.0)</td>
<td>103</td>
</tr>
<tr>
<td>LOM: Traversing</td>
<td>tooru</td>
<td>&quot;pass&quot;</td>
<td>3 (6.0)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>wataru</td>
<td>&quot;cross&quot;</td>
<td>0 (0.0)</td>
<td>101</td>
</tr>
<tr>
<td>LOM: Departing</td>
<td>deru</td>
<td>&quot;exit&quot;</td>
<td>0 (0.0)</td>
<td>100</td>
</tr>
<tr>
<td>Path_shape</td>
<td>magarú</td>
<td>&quot;meander&quot;</td>
<td>5 (5.0)</td>
<td>101</td>
</tr>
<tr>
<td>Motion_directional</td>
<td>noboru</td>
<td>&quot;climb&quot;</td>
<td>0 (0.0)</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>oriru</td>
<td>&quot;descend&quot;</td>
<td>0 (0.0)</td>
<td>101</td>
</tr>
<tr>
<td>?</td>
<td>turanuku</td>
<td>&quot;go through&quot;</td>
<td>4 (4.0)</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>nukeru</td>
<td>&quot;go past&quot;</td>
<td>1 (1.0)</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>hanareru</td>
<td>&quot;go away from&quot;</td>
<td>0 (0.0)</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>sou</td>
<td>&quot;go along&quot;</td>
<td>1 (1.0)</td>
<td>101</td>
</tr>
</tbody>
</table>
i) Japanese: Not much difference in frequency in FM construal between LOM, Path_shape, and Self_motion verbs.

English: FM construal is relatively rare for LOM verbs than path_shape verbs (Ruppenhofer 2006)
### ii) FM sentences with the NP *kokudoo wa* ‘national road TOP’ as the subject of a motion verb (from Google)

<table>
<thead>
<tr>
<th>Verb lemma</th>
<th>English gloss</th>
<th>Verb Type (Frame Name)</th>
<th># of tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>hasiru</td>
<td>&quot;run&quot;</td>
<td>Self_motion</td>
<td>29</td>
</tr>
<tr>
<td>tooru</td>
<td>&quot;pass&quot;</td>
<td>LOM: Traversing</td>
<td>29</td>
</tr>
<tr>
<td>tuuka suru</td>
<td>&quot;go past&quot;</td>
<td>?</td>
<td>9</td>
</tr>
<tr>
<td>mukau</td>
<td>&quot;go toward&quot;</td>
<td>?</td>
<td>5</td>
</tr>
<tr>
<td>wataru</td>
<td>&quot;cross&quot;</td>
<td>LOM: Traversing</td>
<td>4</td>
</tr>
<tr>
<td>iku</td>
<td>&quot;go&quot;</td>
<td>Motion</td>
<td>4</td>
</tr>
<tr>
<td>turanuku</td>
<td>&quot;go through&quot;</td>
<td>?</td>
<td>4</td>
</tr>
<tr>
<td>hanaruru</td>
<td>&quot;go away from&quot;</td>
<td>?</td>
<td>4</td>
</tr>
<tr>
<td>sou</td>
<td>&quot;go along&quot;</td>
<td>?</td>
<td>4</td>
</tr>
<tr>
<td>sugiru</td>
<td>&quot;go past&quot;</td>
<td>?</td>
<td>3</td>
</tr>
<tr>
<td>nukeru</td>
<td>&quot;go through&quot;</td>
<td>?</td>
<td>3</td>
</tr>
<tr>
<td>nanka suru</td>
<td>&quot;go down south&quot;</td>
<td>Motion_directional</td>
<td>3</td>
</tr>
<tr>
<td>oodan suru</td>
<td>&quot;traverse&quot;</td>
<td>LOM: Traversing</td>
<td>2</td>
</tr>
<tr>
<td>itaru</td>
<td>&quot;reach&quot;</td>
<td>LOM: Arriving</td>
<td>2</td>
</tr>
<tr>
<td>noboru</td>
<td>&quot;climb&quot;</td>
<td>Motion_directional</td>
<td>2</td>
</tr>
<tr>
<td>magaru</td>
<td>&quot;meander&quot;</td>
<td>Path_shape</td>
<td>2</td>
</tr>
</tbody>
</table>

\[ n = 123 \]
ii) Japanese: *tooru* ‘pass’ (LOM: Traversing verb) is just as frequent as *hasiru* ‘run’ (Self_motion verb).

English: The majority is contributed by *lead* (Cotheme), *run* (Self_motion), and *climb* (Motion_directional). LOM verbs are rare. (ibid.)
iii) NP ellipsis of Location NP (from Google)

◆ *tooru* ‘pass’ (LOM: Traversing)

FM (with Subject NP *kokudoo wa* ‘national.road TOP’): 10%

Actual Motion: 75%

◆ *hasiru* ‘run’ (Self_motion)

FM (with Subject NP *kokudoo wa* ‘national.road TOP’): 24%

Actual Motion: 71%
iii) Japanese: NP ellipsis of Location NP seems rarer in FM contexts than in actual-motion contexts, but not restricted to LOM verbs.

English: For LOM verbs, NP ellipsis of Location NP is much rarer in FM contexts than in actual-motion contexts. (ibid.)
3. Discussion

i) We need to take into account **Image-schematic frames** in discussing Japanese motion verbs and FM sentences.

- Interaction between Trajectory determined by the motion of Theme and the salient Landmark

![Diagram of Go_through Frame and Go_along frame]
**Go through Frame**

(5) a. Actual Motion

_Gabyoo ga syasin o turanuiteiru._
pushpin NOM photo ACC go.through
‘The pushpin goes through the photo.’

b. FM

_Sono tiiki o kokudoo ga turanuiteiru._
that area ACC national-road NOM go.through
‘The national road goes through the area.’

**Go along Frame**

(6) a. Actual Motion

_Kawa no nagare ni sotte aruku._
river GEN flow LOC go.along-TE walk
‘Walk along the flow of the river.’

b. FM

_Kono kokudoo wa toomeihan doo to sotteiru._
this national-road TOP COM go.along
‘This national road goes alongside the Tomei Hando road.’
ii) Revision of the Path and Manner Conditions

FM expressions in Japanese are subject to:

- **The Revised Path Condition**
  A Location on the Path or Direction of the path of motion must be expressed

- **The Revised Manner Condition**
  No property of the manner of motion can be expressed unless it is used to represent the Path-shape
4. Conclusion

- Frame-semantic analyses of corpus data of Japanese FM sentences in JFN:
  - Image-schematic frames of Motion are proposed.
  - Revisions of the existing Path and Manner conditions on FM sentences are proposed.
Acknowledgments

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Selected References


• Ruppenhofer, Josef. 2006. “Fictive Motion: Construction or Construal?” Paper read at the 32nd Annual Meeting of the *Berkeley Linguistics Society*. 