

Universality of Frames: A View from Japanese FrameNet



JAPANESE FRAME_{NET}

Kyoko Hirose Ohara
Keio University
ohara@hc.st.keio.ac.jp



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Outline

1. Overview
2. Coverage
3. Frame Element level
4. Frame level
5. Types of Frames
6. Summary



1. Overview



1. Universality of Frames?

- The 'Expand' Approach
 - By taking the existing (English-based) frames as a starting point, non-English FrameNets do not have to go through the entire process of frame creation (Boas 2009: 73)

1. 'Optimistic' View

- New frames may need to be invented where necessary, especially in highly culture-specific domains, but in general the English-derived frames will provide a solid foundation for cross-linguistic work (cf. Goddard 2011: 80-81)



2. 'Pessimistic' View

- e.g. Natural Semantic Metalanguage (NSM) approach (Goddard 2011: 81)

3. 'Cautious' View

- Applicability of semantic frames as a cross-linguistic metalanguage remains to be tested (Boas 2009: 92)
- To determine the feasibility of a truly independent metalanguage based on semantic frames for connecting multiple FrameNets in different languages is not an easy task (Boas 2009: 93-94)



Preview: Applicability of English-based frames in Japanese FrameNet

- Coverage
 - ✓ Depends on POS, but in general OK
- Frame Element level
 - ✓ Where FEs are realized in the sentence may be different
- Frame level
 - ✓ Frames with **Intransitive** perspective may be needed
- Types of frames
 - ✓ **Interactional frames** are also necessary in construction building



2. Coverage



2. Coverage

Existing ICSI FN frames

In Full Text Annotation,

- **87 %** of Japanese words in the BCCWJ “Core” Data of the Book genre were covered by ICSI FrameNet frames
- Very few of the “missing” frames are culture-specific
 - tatami.n ‘straw mat’, syoozi.n ‘sliding paper’, husuma.n ‘sliding door’



Japanese words without frame assignment

otukai.n – ‘errand’, *taiken.n* – ‘experience’, *tuukoo.n* – ‘crossing’,
syuppan.n – ‘publication’,

kami.n – ‘god’, *gangu.n* – ‘toy’, *tan’i.n* – ‘unit’, *wariai.n* – ‘ratio’, *inu.n*
– ‘dog’

asobu.v – ‘play’, *muku.v* – ‘face’, *simeru.v* – ‘make up’, ‘take up’,
ki o takeru.v – ‘be careful’

arai.a – ‘coarse’

Kooiteki.an – ‘favorable’, *toozen.an* – ‘naturally’,
noroma.an – ‘stupid’

sikkari.adv – ‘firmly’, *tatoeba.adv* – ‘for example’,
ippan ni.adv – ‘in general’

dakara.conj – ‘therefore’, *sikasi.conj* – ‘but’, *naraba.conj* – ‘then’,
sunawati.conj – ‘thus’

3. Frame Element level

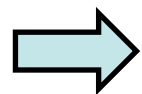


3. Verb-framed vs. Satellite-framed Language Differences

In order to encode a Path of Motion,

- Japanese, Spanish, Hebrew, French: employ **Verbs**
 - <**Verb**-framed language>
 - Many Path of Motion verbs in Japanese
- English, German, Dutch, Russian, Mandarin: employs **Satellites** (prepositions, verb particles)
 - <**Satellite**-framed language> (Talmy 1985, 1991, 2000)

Differences in the two types of languages



Differences in where FEs are realized in
sentence



Traversing frame

A **THEME** changes location with respect to a salient location, which can be expressed by a SOURCE, **PATH**, GOAL, AREA, DIRECTION, **PATH_SHAPE**, or DISTANCE

◆ Core Frame Elements include:

- **THEME**: the object which moves
 - **Kim** CROSSED through the woods
- **PATH**: Any description of a trajectory of motion which is neither a SOURCE nor a GOAL
 - Luney CROSSED **the garden** to the hut where she slept
- **PATH_SHAPE**: the configuration formed by the entire **PATH** of the **THEME**
 - Local trainers TRAVERSED the country. **INI**

Japanese Verbs in Traversing frame

THEME

PATH

PATH_SHAPE

- *wataru.v* 'go across, cross'

(1) *karera ga kawa o wata-tta*
they NOM river ACC go-across.PAST

'They [went **across**/crossed] the river.'

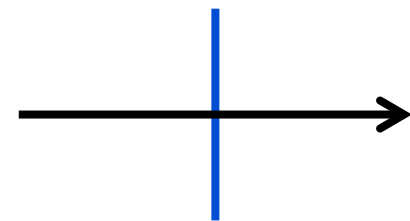
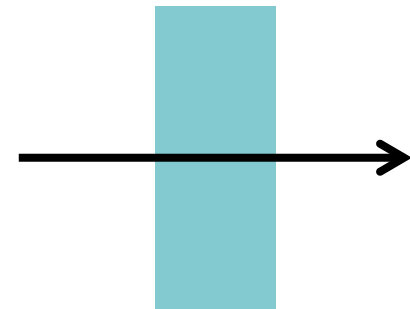
(2) *karera ga hasi o wata-tta*
they NOM bridge ACC cross.PAST

'They crossed the bridge.'

- *koeru.v* 'go over, cross'

(3) *karera ga kokkyoo o koe-ta*
they NOM border ACC go-over.PAST

'They [went **over**/crossed] the border.'



J Verbs & E Satellites and Verbs in Traversing frame

Japanese

- *wataru.v* ‘go across, cross’: <2-dimensional> **PATH_SHAPE**
- *koeru.v* ‘go over, cross’: <1-dimensional> **PATH_SHAPE**

We do NOT need to divide the FE **PATH_SHAPE** into subcategories

- ✓ Aim of JFN: NOT to describe lexical differences between semantically-related words
- ✓ “‘splitting’ procedure will lead to ever more sub-categories with ill-defined relationships to each other and to the higher frames and frame elements.” (Goddard 2011: 81)

English

- *across.part*: <2-dimensional> **PATH_SHAPE**
- *over.part*: <1-dimensional> **PATH_SHAPE**
- *cross.v*: UNSPECIFIED for **PATH_SHAPE**

4. Organization of Frames



4. “Missing” frames due to English preference for **transitivity**

Intransitive-**Transitive** verb pairs in Japanese:

Intransitive verb is often more basic in Japanese

Transitive verbs are derived by suffixing a causative morpheme

- **teru** **terasu** **kawaku** **kawaku**
shine.intr shine.tr become.dry dry.tr
- **saku** **saku** **odoroku** **odoku**
bloom let.bloom become.surprised surprise
- **ikiru** **iku**
live let.live
- **ugoku** **ugoku**
move.intr move.tr



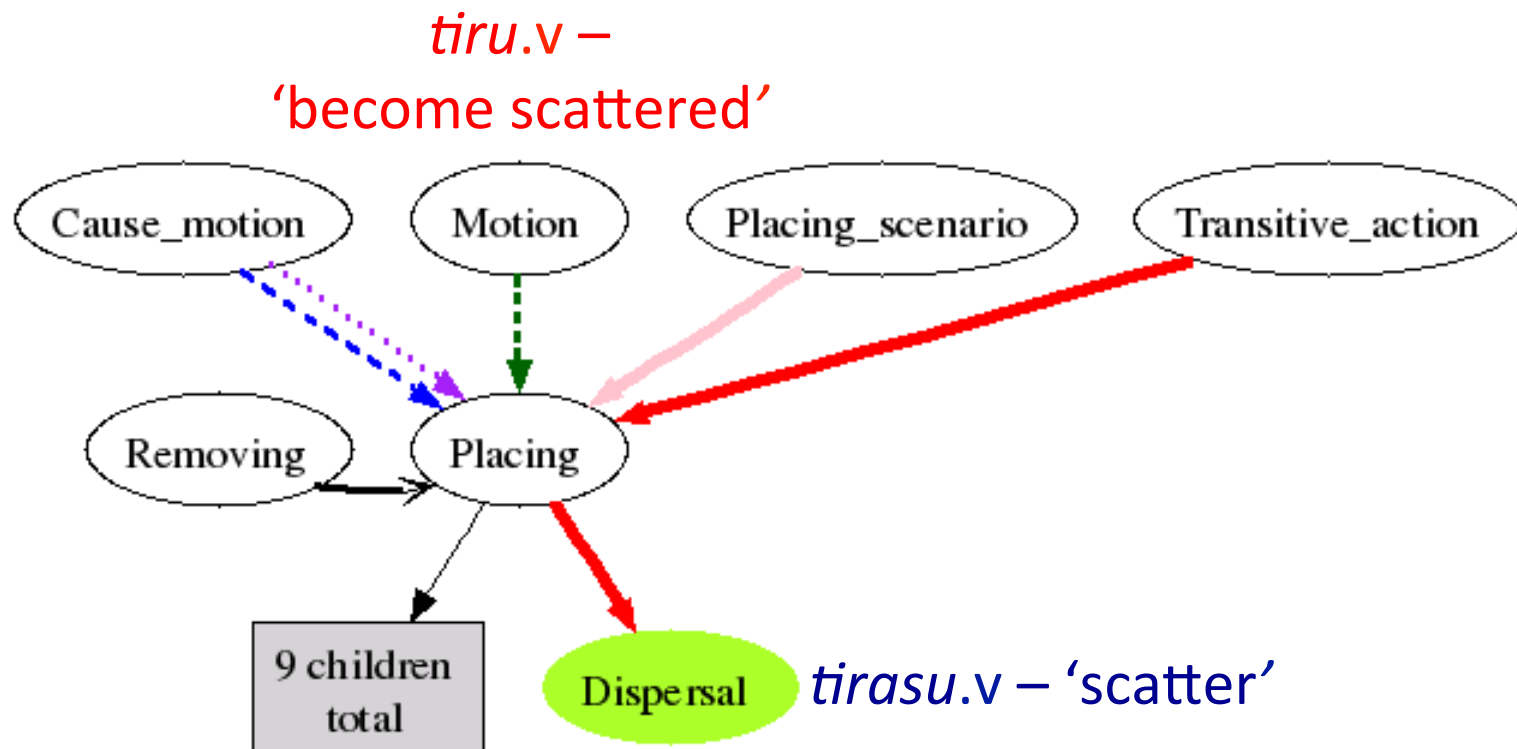
“Missing” frames due to English preference for **transitivity**

a. *sakura no hanabira ga tiru* Motion
cherry.blossom GEN petals NOM become.scattered
‘Petals of cherry blossoms get scattered.’

b. *sakura no hanabira o tirasu* Dispersal
cherry.blossom GEN petals ACC scatter
‘(Somebody) scatters petals of cherry blossoms.’



Frame-to-Frame Relations pertaining to Motion and Dispersal frames



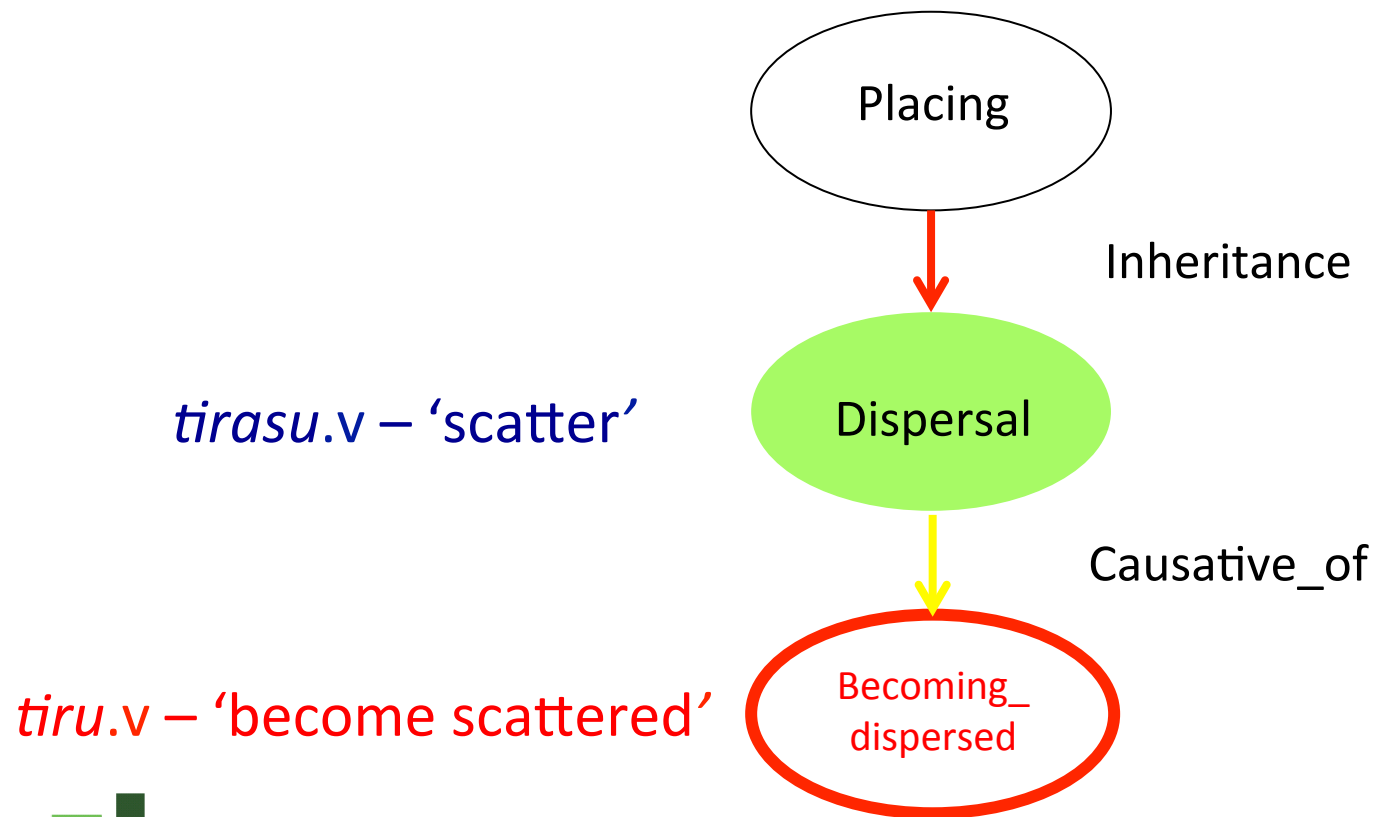
E & J Differences in Overall Frame Organizations

- Many existing FN frames have **transitive** perspective
- Many **Japanese** verbs: **intransitive/inchoative** perspective
- Few cases in which existing FN frames are defined from **intransitive/inchoative** and **transitive** perspectives
 - Exception: Becoming_detached frame **intransitive/inchoative**
Being_detached frame **intransitive/stative**
Detaching frame **transitive**
 - Fullness frame **stative**
Filling frame **transitive**



Solution:

Create Japanese Unique Becoming_dispersed frame

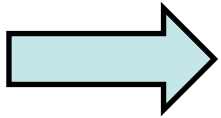


5. Types of Frames



5. Semantic vs. Interactional Frames

- Semantic frames
 - “[A] script-like conceptual structure that describes a particular type of situation, object, or event along with its participants and props” (Ruppenhofer et al. 2010)
- Interactional frames
 - “... how we conceptualize what is going on between the speaker and the hearer, or between the author and the reader.” (Fillmore 1982:379)
- Propositional vs. Contextual, interpersonal
- Event participants vs. Discourse participants
 - We need **both kinds of frames** to characterize meaning structures of constructions.
 - Grammatical Constructions may evoke either type.



Cxn evoking **Semantic** frame

(4) The *Comparative_inequality* construction

● CEs: *Item*, *Standard*, *Base_expression*

● Interpretation

Evokes the **Comparative_inequality** frame,
which reports inequalities between *Item* and *Standard* as
arguments of a plain adjective

● { [*Item* *kore* (*no* *hoo*) *ga*]

 this GEN side NOM

 [*Standard* *are*] [*CEE* *yori*] [*Base_expression* *nagai*]

 that than long

 ‘This is longer than that.’

Cxn evoking **Interactional** frame

(5) The *Suspended-Clause* construction

● CE: *Clause*

● Interpretation The Speaker expects the Hearer to make an inference and to understand his/her situations.

● *sore zya ne.*

that DAT-TOP SFP

{ [^{Clause}*kir -ase te-morau*] [^{CEE}*kara*] }

hang-up CAUS AUX because

[On the phone] (Lit.) ‘That’s it. Because I’m gonna hang up.

(Don’t bother me anymore).

6. Summary

- Coverage
 - Existing English frames cover most Japanese words
 - Depends on POS
- Frame Element level
 - NOT necessary to split FEs into subcategories to deal with differences between **Verb**- & **Satellite**-framed languages
- Frame level
 - Differences between **Intransitive** & **Transitive** perspectives may involve change in overall frame organization and creating new frame-to-frame relations
- Types of frames
 - In Construction building, we need **Interactional** frames, in addition to **Semantic** frames



Selected References

- Boas, Hans C. (2009). Semantic frames as interlingual representations. In Boas, Hans C. (ed.), *Multilingual FrameNets in Computational Lexicography: Methods and Applications*, 59-100. Berlin & New York: Mouton de Gruyter.
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