

# Some Fundamental Questions about Frame Relations across Languages



JAPANESE FRAME<sub>N</sub>ET

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26<sup>th</sup> March, 2017  
Multilingual FrameNet Meeting  
ICSI

# 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 “English-based” perspectives

- Types of frames

- ✓ **Interactional frames** are also necessary



## 2. Coverage



## 2. Coverage

### Existing ICSI FN frames

In Full Text Annotation of the BCCWJ “Core” Data,

- **87 %** of Japanese words in the the Book genre;
- **84.7 %** of Japanese words in the White Book (government reports) 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 in the Government Documents genre **without** frame assignment

*ryooshitsu.an* – ‘high quality’

*saabisu.n* – ‘service’

*kooritsu.n* – ‘efficiency’

*kanten.n* – ‘perspective’

*kihon.n* – ‘fundamentals’

*gensoku.n* – ‘general rule’

*ittei.n* – ‘certain’

*kinri.n* – ‘interest rate’

*kankyoo.n* – ‘environment’

# Japanese words in the Book genre

## **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 tuku.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.'

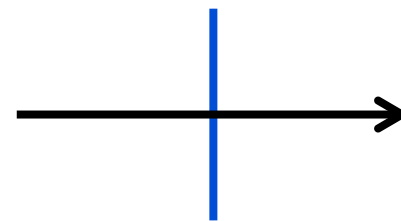


(2) *karera ga hasi o wata-tta*  
they NOM bridge ACC cross.PAST  
'They crossed the bridge.'



- *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





# English “preference” for Transitivity?

Experiencer\_obj frame

- Some phenomenon (the Stimulus) provokes a particular emotion in an Experiencer.
  - Nightmare on Elm Street SCARED me.

Experiencer\_focus frame

- The words in this frame describe an Experiencer's emotions with respect to some Content.
  - Everyone LOVES compliments.



# English “preference” for Transitivity?

	Experiencer_obj frame	Experiencer_focus frame
English	surprise.v  distress.v agonize.v alarm.v amaze.v enjoy.v	delight.v fear.v
Japanese	odorok <u>asu</u> .v ‘surprise’ yorokob <u>asu</u> .v ‘cause to be delighted’  kurushim <u>eru</u> .v ‘cause to suffer’ nayam <u>asu</u> .v ‘distress’ tanoshim <u>aseru</u> .v ‘cause to enjoy’	odoroku.v ‘become.surprised’ yorokobu.v ‘delight’ osoreru.v ‘fear’ kurushimu.v ‘suffer’ nayamu.v ‘distress oneself’ tanoshimu.v ‘enjoy’

# Japanese “preference” for Intransitivity?

## Intransitive-Transitive verb pairs in Japanese:

**Intransitive** verb is often more basic in Japanese

**Transitive** verbs are derived by suffixing a causative morpheme

- |                |                       |                  |   |
|----------------|-----------------------|------------------|---|
| • <b>teru</b>  | <b>ter<u>asu</u></b>  | • <b>kawaku</b>  | <b>kawak<u>asu</u></b>                            |
| shine.intr     | shine.tr              | become.dry       | dry.tr  |
| • <b>saku</b>  | <b>sak<u>asu</u></b>  | • <b>odoroku</b> | <b>odorok<u>asu</u>/</b><br><b>odok<u>asu</u></b> |
| bloom          | let.bloom             | become.surprised | surprise  |
| • <b>ikiru</b> | <b>ik<u>asu</u></b>   |                  |   |
| live           | let.live              |                  |   |
| • <b>ugoku</b> | <b>ugok<u>asu</u></b> |                  |   |
| move.intr      | move.tr               |                  |   |



# 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**

(also Becoming\_dry, Being\_dry, Cause\_to\_be\_dry frames; Becoming\_attached, Being\_attached, and Attaching frames)

Fullness frame      **stative**

Filling frame      **transitive**

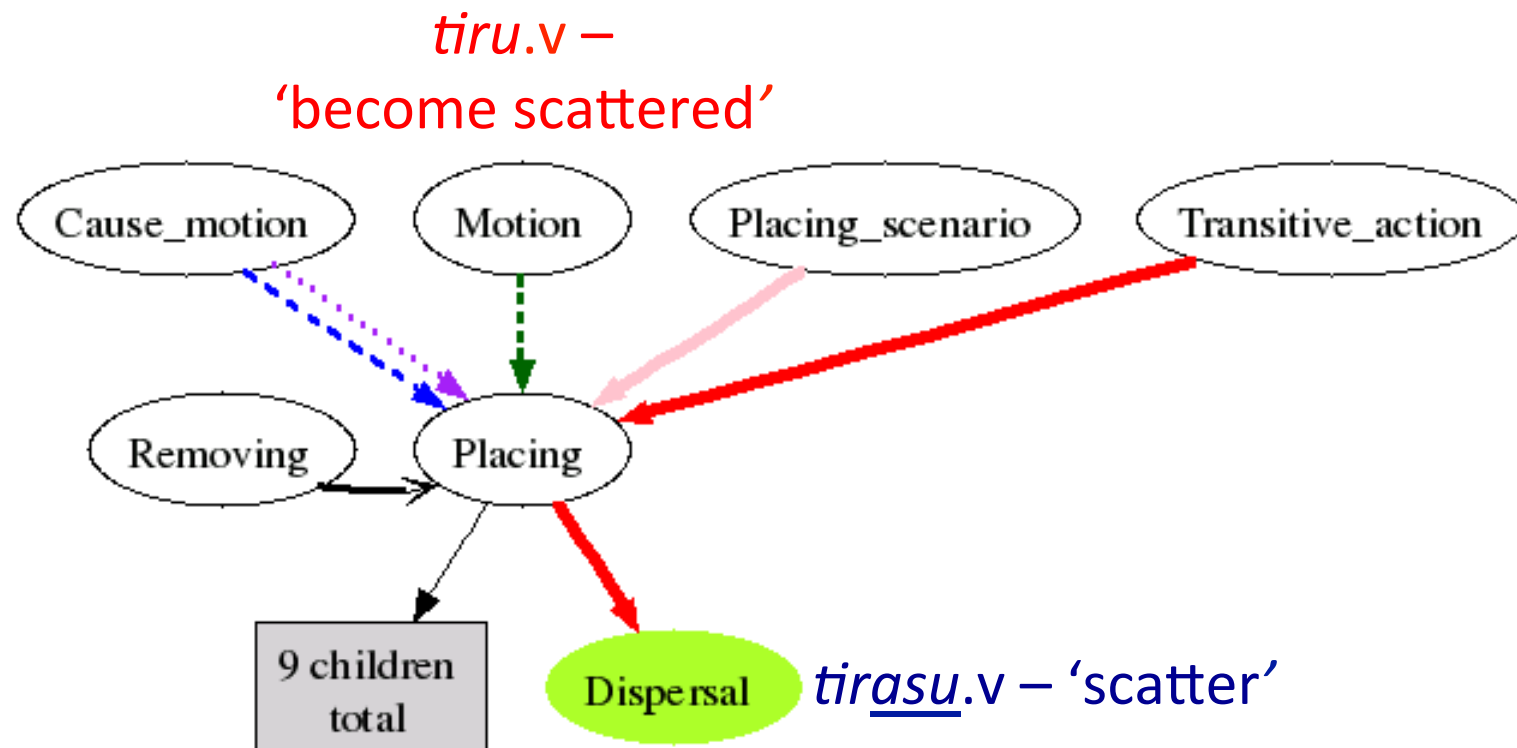


## “Missing” frames due to English preference for **transitivity**

- 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.’

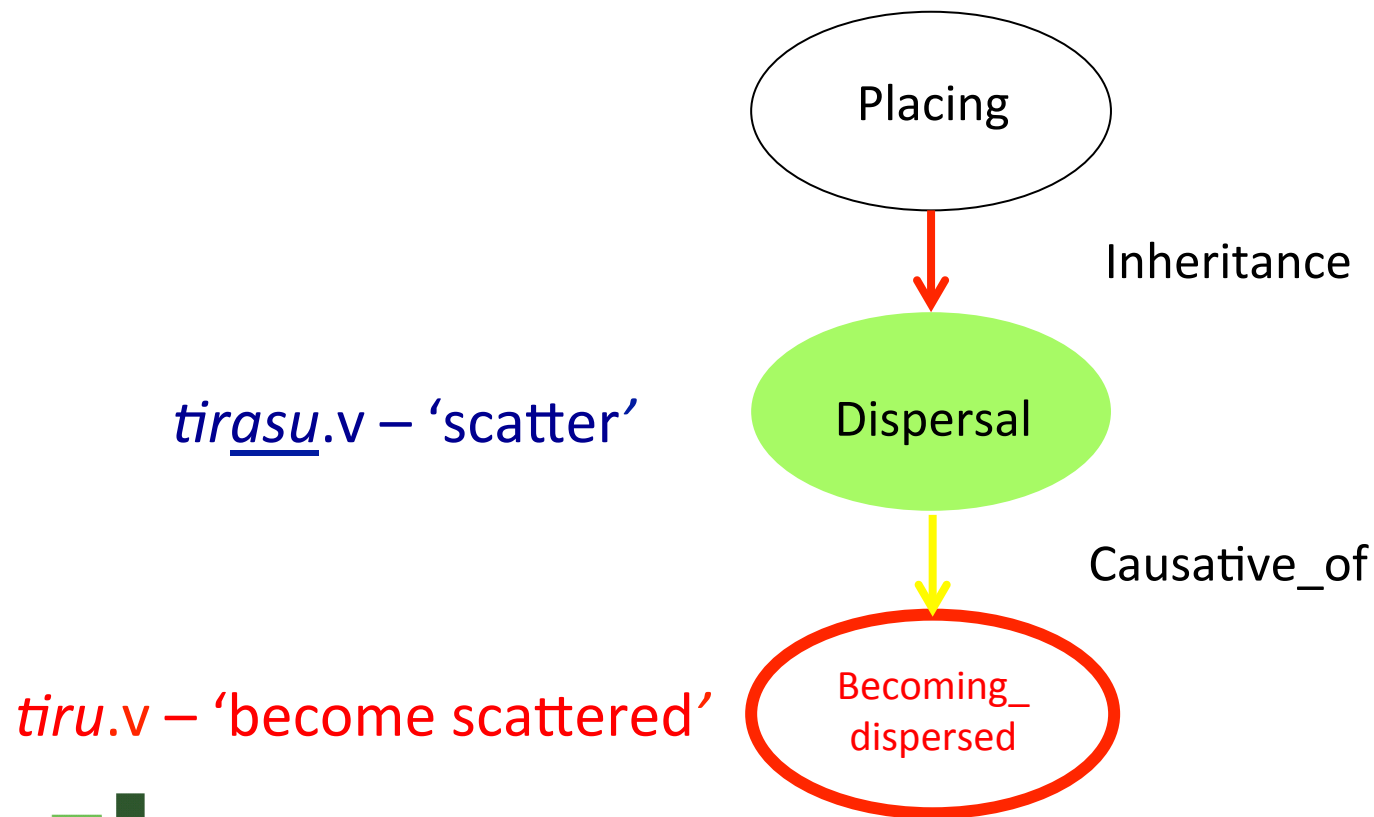


# Frame-to-Frame Relations pertaining to Motion and Dispersal frames



# Solution:

## Create Japanese Unique Becoming\_dispersed frame



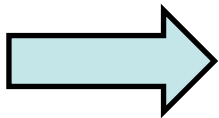
## 5. Types of Frames





## 5. Semantic vs. Interactional Frames

- Semantic frames <FN>
  - “[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

{ [<sup>Clause</sup>*kir                      -ase                      te-morau*] [<sup>CEE</sup>*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
- Frame Element level
  - NOT necessary to split FEs into subcategories to deal with differences between **Verb**- & **Satellite**-framed languages
- Frame level
  - Differences in perspectives may involve change in overall frame
- Types of frames
  - We need **Interactional** frames, in addition to **Semantic** frames



# Selected References

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