Frame-Based Contrastive Lexical Semantics and Japanese FrameNet: The Case of RISK and kakeru

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1. Introduction

- Japanese FrameNet (2002-)
  http://jfn.st.hc.keio.ac.jp/
- Contrastive Lexical Semantics based on Frame Semantics
- Polysemy structures across typologically unrelated languages
- Semantic Frames as interlingual representations? (Boas 2005)
- risk and one of its corresponding Japanese verb kakeru
2. The RISK Family of Frames

Frame Elements

- **Action**: the act of the Protagonist that has the potential of incurring Harm (*a trip into the jungle, swimming in the dark*).
- **Asset**: a valued possession of the Protagonist, seen as potentially endangered in some situation (*health, income*).
- **Harm**: a potential unwelcome development coming to the Protagonist (*infection, losing one's job*).
- **Protagonist**: the person who performs the Action that results in the possibility of Harm occurring.

Background Knowledge

- **Chance**: the uncertainty about the future.
- **Risky Situation**: the state of affairs within which the Asset might be said to be at risk.
(4) **JEOPARDIZING**

**He** risked **his life** {for a man he did not know}.

Protagonist               Asset               Beneficiary

(5) **INCURRING**

**He** risked **losing his life savings**

{by investing in such a company}.

Protagonist               Harm

(6) **DARING**

**I** wouldn’t risk **talking like that** in public.

Protagonist               Action
2.1. The RISK frame: risk.v and its Japanese translation equivalents

1. **JEOPARDIZING**
   - **Protagonist**
   - **TARGET**
   - **Asset**
   - Corresponding Expressions: *kakeru, tosu, kiken ni sarasu*

2. **INCURRING**
   - **Protagonist**
   - **TARGET**
   - **Harm**
   - Corresponding Expression: *kiken o okasu*

3. **DARING**
   - **Protagonist**
   - **TARGET**
   - **Action**
   - Corresponding Expression: *aete, (kiken o okasi(te))*
2.2. Japanese Expressions in JEOPARDIZING

(7) naze [Protagonist syoobooosi wa] [Beneficiary hito no tame ni] why firefighters TOP people GEN for DAT [Asset inoti o] kakeru no ka.
life ACC NMLZ Q
‘Why do firefighters risk their lives to help people?’

(8) [Asset syoku o] tosita yuuki ni atama ga sagaru.
career ACC PERF bravery DAT head NOM descend
‘(I) take off my hat for the bravery of risking her career.’

(9) kanozyo wa iraku ni itte [Asset inoti o]
she TOP Iraq GOAL go life ACC kiken ni sarasiita.
risk DAT expose
‘She went to Iraq and risked her life.’
JEOPARDIZING: kakeru

1) [Protagonist-ga] [Asset -o] kakeru

(10) [Protagonist senmonka ga]
    experts NOM

[Asset gakusya seimei o] kakete
    scholarly career ACC

ronziteirunoda ...

argue

‘Experts are arguing (for the hypothesis), risking their careers.’
JEOPARDIZING: kakeru (Continued)

2) [Protagonist-ga] [Purpose -no tame ni] [Asset -o] kakeru

(11) “doosi” to ie ba, mukasi wa COMPL say COND formerly TOP keppan o osite, petition-sealed-with-blood ACC seal [Purpose kyootuu no mokuteki no tame ni] common GEN purpose GEN for DAT [Asset inoti o] kakeru nakama desita. life ACC group COP-PAST ‘In the past, doosi referred to buddies among whom people risked their lives for a common goal, by sealing it with blood.’
JEOPARDIZING: *kakeru*
(Continued)

3) JEOPARDIZING: [Protagonist-ga] [Motivation -ni] [Asset -o] *kakeru*

(12) [Protagonist yamanonii husai no] akumademo
Mr. and Mrs. GEN persistently

[Motivation onore no yume ni]
one GEN dream DAT

[Asset inoti o] *kakeru* sono sugata …
life ACC that attitude

‘the attitude of Mr. and Mrs. Yamanoi, who risked their lives for the sake of their dream…’
2.5. A Representation of English-Japanese correspondence

Table 2. Partial Valence Table for risk in JEOPARDIZING

c. [Protagonist: NP.Ext] risk.v [Asset: NP.Obj] [Purpose: VPto.Dep]  
Table 3. Partial Valence Table for *kakeru* in *JEOPARDIZING*

<table>
<thead>
<tr>
<th></th>
<th>Protagonist: NP.Ext.-<em>ga</em></th>
<th>Beneficiary: NP.Dep.-<em>no tame ni</em></th>
<th>Motivation: NP.Dep.-<em>ni</em></th>
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</thead>
<tbody>
<tr>
<td>a</td>
<td>[Protagonist: NP.Ext.-<em>ga</em>] [Asset: NP.Obj.-<em>o</em>] <em>kakeru</em></td>
<td>[Beneficiary: NP.Dep.-<em>no tame ni</em>] [Asset: NP.Obj.-<em>o</em>] <em>kakeru</em></td>
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<td>b</td>
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</table>
Linking Partial English and Japanese Lexicon Fragments via JEOPARDIZING

From English-\textit{risk-2b} (Line b of Table 2)

- **Protagonist:** NP. Ext
- **Asset:** NP.Obj
- **Beneficiary:** PP.\textit{for}.Dep

From Japanese-\textit{kakeru-3b} (Line b of Table 3)

- **Protagonist:** NP. Ext.-\textit{ga}
- **Beneficiary:** NP.\textit{Dep.-no tame ni}
- **Asset:** NP.\textit{Obj.-o}
3. Japanese *kakeru.v* and its Frames

*kakeru.v* 賭ける

JEOPARDIZING

(19) He **risked** his life.

(20) *kare wa inoti o kaketa.*

‘He **risked** his life.’
Japanese *kakeru*. 勝ける

Also In:

**BETTING**

(21) kare wa 3000 en o sono uma ni *kaketa*.

> he TOP yen ACC that horse DAT

‘He **bet** 3000 yen on that horse.’

**DEVOTION**

(22) kare wa seesyun o yakyuu ni *kaketa*.

> he TOP youth ACC baseball DAT

‘He **devoted** his youth to (playing) baseball.’

**RELIANCE**

(23) kare wa syoosin o tyokuzoku zyoosi ni *kaketa*.

> he TOP promotion ACC direct supervisor DAT

‘He **counted on** his direct supervisor for a promotion.’
3.1. BETTING

1. [Protagonist-ga] [Outcome –ni.DAT] [Asset -o] kakeru

(24) [Protagonist watasi wa] [Outcome denmaaku no kati ni] [kaketa kara …] PAST because
‘Since I betted on Denmark’s victory, …’

(25) [Protagonist kenbutukyaku mo] [Outcome dotira ga katu ka ni] [onlookers also which.side NOM win Q DAT] [Asset genkin o] kakeru. cash ACC

lit. ‘Onlookers also bet cash on which side will win.’
3.1. BETTING (continued)

2. [Protagonist-ga] [Cotheme –to] [Outcome –o.ACC] kakeru

(26) [Protagonist gyanburaa no sukai wa], gambler GEN Sky TOP
[Cotheme sikin o hosigaru nakama no seed.money ACC want pal GEN neisan to] Nathan with
[Outcome sara o habana ni turedaseru ka o] Sara ACC La Habana GOAL take Q ACC kakeru…

lit. ‘The gambler Sky bets his pal Nathan, who wants seed money, on whether he would take Sarah to La Habana.’
‘(He) dedicated his life to creating sake which tastes lighter and purer than has ever been tasted.’
3.3. RELIANCE

1. [Protagonist-ga] [Purpose/Benefit -o] [Intermediary/Instrument/Means_action -ni] kakeru

(33) toozyoosuru no wa,
   enter.stage NOML TOP
   [Benefit kessyoo toonamento sinsyutu o]
   finals tournament advancement ACC
   [Means_action kono itiban ni] kakeru
   this match DAT
   [Protagonist ingurando].
   England

‘Playing against the team is England, which is counting on this match for advancement to the tournament final.’
In order to ensure job security, (they) counted on organic farming, which allowed them to live in good harmony with nature.
3.4. Semantic Network of *kakeru*

- **Frame: JEOPARDIZING**
  - Protag: NOM
  - Asset: ACC
  - Purpose: DAT

- **Frame: BETTING**
  - Protag: NOM
  - Asset: ACC
  - Outcome: DAT

- **Frame: RELIANCE**
  - Protag: NOM
  - Means_action/Instr: ACC
  - Purpose: DAT

- **Frame: DEVOTION**
  - Protag: NOM
  - Asset: ACC
  - Purpose/Action: DAT
1) JEOPARDIZING and DEVOITION

(a) JEOPARDIZING = (7)

Why do firefighters risk their lives to help people?

(35)

(b) DEVOTION = (30)

(He) dedicated his life to creating sake which tastes lighter and purer than has ever been tasted.

(He) purposefully made this sake, ever lighter and purer than ever,

create thing span.of.life sake ACC

‘(He) dedicated his life to creating sake which tastes lighter and purer than has ever been tasted.’
2) JEOPARDIZING and BETTING

(36) a. JEOPARDIZING

[Protagonist tai tero butai wa] [Purpose hitoziti kyuusyutu ni]
anti terrorist team TOP hostages rescue DAT

[Asset inoti o] kake ta.
life ACC PAST

‘The antiterrorist team risked their lives to rescue the hostages.’

b. BETTING

[Protagonist kare wa] [Outcome hitoziti kyuusyutu seikoo ni]
he TOP hostages rescue success DAT

[Asset 100 doru o] kake ta.
dollar ACC PAST

‘He bet 100 dollars on the success of the hostage rescue operation.’
3) BETTING and RELIANCE

(37) RELIANCE

a. [Instrument ato no iti-wari ni] kakeru
   rest GEN 10% probability DAT
   ‘count on the last 10 percent probability’

b. [Instrument henkasuru koto no kanoosee ni]
   change thing GEN possibility DAT
   kakeru
   ‘count on the possibility of change’
4) DEVOTION and RELIANCE

(38) a. The DEVOTION interpretation

… “[Purpose/Action zibun ga itiban akogareru tiimu ni]
I NOM most aspire team DAT kake te mi tai” to setumeisi ta.
try want COMPL explain PAST
‘(he) explained, “I want to devote (myself) to (playing) on
the team to which I aspire the most.”’

b. The RELIANCE interpretation

… “[Means_action zibun ga itiban akogareru tiimu ni]
kakete mitai” to setumei sita.
‘(he) explained, “I want to count on (playing) on the team
 to which I aspire the most.”’
4) DEVOTION and RELIANCE
(Continued)

(39) a. RELIANCE

[Means_action boohu e no tingonka ni]
late-husband GOAL GEN remembrance DAT

[Purpose saiki o] kaketa.

‘I relied on (creating) a remembrance to my late husband to
get back on my feet again (as an artist).’

b. DEVOTION

[Purpose/Action iti nen go no saiki ni] kaketeiru

one year after GEN comeback DAT PROG
noni, ima, yameru meritto wa nai…
although now quit advantage TOP there.is.no
‘We are devoted to (realizing) our comeback in a year, so
there is no advantage to quitting now.’
4. Conclusion

Semantic Frames as Interlingua between Japanese and English?

risk

JEO-PARDIZING

kakeru 賭ける

INCURRING

BETTING

DEVOTION

RELIANCE

DARING