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**
Protagonist   Harm

{by investing in such a company}.
 Action

(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**
   NP.Ext   risk.v   NP.Obj
   Corresponding Expressions: *kakeru, tosu, kiken ni sarasu*
2 INCURRING
   Protagonist   **TARGET**   **Harm**
   NP.Ext   risk.v   PPby.Obj
   Corresponding Expression: *kiken o okasu*
3 DARING
   Protagonist   **TARGET**   **Action**
   NP.Ext   risk.v   VPing.Obj
   Corresponding Expression: *aete, (kiken o okasi(te))*

2.2. Japanese Expressions in JEOPARDIZING

(7) naze [Protagonist syooboosi 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]   **tosi**ta   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   sarasita.
   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]   **kake**te

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} yamanoi 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

a. [Protagonist: NP.Ext] *risk*.v [Asset: NP.Obj]

b. [Protagonist: NP.Ext] *risk*.v [Asset: NP.Obj]
[Beneficiary: PP_*for*.Dep]

c. [Protagonist: NP.Ext] *risk*.v [Asset: NP.Obj]
[Purpose: VP*to*.Dep]

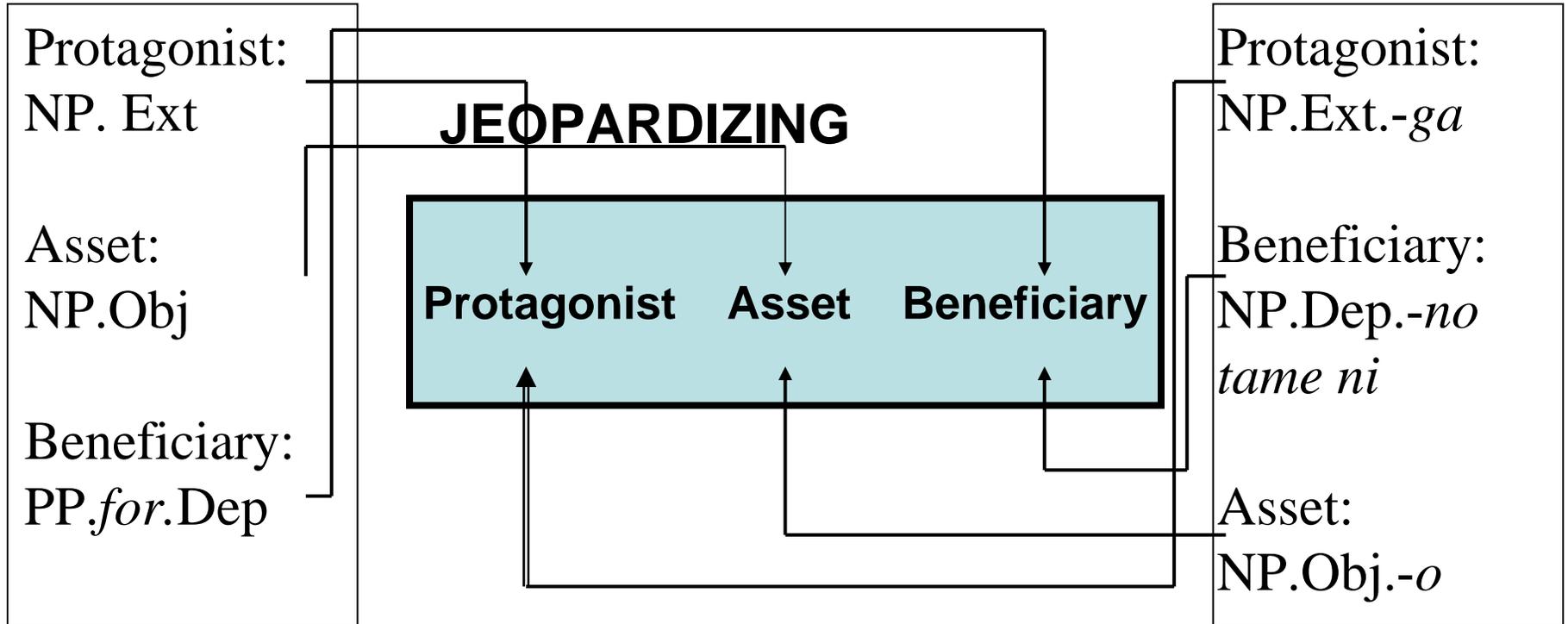d. [Protagonist: NP.Ext] *risk*.v [Asset: NP.Obj]
[Motivation: PP_*for*.Dep]

Table 3. Partial Valence Table for *kakeru* in JEOPARDIZING

a. [Protagonist: NP.Ext.-*ga*] [Asset:NP.Obj.-*o*] *kakeru*

b. [Protagonist: NP.Ext.-*ga*] [Beneficiary: NP.Dep.-*no tame ni*] [Asset:NP.Obj.-*o*] *kakeru*

c. [Protagonist-*ga*] [Purpose: NP.Dep.-*no tame ni*] [Asset: NP.Obj.-*o*] *kakeru*

d. [Protagonist: NP.Ext.-*ga*] [Motivation: NP.Dep.-*ni*] [Asset: NP.Obj.-*o*] *kakeru*

Linking Partial English and Japanese Lexicon Fragments via JEOPARDIZING

From English-*risk-2b*
(Line b of Table 2)

From Japanese-*kakeru-3b*
(Line b of Table 3)

Protagonist:
NP. Ext

Asset:
NP.Obj

Beneficiary:
PP.*for*.Dep

JEOPARDIZING

Protagonist   Asset   Beneficiary

Protagonist:
NP.Ext.-*ga*

Beneficiary:
NP.Dep.-*no tame ni*

Asset:
NP.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   TOP   life   ACC

     'He <u>risked</u> his life.'

Japanese *kakeru*.v 賭ける

Also In:

BETTING

(21) kare wa 3000 en o   sono uma ni   **kaketa**.
     he   TOP   yen ACC that   horse DAT
     'He <u>bet</u> 3000 yen on that horse.'

DEVOTION

(22) kare wa   seesyun o   yakyuu ni   **kaketa**.
     he   TOP youth   ACC baseball DAT
     'He <u>devoted</u> his youth to (playing) baseball.'

RELIANCE

(23) kare   wa syoosin o   tyokuzoku zyoosi   ni **kaketa**.
     he   TOP promotion ACC direct   supervisor DAT
     'He <u>counted on</u> 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]

            I   TOP   Denmark   GEN victory DAT

    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.'

3.2. DEVOTION

[Protagonist-*ga*] [Asset -*o*]
[Purpose/Means_action -*ni*] *kakeru*

(30) [_{Purpose} koremadeni naku karuku,

           Ever   light

    sukkirisita sake o   tukuridasu koto ni]

 pure   ACC create   thing   DAT

   [_{Asset} zinsei   o] **kake**ta …

      span.of.life ACC

   '(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.'

3.3. RELIANCE (Continued)

2.[Protagonist-*ga*] [Purpose/Benefit -*tame*] [Intermediary/Instrument/Means_action –*ni*] *kakeru*

(34) [Purpose koyoo   o   kakuhosuru tame]

employment ACC secure   for

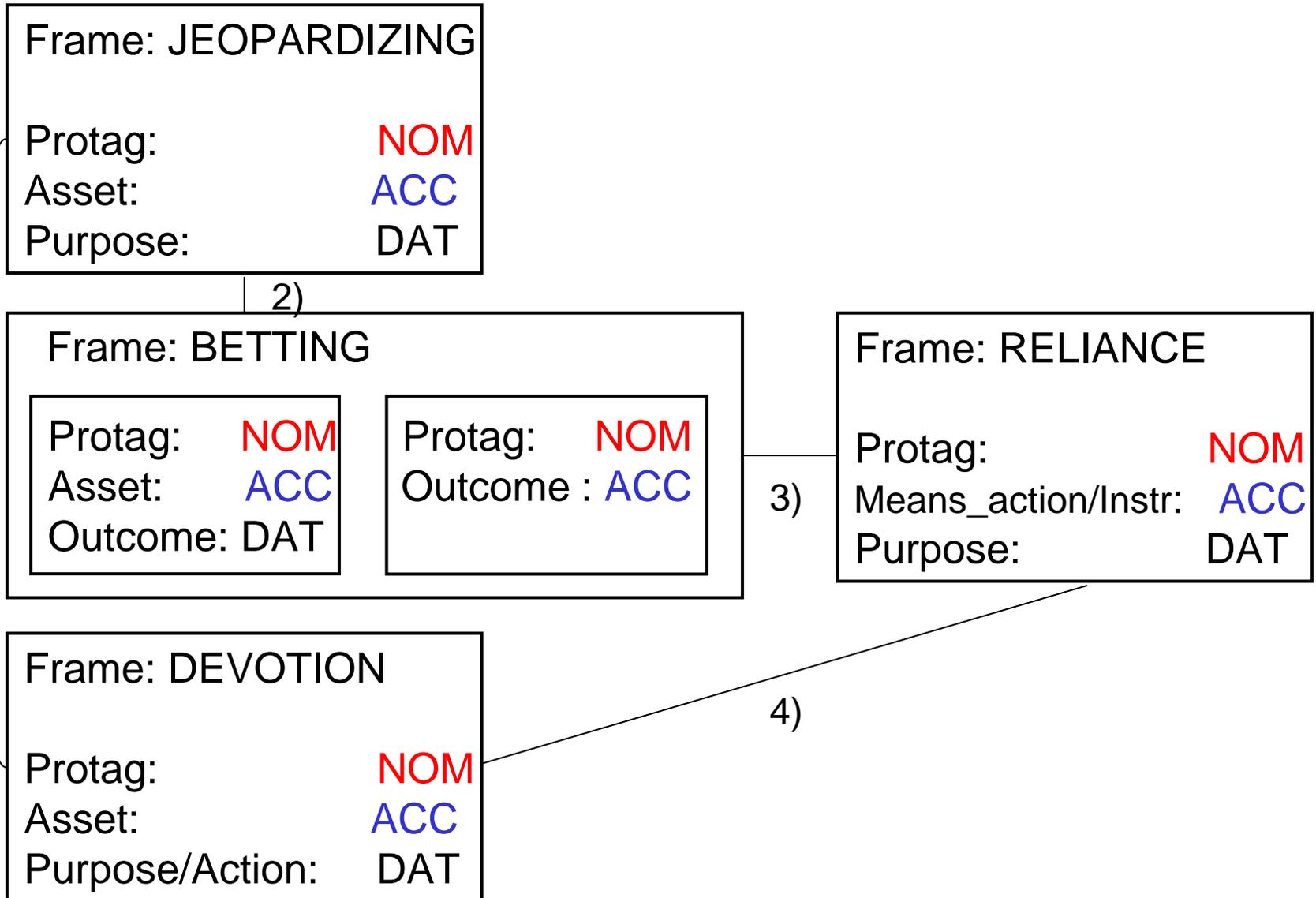[Means_action sizen to kyooseisuru

nature   with live.together

yuuki noogyoo ni] **kake**ta.

organic farming   DAT

'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*

1) JEOPARDIZING and DEVOTION

(35) a. JEOPARDIZING = (7)

naze [Protagonist syooboosi wa] [Beneficiary hito   no   tame ni]
why   firefighters TOP   people GEN sake   DAT

[Asset inoti o]   **kakeru** no   ka.
        life   ACC   NMLZ Q

'Why do firefighters risk their lives to help people?'

b. DEVOTION   = (30)

 [Purpose koremadeni naku karuku, sukkirisita sake o
        Ever   light   pure   ACC

tukuridasu koto ni] [Asset zinsei   o]   **kake**ta …
create   thing DAT   span.of.life 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

kakete 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]   **kake**ta.
       comeback ACC   PAST

'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] **kake**teiru
         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?