A Study in Transfer
Japanese–English

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Introduction

Together with our partners at DFKI and the University of Saarbruecken we selected for our first approach to transfer rules Japanese–English (out of the dialogues we received) six example sentences. On the following pages we would like to give the imaginary analysis output and the target transfer rules for these sentences.

First let us have a look at some grammatical phenomena occurring in these sentences.

An essential phenomenon of the Japanese language is the differentiated honorific system (much more differentiated than the corresponding English system). Thus we have to check the descriptions produced by analysis if they can be dropped in English or in how far they have to be kept.

The honorific behaviour of the Japanese language is determined by the following factors:

- Belonging to the same group or to different groups
- Status (higher–equal–lower)
- Sex (male–female)
- Age

Generally speaking, the speaker and the hearer use different levels to express respect (only if they are equal in status there is a reciprocal use of the honorific forms). The chosen honorific form shows the relationship between the speaker and the hearer (or if the speaker speaks about a third person, then it shows the relationship between the speaker and this person). The speaker speaks about the action of another person who is higher in status (or —if the speaker and this person belong to different groups— is equal in status) with more respect, about the speaker’s own action in a modest or neutral way.

The level of respect can be graded by means of honorific groups according to the relationship between the speaker and hearer.

Some of frequently used verbs have lexical variants for respect or modesty. However, most of the verbs form their honorific forms in the following way:

- $o\ V\ ni\ nar u$ (respect) or
- $o\ V\ sur u$ (modesty)

Nouns often have honorific markers (for example the prefix $go$ or $o$), too.

A further remarkable phenomenon of Japanese is the benefactive. In Japanese, the forms of verbs expressing giving and receiving are determined depending on the social relationship between the giver and the receiver.
The verb *kureru* (give) is used when the receiver is the first person or a person with whom the speaker empathizes (usually a member of the speaker’s in-group). Otherwise *ageru* is chosen to mean ‘give.’

There is still another verb *momu* which corresponds to the English verb ‘get.’ *momu* is chosen when the receiver is the first person or someone with whom the speaker empathizes (usually a member of the speaker’s in-group).

*kudasaru, sashiageru, and itadaku* are honorific forms of *kureru, ageru,* and *momu,* respectively. When they are used, the following conditions must be satisfied:

- **kudasaru** — the giver is superior to the receiver
- **sashiageru** — the receiver is superior to the giver
- **itadaku** — the giver is superior to the receiver

In Japanese doing something for someone else is seen as giving a thing to someone. Accordingly, the verbs expressing giving or receiving are attached to the *te*-form of the verb which expresses the action. The use of these compound verbs is governed by the same conditions as described above. (*V te-ageru, V te-kureru, V te-momu*).

The semantics of these auxiliaries allows or forces to omit the constituents that describe the acting partners. In most cases the speaking person is omitted because its role is determined by the corresponding auxiliary. The profiting partner (in particular if identical with the hearer) is also often omitted.
Reference Sentences and Transfer Rules

In what follows we will show how analysis outputs of the six reference sentences and transfer rules for them should look like. The following points are noteworthy.

- Only the core part of each sentence meaning (mostly luj_preds) is given.
- Zero pronouns and other anaphoras are treated like usual predicates, because it is convenient for transfer rule description.
- Case roles are named explicitly like ‘agent’ or ‘theme’ instead of ‘arg1’ etc. (as they are named in Melanie Siegel’s Japanese grammar for verbmobil), because it is easier to understand.
- Tense/aspect information is neglected for the time being.

[A050 1471 02a]

satou seNsei no sukejuuru o o ukagai shi tai to
NAME TITLE ADNM schedule ACC HON ask DESD QUOT
omoi mashi te o deNwa sashiage ta Ndesu ga.
think POL HON telephone give PAST EXPL CONC

‘I am calling because I would like to know Professor Satou’s schedule.’

Characteristics of the sentence

- A collocation to express desire, tai to omoimasu, is used.

  Tai (want to) is attached to V and the resulting predicate is then used as an adjective. This predicate is basically used to express the speaker’s desire. If it is used to express the speaker’s desire, tai is often connected with to omoimasu (to omoimasu is usually a means to indicate the speaker’s thoughts at the moment of speech). This collocation is preferable if the hearer has superior status (same group) or at least equal status (different group). When used for another person than the speaker some modifications are necessary like for example V–tai no desu.

- Zero pronouns appear that indicate the speaker and hearer. They can be identified here on the basis of honorific expressions and a speech act. (See the above description of benefactives and honorific forms).
Imaginary analysis output

11: cause(h1,h2)
12: omou(i1)
12: agent(i1,i2)
12: theme(i1,h3)
13: zero_anaphora(i2)
14: tai(i3)
14: agent(i3,i2)
14: theme(i3,i5)
15: ukagau(i4)
15: agent(i4,i2)
15: recipient(i4,i5)
15: theme(i4,i6)
16: modest(i4,i2,i5)
17: zero_anaphora(i5)
18: anaphora(i6)
19: sukejuuru(i6)
110: no_possession(i7,i6)
111: named(satou,i7)
112: sensei_title(i7)
113: anaphora(i7)
114: nodesu(i15)
115: denwasuru(i8)
115: agent(i8,i9)
115: recipient(i8,i10)
116: zero_anaphora(i9)
117: zero_anaphora(i10)
118: modest(i8,i9,i10)
119: centrifugal(i8,i9,i10)
On the analysis output

- The binding between subjects in complex predicates such as in o-ukagai shi-tai must be made in analysis.

- It should not be supposed that te, the particle introducing the subordinate clause, always marks a causal clause. The ambiguous meanings of the te-clause must be disambiguated in analysis, which is by no means an easy task. The te-form functions, in part, to link sentences. The meaning varies according to the context. The hearer is forced to interpret the meaning by means of the sentential relations between the involved sentences. The most important relationships are coordinative, temporal, causal, modal, and conditional.

- The predicate ‘modest’ is assigned to the honorific predicates o-ukagai shi and o-denwa sashiage.

- The predicate ‘centrifugal’ is assigned to the emphatic predicate o-denwa sashiage. In general, it is assigned to ageru-series predicates. To kureru-series predicates is assigned ‘centripetal.’

Target transfer output

‘I am calling you because I would like to ask about Professor Satou’s schedule’

11: because(h1,h2)
12: would_like_to(i1)
12: agent(i1,i2)
12: theme(i1,15)
13: ego(i2)
15: ask(i4)
15: agent(i4,i2)
15: recipient(i4,i5)
15: theme(i4,i6)
17: you(i5)
18: anaphora(i6)
19: schedule(i6)
110: possession(i7,i6)
111: named(satou,i7)
112: professor_title(i7)
113: anaphora(i7)
115: call(i8)
115: agent(i8,i9)
115: recipient(i8,i10)
116: ego(i9)
117: you(i10)
Transfer Rules

transfer_flag(statistics).
transfer_flag(source_target_only).
transfer_flag(autoload).
transfer_flag(mrs_IO).
transfer_module(jp,en).

% 11
% te -> because
[H:te_cause(X,Y)] -> [H:because(X,Y)].

% 12, 14
% tai to omou -> would like to
[H:omou(E),_:agent(E,X),_:theme(E,Y),_:tai(E2),_:agent(E2,X),
_:theme(E2,H3)] -> [H:would_like_to(E),_:agent(E,X),_:theme(E,H3)].

% 15
% ukagau -> ask
[H:ukagau(E),_:agent(E,X),_:recipient(E,Y),_:theme(E,Z)]
-> [H:ask(E),_:agent(E,X),_:theme(E,Z)].

% 19
% sukejuuru -> schedule
[H:sukejuuru(X)] -> [H:schedule(X)].

% 110
% no -> 's
[H:no_possession(X,Y)] -> [H:s_possession(X,Y)].

% 112
% Sensei -> Professor
[H:kyouju_title(X)] -> [H:professor_title(X)].

% 114
% delete nodesu
[H: nodesu(Y)] -> [].

% 115
% denwasuru -> call
[H:denwasuru(E),_:agent(E,X),_:recipient(E,Y)]
-> [H:call(E),_:agent(E,X),_:recipient(E,Y)].
% zero anaphora identification

\[ \text{modest}(E, X, Y), H_1: \text{zero anaphora}(X), H_2: \text{zero anaphora}(Y) \] \rightarrow
\[ [H_1: \text{ego}(X), H_2: \text{you}(Y)]. \]

\[ \text{centrifugal}(E, X, Y), H_1: \text{zero anaphora}(X), H_2: \text{zero anaphora}(Y) \]
\rightarrow \[ [H_1: \text{ego}(X), H_2: \text{you}(Y)]. \]

% Default
default_transfer(jp, en).

On transfer

- Zero-pronominalized agents and recipients are in this study always identified with the speaker and hearer on the basis of 'modest' and 'centrifugal' predicates. This is by no means always correct.

- In converting 'NP no NP2' to 'NP's NP2' we use predicates 'no possession' and 's possession.' This is because all no marked NPs are not possessive and all possessive NPs in Japanese are not transferred to 'NP's.' The proposed rule still needs more explicit context specifications. The particle no combines generally two noun phrases into a larger noun phrase. The two noun phrases are related to each other in various ways, where these relationships are determined by context. Possible relationships are for example: (N1 first noun phrase, N2 second noun phrase)

  - N1 is the possessor of N2
  - N1 is the relation where N2 exists
  - N2 is about N1
  - N1 is a specific kind of N2
  - N1 is the object and N2 is the subject
  - N1 created N2
  - N1 is an attribute of N2
  - N2 is made of N1.

- \(n(o)\) desu ga adds a contextual meaning that softens the speech act request in this case. Generally speaking, \(n(o)\) desu indicates that the speaker gives an explanation about his intention. However, this part of the sentence meaning is neglected for the time being.
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[A050 1471 09b]
gogo dake desu to nijuuyokka demo kamai mase N keredomo.

afternoon only COP COND 24th even mind POL NEG CONC

“So for only an afternoon, the 24th is possible.”

Characteristics:

- Modification by dake (only) and demo (even).

Imaginary Analysis Output

11:to condition(h1,h2)
12:copula(i1)
12:theme(i1,i2)
12:identified(i1,i3)
13:zero_anaphora(i2)
14:anaphora(i3)
15:posd(i3,afternoon)
16:dake(i5,h3)
17:negative(h4)
18:kamau(i4)
18:agent(i4,i5)
18:theme(i4,i6)
19:zero_anaphora(i5)
110:anaphora(i6)
111:ord(i6,i7,24)
112:tp(i7,month)

On imaginary analysis output

- There is no clue in the sentence to identify the zero pronoun subject in the to-clause and matrix sentence.

- The subordinate conjunction marks a condition that brings about a uncontrollable event or state. There are other possibilities in Japanese in order to mark conditions. The ranges of meaning covered by these conditionals overlap to a large extent, though there are some slight differences in nuance and use. If there are two sentences S1 and S2 (connected with to) then is S2 a natural consequence of S1.

Target transfer output

‘Even the 24th is O.K. if it is only in the afternoon’
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11: if(h1,h2)
12: copula(i1)
12: theme(i1,i2)
12: identified(i1,i3)
13: anaphora(i2)
14: anaphora(i3)
15: pofd(i3, afternoon)
16: only(l5, h3)
17: ok(i4)
18: theme(i4, i6)
110: anaphora(i6)
111: ord(i6, i7, 24)
112: tp(i7, month)

Transfer Rules
transfer_flag(statistics).
transfer_flag(source_target_only).
transfer_flag(autoload).
transfer_flag(mrs_IO).
transfer_module(jp,en).

% 11
% to -> if
[H:to_condition(X,Y)] -> [H:if(X,Y)].

% 16
% dake -> only
[H:dake(X,Y)] -> [H:only(X,Y)].

% 17-18
% kamawa nai -> be O.K.
[H:negative(H2), H2:kamau(E), _:agent(E,X), _:theme(E,Y)]
-> [H:ok(E), _:theme(E,B)].

% Default
default_transfer(jp,en).

On transfer

- kamai mase N is translated as be O.K.

- keredomo, originally a concessive subordinator, is used to weaken the assertive act. Its function is neglected for the time being.
On Tuesday, the 22nd, a meeting is planned from 11:30 to 2 o’clock.

Imaginary analysis output

11: hairu (i1)
11: theme (i1, i2)
12: kara (i1, i3)
13: made (i1, i4)
14: tloc (i1, i5)
15: some (i2, i6)
16: uchiawase (i2)
17: no modify (i6, i2)
18: anaphora (i6)
19: chuushokugo (i6)
110: uhrzeit (i3, 11.5)
111: uhrzeit (i4, 2)
112: ord (i5, i6, 22)
113: tp (i6, month)
114: dofw (i5, tuesday)

Target transfer output

‘On Tuesday 22th a meeting is planned from 11:30 to 2 o’clock’

11: be planned (i1)
11: theme (i1, i2)
12: from (i1, i3)
13: to (i1, i4)
14: tloc (i1, i5)
15: some (i2, i6)
16: meeting (i2)
17: after (i2, i6)
18: anaphora (i6)
19: lunch (i6)
110: uhrzeit (i3, 11.5)
111: uhrzeit (i4, 2)
112: ord (i5, i6, 22)
113: tp (i6, month)
114: dofw (i5, tuesday)
Transfer Rules

transfer_flag(statistics).
transfer_flag(source_target_only).
transfer_flag(autoload).
transfer_flag(mrs_IO).
transfer_module(jp,en).

% 11
% hairu -> be planned
[H:hairu(E),:_theme(E,X)] -> [H:be_planned(E),:_theme(E,X)].

% 12
% kara -> from
[H:kara(E,A)] -> [H:from(E,A)].

% 13
% made -> to
[H:made(E,X)] -> [H:to(E,X)].

% 16
% uchiawase -> meeting
[H:uchiawase(X)] -> [H:meeting(X)].

% 17, 19
% chuushoku go no N -> N after lunch
[H:no_modify(X,Y),H2:chuushokugo(Y)]
-> [H:after(X,Y),H2:lunch(Y)].

% Default
default_transfer(jp,en).

On transfer

- uchiawase ga haitte ori masu is interpreted as meeting is planned. Notice that the noun uchiawase is a jargon among the officials.
itsudemo go tsugou no yoroshii toki ni o
whenever HON convenience ADNM good HON time TPOINT HON
deNwa o o negai itashi masu.
television ACC HON request HON POLT

‘Could I ask you to call me back whenever it suits you?’

Characteristics

No o negai itashi masu is a collocation to express request.

Imaginary analysis output

11:q(itsudemo, tokini, i2, i2, h1)
12:yoroshii(i2)
12:sentient(i2, i3)
12:theme(i2, i4)
13:tsugou(i4)
14:zero_anaphora(i3)
15:negau(i5)
15:agent(i5, i6)
15:recipient(i5, i7)
15:theme(i5, i8)
16:zero_anaphora(i6)
17:zero_anaphora(i7)
18:denwa(i8)
19:modest(i5, i6, i7)

Target transfer output

‘Please call me whenever it is convenient to you’
On imaginary analysis output:

- *itsu demo* and *toki ni* are supposed to be analyzed as a single ‘quantifier.’ It might be troublesome to posit analysis rules for them in a general way.

- The ‘sentient’ case is supposed to be subcategorized by *yoroshii* and to be zero-pronominalized. However, it is difficult to set up a transfer rule to identify this zero pronoun as the second person.

- The zero-pronominalized agent and recipient cases in the matrix sentence are identified on the basis of the emphatic auxiliary verb *itasu.*

Transfer Rules

```plaintext
transfer_flag(statistics).
transfer_flag(source_target_only).
transfer_flag(autoload).
transfer_flag(mrs_IO).
transfer_module(jp,en).
% 11
% itsudemo ... toki ni -> whenever
[H:gq(itsudemo_tokini,X,Y,Z)]
  -> [H:gq(whenever,X,Y,Z)].
% 12-13
% tsugou ga yoroshii -> be convenient
[H:yoroshii(E),_:sentient(E,X),_:theme(E,Y),_:tsugou(Y)]
```
\[\text{A Study in Transfer Japanese–English}\]

\[\rightarrow \quad [H:\text{convenient}(E), \_\text{-sentient}(E,X), \_\text{-theme}(E,Z)].\]

\% 15, 18
\% odewa o negau

\[H:\text{negau}(E), \_\text{-agent}(E,X), \_\text{-recipient}(E,Y), \_\text{-theme}(E,Z), \_\text{-denwa}(Z)] \rightarrow\]
\[H:\text{request}(E), \_\text{-agent}(E,X), \_\text{-recipient}(E,Y), \_\text{-theme}(E,Z), \_\text{-call}(Z)].\]

\% zero anaphora identification

\[\_\text{-modest}(E,X,Y), H1: \text{zero_anaphora}(X), H2: \text{zero_anaphora}(Y)] \rightarrow\]
\[H1: \text{ego}(X), H2: \text{you}(Y).\]

\% Default
default_transfer(jp,en).
‘We would like to have a talk about our joint research between the 11th and the 24th of the next month April.’

**Imaginary analysis output**

| (12) | (i1) | (i1,i2) | (i1,13) | (i3) | (i3,i2) | (i3,i4) | (i2) | (i4) | (i4,i5) | (i5) | (i3,i6) | (i6) | (i6,i7) | (i6,i8) | (i9,next) | (i9,month) | (i7,4) | (i7,i9,11) | (i8,i9,24) | (i9,month) |

**Target transfer output**

‘I would like to arrange a meeting about our joint research between the 11th and the 24th of the next month April’
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12: would like to(i1)
12: agent(i1, i2)
12: theme(i1, i3)
13: arrange(i3)
13: agent(i3, i2)
13: theme(i3, i4)
14: ego(i2)
15: meeting(i4)
16: about(i4, i5)
17: joint research(i5)
18: between(i3, i7, i8)
112: tspec(i9, next)
112: tp(i9, month)
113: mofy(i7, 4)
114: ord(i7, i9, 11)
115: ord(i8, i9, 24)
116: tp(i9, month)

Transfer Rules

transfer_flag(statistics).
transfer_flag(source_target_only).
transfer_flag(autoload).
transfer_flag(mrs_IO).
transfer_module(jp, en).

% 11
% delete nodesu

[H: nodesu(Y)] -> [] .

% 12
% tai -> would like to/zero anaphora identification

[H: :tai(E), :agent(E, X), H2: zero_anaphora(X), :theme(E, H2)] -> [H: would like to(E), :agent(E, X), H2: ego(X), :theme(E, H2)].

% 13, 15
% uchiawase o okonau -> arrange a meeting

[H: okonau(E), :agent(E, X), :theme(E, Y), :uchiawase(Y)]

-> [H: arrange(E), :agent(E, X), :theme(E, Y), :meeting(Y)].

% 16
% no tame no -> about

[H: no_tame_no(X, Y)] -> [H: about(X, Y)].

% 17
% kyoudoukenkyuu -> joint research
[H:kyoudoukenkyuu(X)] -> [H:joint_research(X)].

% 18-111
% Temp kara Temp made no aida -> between Temp and Temp
[H:tloc(E,A),.:aida(A),.:kara(A,X),.:made(A,Y)]
-> [H:between(E,X,Y)].

% 116
% raigetsu -> next month
[H:raigetsu(X)] -> [H:next_month(X)].

% Default
default_transfer(jp, en).

On transfer

- The zero-pronominalized agent is identified on the basis of the speech act.
[B357 5202 09a]

dewa hatsuka no gogo kara to in no wa ikaga
so 20th ADN M afternoon from QUOT F NOUN TOP how
deshou ka?
COP-POL INTG

‘So, how about the afternoon of the twentieth?’

Characteristics

- *S to in no wa ikaga desu ka?* is a collocation to express a proposal by means of a surface expression meaning a WH-question.

Imaginary analysis output

- l1:whq(ikaga,13,h1)
- l2:you_presumptive(13)
- l3:general_property(i1)
- l4:theme(i1,i2)
- l5:kara(i2,i3)
- l6:pořd(i3,afternoon)
- l7:ord(i3,i4,20)
- l8:tp(i4,month)

On imaginary analysis output

- It is supposed that the form *ikaga desu ka* is analyzed as a WH-question and converted by the transfer to a predicate meaning a proposal. As an alternative the form may be directly analyzed as a proposal.

Target transfer output

‘How about the afternoon of the 20th?’

- l1:how_about_propose(i4)
- l4:theme(i4,i3)
- l6:pořd(i3,afternoon)
- l7:ord(i3,i4,20)
- l8:tp(i4,month)

Transfer Rules

transfer_flag(statistics).
transfer_flag(source_target_only).
transfer_flag(autoload).
transfer_flag(mrs_I0).
transfer_module(jp, en).

% 11, 13
% Temp kara wa ikaga desu ka -> how about Temp

[H:whq(ikaga,H2,X), _:yo_presumptive(H2), H2:general_property(Y),
 H3:theme(Y,Z), _:kara(Z,A)]
-> [H:how_about_propose(B), H3:theme(B,A)].

% Default
default_transfer(jp, en).