Control in Japanese

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This paper deals with the problem of control in Japanese. It presents a classification of control phenomena in Japanese using Lexical Functional Grammar(LFG, henceforth) as its framework for analysis. The classificatory schema employed in this paper is adapted from Bresnan (1982), which presents a LFG view of control in general as well as other grammatical phenomena. The current paper tries to show how the LFG approach to the control problem allows us to place various phenomena related to it in appropriate context.

1. LFG

LFG is a grammatical theory originally advocated in Kaplan and Bresnan(1982). It is an outcome of the ideas of ATN and transformationless grammars. LFG has two levels of representation in the syntactic component, called C-structure and F-structure. A C-structure is essentially a phrase structure representation of a surface string except that the nodes on the tree are annotated with the equations registering information about the F-structures associated with them. Each node, labelled with a syntactic category, has its corresponding F-structure. A F-structure is a matrix with two columns, of which the left one represents attribute names and the right one the corresponding value names. The attribute-value pairs in the matrices are information coming from the equations on the corresponding C-structure, which in turn derive from the C-structure rules (rewriting rules) and the lexical entries. In other words, both C-structure rules and lexical entries equally contribute the equations supplying the information characterizing the F-structure(s) of the relevant C-structure. When every F-structure associated with the C-structure is well-formed according to the three well-formedness conditions for F-structure (the uniqueness, the coherence, and the completeness conditions), the set of F-structures, which is usually represented by the most inclusive member, is said to be well-formed. This, in turn, characterizes the corresponding C-structure as well-formed, or grammatical.

Since LFG is a transformationless grammar, grammatical generalizations are captured by lexical rules relating one set of lexical items to another. Such lexical rules can capture transformational syntactic relationships directly in the lexicon because the lexical rules can refer to grammatical functions, which are taken to be primitives in LFG. The LFG theory of grammatical functions proposed by Bresnan (1982) has the following inventory: subcategorizable grammatical functions--SUBJ, OBJ, and OBJ2 (the above three are called semantically unrestricted GFs), OBLth, COMP, and XCOMP (these three are semantically restricted GFs); non-subcategorizable GFs--ADJ, and XADJ. XCOMP and XADJ are called open GFs, whereas all the other GFs are called closed GFs. The inventory also contains TOPIC and FOCUS GFs, which are either subcategorizable or not, depending on the language. In some analyses, POSS (essive) is also used as a GF.

2. Control in LFG

There are two major classes of control in LFG. One is called functional control and the other anaphoric control. In functional control, the controlled element is the SUBJ of either XCOMP or XADJ. As noted above, XCOMP and XADJ lack their overt SUBJ in C-structure. In order to satisfy the completeness condition, which says every GF subcategorized for by the predicate of the F-structure must have a value in it, the SUBJof XCOMP and XADJ must be controlled by some GF which is referentially indentical. The controlling GF is a sister of XCOMP or XADJ. Since the value of a GF in F-structure is another F-structure containing the PRED feature, the control relation is captured by the sharing of the same F-structure by the controlling GF and the controlled GF, i. e. the SUBJ of XCOMP or XADJ. When the controlled element is the SUBJ of XCOMP, we have lexically induced functional control because the control relation is induced by the control equation of the form (↑ GF) = (↑ XCOMP SUBJ) specified in the lexical item. On the other hand, when the SUBJ of XADJ is controlled, we have constructionally induced functional control because, being a non-subcategorizable GF, XADJ is not introduced by being subcategorized for by a predicate, but by being specified in a C-structure rule.

Anaphoric control is different from functional control in that it does not involve the sharing of F-structure. Within the overall framework of LFG, anaphoric control is a specific case of anaphoric binding where a pronominal element with no phonetic form(zero pronoun) is referentially dependent on its antecedent. As opposed to the case of functional control, the controller of anaphoric contol, which is the antecedent of the zero pronoun, can be non-overt.

In what follows, I will discuss each case of control phenomena as found in Japanese.

3. Lexically induced functional control

As noted above, this case of control involves the SUBJ of XCOMP as the controlled element. Bresnan(1982) distinguishes between marked and unmarked cases of this kind of functional control. The unmarked cases are captured by the following redundancy rule, which introduces a control equation into the lexical entry of relevant predicates.

Lexical Rule of Functional Control
Let L be a lexical form and F_L its grammatical function assignment. If XCOMP $\in F_L$, add to the lexical entry of L: (↑OBJ2) = (↑XCOMP SUBJ) if OBJ2 $\in F_L$;
otherwise:
(↑OBJ) = (↑XCOMP SUBJ) if OBJ $\in F_L$;
otherwise:
(↑SUBJ) = (↑XCOMP SUBJ). (Bresnan(1982, p. 322)
Let us take an example.

(2) lexical form
(s) ase (↑PRED) = 'SASE<(↑SUBJ) (↑OBJ2) (↑XCOMP)>'
grammatical function assignment {SUBJ, OBJ2, XCOMP}
{SUBJ, OBJ2, XCOMP}

(3) John ga Mary ni [zibun no kuruma o untens] ase-ta
self car drive cause-past
SUBJ OBJ2 XCOMP
'John caused Mary to drive self's car'

In (2), we have the lexical form for the causative predicate *sase* and its grammatical function assignment, which is the set of GFs subcategorized for by *sase*. Since both XCOMP and OBJ2 are members of the set, the rule introduces the first equation as the control equation of the causative predicate, which captures the control relation found in (3). Similarly, (4) and (5) illustrate the other two cases.

(4) John ga Mary o [asahayaku kara hatarak] ase-ta
early morning from work cause-past
SUBJ OBJ XCOMP
'John caused Mary to work from early in the morning'

(5) John ga [Mary no kuruma o untensi] tagat-ta
car drive want-past
SUBJ XCOMP
'John wanted to drive Mary's car'

In (4), the causative predicate subcategorizes for OBJ instead of OBJ2. This is reflected in the case marker o. So, there are two causative predicates of the same phonetic form in Japanese.

The unmarked cases in Japanese seem to require untensed form of the XCOMP predicate. With the causative predicates, the form of the XCOMP predicates is the root form. *Tagar* in (5) requires the *renyoo* form, which is another untensed form of the verb. Such predicates as *moraw'* receive the favor of', and mi'try' requires the *te* form.

Unlike English, Japanese seem to lack marked cases of lexically induced functional control. The equivalent of *promise,* which has the control equation (↑SUBJ) = (↑XCOMP SUBJ) in spite of its grammatical function assignment {SUBJ, OBJ2, XCOMP}, requires a full-fledged clausal construction, as shown in (6), and constitutes a case of anaphoric control.

(6) John ga Mary ni [tegami o kaku] koto o yakusokusi-ta
letter wirte that promise-past
SUBJ OBJ2 XCOMP
'John promised Mary to write letters'

4. Constructionally induced functional control

This case of control involves the SUBJ of XADJ as the controlled element. Unlike XCOMP, XADJ is an optional argument to the predicate. So, it is introduced by a C-structure rule. The controller of the XADJ SUBJ is one of the GFs subcategorized for by the main predicate. The following is the constructional rule of functional control proposed by Bresnan(1982, P. 324).

> If (↑XADJ) = ↓ is a syntactically encoded functional annotation, conjoin it to the disjunction of the schemata {(↑*G*) = (↓SUBJ) | *G* ∈ *GAMMA*} (where *GAMMA* is the set of possible controller GFs specific to the language).

(7) illustrates the above rule.

(7) John wa [(*kare ga) biiru o nomi-nagara] naitaa o mi-ta
he beer drink while nighter watch-past

(↑SUBJ) = ↓ (↑XADJ) = ↓
(↑SUBJ) = (↓SUBJ)
'John watched the nigh game while drinking beer.'

In (7), the controller is the matrix SUBJ as shown by the equation (↑ SUBJ) = (↓ SUBJ). In English, the predicate of XADJ is an adjective or a past participle, thus lacking in the tense marker. Similarly, the predicate of XADJ in Japanese is untensed. It is accompanied by a particular suffixal element such as *nagara*'while', *tamama*'with', and *zuni*'without'.

As functional control involves the sharing of a F-structure by *two* GFs, the SUBJ of XADJ cannot appear overtly as shown by the ungrammaticality of (7) when *kare ga'he'* overtly occurs in it. This is because *kare ga* induces its *own* F-structure and makes the XADJ SUBJ have two distinct F-structures as its value, which is a violation of the uniqueness condition. As noted by Bresnan (1982, p. 346), split antecedents are not allowed in the case of functional control because they will also make the XADJ SUBJ have two distinct F-structures as its value.

(8) * John wa [tagaini aiteno namae o yobi-nagara] Mary o sagasi-ta
each other's name call-while look-for-past
SUBJ XADJ OBJ
'John looked for Mary calling each other's names'

(8) is an ungrammatical sentence as expected. By contrast, split antecedents are possible in the case of anaphoric control as shown in (8') where the concessive clause lacks an overt SUBJ.

(8') John wa [tagaini aite no kao o siranai noni] Mary o
each other's face not-know though
SUBJ OBJ
sagasi-ta
look-for-past
'John looked for Mary although not knowing each othere's face'

In Japanese, *GAMMA* seems to contain only *SUBJ* as a possible controller. (9) is not ambiguous in Japanese as to the antecedent of the XADJ SUBJ.

(9) John ga Mary o [te o huri-nagara] yon-da
hand wave-while call-past
SUBJ OBJ XADJ
'John called Mary waving the hand'

The ungrammaticality of (10) is also accounted for by *GAMMA's* containing only SUBJ.

(10)John wa [kare no buka o hagemasite kure-nagara] arui-ta
his subordinate encourage BENEF-while walk-past
'John walked encouraging his subordinates'

In the standard dialect, the benefactive *kure* requires the agent of the predicate to which it is attached to be someone outside the (pseudo-)family group which contains the people receiving the benefactive act. In (10), the receivers of the benefactive act are John's subordinates. So, the agent of the encouraging act must be someone outside the family group containing *John* as a member. But, the XADJ can have only the matrix SUBJ as the controller of its SUBJ. Thus, we have a contradiction here.

An apparent counterexample to the above generalization has a ready explanation in LFG. In (11), the XADJ SUBJ can have either the matrix SUBJ or OBJ as its controller.

(11)John wa Bill o [[huku o ki-tamama] puuru ni tobikom] ase-ta
clothes wear-with pool dive-in cause
SUBJ OBJ XCOMP
XADJ
'John caused Bill to dive in the swimming pool with his clothes on'

In this case, the XADJ is embedded in the XCOMP, whose SUBJ is controlled by its matrix OBJ, i. e. Bill. Thus, both *John* and *Bill* has the status of SUBJ in the sentence. Compare this case with (12), whose XADJ is not contained in an XCOMP.

(12)John wa Bill o [huku o ki-tamama] puuru ni nagekon-da
clothes wear-with pool throw-in-past
SUBJ OBJ XADJ
'John threw Bill in the swimming pool with his clothes on'

As expected, the XADJ SUBJ in (12) has only *John* as its controller.

A similar line of explanation is possible for the following sentence originally presented by Shibatani as an example which, according to him, requires the notion of subject to be modified.

(13)Hanako wa Taroo ni [[aruki-nagara] aisatus] are-ta
walk-while greet pass-past

SUBJ OBJ2 XCOMP
XADJ
'Hanako was greeted by Tarro while walking'

On one reading, the SUBJ of the XADJ is controlled by *Taroo*. As is indicated by the GFs associated with the passive predicate, (13) is not a case of direct passivization, but one of indirect passivization, which has an implication of the SUBJ being adversely affected by the act denoted by the XCOMP. According to the lexical rule of functional control, the OBJ2 controls the SUBJ of the XCOMP, which in turn controls the SUBJ of the XADJ. Thus, we can establish the necessary control relationship without violating the constraints of LFG.

5. Anaphoric control

In anaphoric control, the controlled element is PRO without phonetic form. Such PRO is lexically induced by the following rule.

Rule of Functional Anaphora
For all lexical entries L, for all G ∈ DELTA, assign the optional pair of equations {(↑G PRED)='PRO':(↑FIN)=alpha} to LC, where DELTA is the set of GFs specific to the language, and alpha is either plus or minus). Bresnan(1982, p. 326)

In Japanese, DELTA seems to be the set of all GFs, and alpha can be either plus or minus because zero pronouns can occur in both tensed and untensed clauses. But, the value of alpha is restricted according to specific phenomena involving anaphoric control. The most notable one is that of obviation(Bresnan (1982, p. 331).

Obviation Principle
If P is the pronominal SUBJ of an obviative clause C, and A is a potential antecedent of P and is the SUBJ of the minimal clause nucleus that properly contains C, P is or is not bound to A according to whether P is + or -U, respectively.

In other words, an antecedent candidate SUBJ is or is not an actual antecedent of a SUBJ PRO according to whether the SUBJ PRO is without or with phonetic form, respectively.

(14) John wa [kare ga/Ø sigoto o kawatte kara] genki ni nat-ta
he job change since cheerful become
SUBJ ADJ

'John has been in good spirits since he changed his job'

In (14), the antecedent of ADJ SUBJ must be *John* when the PRO is the zero pronoun, and cannot be *John* when the PRO is *kare ga*. This phenomenon seems to be restricted to the clauses with untensed predicate in Japanese.

(15) John wa [Ø sono ziken o kaiketusi-ta noni] Bill o hyookasi-
that case solve-past though appreciate
SUBJ ADJ OBJ
nai
not
'John does not appreciate Bill('s worth) though he solved the case'

The zero pronoun in (15) can have *Bill* as its antecedent contrary to the obviation principle. This is probably because the concessive clause introduced by *noni* is tensed. When the same *noni* is used to denote objective clauses indicating a purpose or cotemporal activity, the predicate becomes tenseless because only a time point posterior to that of the main predicate can be denoted by it. In such clauses, the obviative principle cannot be violated.

(16) John wa [kare ga/Ø sono ziken o kaiketusu-ru noni]
that case solve-pres
zenryoku o sosoi-da
utmost pour-past
'John did his best so that he could solve the case'

In (16), the antecedent of the zero pronoun must be *John* and that of *kare ga* has to be someone other than *John*. It should be noted that the obviation principle is only concerned with SUBJ PRO. The distinction between the +/- PRO disappears when the PRO is not a SUBJ.

(17) John wa [Mary ga kare o/Ø tetudat-te] yatto sigoto o oe-ta
help-ger finall task finish
SUBJ OBJ
'With Mary helping him, John finally finished the task'

In (17), both *kare ga* and the zero pronoun can have *John wa* as their antecedent.

Zec (1986) notes another phenomenon involving anaphoric control. She finds cases of obligatory anaphoric control in Serbo-Croatian, where the control relation is lexically determined but the controlled PRO can be overt.

When the PRO is overt, it has an emphatic reading with the same antecedent as the non-overt PRO. Similar cases exist in Japanese.

(18) John wa Mary ni [kanozyo ga/Ø sono sigoto o suru yooni]
she the job do comp.
SUBJ OBJ2 COMP
susume-ta
advise-past
'John advised Mary to take on the job'

When the controlled PRO is *kanozyo ga* in (18), the reading becomes 'John advised Mary that no other person than she take on the job'. In such COMP clauses, the predicate is considered to be tenseless because its temporal relation with the main predicate is fixed. But it is clear that (18) does not follow the obviation principle, which would predict *John* rather than *Mary* to be the antecedent of the zero pronoun. So, this phenomenon of obligatory anaphoric control constitutes a separate class of anaphoric control.

Bresnan (1982) cites *two* other characteristics of PRO. First, the + U PRO cannot have an antecedent within its minimum clause.

(19) John wa zibun-zisin ga/*Ø zibun no saidai no teki da
oneself self's biggest enemy be
'For John, he himself is self's(=his) biggest enemy'

In (19), the zero pronoun cannot have *John wa* as its antecedent. Similarly, the zero pronoun can only refer to *Bill ga* in(20).

(20) Bill ga [John ga zibun o/Ø nagut-ta to] it-ta
self hit-past comp say-past
'Bill said that John hit self(=Bill, John)/0 (=Bill, *John)'

Second, the + U PRO must be f-commanded by its antecedent. F-commanding is defined as follows.

F-command: For any grammatical functions A and B within the same F-structure, A f-commands B if and only if A does not contain B, and every F-structure which contains A contains B.

According to this condition, we can explain why the zero pronoun in (21) cannot refer to *John*, whereas *kare* can.

(21) [[[John o osie-ta] hito wa] [kare ga/Ø namakemono na node]
teach-past people l lazy be as

OBJ SUBJ
ADJ ADJ
SUBJ
gakkarisi-ta]
disappointed
'People who taught John were disappointed because he was lazy.'

In (21), since *John o* is the OBJ of the ADJ clause, which does not contain the zero pronoun, it cannot f-command the zero pronoun.

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