

Predicate Composition and the Determination of Scope

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Abstract

In this paper we argue that the Japanese causative constructions should be viewed as a complex predicate having two possible c-structure realizations (i.e. a single monoclausal f-structure, and monoclausal and biclausal c-structures). Along with the Optimality Theory architecture, we suggest that the emergence of two c-structures in predicate composition is a consequence of the interactions that regulate the parallel representations of clause structure. The proposed analysis can account for various grammatical phenomena including adverb scope.

1. Introduction

There are two levels of “syntactic structure” in LFG; c-structure and f-structure. The one that is built out of words is c-structure; f-structure consists of abstract attributes (features and functions) and their values. The theory of LFG defines f-structure and c-structure as independent, but mutually constraining levels of representation. This makes it possible for a given sentence to have more than one c-structure realization, as long as well-formedness conditions such as completeness and coherence are met at f-structure (Butt 1995, Bresnan 2001). In this paper, we propose that the Japanese (morphological) causatives be considered as a complex predicate having two possible c-structure realizations (i.e. a single f-structure and multiple c-structures). This enables us to provide a full account for phenomena like adverbial scope that cannot be handled in the traditional LFG (Ishikawa 1985, Matsumoto 1996). We further suggest that the emergence of two constituent structures in complex predication is a consequence of the interactions that regulate the parallel representations of clause structure, assumed in Optimality Theoretic (OT)-LFG (Bresnan 2000).

2. Defining characteristics of complex predicates in LFG

In LFG, Argument Fusion (or Event Fusion) allows a complex a-structure to correspond to a single PRED at f-structure. Once complex predicate formation is defined at a-structure, the algorithm which relates c-structures to f-structures allows both monoclausal and biclausal c-structures to correspond to the f-structure in (1) (For a more detailed discussion, see Alsina 1993 and Butt 1995). Let us look at how the complex-predicate analysis can be applied to Japanese morphological causatives.

e.g., John ga Bill o hashir-ase-ta.
 John Nom Bill Acc run-Caus-Past
 ‘John made Bill run.’

(1) f-structure:

PRED	‘cause-to-run < SUBJ, OBJ>’
SUBJ	[PRED ‘John’]
OBJ	[PRED ‘Bill’]

c-structure:

- i) [Jon ga [Bill o **hashir-]ase-ta] (biclausal c-structure)**
- ii) [Jon ga Bill o [**hasher-ase-ta]] (monoclausal c-structure)**

A-structures are assumed to project skeletal f-structures through lexical mapping principles (Bresnan 2001). Following Butt, Isoda, and Sells (1990), we assume all arguments in upper clause ‘cause’ and the SUBEVENT clause in (2) are mapped onto entities in a simplex f-structure (1).

(2) a-structure:

REL	‘cause < AGENT, PATIENT, SUBEVENT >’
AGENT	[REL ‘John’]
PATIENT	[REL ‘Bill’] <i>i</i>
SUBEVENT	[REL ‘run < AGENT >’ AGENT <i>i</i>]

Based on the notion of the complex-predicate formation, the next section provides evidence to support this view.

3. Syntactic/semantic integrity of Japanese morphological causatives

3.1. Evidence for f-structure monoclausality

F-structure models the internal (or covert) structure of language where grammatical relations are represented. In this subsection, we provide three pieces of evidence in support of functional monoclausality, indicating that the Japanese morphological causative is a complex predicate rather than a control construction which has biclausal f-structures.

-Kata ‘way of-’ nominalization

The *-kata* ‘way’ nominalization supports the monoclausal approach. Suffixation of *kata* creates a nominal meaning “way of”, and can apply to causatives.

- (3) a. kodomo ni hon o yom-ase-ta.
 child Dat book Acc read-Caus-Past
 ‘(I) caused the child read a book’

- b. (?kodomono e no) hon no yom-ase-**kata**
 child Dat Gen book Gen read-Caus-way
 ‘the way to cause (the child) to read a book’

(Long-distance) passivization

It is well-known that causatives of transitive verbs allow passivization of the *-ni* marked phrase (Kuno 1973).

- (4) Sono rinyuu-shoku wa mada dono akachan-ni-mo tabe-sase-**rare**-te inai.
 that baby food Top yet any baby Dat even eat-Caus-Pass Asp-Neg
 ‘The baby food has not yet been given to feed any child.’ (Matsumoto 2000:148)

Semantic scope by shika---na ‘only --- Neg’

The split quantificational phrase *shika-na* must be, in general, in the same clause.

- (5) a. Ken ga kinoo shika Naomi ga ki-ta to iw-anakat-ta.
 Ken Nom yesterday only Naomi Nom come-Past Comp say-Neg-Past.
 ‘It was only yesterday that Ken said Naomi came.’
 b. Ken ga kinoo shika Naomi ga ko-nakat-ta to it-ta.
 Ken Nom yesterday only Naomi Nom come-Neg-Past Comp say-Past
 ‘Ken said that it was only yesterday that Naomi came.’

These structures would look like the following.

- (6) a. Ken ga kinoo **shika** [Naomi ga ki-ta] to iw-**anakat**-ta. (=5a)
 b. Ken ga [kinoo **shika** Naomi ga ko-**nakat**-ta] to it-ta. (=5b)

Consider now the causative pattern.

- (7) Ken ga Naomi ni TV **shika** mi-sase-**nakat**-ta.
 Ken Nom Naomi Dat TV only see-Cause-Neg-Past
 (a) (*Wide scope*) Ken didn’t cause Naomi to watch other things.
 (b) (*Narrow scope*) Ken didn’t cause Naomi to do other things.

The wide-scope reading (7a) is obtained if *shika---nakat* has *mi-sase* ‘cause to see’ within its scope. On the other hand, the narrow scope reading (7b) can only be obtained if *shika --- nakat* is assumed to have only *mi* in its scope. These contrasts can be explained *TV shika mi-sase* is considered to have a ‘biclausal’ structure.

- (8) a. Ken ga Naomi ni TV **shika** [mi]-sase-**nakat**-ta. (= 7a)
 b. Ken ga Naomi ni [TV **shika** mi]-sase-**nakat**-ta. (= 7b)

In the construction shown in (8a) *TV shika* is outside of the inner ‘clause’ headed by *mi* ‘watch’ via Argument Transfer (Grimshaw and Mester 1988). In light of these examples, any

“lexical” account of causatives makes clear how it can deal with such ambiguous scope assignments. Under the assumption that the causative is a single lexical entry, the problem posed by such examples is basically the problem of how to assign “word-internal” scope to a quantified NP that appears external to the lexical causative.¹

3.2. Evidence for c-structure monoclausality

C-structure is the level where the surface syntactic form, including categorial information, word order and phrasal grouping of constituent, is encoded and is expressed through phrase structure rules, such as $S \rightarrow NP, VP$. Concerning constituent (or category) monoclausality of the Japanese causatives, it is quite easy to give evidence (see Manning et al. 1999). We will discuss just a piece of evidence for c-structure monoclausality.

Reduplication

Reduplication process is assumed to be a lexical process (Marantz 1982), which is irrelevant to syntactic and semantic information and is construed so as to respect the morpho-phonological integrity between the stem of the head verb and the causative.

- (9) a. gohan o tabe tabe
 rice Acc eat eat
 ‘eating rice repeatedly’
 b. ?gohan o tabe-sase tabe-sase
 rice Acc eat-Caus eat-Caus
 ‘causing someone to eat rice repeatedly’
 c. *gohan o tabe-sase sase
 rice Acc eat-Caus Caus
 ‘causing someone to eat rice repeatedly’

The LFG conception of “word” is a purely c-structural concept. Not only does the Lexical Integrity Principle say nothing about semantics and phonology, it does not even apply to the functional aspect of syntax. The relations between the smallest element of c-structure (the word), the smallest unit of semantics (the semantic word), and prosodic constituent often described as the “phonological word” will certainly be a question for the theories of correspondence between c-structure and these other modules of the grammar (see Matsumoto 1996).

3.3. Evidence for c-structure biclausality

We provide three pieces of evidence for c-structure biclausality.

Particle intervention

- (10) Sono eiga wa kankyaku o naki **mo** sase-ta shi, warai **mo** sase-ta.
 that movie Top audience Acc cry also Caus-Past and laugh also Caus-Past

¹ The account must predict that a quantified argument of the causative operator, even though there is no syntactic constituent to serve as the basis of that particular scope assignment (see also 3.3).

‘That movie made the audience cry and laugh.’

(Kuroda 1990)

Focus particles such as *wa* ‘at least’, *mo* ‘also’ or *sae* ‘even’ attach to VP not S (Nishiyama and Cho 1998). In that situation, the *su*-‘do’ support takes place in order to support the stranded tense morpheme, as shown in (11).

- (11) a. John ga hon o kai-wa/ mo/ sae shi-ta.
 John Nom book Acc buy-at least/also/even do-Past
 ‘John at least/also/even bought a book.’
 b. *John ga hon o kat-ta-wa/ mo/ sae shi-ta.
 John Nom book Acc buy-Past-at least / also / even do-Past

If we follow the assumption that the causative verb takes the verbal complement rather than sentential complement since the embedded verb lacks the tense marker, we need not to think that the dummy verb *su* ‘do’ get inserted within the VP.²

- (12) Bill ga John ni hon o kai-wa / mo / sae / s-ase-ta.
 Bill Nom John Dat book Acc buy-at least / also / even do-Caus-Past
 ‘Bill made John at least / also / even buy a computer.’

Coordination

- (13) Ken ga Naomi ni TV o mi soshite e o kak-ase-ta.
 Ken Nom Naomi Dat TV Acc see and picture Acc draw-Cause-Past
 ‘Ken made Naomi watch TV and draw a picture.’

The VP *TV o mi* and *e o kak* are presumably conjoined and *sase* is attached to this complex VP; it is not the case that only the second conjunct is to be understood as causativized. That is at least semantically, it is a conjunction of two causatives: “cause to see” and “cause to write”.

Semantic scope by adverbs

² Another evidence for the view that *sase* takes VP complement comes from the impossibility of a reflexive pronoun as the embedded subject slot (see Sells 1996). Compare (i) and (ii). The unavailability of an embedded subject position in (iib) indicates the absence of embedded sentential complement.

- (i) a. Taro wa [tookyo ni iku] tsumori-da.
 Taro Top Toyo to go intend-Cop
 b. Taro_i wa [jibun_i ga tookyo ni iku] tsumori-da.
 Taro Top [self Nom Tokyo to go] intend-Cop
 ‘Taro intends to go to Tokyo.’
 (ii) a. Taro wa [Hanako o hashir-]aseta.
 Taro Top [Hanako Acc run-]caused
 b. ?*Taro_i wa [jibun_i ga Hanako o hashir-]aseta.
 Taro Top [self Nom Hanako Acc run-]caused
 ‘Taro made Hanako run.’

Now let us shift our focus onto discussion of adverb scope. Adverbs in the causative construction can in general be interpreted as modifying either the event denoted by the verb stem or the causation event (e.g., Shibatani 1990). For instance, sentence (14) is ambiguous, and possible syntactic structures are shown in (15).

(14) Noriko ga Masaru ni gakkoo de hashir-ase-ta.
 Noriko Nom Masaru Dat school at run-Caus-Past
 ‘Noriko made Masaru run at school.’

(15)a. [Noriko ga Masaru ni [gakkoo de [hashir-ase]]
 b. [Noriko ga Masaru ni [[gakkoo de hashir]-ase]

The point here is that the ambiguity of adverb scope is attributed to the presence of an embedding structure, i.e. the presence of two sentential domains over which adverbs can take scope. However, scope ambiguity shown in (16)-(18) (taken from Yokota 2004:36; the numbers within the angle brackets correspond (from left to right) to conventional indicators in the literature “OK”, “?”, “??”, “*”, respectively) cannot be accounted for by simply assuming that linear order correlates with adverb scope, nor allowing adverbs to take scope word-internally (see Manning et al. 1999). Pay special attention to the position and interpretation of adverbs underlined in the examples below.

(16) a. Ken ga Naomi o damatte suwar-ase-ta.
 Ken Nom Naomi Acc silently sit-Caus-Past
 (i) ‘Ken silently made Naomi sit.’ <17, 4, 1, 0>
 (ii) ‘Ken made Naomi silently.’ <11, 6, 4, 1>

b. Damate Ken ga Naomi o suwar-ase-ta.
 (i) ‘Ken silently made Naomi sit.’ <15, 5, 2, 0>
 (ii) ‘Ken made Naomi sit silently.’ <0, 2, 9, 11>

(17) a. Ken ga Naomi ni eigo o yukkurito hanas-ase-ta.
 Ken Nom Naomi Dat English Acc fluently speak-Caus-Past
 (i) ‘Ken slowly made Naomi speak English.’ <12, 6, 3, 1>
 (ii) ‘Ken made Naomi speak English slowly.’ <11, 7, 4, 0>

b. Yukkurito Ken ga Naomi-ni eigo o hanas-ase-ta.
 (i) ‘Ken slowly made speak English.’ <13, 7, 2, 0>
 (ii) ‘Ken made Naomi speak English slowly.’ <10, 5, 5, 2>

(18) a. Ken ga Jiroo o oomatade aruk-ase-ta.
 Ken Nom Jiro Acc with strides walk-Caus-Past
 (i) ‘Ken made Jiro walk, with vigorous stride.’ <2, 1, 11, 8>
 (ii) ‘Ken made Jiro walk with vigorous stride’ <15, 6, 1, 0>

b. Oomatade Ken ga Jiroo o aruk-ase-ta.
 (i) ‘Ken made Jiro walk, with vigorous stride.’ <3, 2, 9, 8>
 (ii) ‘Ken made Jiro walk with vigorous stride.’ <10, 7, 4, 1>

What is remarkable is that in (16b) and (18b), unlike (17b), expected semantic scope ambiguities do not arise. The differences cannot be accounted for nicely only by assuming that linear order correlates with adverbial scope. Lexical semantic considerations for a given

adverb class on the whole correlates with more restricted distribution and its interpretation. However, the above data suggest that the lexical semantic account discussed above is insufficient to handle these facts correctly. The next step will be to spell out decisive factors of licensing of each adverb in those examples. Further research is required to provide a full account of scrambling and related scope phenomena, it appears that (certain types of) adverbs can be long-distance scrambled. Syntactically speaking, such adverbs should be treated as a functor taking a verb phrase as argument. Syntactic component of the grammar does not necessarily prescribe exactly a position for an adjunct. Rather Japanese adverbs, mostly regarded as adjuncts, can be base-generated and scrambled in different positions as long as the relevant semantic (and pragmatic) constraints are satisfied.

4. Parallel c-structures in Japanese causatives

Finally, we would like to discuss the validity of an argument for a complex-predicate construction defined in LFG (see section 2) having more than one c-structure. that the case at issue involves the predicate with a single f-structure representation where two c-structures emerge as equally optimal under relevant constraint evaluation using Optimality-Theoretic LFG (see Bresnan 2000, Broadwell 2003). In OT-LFG, the constraint operates on the mapping from f-structure to c-structure. We assume that the appearance of parallel structures in Japanese is a result of overlapping strength between the constraint favoring “LCS - c-structure” relation as in (19) and the constraint favoring “f-structure - c-structure” relation as in (20).

(19) LCS (Event) = C-STR(Constit)

Lexical-Conceptual Structure Events are in a one-to-one correspondence with c-structure constituents. → biclausal c-structure

(20) F-STR (Nucleus) = C-STR(Constit)

F-structure nuclei are in a one-to-one correspondence with c-structure constituents. → monoclausal c-structure

In a language like Japanese where these two constraints might have overlapping strength, we predict that both monoclausal and biclausal structures would be optimal for complex-predicate construction like causatives, and in any particular case would be dependent on the relative strength of the two constraints at instantiation.

5. Conclusion

In this paper we have shown that Japanese causative constructions be viewed as a complex predicate allowing monoclausal and biclausal c-structures. It is hypothesized that the realization of two c-structures is a consequence of the interactions that regulate the parallel representations of clause structure. Differences in scope interpretation of the causative constructions in Japanese then follow from the existence of multiple constituent structures in Japanese.

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