You Can't Unscramble an Egg

It is widely believed among linguists working on Japanese syntax that a scrambled phrase can be reconstructed totally, or reconstructed without leaving any trace/copy in its scrambled position, in Japanese. This peculiar property of Japanese scrambling has attracted much attention, but, to the best of my knowledge, no serious effort has been made to find empirical evidence that the reconstruction which scrambling undergoes must be total, rather than partial (although there used to be a conceptual reason to assume so (Saito 1989)). The aim of this presentation is to argue that it is not total reconstruction but partial reconstruction that scrambling can undergo: namely, reconstruction of a scrambled phrase leaves something behind. What sheds light on the issue of what kind of reconstruction scrambling man undergo is the behavior of this operation with respect to the Coordinate Structure Constraint (CSC).

It has recently been argued that the CSC is to be best viewed as a condition on LF representations, rather than a condition on movement (Fox 2000, Lin 2001, Ruys 1993). Here I assume that under the LF representational view, CSC effects are derived from the two assumptions in (1) (adapted from Fox 2000). Let us consider how the grammaticality of (2a) and (2b) are explained under this approach. According to (1b), the two component structures (CSs) of (2a) are as in (3). In (3b), the ban on vacuous quantification (BVQ) is violated; hence the unacceptability of (2a). The CSs of (2b) are as in (4), and neither of them violates any grammatical constraints; hence the acceptability of the example.

There are some cases in which a non-ATB movement occurs but no CSC effect is detected, and these cases potentially support the representational view of the CSC because they can never be dealt with by the CSC as a condition on movement (see the references cited above). We can find a different sort of evidence in favor of the representational CSC in Japanese topic and relative constructions. The examples in (5) show that these constructions exhibit CSC effects (cf. Tamori 1976/7, Tokashiki 1989) (The tense morpheme is assumed to be generated under the head of IP/TP (Takano 2004)). However, there are several reasons to believe that Japanese topicalization and relativization do not involve movement (cf., e.g., Kuno 1973, Murasugi 1991, 2000). For example, Japanese topic and relative constructions do not exhibit subjacency effects (6) or reconstruction effects (7). These and other observations lead us to assume that the only licensing condition on those constructions is that an "aboutness" relation should hold between the topic phrase/relative head and the rest of the construction (Kuno 1973) and that a gap in those constructions is a *pro* (Perlmutter 1972). If no movement is involved in Japanese topicalization or relativization, however, the CSC as a condition on movement cannot capture the CSC effects seen in (5). In contrast, the representational CSC can explain them. For example, one of the CSs of (5a) is like (8), where no aboutness relation holds between the topic and the rest of the sentence.

Once the LF nature of the CSC is established, we can make an interesting prediction about the reconstruction property of Japanese scrambling: if this operation can undergo total reconstruction, it should not exhibit CSC effects. The examples in (9) shows that this prediction is not born out. If the scrambled phrase in (9a) could be totally reconstructed, the CSs of the example would be as in (10), where no grammatical constraints are violated. Thus, the conclusion which emerges is that scrambling cannot undergo total reconstruction. I claim that the type of reconstruction available to scrambling is partial reconstruction, hypothesizing that some features (e.g., binding and scope features) can be reconstructed, or deleted in the moved positions at LF, while others (e.g., phi- and categorial features) cannot. Under this hypothesis, if *Hanako-o* in (9a) undergoes reconstruction, one of the CSs of this example should be something like (11), where some of the features of *Hanako-o* are deleted from the higher copy, but this copy still holds at least the phi- and categorial features. Assuming that phi- and categorial features of an NP are enough to ensure this NP's status as an argument, the Theta-Criterion is violated in (11), so that the unacceptability of (9a) is explained.

To sum up, it is argued in this presentation that Japanese scrambling cannot undergo total reconstruction, although it is widely believed to be able to do so.

(1) a. A sentence with a coordinate structure is well-formed only if each of its component structures independently satisfies grammatical constraints.
b. Component structures of a sentence with a coordinate structure $=_{def}$ structures each of which is composed of one of the coordinates together with the material above the coordinate structure

(2) a. *What did Mary [send *t* on Monday] and [receive the parcel on Wednesday]?
b. What did Mary [send *t* on Monday] and [receive *t* on Wednesday]?

(3) a. what did Mary send *t* on Monday b. what did Mary receive the parcel on Wednesday

(4) a. what did Mary send *t* on Monday b. what did Mary receive *t* on Wednesday

(5) a. *Taroo$_i$-wa [Yamada kyoozyu-ga [$_{VP}$ e_i home] & [$_{VP}$ Hanako-o sikat] -ta].
T.-Top Y. prof.-Nom praise H-Acc scolded Past
'Speaking of Taroo, Prof. Yamada praised him and scolded Hanako.'
b. *[Yamada kyoozyu-ga [$_{VP}$ e_i home] & [$_{VP}$ Hanako-o sikat] -ta] gakusei$_i$
Y. prof.-Nom praise H.-Acc scolded Past student
'the student who Prof. Yamada praised and scolded Hanako'

(6) a. Sono hito$_i$-wa [$_{adjunct}$ e_i sinda noni] dare-mo kanasimanakatta.
that person-Top died although anyone saddened-not-was
'Speaking of that person, no one was saddened although he died.'
b. [[$_{adjunct}$ e_i sinda noni] dare-mo kanasimanakatta] hito$_i$
died although anyone saddened-not-was person
'the person who no one was saddened although he died'

(7) a. *[Sono zibun$_i$ nituite-no hon]$_j$-wa John$_i$-ga e_j suteta.
that self about-Gen book-Top J.-Nom threw-away
'Speaking of the book about himself$_i$, John$_i$ threw it away.'
b. *[John$_i$-ga e_j taipu-sita] zibun$_i$-no ronbun$_j$
J.-Nom typed self-Gen paper
'the paper of himself$_i$ that John$_i$ typed'

(8) Taroo$_i$-wa[Yamada kyoozyu-ga [Hanako-o sikat] -ta]
'Speaking of Taroo, Prof. Yamada scolded Hanako.'

(9) a. *Hanako-o$_i$ [Yamada kyoozyu-ga [$_{VP}$ Taroo-o home] & [$_{VP}$ t_i sikat] -ta].
H.-Acc [Y. prof.-Nom T.-Acc praise scolded Past
'Hanako, Prof. Yamada praised Taroo and scolded.'
b. *Hanako-o$_i$ [John-wa [$_{VP}$ [$_{CP}$ Yamada kyoozyu-ga Taroo-o hometa to] ii] &
H.-Acc J.-Top Y. prof.-Nom T.-Acc praised C say
[$_{VP}$ [$_{CP}$ Tanaka kyoozuu-ga t_i sikatta to] omot] -ta].
T. prof.-Nom scolded C thought Past
'Hanako, John said that Prof. Yamada praised Taroo and thought that Prof. Tanaka scolded.'

(10) a. Yamada kyoozyu-ga [Taroo-o home] -ta b. Yamada kyoozyu-ga [Hanako-o sikat] -ta
'Prof. Yamada praised Taroo.' 'Prof. Yamada scolded Hanako.'

(11) Hanako-o Yamada kyoozyu-ga [Taroo-o home] -ta
{φ,N,~~F$_x$~~,~~F$_y$~~,…}

Selected References

[1] Lin, V. 2001. A way to undo A-movement. In *Proceedings of WCCFL 20*. [2] Tamori, I. 1976/7. The semantics and syntax of the Japanese gerundive and infinitive conjunctions. *Papers in Japanese Linguistics* 5: 307-360. [3] Tokashiki, K. 1989. On Japanese coordination structures: An investigation of structural differences between the *–te* form and *–i* form. MA thesis, The Ohio State University, Columbus.