

**Scrambling out of a control clause in Japanese:  
An argument against the Movement Theory of Control  
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The main aim of this paper is to provide a set of data which is problematic for the movement theory of control (MTC) where claims that the distribution of Obligatory Control (OC) PRO is assimilated to that of NP-traces (cf., e.g., Hornstein 1999, 2003, Boeckx and Hornstein 2003) and propose an alternative analysis of control, an Equi NP Deletion analysis.

Takano (2009) argues that scrambling out of an OC clause in Japanese reveals interesting asymmetries in binding effects that have previously been unnoticed. Consider (1), in which control clauses are involved and hence subject positions in the embedded clauses are occupied by null subjects, PROs. PROs are obligatory controlled by the matrix indirect object, and the sentence-initial quantificational phrase (QP), which undergoes scrambling from the embedded clause, can bind the bound pronoun in the matrix clause, in (1a) but not in (1b). Surprisingly, (1b) does not allow the bound variable reading, although a c-commanding condition on variable binding seems to be satisfied. From this contrast, the generalization Takano draws is that scrambling out of a control clause allows variable binding only if the bound pronoun is contained in the controller as in (1a). Takano proposes to capture this generalization based on the assumptions as in (2). Takano's proposal shows that (1) is derived as in (3). Under MTC, the controller originates from the subject of the embedded clause as in (3a) and checks a  $\theta$ -role feature of the embedded verb. In the first step as in (3b), the embedded object QP scrambles to a position at which the QP c-commands the controller. The second operation is movement of the controller to the matrix clause to check a  $\theta$ -role feature of the matrix verb, as in (3c). Finally, as in (3d) the QP scrambles to the sentence-initial position. The important step for a bound variable interpretation is (3b). (3b) shows clause-internal scrambling which produces new binding relations. Since in (1a) the controller contains the bound pronoun, the bound variable reading is allowed. In contrast, this step has no effects on binding in (1b), where the bound pronoun is not contained in the controller. In addition, the sentence-initial QP in (3d) cannot bind the bound pronoun in the matrix clause because scrambling out of a control clause fails to produce new binding relations. What is crucial is that a controller originates from the embedded clause.

Fujii (2006) argues that split control is allowed in Japanese, and proposes the analysis for it with appealing to MTC. The ban on split control has been considered to be a diagnostic property of OC (cf., e.g., Hornstein 2003), but it is allowed in Japanese when embedded clauses contain the exhortative particle *-(y)oo* as seen in (4). (4) involves OC, where the null subject in the embedded clause is controlled by both the matrix subject and the matrix indirect object. Under MTC, as seen in (5),  $NP_j$  and  $NP_k$  are conjoined, and the conjoined element is in [spec,MoodP]. One of the conjuncts ( $NP_k$ ) then moves to the indirect object position of the matrix clause to check a  $\theta$ -role feature of *V* pied-piping the other conjunct ( $NP_j$ ), and finally ( $NP_j$ ) moves to [spec,vP] to check the external  $\theta$ -role feature of *v*. Fujii's proposal is the only analysis for split control in Japanese, which is currently proposed.

Takano does not discuss split control. Consider (6). The null subject in the embedded control clause is controlled by both the matrix subject and the matrix indirect object. While in (6) a variable binding reading between the QP and the bound pronoun is not allowed, Takano's theory predicts wrongly that a variable binding reading is possible. Under Fujii's analysis of split control, the derivation of (6) proceeds as shown in (7). The controller originates from the subject of the embedded clause as in (7a). In (7b), the embedded object QP scrambles to a position at which the QP c-commands the controller. One of the controllers,  $NP_j$ , contains the bound pronoun in (6), and hence the QP can bind the bound pronoun unexpectedly. The data which I examined above leads to the fact that MTC is problematic.

Alternatively, I propose that this problem can be explained under the view that control involves Equi. It is an operation which deletes a coreferent subject of an embedded complement in the course of derivation. I adopt the assumptions as in (8), and then argue that an Equi analysis can provide an explanation for the problematic data above. Under this analysis of control, the derivation of (6) proceeds as in (9). In (9a), the subject in the embedded clause stays overtly, and in the case of (6), both subjects in the matrix and the embedded clauses contain the bound pronoun, which has to be c-commanded by the QP. In the step of (9b), the QP scrambles over the bound pronoun, and therefore this scrambling produces new binding relations. Then a variable binding reading is successfully allowed in the embedded subject. In contrast, it is not allowed in the matrix subject. The crucial step is (9c) where the QP scrambles over the indirect object. In the case of (6), since the indirect object does not include the element which has any effects on binding, this scrambling fails to produce new binding relations. The assumption (8i) indicates that once the QP fails to produce new binding relations, it never produces them afterwards. Thus in (9d), the QP cannot bind the bound pronoun in the matrix subject. Finally, based on the argument that the ellipsis site can have split antecedents, as argued by Elbourne (2008), the subject in the embedded clause is deleted as in (9e).

To sum up, the empirical evidence provided in this paper indicates that MTC is problematic and I propose an alternative analysis of control, an Equi NP Deletion analysis.

- (1)a. [Mittu-izyoo-no daigaku]<sub>i</sub>-ni]<sub>1</sub> Ken-ga [soko<sub>i</sub>-no sotugyoosei]<sub>j</sub>-ni  
 three or more-GEN university-DAT Ken-NOM it-GEN graduate-DAT  
 [<sub>IP</sub>PRO<sub>j</sub> t<sub>1</sub> syutugansuru yoo(ni)] susumeta  
 apply C recommended  
 ‘Ken recommended [their<sub>i</sub> graduates]<sub>j</sub> [<sub>IP</sub>PRO<sub>j</sub> to apply to [three or more universities]<sub>i</sub>].’  
 b. \*[Mittu-izyoo-no daigaku]<sub>i</sub>-ni]<sub>1</sub> [soko<sub>i</sub>-no sotugyoosei]-ga Ken<sub>j</sub>-ni  
 three or more-GEN university-DAT it-GEN graduate-NOM Ken-DAT  
 [<sub>IP</sub>PRO<sub>j</sub> t<sub>1</sub> syutugansuru yoo(ni)] susumeta  
 apply C recommended  
 ‘Their<sub>i</sub> graduates recommended Ken<sub>j</sub> [<sub>IP</sub>PRO<sub>j</sub> to apply to [three or more universities]<sub>i</sub>].’  
 (Takano 2009; the indexes are original)
- (2) (i) Scrambling out of a control clause, like scrambling out of a finite clause, fails to produce new binding relations.  
 (ii) OC is derived by MTC.  
 (iii) Long distance scrambling is composed of shorter scramblings.
- (3) a. SUBJ [<sub>IP</sub> CONTROLLER QP V] V → b. SUBJ [<sub>IP</sub> QP CONTROLLER t<sub>QP</sub> V] V  
 → c. SUBJ CONTROLLER [<sub>IP</sub> QP t<sub>CONTROLLER</sub> t<sub>QP</sub> V] V  
 → d. QP SUBJ CONTROLLER [<sub>IP</sub> t<sub>QP</sub> t<sub>CONTROLLER</sub> t<sub>QP</sub> V] V
- (4) John<sub>j</sub>-wa Bill<sub>k</sub>-ni [<sub>IP</sub>PRO<sub>j+k</sub> otagai -no kao-o sikame -yoo -to] itta  
 John-TOP Bill-DAT each other-GEN face-ACC screw up exhortative YOO C ] said  
 lit. ‘John<sub>j</sub> said to Bill<sub>k</sub> [PRO<sub>j+k</sub> to screw up their face].’  
 = ‘John said to Bill: “Let’s screw up our own face.”’ (Fujii 2006)
- (5) [<sub>VP</sub> NP<sub>j</sub> [<sub>VP</sub> NP<sub>k</sub>(+NP<sub>j</sub><sub>(pied-piping)</sub>) [<sub>CP</sub> [<sub>MoodP</sub> NP<sub>j</sub>+NP<sub>k</sub> V (y)oo] C°] V]v]  
 ↑ ↑  
 (Fujii 2006)
- (6) \*[Mittu-izyoo-no daigaku]<sub>i</sub>-ni]<sub>1</sub> [soko<sub>i</sub>-no sotugyoosei]<sub>j</sub>-ga  
 three or more-GEN university-DAT it-GEN graduate-NOM  
 [Ken]<sub>k</sub>-ni [<sub>IP</sub>PRO<sub>j+k</sub> t<sub>1</sub> syutugansi- yoo-to] susumeta  
 Ken-DAT apply exhortative YOO C recommended  
 lit. ‘[Their<sub>i</sub> graduates]<sub>j</sub> recommended Ken<sub>k</sub> [<sub>IP</sub>PRO<sub>j+k</sub> to apply to [three or more universities]<sub>i</sub>].’  
 = ‘Their<sub>i</sub> graduates recommended Ken: “Let’s apply to [three or more universities]<sub>i</sub>.”’
- (7) a. [<sub>CP</sub>[<sub>MoodP</sub> NP<sub>j</sub>+NP<sub>k</sub> QP V (y)oo] C°] V → b. [<sub>CP</sub>[<sub>MoodP</sub> QP NP<sub>j</sub>+NP<sub>k</sub> t<sub>QP</sub> V (y)oo] C°] V]  
 → c. [<sub>VP</sub> NP<sub>k</sub>(+NP<sub>j</sub><sub>(pied-piping)</sub>) [<sub>CP</sub>[<sub>MoodP</sub> QP t<sub>NPj</sub>+t<sub>NPk</sub> t<sub>QP</sub> V(y)oo] C°] V]  
 → d. [<sub>VP</sub> NP<sub>j</sub> [<sub>VP</sub> NP<sub>k</sub>+t<sub>NPj</sub> [<sub>CP</sub>[<sub>MoodP</sub> QP t<sub>NPj</sub>+t<sub>NPk</sub> t<sub>QP</sub> V (y)oo] C°] V] v]  
 → e. QP[<sub>VP</sub> NP<sub>j</sub> [<sub>VP</sub> NP<sub>k</sub>+t<sub>NPj</sub> [<sub>CP</sub>[<sub>MoodP</sub> t<sub>QP</sub> t<sub>NPj</sub>+t<sub>NPk</sub> t<sub>QP</sub> V (y)oo] C°] V] v]
- (8) (i) Scrambling generally fails to produce new binding relations, that is, it is A’-scrambling. It can produce new binding relations only if the QP undergoes scrambling over elements which can have effects on binding, such as a bound pronoun.  
 (This originally follows from Saito (2003, 2005) in which movement chains are interpreted cyclically by means of deletion of features. Saito proposes that when the feature for binding is retained in the head of the chain, new binding relations are produced, and that once the feature is deleted in the head of the chain, it keeps being deleted afterwards.)  
 (ii) Long-distance scrambling is composed of shorter scramblings, and it is possible to put the scrambled phrase between a subject and an indirect object.
- (9) a. SUBJ<sub>j</sub> IO<sub>k</sub> [<sub>IP</sub> SUBJ<sub>j+k</sub> QP V]V → b. SUBJ<sub>j</sub> IO<sub>k</sub> [<sub>IP</sub> QP SUBJ<sub>j+k</sub> t<sub>QP</sub> V]V  
 → c. SUBJ<sub>j</sub> QP IO<sub>k</sub> [<sub>IP</sub> t<sub>QP</sub> SUBJ<sub>j+k</sub> t<sub>QP</sub> V]V → d. QP SUBJ<sub>j</sub> t<sub>QP</sub> IO<sub>k</sub> [<sub>IP</sub> t<sub>QP</sub> SUBJ<sub>j+k</sub> t<sub>QP</sub> V]V  
 → e. QP SUBJ<sub>j</sub> t<sub>QP</sub> IO<sub>k</sub> [<sub>IP</sub> t<sub>QP</sub> ~~SUBJ<sub>j+k</sub>~~ t<sub>QP</sub> V]V

## Selected References

- [1]Boeckx, Cedric and Norbert Hornstein. 2003. Reply to “Control is not movement”. *Linguistic Inquiry* 34, 269-280. [2]Elbourne, Paul. 2008. Ellipsis Sites as Definite Descriptions. *Linguistic Inquiry* 39, 191-220. [3]Fujii, Tomohiro. 2006. Some Theoretical Issues in Japanese Control. Doctoral dissertation, University of Maryland. [4]Hornstein, Norbert. 1999. Movement and Control. *Linguistic Inquiry* 30, 69-96. [5]Saito, Mamoru. 2003. A Derivational Approach to the Interpretation of Scrambling Chains. *Lingua* 113, 481-518. [6]Takano, Yuji. 2009. Scrambling and the Nature of Movement. *Nanzan Linguistics* 5, 75-104.