# A Reconsideration of Scrambling out of Control Clauses*

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## 1 Introduction

Many researchers have been studying the properties of scrambling, but there are still many mysteries surrounding it (e.g. Saito 1992, Yoshimura 1992, Takano 2010, Yoshimura 2017). This study focuses on scrambling out of control clauses; I scrutinize the controversial status of scrambling out of control clauses regarding weak-crossover effects. It will be shown that weak-crossover effects are not seen in scrambling out of control clauses. I then reconsider the analyses with phase theory.

## 2 Previous Approaches

It is maintained that scrambling out of finite clauses has different characteristics from scrambling out of control clauses (e.g. Nemoto 1993, Goto 2017). Let us first consider scrambling out of finite

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clauses; it is argued to have A′-properties because it provokes weak-crossover effects, as shown in (1).[1]

(1) a. *Mitu-izyoo-no daigaku$_i$-ni soko$_i$-no
three-or.more-GEN university-DAT it-GEN
sotugyoosei-ga Aya-ni [Ken-ga syutugansita to] itta.
graduate-NOM Aya-DAT Ken-NOM applied that told
'Their graduates told Aya that Ken applied to three or more universities.'
(cf. Takano 2009: 77)

b. *Mitu-izyoo-no kaisya$_i$-o soko$_i$-no syain-ga
three-or.more-GEN company-ACC it GEN employee-NOM
Aya-ni [Ken-ga tyoosasita to] itta.
Aya-DAT Ken-NOM investigated that told
'Their employees told Aya that Ken investigated three or more companies.'
(cf. Takano 2009: 77)

As indicated in (1a–b), scrambling out of finite clauses seems to provoke weak-crossover effects. In contrast, it is argued that scrambling out of control clauses behaves differently (e.g. Nemoto 1993): The former seems to not provoke weak-crossover effects as in (2a–b).[2]

(2) a. Mitu-izyoo-no daigaku$_i$-ni soko$_i$-no sotugyoosei-ga
Three-or.more-GEN university-DAT it-GEN graduate-NOM
[syutugansi-yoo to] sita.
apply-will that did
'Their graduates tried to apply to three or more universities.' (cf. Takano 2010: 86)

b. Mitu-izyoo-no kaisya$_i$-o soko$_i$-no syain-ga
three-or.more-GEN company-ACC it-NOM employee-NOM
[tyoosasi-yoo to] sita.
investigate-will that did
'Their employees tried to investigate three or more companies.' (cf. Takano 2010: 86)

From data like (2a–b), it is considered that control clauses do not provoke weak-crossover effects (e.g. see Nemoto 1993 for original examples). However, Takano (2010) argues against Nemoto's (1993) idea by presenting additional data such as the following:

(3) a. ?*Mitu-izyoo-no daigaku$_i$-ni soko$_i$-no sotugyoosei-ga
three-or.more-GEN university-DAT it-GEN graduate-NOM

[1] In this paper, I utilize the Kunrei system of romanization (e.g., see https://lazesoftware.com/en/tool/kunrei/).
[2] Similar examples in (3a–b) are grammatical in Uchibori (2000). See Takano (2010: 89, Footnote 5) for a discussion.

Ken-ni [syutugansuru yoo(ni)] susumeta.
Ken-DAT apply COMP recommended
'Their graduates recommended to Ken that he apply to three or more universities.'
(cf. Takano 2010: 88)

b. ?*Mitu-izyoo-no kaisya$_i$-o soko$_i$-no syain-ga
three-or.more-GEN company-GEN it-GEN employee-NOM
Ken-ni [tyoosasuru yoo(ni)] iraisita.
Ken-DAT investigate COMP asked
'Their employees asked Ken to investigate three or more companies.'
(cf. Takano 2010: 88)

With this type of data, Takano (2010) puts forth the revised generalization as in (4).[3]

(4) Scrambling out of a control clause makes variable binding possible only if the pronominal is contained in the controller. (Takano 2010: 91)

Moreover, there are other types of generalizations proposed in the literature (see also Yoshimoto 2012, Goto 2014: 135, among others):

(5) Generalization on A-scrambling in Japanese
In Japanese, scrambling can feed A-binding only when scrambling takes place within a clause or out of a clause whose subject is null. (Goto 2017: 22)

(6) Nemoto's (1993) generalization (from Takano 2010; see also Yoshimoto 2012)
Scrambling out of a control clause patterns with clause-internal scrambling.
(Takano 2010: 88)

This paper further clarifies the status of scrambling out of control clauses with more data on weak-crossover effects.

## 3 Scrambling out of Finite Clauses and Previous Analyses

In this section, I discuss the argument that scrambling out of finite clauses (long-distance scrambling; LDS) does not provoke weak-crossover effects. In the literature, the properties of LDS are controversial: While some argue that LDS does provoke weak-crossover effects, others claim that it does not (see Saito 1992, Yoshimura 1992, Takano 2009, 2010, Goto 2017, among others). For example, Takano (2009: 77) argues that the following examples provoke weak-crossover effects:

(7) a. *Mitu-izyoo-no daigaku$_i$-ni soko$_i$-no
three-or.more-GEN university-DAT it-GEN

[3] With this generalization, Takano (2010) analyzes scrambling out of control clauses under the movement account of control (e.g. Hornstein 1999).

sotugyoosei-ga Aya-ni [Ken-ga syutugansita to] itta.
graduate-NOM Aya-DAT Ken-NOM applied that told
'Their graduates told Aya that Ken applied to three or more universities.'
(cf. Takano 2009: 77)

b. *Mitu-izyoo-no kaisya$_i$-o soko$_i$-no syain-ga
three-or.more-GEN company-ACC it-GEN employee-NOM
Aya-ni [Ken-ga tyoosasita to] itta.
Aya-DAT Ken-NOM investigated that told
'Their employees told Aya that Ken investigated three or more companies.'
(cf. Takano 2009: 77)

Based on Yoshimura (1992), among others, Sakumoto (2024a) argues that LDS does not provoke weak-crossover effects for many informants using data such as (8a–b), and that the alleged ungrammaticality of (7a–b) is provoked by different types of factors (cf. Saito 1992, Otsu 1994, Yoshimoto 2012, Goto 2014, 2017, Sakumoto 2023a and the references therein).[4]

(8) a. Mitu-izyoo-no daigaku$_i$-ni soko$_i$-no
three-or.more-GEN university-DAT it-GEN
zaigakusei-ga zibunno-kouhai-mo syutugansuru to
enrolled student-NOM self's junior-also apply that
itta
apply
'The enrolled students said that their own juniors also apply to three or more universities.'

b. Mitu-izyoo-no kaisya$_i$-o soko$_i$-no syain-ga
three-or.more-GEN company-ACC it-GEN employee-NOM
[keisatsu-ga tyoosasita to] itta.
police-NOM investigated that told
'Their employees said that the police investigated three or more companies.'

It is also argued that discourse is related to the naturalness of scrambling (see Otsu 1994 and the references therein). As Yoshimoto (2012: 184) claims: 'The complexity of the sentences makes the bound variable reading difficult to obtain.'

[4] Sakumoto (2024a) investigates the grammaticality of (8a, b) with informants. (8a): OK [10], ? [1], ?? [2], *[1] out of 14 informants. (8b): OK [10], ? [1], ?? [2], * [0] out of 13 informants. As for control, Sakumoto (2024a) argues the following:

(i) If scrambling out of finite clauses is A-movement, as discussed in this paper, the previous analyses focusing on the similarity or differences of scrambling between finite clauses and control clauses must be reconsidered, and the grammaticality and other factors should be more deeply investigated (see e.g. Nemoto 1993, Takano 2009, among others, for the differences and similarities). (Sakumoto 2024a: 220)

## 4 Data

Based on Sakumoto (2024a) and the references therein, this paper shows that scrambling out of control clauses does not provoke weak-crossover effects. Consider the following data (cf. Saito 1992, based on Yoshimura 1988, Nemoto 1993, Uchibori 2000, Takano 2009, 2010, Sakumoto 2024a).

(9) a. Mitu-izyoo-no daigaku$_i$-ni soko$_i$-no sotugyoosei-ga
three-or.more-GEN university-DAT it-GEN graduate-NOM
Ken-ni [kifusuru yoo(ni)] susumeta.
Ken-DAT donate COMP recommended

b. Mitu-izyoo-no kaisya$_i$-o soko$_i$-no syain-ga
three-or.more-GEN company-ACC it-GEN employee-NOM
pawahara-iinkai-ni [tyoosasuru yoo(ni)] iraisita.
power-harassment-committee investigate COMP asked
'Their employees asked the power-harassment committee to investigate three or more companies.'[5]

(10) a. Grammaticality of (9a): OK [11], ? [2], ?? [1], * [0] (out of 14)
b. Grammaticality of (9b): OK [12], ? [1], ?? [1], * [0] (out of 14)

(11) a. Dono kaisya$_i$-o soko$_i$-no syain-ga
which company-ACC it-GEN employee-NOM
pawahara-iinkai-ni tyoosasuru yoo(ni)
power-harassment-committee-DAT investigate COMP
iraisita no?
asked Q
'The employees of which company asked the power-harassment committee to investigate?'

b. Dono daigaku$_i$-ni soko$_i$-no zaigakusei-ga sotugyoosei-ni
which company-ACC it-GEN student-NOM students-DAT
kifusuru yoo(ni) susumeta no?
donate COMP recommended Q
'The graduates of which university recommended students donate to it?'

(12) a. Grammaticality of (11a): OK [10], ? [2], ?? [0], * [2] (out of 14)
b. Grammaticality of (11b): OK [10], ? [2], ?? [0], * [2] (out of 14)

As shown by these data, scrambling out of control clauses does not cause any ungrammaticality for many speakers, even though these examples should be impossible under Takano's (2010) gen-

[5] The one informant who gave an 'OK' response thought that (9a) would be grammatical with context.

eralization. The data shown here suggest that weak-crossover effects are not provoked by scrambling out of control clauses in principle. Therefore, it can be argued that scrambling out of finite and control clauses does not provoke weak crossover effects, for which is originally advocated by Nemoto (1993) (cf. Uchibori 2000, Yoshimoto 2012, Goto 2017, Takano 2010, among others).

## 5 Analysis and Discussion

Let us then consider the analysis of scrambling out of control clauses. It is suggested that the lack of weak-crossover effects is explained by the idea of phases (e.g. Saito 2017a, Yoshimoto 2012). Movement to the CP spec position (i.e. phase edges) is assumed to render scrambling A′-movement (e.g. Saito 2017a, Yoshimoto 2012, Goto 2017). If the embedded CP is a phase, movement must move to its edge position because of the Phase Impenetrability Condition (henceforth, PIC; see Chomsky 2000, 2001):

(13) Phase-Impenetrability Condition (PIC)
In phase α with Head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations. (Chomsky 2000: 108)

Therefore, if the embedded C is a phase head, scrambling becomes A′-movement, as argued by Goto (2017), among others.

(14) [enu tayhak$_j$-ey [[$_{NP}$ [$_{CP}$ $e_i$ sip nyen ceney keki$_j$-eyse
which university ten year ago there-at
kongpwuhan] salam]$_i$-i [$_{CP}$ Mary-ka olhay $t_j$ tulekassta-ko]
studied person-NOM Mary-NOM this year entered COMP
malhayss-ni?
said-Q
'Which university$_j$ did the person who studied there$_j$ ten years ago say that Mary entered $t_j$ this year? (cf. Yoshimura 1992: 181)

Based on Chomsky (2001), Kanno (2008), Saito (2017a, 2017b), and Sakumoto (2023a, 2023b), among others, Sakumoto (2024a) explains the absence of weak-crossover effects in scrambling out of finite clauses by arguing that Korean and Japanese lack phases because of the lack of unvalued phi features (cf. Park 2018, among others). Furthermore, the Korean counterpart of (9a) in Japanese is grammatical (Kyomi You p.c.). Therefore, scrambling out of finite and control clauses does not provoke weak-crossover effects in Korean. This can be explained if we assume that finite C and control C are not phases in Korean, too (see/cf. Saito 2017a, Sakumoto 2023b, 2024a, 2024b). Let us then consider Hindi, which is considered to have agreement (e.g. Yoshimura 1993). It is observed that scrambling out of control clauses does not provoke weak-crossover effects in Japanese (Nemoto 1993: 45, Takano 2009: 78, citing Mahajan 1989), but scrambling out of finite clauses in Hindi does, as suggested in (15).[6]

[6] It can be assumed finite C is a phase in Hindi (see e.g. Keine 2017, Sakumoto 2024a).

(15) *kis-ko$_i$ uskii$_i$ bahin-ne socaa [$_{CP}$ ki raam-ne $t_i$
who his sister thought that Ram
dekhaa thaa]?
seen be-past
'Who$_i$, did his$_i$ sister think that Ram had seen $t_i$?'
(cf. Mahajan 1990: 39, Saito 1992: 108)

Therefore, the idea that unvalued phi features (or Agree features) affect determination of the property of scrambling is strengthened (Yoshimura 1992, Sakumoto 2023a, 2024a, among others; cf. Kanno 2008, Saito 2017a, Goto 2017).

## 6 Further Discussions

Let us finally consider argument that landing positions define properties of scrambling. Yoshimoto (2012) argues the following idea:

(16) Clause-internal scrambling of the direct object over the indirect object is A-movement while that over the subject is A′-movement. (Yoshimoto 2012: 179)

Yoshimoto (2012) claims that scrambling into 'the pre-subject position' does provoke weak-crossover effects, as shown in (17).

(17) ??Mitu-izyoo-no daigaku$_i$-o soko$_i$-no sotugyoosei-ga
Three-or.more-GEN university it-GEN graduate-NOM
Ken-ni $t_i$ susumeta.
Ken-DAT recommended
'Their$_i$ graduates recommended to Ken three or more universities$_i$.'
(cf. Yoshimoto 2012: 180)

However, an example such as in (18) where scrambling takes place into the pre-subject position has to be explained, because it seems to not provoke weak-crossover effects.

(18) ?Mitu-izyoo-no daigaku$_i$-ni Ken-ga soko$_i$-no sotugyoosei-ni
Three-or.more-DAT university Ken-NOM it-GEN graduate-DAT
[PRO $t_i$ syutugansuru yoo(ni)] susumeta.
PRO apply COMP recommended
'Ken recommended that their$_i$ graduates should apply to three or more universities$_i$.'
(cf. Yoshimoto 2012: 186)

As for the grammaticality of (18), Yoshimoto (2012: 181) assumes that '[s]crambling of the direct object to the pre-subject position consists of shorter scrambling to the post-subject position'. In this way, it is argued that the landing positions of scrambling are related to the properties of

scrambling. However, this idea has to be reconsidered because examples bearing similar structures of (18) such as (9a–b) are grammatical.[7]

## 7 Conclusion

This paper has shown that scrambling out of control clauses does not provoke weak-crossover effects by presenting additional data. I have then considered an analysis of scrambling crosslinguistically.

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[7] Still, more types of evidence other than weak-crossover effects should be investigated (e.g., see Nemoto 1993, 1999, Takano 2010, Yoshimoto 2012, among others).

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## Appendix

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|---|---|
| ACC | accusative |
| COMP | complementizer |
| DAT | dative |
| GEN | genitive |
| NOM | nominative |
| Q | question particle/marker |