

A Movement Analysis for Split Control

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0. Abstract

Split control has been regarded as a strong counterexample to the original Movement Theory of Control in Hornstein (1999). This presentation aims to propose a novel movement analysis for split control from the perspective of Labeling Algorithm in Chomsky (2013, 2015).

1. Split Control

(1) Obligatory control cannot have split antecedents.¹ (Hornstein (1999))

(2) Split antecedents are in fact allowed not only in non-obligatory control but also in limited obligatory control types. (Landau (2000))

(3) a. John_i proposed to Mary_j PRO_{i+j} to meet each other at 6. (Landau (2000: 53-54))

b. John_i asked Mary_j [whether PRO_{i+j} to get themselves a new car]. (Landau (2000: 53-54))

c. John_i discussed with Mary_j which club PRO_{i+j} to become members of. (Landau (2000: 53-54))

d. John_i persuaded Mary_j [PRO_{i+j} to get themselves a new car]. (Landau (2000: 117))

e. John_i suggested to Mary_j [PRO_{i+j} to get themselves a new car]. (Landau (2000: 117))

(4) Properties of Split Control

Property ①: Split Control does allow plural anaphor: semantically and syntactically plural.

Property ②: Controllers must be local.

(5) Mary_i was glad that John_j had proposed to Bill_k [PRO_{j+k/*i+j/*i+k} to cooperate with each other]. (Landau (2013: 173))

Property ③: Each controller of the split control can contain multiple referents.

(6) a. [John and Tom]_i asked [Mary and Bill]_j [whether PRO_{i+j} to get themselves a new car]. (Edmundo, Luna (p.c.))

b. [John and Tom]_i discussed with [Mary and Bill]_j which club PRO_{i+j} to become members of. (Edmundo, Luna (p.c.))

Property ④: Some control verbs do not allow split control.

(7) *John_i told Mary_j PRO_{i+j} to wash themselves/each other. (Hornstein (1999: 73))

(8) a. John offered/*ordered Mary to help each other. (Landau (2013: 174))

b. John proposed/*committed/*seemed to Mary to help each other. (Landau (2013: 174))

Property ⑤: Split control is not allowed in adjunct clauses.

(9) a. *John_i said that Mary_j left after PRO_{i+j} washing themselves. (Hornstein (2003: 31))

b. *John_i told Mary_j a story after PRO_{i+j} washing themselves. (Hornstein (2003: 31))

(10) Split control is not very common in English but does exist. (Landau (2000, 2007, 2013))

¹ See also Williams (1980), Lebeaux (1984), Wyngaerd (1994), Martin (1996), Hornstein (2001, 2003) for the ban of the split control.

(11) [S]plit control is a problem for everybody, and cannot be simply wished away. (Landau (2007: 296))

2. Movement Theory of Control (MTC)

(12) Before the Minimalist Program, raising and control constructions were analyzed differently.

(13) a. John_i seemed [*t_i* to win].

b. John_i tried [PRO_i to win].

(14) Theta-criterion: each argument bears one and only one θ -role, and each θ -role is assigned to one and only one argument. (Chomsky (1981: 36))

(15) Since D-structure is eliminated, there is nothing to prevent movement to theta-positions. (Hornstein (1999, 2003))

(16) a. John hopes to leave.

b. [_{TP} John [_{VP} ~~John~~ [hopes [_{TP} ~~John~~ to [_{VP} ~~John~~ leave]]]]]

(17) If obligatory control is derived by movement, how can split antecedents be derived?

3. Problems of Previous Analyses of Split Control

3.1 PRO (Agree) Analysis

(18) The PRO analysis for split control violates a minimality principle, the Principle of Minimal Distance (PMD) by Rosenbaum (1970), which requires that PRO be bound by the closer potential antecedent. (Fujii (2006, 2010))

(19) NP_i NP_j [_{CP} PRO_{*i+j*} ...]

(20) RRO Analysis (Landau (2000, 2004)) faces a problem. (Landau (2013))

(21) Split control shows a mismatch in syntactic number.²

(22) a. John_i proposed to Mary_j PRO_{*i+j*} to meet each other at 6. (= (3a))

b. John_i asked Mary_j [whether PRO_{*i+j*} to get themselves a new car]. (= (3b))

c. John_i discussed with Mary_j which club PRO_{*i+j*} to become members of. (= (3c))

3.2 MTC Analysis (Fujii (2006, 2010))

(23) Japanese has certain mood particles triggering obligatory control: the “intensive marker” *-(yoo)*, the imperative marker *-e/-ro*, and the “exhortative” marker *-(y)oo*.

(24) a. Taro-wa boku-no beeguru-o tabe-yoo-to keikakusita
Taro-Top my bagel-Acc eat-YOO-C planned
'Taro planned to eat my bagel.' (Fujii (2006: 101))

b. Yoko-wa Hiroshi-ni boku-no beeguru-o tabe-ro-to meireisita
Yoko-Top Hiroshi-Dat my bagel-Acc eat-Imp-C ordered
'Yoko ordered Hiroshi to eat my bagel.' (Fujii (2006: 101))

² Unlike split control, partial control does not allow plural anaphor: semantically plural but syntactically singular.

(i) a. *John told Mary that he preferred to meet each other at 6.

b. *John told Mary that he wondered whether to get themselves a new car.

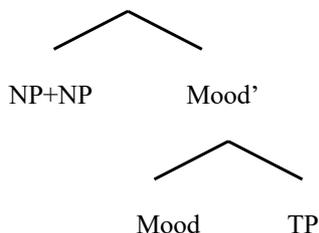
(Landau (2000: 53))

- c. Taro-wa Hiroshi-ni [Δ otagai-o tasuke-a-oo-to] teiansita
 Taro-Top Hiroshi-Dat [e.o.-Acc respect-Recip-YOO-C] proposed
 ‘Taro proposed to Hiroshi to help each other.’ (Fujii (2006: 122))

(25) In Japanese, subject control is allowed with “intensive mood”, object control with “imperative mood,” and split control with “exhortative mood.”

(26) Two coordinated NPs are allowed to arise in the same specifier of Mood in the case of SC.

(27) MoodP



(28) [_{VP} α [_{VP} $\alpha+\beta$ V [_{CP} C [_{MoodP} $\alpha+\beta$ Mood ...]³

(29) a. John proposed to Mary to help each other.

b. [_{VP} John+Mary V [_{CP} C [_{MoodP} John+Mary Mood ...

c. [_{VP} John [_{VP} John+Mary V [_{CP} C [_{MoodP} John+Mary Mood ...

(30) The assumption that the coordinated structure is broken up in syntax is quite dubious. (Landau (2013))

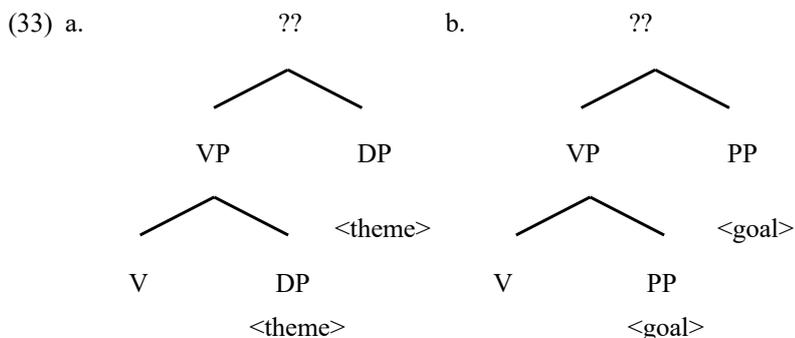
(31) As of yet, there is no satisfactory theory for the syntax of split control constructions. (Landau (2013: 174))

4. Proposal

4.1 Analysis of Argument Doubling in Saito (2017a, b)

(32) a. *Mary hit the head John (Saito (2017a: 29))

b. *Mary went to Germany (three times) to Europe (Saito (2017a: 29))



(Saito (2017a: 26))

³ Boeckx, Hornstein, and Nunes (hereafter, BHN) (2010) slightly modify Fujii’s proposal and argue that [+ β] is complex with [α].

- (34) ??Masao-ga Hanako-o hoho-o butta
 Masao-Nom Hanako-Acc cheek-Acc hit
 ‘Masao hit Hanako on the cheek.’ (cf. Kuroda (1988: 25))
- (35) [_{CP} Masao-ga Hanako-o (hoho-o) but-ta no]-wa hoho-o da
 Masao-Nom Hanako-Acc (cheek-Acc) hit-Past Comp-Top cheek-Acc is
 ‘It is on the cheek that Masao hit Hanako.’ (cf. Kuroda (1988: 25))
- (36) One verb can provide theta-roles to two arguments.

4.2 Free Merge

- (37) Since movement (Internal Merge) is a subcase of Merge, it can be applied freely. (Chomsky (2013, 2015))
- (38) Operations can be free, with the outcome evaluated at the phase level for transfer and interpretation at the interfaces. (Chomsky (2015: 14))
- (39) Control constructions can be derived without incurring any costs.

4.3 Labeling Algorithm

- (40) For a syntactic object SO to be interpreted, some information is necessary about it: what kind of object is it? Labeling is the process of providing that information. (Chomsky (2015: 43))
- (41) $\{\alpha=X, YP\}$
- (42) $\{XP, \dots \{\alpha=Y, \cancel{XP}, YP\}\}$
- (43) $\{\alpha=\langle F, F \rangle \{X_{[F]}, WP\}, \{Y_{[uF]}, ZP\}\}$

4.4 A Derivation of Split Control.

- (44) a. John asked Mary [whether to get themselves a new car].
 b. $\{\beta=\langle \varphi, \varphi \rangle \text{ John T } \{v^*P \text{ asked } \{\alpha=\langle \varphi, \varphi \rangle \text{ Mary } \{\text{whether to } \{\text{John } \{\text{Mary } \{v^*P \text{ get...}\}\}\}\}\}\}\}$
- (45) Nothing prevents the derivation in which two external arguments are generated in the specifier position of one v^*P under Free Merge.⁴
- (46) *John* and *Mary* both gain a theta-role from *get*.
- (47) This derivation is theoretically possible within the current framework insofar as the labeling algorithm is conducted successfully: *John* and *Mary* move into the matrix clause and get successfully labeled as $\langle \varphi, \varphi \rangle$.⁵

4.4.1 An Analysis of Split Control.

Property ①: Split Control does allow plural anaphor: semantically and syntactically plural.

- (48) John proposed to Mary to meet each other at 6. (Landau (2000: 53))
- (49) John and Mary love each other.
- (50) Two DPs originated in the same edge of v^*P can authorize the plural anaphor like *each other* just like the coordinate structure.

Property ②: Controllers must be local.

- (51) Mary_i was glad that John_j had proposed to Bill_k [$\text{PRO}_{j+k/*i+j/*i+k}$ to cooperate with each other].

⁴ More specifically, we assume that two DPs originate in v^*P Spec as a one set.

⁵ We assume with Mizuguchi (2017) that infinitival T can be labeled by itself because it does not have an unvalued feature.

- (52) Minimal Link Condition:
 α can raise to target K only if there is no legitimate operation Move- β targeting K, where β is closer to K than α . (Chomsky (1995: 296))

Property ③: Each controller of the split control can contain multiple referents.

- (53) a. [John and Tom]_i asked [Mary and Bill]_j [whether PRO_{i+j} to get themselves a new car]. (= (6a))
 b. [John and Tom]_i discussed with [Mary and Bill]_j which club PRO_{i+j} to become members of. (= (6b))

Property ④: Some control verbs do not allow split control.

- (54) *John_i told Mary_j PRO_{i+j} to wash themselves/each other. (= (7))
 (55) a. John offered/*ordered Mary to help each other. (= (8a))
 b. John proposed/*committed/*seemed to Mary to help each other. (= (8b))
 (56) This issue also arises not only in the MTC but also in the PRO analysis.
 (57) If PRO can have split antecedents, what excludes certain types of the control constructions?
 (58) The derivation of split control is allowed in syntax, but there are also semantic factors excluding it.
 (59) The acceptability of SC depends partially on the semantics of particular verbs. (Landau (2000), Fujii (2006))
 (60) Semantic restrictions proposed by Landau (2000) and Fujii (2006) are easily compatible with the MTC.

(BHN (2010))

- (61) Only verbs which support exhortative interpretations allow split control complement. (Fujii (2006))
 (62) C with an exhortative feature needs to be selected by verbs.

Property ⑤: Split control is not allowed in adjunct clauses.

- (63) a. *John_i said that Mary_j left after PRO_{i+j} washing themselves. (= (9a))
 b. *John_i told Mary_j a story after PRO_{i+j} washing themselves. (= (9b))
 (64) Adjuncts are not selected by matrix verbs.

4.4.2 Possible Extension

- (65) Split antecedents are also observed in relative clause.⁶ (Ross and Perlmutter (1970))
 (66) a. A man_i entered the room and a woman_j went out who_{i,j} were quite similar. (Ross and Perlmutter (1970: 350))
 b. Mary met a man_i and John met a woman_j [who_{i,j} knew each other well]. (Moltmann (1992: 262))
 c. We always let those boys_i play with those girls_j [who_{i,j} know one another from elementary school]. (Hoeksema (1986: 64))

4.4.3 Ungrammatical Cases

- (67) a. *John Mary played baseball.
 b. $\{\beta=?? \text{ John } \{\alpha=<\varphi, \varphi> \text{ Mary T } \{\text{John } \{\text{Mary } \{v^*P \text{ played baseball}\}\}\}\}\}$
 (68) β is not labeled, causing the derivation to crash since each syntactic object needs to be labeled for the interpretation.
 (69) a. *John suggests to Mary that get themselves a new car.
 b. $\{\beta=<\varphi, \varphi> \text{ John T suggests to Mary that } \{\alpha=?? \text{ John } \{\text{Mary T get themselves a new car}\}\}\}$.

⁶ For the raising analysis for the relative clause with split antecedents, see Zhang (2007, 2010), and Donati and Cecchetto (2015).

- (cf. John_i suggested to Mary_j [PRO_{i,j} to get themselves a new car].) (= (3e))
- (70) a. English T is too weak to be labeled by itself. (Chomsky (2015))
 b. A copy left by movement cannot be seen by Minimal Search in principle. (Chomsky (2015))
- (71) Activation Condition:
 A probe and a goal are required to bear an uninterpretable feature for the further syntactic operation.
 (Chomsky (2000, 2001))

5. Conclusion.

References.

- Boeckx, Cedric, Norbert Hornstein and Jairo Nunes (2010) *Control as Movement*, Cambridge University Press, Cambridge.
- Chomsky, Noam (1981) *Lectures on Government and Binding: The Pisa Lectures*, Foris, Dordrecht.
- Chomsky, Noam (1995) *The Minimalist Program*, MIT Press, Cambridge, MA.
- Chomsky, Noam (2000) "Minimalist Inquiries: The Framework," *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, ed. by Roger Martin, David Michaels and Juan Uriagereka, 89-155, MIT Press, Cambridge, MA.
- Chomsky, Noam (2001) "Derivation by Phase," *Ken Hale: A Life in Language*, ed. by Michael Kenstowicz, 1-52, MIT Press, Cambridge, MA.
- Chomsky, Noam (2013) "Problems of Projection," *Lingua* 130, 33-49.
- Chomsky, Noam (2015) "Problems of Projection: Extensions," *Structures, Strategies and Beyond: Studies in Honour of Adriana Belletti*, ed. by Elisa Di Domenico, Cornelia Hamann and Simona Matteini, 3-16, John Benjamins, Amsterdam.
- Donati, Caterina and Carlo Cecchetto (2015) *(Re)labeling*, MIT Press, Cambridge, MA.
- Fujii, Tomohiro (2006) *Some Theoretical Issues in Japanese Control*. Doctoral dissertation, University of Maryland.
- Fujii, Tomohiro (2010) "Split Control and the Principle of Minimal Distance," *Movement Theory of Control*, ed. by Norbert Hornstein and Maria Polinsky, 211-244, John Benjamins, Amsterdam.
- Hoeksema, Jack (1986) "An Account of Relative Clauses with Split Antecedents," *Proceedings of the West Coast Conference on Formal Linguistics* 5, pp. 68-86.
- Hornstein, Norbert (1999) "Movement and Control," *Linguistic Inquiry* 30, 69-96.
- Hornstein, Norbert (2001) *Move! A Minimalist Theory of Construal*, Blackwell, Oxford.
- Hornstein, Norbert (2003) "On Control," *Minimalist Syntax*, ed. by Randall Hendrick, 6-81, Blackwell, Oxford.
- Kuroda, Shige-Yuki (1988) "Whether We Agree or Not," *Linguisticae Investigationes* 12, 1-47.
- Landau, Idan (2000) *Elements of Control: Structure and Meaning in Infinitival Constructions*, Kluwer, Dordrecht.
- Landau, Idan (2004) "The Scale of Finiteness and the Calculus of Control," *Natural Language and Linguistic Theory* 22, 811-877.
- Landau, Idan (2007) "Movement-Resistant Aspects of Control," *New Horizons in the Analysis of Control and Raising*, ed. by William D. Davies and Stanley Dubinsky, 293-325, Springer, Dordrecht.
- Landau (2013) *Control in Generative Grammar: A Research Companion*, Cambridge University Press, Cambridge.
- Lebeaux, David (1984) Anaphoric binding and the definition of PRO. In *Proceedings of NELS 14*, C. Jones & P. Sells (eds), 253-274. Amherst, Mass.: GLSA.
- Martin, Roger (1996) *A Minimalist Theory of PRO and Control*, Doctoral dissertation, University of Connecticut.
- Mizuguchi, Manabu (2017) "Labelability and Interpretability," *Studies in Generative Grammar* 27, 327-365.

- Moltmann, Friederike (1992) "On the Interpretation of Three-Dimensional Syntactic Trees," *Proceedings of SALT 2*, pp 261-281
- Ross, John Robert. and David, Perlmutter (1970) "Relative clauses with split antecedents," *Linguistic Inquiry* 1, 350.
- Saito, Mamoru (2017a) "Notes on the Locality of Anaphor Binding and A-Movement," *English Linguistics* 34, 1-33.
- Saito, Mamoru (2017b) "Labeling and Argument Doubling in Japanese," *Tsing Hua Journal of Chinese Studies* 47, 383-405.
- Williams, Edwin (1980) "Predication," *Linguistic Inquiry* 11, 203-238.
- Wyngaerd, Guido J. Vanden (1994) *PRO-legomena*, Berlin: Mouton de Gruyter.
- Zhang, Niina (2007) "The syntactic derivations of split antecedent relative clause constructions," *Taiwan Journal of Linguistics* 5, 19-48.
- Zhang, Niina (2010) *Coordination in Syntax*, Cambridge University Press, Cambridge.