The CSC as an LF condition: Evidence from Neg-raising in Japanese

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1 Introduction

In this paper I examine the behavior of Japanese negative concord items (NCIs) in the context of VP coordination. My aim is twofold. First, I demonstrate that Japanese has the operation of Neg-raising and that the operation is subject to the principle of Last Resort (or Scope Economy). And secondly, I argue that the last resort nature of Neg-raising provides a piece of evidence that the Coordinate Structure Constraint (CSC) should be regarded as a representational constraint, rather than a derivational constraint.

The organization of this paper is as follows. Section 2 introduces the representational approach to the CSC, which views this constraint as a constraint on LF representations, rather than a constraint on movement, and illustrates how CSC effects are explained under this approach. Section 3 investigates Japanese NCI licensing in the context of VP coordination and argues that Japanese has the operation of Neg-raising and it only occurs as a last resort. Section 4 discusses an implication of my argument in the last section for the nature of the CSC, arguing that the last resort nature of Neg-raising lends support to the representational approach to the CSC.

2 The Representational Approach to the CSC

Since Ross (1967), the ungrammaticality of examples like (1) has been attributed to the CSC, the standard formulation of which is given in (2).

(1) *What did Mary [send *t* on Monday] and [receive the parcel on Wednesday]?

(2) In a coordinate structure, no element contained in a conjunct may be moved out of that conjunct (cf. Ross 1967).[1]

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[1]This is only a part of Ross' original CSC, which also says "(in a coordinate

The CSC was originally proposed as a sort of island constraint, and island constraints are standardly considered to ban particular applications of the movement transformation. Thus, one possible approach to the CSC is to view it as a constraint on movement (cf. Johnson 2002, Postal 1998, Ross 1967). In this approach, what the CSC bans is a derivational step which moves an element out of a conjunct. I will refer to this approach as the derivational approach.

Another possible approach, which has been pursued by a number of researchers, is to view the CSC as a constraint on LF (or semantic) representations (cf., e.g., Fox 2000, Goodall 1987, Kato 2004, Lin 2001, Moltmann 1992, Muadz 1991, Munn 1993, Ruys 1993). In this approach, which will be called the representational approach, a movement out of a conjunct *per se* is harmless, and what may induce a CSC effect is the LF representation resulting from the movement. In this paper, I adopt the variant of the representational approach where CSC effects are assumed to be derived from the condition in (3) ((3) and (4) are adapted from Fox 2000:50; for another variant, see Munn 1993).

(3) A sentence with a coordinate structure is well-formed only if each of its component structures independently satisfies grammatical constraints.

The definition of "component structure" is the following:

(4) 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.

Let us consider how the unacceptability of (1) is explained under the representational approach adopted here. According to (4), the two component structures of this example are like (5a) and (5b) below.

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

Condition (3) requires that each of these structures independently satisfy grammatical constraints. Although (5a) produces no problem with any grammatical constraints, we find a problem in (5b): it violates the ban on

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structure) no conjunct may be moved." Following Grosu (1973, 1981) and Merchant (2001), I assume that this "no extraction *of* conjuncts" part has different nature from the "no extraction *out of* conjuncts" part in (2) and focus on the latter in this paper.

vacuous quantification since it contains a *wh*-phrase which fails to bind a variable. Hence (1) is ungrammatical.

Next, compare (1) with (6), where a *wh*-phrase has been extracted from a coordinate structure in an A(cross)-T(he)-B(oard) fashion.

(6) What did Mary [send *t* on Monday] and [receive *t* on Wednesday]?

The component structures of (6) are given below:

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

Neither of these structures violates any grammatical constraints. Crucially, unlike (5b), they do not violate the ban on vacuous quantification. Thus, the grammaticality of (6) is correctly predicated under the representational approach.

In the literature you find several pieces of empirical evidence in favor of the representational approach over the derivational one (see Fox 2000, Kato 2004, Lin 2001). Because of the lack of space, I do not review the existing evidence here. What I would like to do here is to provide a new piece of evidence for the representational approach from Japanese.

3 NCI Licensing and VP Coordination in Japanese

3.1 Scope of Negation with Respect to Coordinated VPs

As Takano (2004) convincingly argues, Japanese VP coordination takes the form in (8) (see also Nakatani 2004, Tamori 1976/7, and Tokashiki 1989).

(8) (...... V_{bare}) ...... V_{bare} ...... V_{fin}

Here, the final verb is inflected for tense, but the non-final verbs are in their bare forms. The following is an example sentence with VP coordination ("&" stands for an invisible conjunction):

(9) Taroo-ga [$_{VP}$ kesa   ringo-o   tabe]&[$_{VP}$ sakuban
    T.-NOM   this:morning apple-ACC   eat   last:night
    koohii-o   non-da].
    coffee-ACC drink-PAST
    'Taroo ate an apple this morning and drank coffee last night.'

Takano argues that the tense morpheme on the final verb is base-generated

under the head position of TP and undergoes "affix-hopping" onto the adjacent verb, as shown below:

(10) ... [$_{TP}$ ... [$_{VP}$ ...... V]&[$_{VP}$ ...... V] T-*ta*] ...
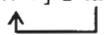
Now consider the following example:

(11) Taroo-ga kesa   ringo-o   tabe & sakuban   koohii-o
     T.-NOM   this:morning apple-ACC eat   last:night coffee-ACC
     nom-**ana**-katta.
     drink-**NEG**-PAST

Here, the second verb carries a negative marker (Neg). There are three imaginable interpretations of this example, (12a-c), but the fact is that only one of them, (12a), is possible.

(12) a. Taroo ate an apple this morning and didn't drink coffee last night.
        (VP$_1$&¬VP$_2$)
     b. Taroo didn't eat an apple this morning and didn't drink coffee
        last night. (¬VP$_1$&¬VP$_2$)
     c. Taroo didn't eat an apple this morning and drink coffee last night.
        (¬(VP$_1$&VP$_2$))

What is crucial for our discussion below is that (12c) is impossible as an interpretation of (11). In this interpretation, Neg takes scope over the whole coordinated VP, and the unavailability of this interpretation indicates that Neg on the final verb in Japanese VP coordination cannot appear above the coordinated VP.[2]

3.2 NCI Licensing in Component Structures

Let us turn to NCIs.[3] In (13a), *nani-mo* is an NCI, and as shown by the un-

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[2]In this paper I do not discuss exactly where Neg appears (as a result of base-generation or movement) in cartographical terms. The issue is immaterial for our present purposes. It will suffice here to assume that Neg appears in some head position, and that when it moves, it undergoes head-movement (see below). Exploring the issue just mentioned may reveal that what is involved in examples like (11) is not VP coordination but something different, for example NegP coordination, but I will continue to call it VP-coordination below just for the sake of convenience.

[3]What I call Japanese NCIs in this paper have traditionally been regarded as negative polarity items, but Watanabe (2004) convincingly shows that they should be

grammaticality of example (13b), it must be licensed by Neg (cf. Watanabe 2004).

(13) a. Taroo-ga **nani-mo** tabe-**na**-katta.
T.-NOM **what-MO** eat-NEG-PAST
'Taroo didn't eat anything.'
b. *Taroo-ga **nani-mo** tabe-ta.
eat-PAST

Unlike English negative polarity items, object NCIs can be moved across the subject, as shown in (14).

(14) a. **Nani-mo**$_i$ Taroo-ga t_i tabe-**na**-katta.
what-MO T.-NOM eat-NEG-PAST
'Taroo didn't eat anything.'
cf. *Anything, John didn't eat.
b. **Dare-mo**$_i$ John-wa [Yamada kyoozyu-ga t_i home-**na**-katta
who-MO J.-TOP Y. prof.-NOM praise-NEG-PAST
to] itta.
C said
'John said that Prof. Yamada didn't praise anyone.'
cf. *Anybody, John said that Prof. Yamada didn't praise.

In both (14a) and (14b), the NCI is scrambled to a position higher than the subject, but the resulting structures are well-formed.[4]

Now, let us consider the behavior of NCIs in sentences with VP coordination. First, when the second conjunct contains both an NCI and Neg, the NCI is licensed, which is shown in (15).

(15) Yamada kyoozyu-ga [kyoo Taroo-o home]&[kinoo **dare-mo**
Y. prof.-NOM today T.-ACC praise yesterday **who-MO**
sikar-**ana**-katta].
scold-NEG-PAST
'Prof. Yamada praised Taroo today and didn't scold anyone yesterday.'

Second, when the first conjunct contains an NCI, but Neg appears in the sec-

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best viewed as NCIs. See also Kuno (in preparation).

[4]In this paper, I am not concerned with the precise mechanism of NCI licensing. For this matter, see Giannakidou (to appear), Y. Kato 2002, Kuno (in preparation), Watanabe 2004, and references cited therein.

ond conjunct, the NCI is not licensed, as shown in (16).

(16) *Yamada kyoozyu-ga [kyoo **dare-mo** home]&[kinoo
Y.   prof.-NOM today **who-MO** praise yesterday
Hanako-o sikar-**ana**-katta].
H.-ACC   scold-**NEG**-PAST
'Prof. Yamada praised anyone today and didn't scold Hanako yes-
terday.'

Thirdly, when each conjunct contains both an NCI and Neg, the NCIs are
licensed, as shown in (17).

(17) Yamada   kyoozyu-ga [kyoo **dare-mo** home-**zu**]&[kinoo
Y.   prof.-NOM today **who-MO** praise-**NEG** yesterday
dare-mo sikar-**ana**-katta].
who-MO scold-**NEG**-PAST
'Prof. Yamada didn't praise anyone today and didn't scold anyone
yesterday.'

Fourth, when an NCI appears above a coordinated VP and each of the con-
juncts contains Neg, the NCI is licensed, as shown in (18) and (19), where an
object NCI undergoes ATB scrambling (clause-internal and long-distance,
respectively) to the sentence-initial position.

(18) **Dare-mo**$_i$ Yamada kyoozyu-ga [kyoo t_i home-**zu**] & [kinoo t_i
who-MO   Y.   prof.-NOM   today   praise-**NEG**   yesterday
sikar-**ana**-katta].
scold-**NEG**-PAST
'Prof. Yamada praised nobody today and scolded nobody yester-
day.'
(19) **Dare-mo**$_i$ John-wa [Yamada kyoozyu-ga [kyoo t_i home-**zu**]
who-MO   J.-TOP   Y.   prof.-NOM today   praise-**NEG**
& [kinoo t_i sikar-**ana**-katta] to] itta.
    yesterday   scold-**NEG**-PAST C said
'John said that Prof. Yamada praised nobody today and scolded no-
body yesterday.'

Finally, when an NCI appears above a coordinated VP, but only the first
conjunct contains Neg, the NCI fails to be licensed, as shown in (20), where,
again, the NCI appearing in the sentence-initial position has undergone ATB
scrambling.

(20) ***Dare-mo**$_i$ Yamada kyoozyu-ga [kyoo t_i home-**zu**] &
   who-MO   Y.   prof.-NOM today   praise-**NEG**
   [kinoo t_i sikat-ta].
   yesterday   scold-PAST
   'Prof. Yamada didn't praise anyone today and scolded anyone yesterday.'

(21) is the summary of the above data.

(21) a. ^{ok}[......]&[... NCI ... Neg]
    b. *[... NCI ...]&[...... Neg]
    c. ^{ok}[... NCI ... Neg]&[... NCI ... Neg]
    d. ^{ok}NCI ...... [...... Neg]&[...... Neg]
    e. *NCI ...... [...... Neg]&[......]

At this point, we can draw the following descriptive generalization:[5]

(22) If a component structure of a sentence contains an NCI, it must also
    contain Neg.

The definition of component structure is repeated below:

(23) 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.

For example, the component structures of (21d) are the following:

(24) CS$_1$: NCI ...... [...... Neg]
    CS$_2$: NCI ...... [...... Neg]

Here, each component structure contains an NCI and it also contains Neg.
Thus, (21d) is grammatical. In contrast, the component structures of (21e)
are the following:

(25) CS$_1$: NCI ...... [...... Neg]
    CS$_2$: *NCI ...... [......]

Here, although both component structures contain an NCI, one of them fails

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[5]This generalization is also confirmed by examples involving another type of
NCI (i.e. NP-*sika* 'NP-except') or an NCI in the subject position. See Kato (in progress: chapter 4) for relevant data.

to contain Neg (CS$_2$). Thus, the ungrammaticality of (21e) is captured by the generalization in (22).

3.3 Neg-raising and Last Resort

Given the generalization we obtained in the last subsection, a crucial observation is the following: When Neg appears on the final verb and an NCI appears above the coordinate structure, the sentence is acceptable, as illustrated by (26).

(26) **Dare-mo$_i$**   Yamada kyoozyu-ga kyoo t_i home & kinoo t_i
     who-MO   Y.   prof.-NOM today   praise   yesterday
     sikar-**ana**-katta.
     scold-**NEG**-PAST
     'Nobody is such that Prof. Yamada praised him today and scolded
     him yesterday.'

If generalization (22) is correct, the acceptability of this example indicates that its structure is not as in (27), because if it were, one of its component structures would not contain Neg, and it would be unacceptable on a par with (20).

(27) *NCI ...... [[......]&[...... Neg]]

Rather, the structure of (26) should be like (28), where Neg appears in a position higher than the coordinate structure.

(28) NCI ...... [[......]&[......]] Neg

In each of the two component structures obtained from (28), the NCI co-occurs with Neg.

    Recall at this point that when there is no NCI above the coordinate structure, Neg cannot appear outside the coordinate structure (see (11)-(12)). Thus, we can draw the following descriptive generalization:

(29) Neg can appear above a coordinated VP only when there is an NCI
     above the coordinated VP which needs to be licensed by the Neg.

Now, the question is: How can we capture this generalization most naturally? It should not be a good strategy to assume that the appearance of Neg above the coordinated VP is a result of base-generation, since this would make it much more difficult to explain why Neg cannot appear above the coordi-

nated VP unless an NCI also appears there: it is quite unlikely that the base-generated position of one element is affected by the existence of another.

My claim is that Neg is always base-generated within VP in Japanese, and that it may undergo raising in accordance with the familiar Last Resort principle in the Minimalist Program (cf. Chomsky 1995). In this analysis, Neg can raise out of the coordinated VP in (26), where an NCI appears above the coordinate structure, as a last resort to license the NCI, as shown below.

(30) NCI ...... [......]&[...... Neg]

In this derivation, in the representation before Neg-raising occurs, the NCI is not licensed, but it gets licensed once Neg-raising occurs, and in this sense, this movement operation satisfies Last Resort. In contrast, in (11), where there is no NCI above the coordinated VP, Neg-raising is blocked by Last Resort, because there is no reason for it to take place. Thus, we can capture the generalization in (29).[6]

The last resort nature of Neg-raising also manifests itself in another circumstance. Y. Kato (1988) observes that sentences such as (31), where the universal quantifier *zen'in* 'all' appears as a subject, allow for only total negation readings (see also Miyagawa 2001, 2003, to appear).

(31) **Zen'in**-ga Taroo-o home-**na**-katta.
    all-NOM   T.-ACC praise-NEG-PAST
    'All didn't praise Taroo.'

However, in reality, partial negation readings ('It is not that all praised Taroo') are also possible for some speakers (see also Miyagawa, to appear: fn.10). Crucially, these speakers accept the partial negation reading of the following example:

(32) **Zen'in**-ga kyoo Taroo-o home & kinoo   Hanako-o
    all-NOM   today T.-ACC praise   yesterday H.-ACC
    sikar-**ana**-katta.
    scold-NEG-PAST

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[6]The ungrammaticality of examples with the structure of (21e) shows that Neg-raising occurs overtly in Japanese, and this falls in line with the claim made by Ladusaw (1988) and McCloskey (1997) that covert Neg-raising does not exist (but see also Boeckx 2001).

'All praised Taroo today and didn't scold Hanako yesterday.' ($\forall$ >
Neg)
'It is not that all praised Taroo today and scolded Hanako yester-
day.' (Neg > $\forall$)

The availability of the partial negation reading indicates that Neg may appear
higher than the subject quantifier, and this in turn entails that it may appear
above the coordinate structure. Thus, the structure of (32) may be like the
following:[7]

(33) [All ...... [$_{VP}$ ......]&[$_{VP}$ ......]]Neg

Adopting Fox's (1995, 2000) Scope Economy, which amounts to requiring
that scope-shifting operations occur as a last resort to create new scope rela-
tions, I argue that in (32) Neg-raising may occur as a last resort to create the
partial negation reading, which is unavailable before it occurs (for Scope
Economy, see also Singh 2003).[8]

4 The Nature of the CSC

So far I have argued that Neg-raising may occur as a last resort in Japanese.
For example, in sentence (26), repeated below as (34), Neg moves out of the
coordinated VP as a last resort to license the NCI.

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[7]Reconstruction of the subject quantifier to its VP-internal base positions cannot
create a licit representation for the partial negation reading, because it would result in
a representation like the following:

(i) ... [$_{VP}$ all ...]&[$_{VP}$ all ... Neg]

Here, one occurrence of the universal quantifier fails to be under the scope of nega-
tion.

[8]One might ask why Scope Economy cannot license Neg-raising in (11). There,
neither an NCI nor a quantifier appears above the coordinate structure, but Neg-
raising could create a new scope relation between Neg and coordination (i.e.
$\neg(VP_1 \& VP_2)$). I assume following Fox (2000:48–49) that coordination is invisible to
Scope Economy, so that this condition cannot be satisfied if a scope-shifting opera-
tion would result in a new scope relation with respect to coordination. Fox argues that
the invisibility of coordination is derived from the representational approach to the
CSC, which assumes the condition in (3), repeated in (i):

(i) A sentence with a coordinate structure is well-formed only if each of its
component structures independently satisfies grammatical constraints.

As a grammatical constraint, Scope Economy should be satisfied in each component
structure, but because component structures, by definition, do not contain coordinate
structures, coordination is invisible to Scope Economy.

(34) **Dare-mo**$_i$ Yamada kyoozyu-ga kyoo t_i home & kinoo t_i
  who-MO Y. prof.-NOM today praise yesterday
  sikar-**ana**-katta.
  scold-**NEG**-PAST
  'Nobody is such that Prof. Yamada praised him today and scolded
  him yesterday.'

In the above discussion, I have assumed implicitly that the launching site of the Neg-raising in (34) is within the final conjunct. Namely, the Neg-raising has been assumed to take place as follows:

(35) NCI ...... [......]&[...... Neg]

Now, let us consider another imaginable derivation of (34), which is shown in (36).

(36) NCI ...... [...... Neg]&[...... Neg]
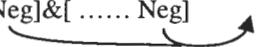
Here, Neg raises from both conjuncts in an ATB fashion. If my argument in the last section is on the right track, this derivation should be blocked by Last Resort. This is so because, if the underlying structure of (34) contained two Neg's as in (36), the NCI could be licensed without Neg-raising, as shown by the acceptability of (18), repeated below as (37).

(37) **Dare-mo**$_i$ Yamada kyoozyu-ga [kyoo t_i home-**zu**] & [kinoo
  who-MO Y. prof.-NOM today praise-**NEG** yesterday
  t_i sikar-**ana**-katta].
   scold-**NEG**-PAST
  'Prof. Yamada praised nobody today and scolded nobody yester-
  day.'

Because there is no motivation for Neg-raising in the derivation in (36), this operation should be blocked by Last Resort.

  Having excluded the possibility of (36), we can conclude that (35) is the only possible derivation for (34). However, this conclusion has an important implication for the nature of the CSC. Recall that there are two possible approaches to this constraint: the derivational approach and the representational approach. Under the first approach, the CSC is viewed as a derivational constraint which bans non-ATB extraction from a coordinate structure. The fact that Neg-raising as in (35) is allowed shows that this view is not

tenable. In contrast, under the representational approach, where CSC effects are assumed to be derived from (3), which is repeated below, Neg-raising as in (35) is permitted, as long as it does not create an operator variable chain (otherwise, it would result in a violation of the ban on vacuous quantification; see section 2).

(38) A sentence with a coordinate structure is well-formed only if each of its component structures independently satisfies grammatical constraints.

Because only the representational approach allows for the derivation which should be allowed, the discussion on Neg-raising provides further support for this approach.

5 Summary

To sum up, it has been demonstrated in this paper that Japanese has the operation of Neg-raising and that it occurs as a last resort to license an NCI or create a new scope relation. It has also been argued that this last resort nature of Neg-raising lends support to the representational approach to the CSC.

References

Boeckx, Cedric. 2001. Scope reconstruction and A-movement. *Natural Language & Linguistic Theory* 19:503–548.

Chomsky, Noam. 1995. *The minimalist program.* Cambridge, MA: MIT Press.

Fox, Danny. 1995. Economy and scope. *Natural Language Semantics* 3:283–341.

Fox, Danny. 2000. *Economy and semantic interpretation.* Cambridge, MA.: MIT Press.

Giannakidou, Anastasia. To appear. N-words and negative concord. In *The Linguistic Companion.* Malden, Mass.: Blackwell Publishers.

Goodall, Grant. 1987. *Parallel structures in syntax.* Cambridge: Cambridge University Press.

Grosu, Alexander. 1973. On the nonunitary nature of the Coordinate Structure Constraint. *Linguistic Inquiry* 4:88–92.

Grosu, Alexander. 1981. *Approaches to island phenomena.* Amsterdam: North-Holland.

Johnson, Kyle. 2002. Restoring exotic coordinations to normalcy. *Linguistic Inquiry* 33:97–156.

Kato, Takaomi. 2004. The LF nature of the CSC and the total reconstruction property of Japanese scrambling. Ms., Harvard University.

Kato, Takaomi. In progress. Symmetries in coordination. Doctoral Dissertation, Harvard University.

Kato, Yasuhiko. 1988. Negation and the discourse-dependent property of relative scope in Japanese. In *Sophia Linguistica: Working Papers in Linguistics* 23/24, 31–37. The Graduate School of Languages and Linguistics, Linguistic Institute for International Communication, Sophia University, Tokyo.

Kato, Yasuhiko. 2002. Negation in English and Japanese: Some (a)symmetries and their theoretical implications. In *Proceedings of the Sophia Symposium on Negation*, 1–21. Sophia Linguistic Institute for International Communication, Sophia University, Tokyo.

Kuno, Masakazu. In preparation. Parametric syntax of negative concord and polarity items. Doctoral Dissertation, Harvard University.

Ladusaw, William. 1988. Adverbs, negation and QR. In *Linguistics in the morning calm 2: Selected papers from SICOL-1986*, 481–488. The Linguistic Society of Korea, Seoul.

Lin, Vivian. 2001. A way to undo A-movement. In *Proceedings of WCCFL 20*, ed. K. Megerdoomian and L. A. Barel, 358–371. Somerville, MA: Cascadilla Press.

McCloskey, James. 1997. Subjecthood and subject positions. In *Elements of grammar*, ed. Liliane Haegeman, 197–235. Dordrecht: Kluwer.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.

Miyagawa, Shigeru. 2001. EPP, scrambling, and *wh*-in-situ. In *Ken Hale, a life in language*, ed. Michael Kenstowicz, 1–52. Cambridge, MA: MIT Press.

Miyagawa, Shigeru. 2003. A-movement scrambling and options without optionality. In *Word order and scrambling*, ed. S. Karimi, 177–200. Malden, MA: Blackwell Publishers.

Miyagawa, Shigeru. To appear. EPP and semantically vacuous scrambling. In *The free word order phenomenon: Its syntactic sources and diversity*, ed. J. Sabel and M. Saito. Berlin: Mouton de Gruyter.

Moltmann, Friederike. 1992. Coordination and comparatives. Doctoral Dissertation, MIT.

Muadz, Husni. 1991. Coordinate structures: A planar representation. Doctoral dissertation, University of Arizona, Tucson.

Munn, Alan. 1993. Topics in the syntax and semantics of coordinate structures. Doctoral Dissertation, University of Maryland, College Park.

Nakatani, Kentaro. 2004. Predicate concatenation: A study of the V-*te*-V predicate in Japanese. Doctoral Dissertation, Harvard University.

Postal, M. Paul. 1998. *Three investigations of extraction*. Cambridge, MA: MIT Press.

Ross, John. 1967. Constraints on variables in syntax. Doctoral dissertation, MIT, Cambridge, Mass.

Ruys, Eddy. 1993. The scope of indefinites. Doctoral Dissertation, Universiteit Utrecht.

Singh, Rajvinder. 2003. Economy, scope, and computation without reference sets. Ms., MIT.

Takano, Yuji. 2004. Coordination of verbs and two types of verbal inflection. *Linguistic Inquiry* 35:168–178.

Tamori, Ikuhiro. 1976/7. The semantics and syntax of the Japanese gerundive and infinitive conjunctions. *Papers in Japanese Linguistics* 5:307–360.

Tokashiki, Kyoko. 1989. On Japanese coordination structures: An investigation of structural differences between the *-te* form and *-i* form. Master's Thesis, Ohio State University, Columbus.

Watanabe, Akira. 2004. The genesis of negative concord: Syntax and morphology of negative doubling. *Linguistic Inquiry* 35:559–612.

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