On the Verb-raising Analysis of Non-Constituent Coordination in Japanese

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Abstract

This study argues against the verb-raising analysis of Japanese Non-Constituent Coordination (NCC), and consequently supports an alternative analysis with no recourse to verb movement in Narrow Syntax. I show that the verb-raising analysis under-generates regarding VP-fronting in Japanese. Furthermore, I point out that this analysis makes wrong predictions about the scope between heads and elements inside NCC. I conclude that there is no syntactic V-to-T-to-C verb-raising in Japanese NCC.

Keywords: non-constituent coordination; Japanese syntax; verb-raising; string-vacuous movement

1 Introduction

The occurrence of syntactic verb-raising in the strictly head-final Japanese language has been controversial (see Otani and Whitman 1991; Hoji 1998; Koizumi 2000; Fukui and Sakai 2003; Funakoshi 2014; Hayashi and Fujii 2015; Kobayashi 2016; Sato and Hayashi 2018; Sato and Maeda 2021; Tanabe and Kobayashi to appear, among many others). Even if it occurs, it's detection is impossible since the surface order of elements, V, T and C remains unchanged. This study focuses on Non-Constituent Coordination (**NCC**) in Japanese. In (1), apparent non-constituents are coordinated by *to* 'and'.

(1)   Taro-ga   [Hanako-ni ringo-o   3-tu] to   [Kumiko-ni banana-o   2-hon]
           Taro-NOM Hanako-DAT apple-ACC 3-CL   CONJ Kumiko-DAT banana-ACC 2-CL
           age-ta.
           give-PST
           'Taro gave three apples to Hanako and two bananas to Kumiko.'

Koizumi (2000) and Funakoshi (2014) argue that NCC is derived via string-vacuous syntactic verb-raising. This study argues against such verb-raising approaches.

This study is organized in the following pattern. Section 1 briefly reviews Koizumi's (2000) verb-raising analysis of NCC, and Fukui and Sakai's (2003) gapping analysis of NCC without verb-raising. Section 2 points out that the verb-raising analysis undergenerates, when confronted with VP-fronting. In section 3, I show that the verb-raising approach makes wrong predictions about the scope order between heads and elements inside NCC, and the scope between heads and the whole coordinate structure. Section 4 is a brief summary of this study.

1.1 String-Vacuous Verb Raising (Koizumi 2000)

Koizumi (2000) presents an argument for string-vacuous verb-raising in NCC.[1] He assumes that NCC is derived from predicative phrase coordination by Across-the-Board (**ATB**) verb-raising. This results in headless remnants *Hanako-ni ringo-o 3-tu* and *Kumiko-ni banana-o 2-hon*, which are coordinated by *-to* 'and'.

(2) a. Taro-ga [Hanako-ni ringo-o 3-tu] to [Kumiko-ni banana-o 2-hon]
    Taro-NOM Hanako-DAT apple-ACC 3-CL CONJ Kumiko-DAT banana-ACC 2-CL

    age-ta.
    give-PST

    'Taro gave three apples to Hanako and two bananas to Kumiko.'
  b. [Taro-ga [$_{VP}$ [Hanako-ni ringo-o 3-tu t_i] to [Kumiko-ni banana-o 2-hon t_i]]
    age$_i$-ta]

                 (adapted from Koizumi 2000, p.228)

Koizumi's verb-raising analysis in (2) is schematically illustrated in (3), where indirect objects (**IO**), direct objects (**DO**), and classifiers (**CL**), remain in the remnant phrase after the ATB V-to-T-to-C movement.

(3) [$_{CP}$ [$_{TP}$ SUBJ [$_{VP}$ [$_{VP}$ IO DO CL t_V] CONJ [$_{VP}$ IO DO CL t_V]] t_T] V-T-C]

Despite several objections against the string-vacuous verb-raising analysis (Sakai 2000; Takano 2002; Fukui and Sakai 2003; Fukushima 2003, *inter alia*), few of them have, to the best of my knowledge, succeeded in convincingly falsifying the string-vacuous verb-raising analysis of NCC.[2]

1.2 The Gapping Analysis of NCC (Fukui and Sakai 2003)

As an alternative to Koizumi's string-vacuous verb-raising approach to NCC, Fukui and Sakai (2003) argue that the relevant non-constituents are derived through gapping in non-

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[1]For other evidence of Japanese verb-raising, see Koizumi (2000). See also Fukui and Sakai (2003), for alternative explanations on Koizumi's arguments.

[2]Categorial grammar provides an alternative analysis of NCC that does not resort to ellipsis or movement (Dowty 1996; Steedman 1990; Kubota 2015, among others). I do not discuss their analyses here, since it is beyond the scope of this short paper.

final conjuncts. They propose that a post-syntactic operation of *PF-reanalysis* subsequently applies to two or more phonological units in the PF-component, to create a single unit. Under the gapping analysis, *to* 'and' coordinates non-constituents in the post-syntactic component, as illustrated in (4) below (Fukui and Sakai 2003, p.350).

(4)   a.   [Taro-ga [[Hanako-ni ringo-o   3-tu ~~age~~] &   [Kumiko-ni banana-o
            Taro-NOM Hanako-DAT apple-ACC 3-CL give CONJ Kumiko-DAT banana-ACC
            2-hon age]-ta]]
            2-CL   give-PST

       b.   [Taro-ga [[Hanako-ni ringo-o   3-tu] to   [Kumiko-ni banana-o   2-hon]
            Taro-NOM Hanako-DAT apple-ACC 3-CL CONJ Kumiko-DAT banana-ACC 2-CL
            age-ta]]
            give-PST
            'Taro gave three apples to Hanako and two bananas to Kumiko.'

            (Gapping of *age* 'give' in the first conjunct and application of PF-reanalysis)

Gapping in the first conjunct occurs after the structure (4a) is sent to the post-syntactic component. However, the exact nature of gapping is not clearly defined in (Fukui and Sakai 2003). I simply assume that gapping is a phonological operation in which a verb in the non-final conjunct is elided together with verbal affixes, which are bound morphemes in Japanese.[3] Revisiting (4), after gapping, the phonologically adjacent IO, DO, and CL in each conjunct are reanalyzed as a phonological unit, coordinated by *to* 'and', as in (4b).

     So far, I have compared the verb-raising analysis with the gapping analysis without verb-raising.[4] Next, we will see that there are other reasons to prefer the gapping account, which in turn weakens the case for syntactic verb-raising in Japanese.

2   Verb-raising in NCC and Focus Particles

I first review Funakoshi's (2020) analysis of VP-fronting in Japanese. He claims that verbs raise out of VP in Japanese, which eventually makes *ringo-o* 'an apple' and *tabe* 'eat' a non-constituent in (5b). Since *ringo-o* and *tabe* do not form a constituent, they cannot be fronted together; hence, (5b) is ungrammatical in Japanese. On the other hand, since focus particles such as *-sae* 'even' and *-mo* 'also' block verb-raising out of VP (Aoyagi 1998, 2006; Sakai 1998, 2000, among others), the verb remains inside the VP and so *ringo-o* and *tabe-sae* form constituency. Thus, VP-fronting is possible in (5c). To summarize, Funakoshi claims that VP-fronting without a focus particle in (5b) is ungrammatical, since verbs raise out of the VP in Japanese.

(5)   a.   Taro-ga   ringo-o   tabe-ta.
            Taro-NOM apple-ACC eat-PST
            'Taro ate an apple.'

       b.   *[$_{VP}$ Ringo-o   tabe] Taro-ga t_{VP} si-ta.
            apple-ACC eat   Taro-NOM   do-PST

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[3]There is nothing that prevents this operation in principle, since a verb itself is a syntactic constituent, hence it can be a target of ellipsis under the general assumption.

[4]Takano's (2002) oblique movement analysis will be reviewed in 4. I conclude that his analysis has an empirical problem; hence, I do not discuss the oblique movement analysis in detail in this study.

c.   [_VP_ Ringo-o   tabe-sae] Taro-ga t_{VP} si-ta.
       apple-ACC eat-even   Taro-NOM   do-PST

<div align="right">(Funakoshi 2020, p.119)</div>

Given that focus particles block verb-raising in Japanese, it is predicted that NCC results in ungrammaticality, whenever VP-fronting and focus particles co-occur. However, this prediction is not borne out: the NCC with VP-fronting in (6) is perfectly grammatical.

(6)   a.   Taro-ga   [Ziro-ni ringo-o   2-tu] to   [Hanako-ni banana-o   3-bon]
            Taro-NOM Ziro-DAT apple-ACC 2-CL CONJ Hanako-DAT banana-ACC 3-CL
            age-sae   si-ta.
            give-even do-PAST
            'Taro even gave Ziro two apples and Hanako three bananas.'
   b.   [_VP_ [Ziro-ni ringo-o   2-tu] to   [Hanako-ni banana-o   3-bon] age-sae]
            Ziro-DAT apple-ACC 2-CL CONJ Hanako-DAT banana-ACC 3-CL   give-even
            Taro-ga t_{VP} si-ta.
            Taro-NOM   do-PAST
            lit. 'Even give Ziro two apples and Hanako three bananas, Taro did.'

Based on this observation, I conclude that there is no syntactic verb-raising in Japanese NCC. Note that the gapping analysis derives the VP-fronted NCC, since it does not make use of verb-raising. Therefore, I argue that the gapping analysis is preferable to the verb-raising analysis of NCC in Japanese. In the next section, I provide another piece of empirical evidence against the verb-raising analysis.

3   Verb-raising in NCC and Scope Properties

In this section, I provide empirical evidence against the verb-raising analysis of NCC. If some scope-bearing element moves in Narrow Syntax, then this movement should be reflected at LF. In the case of head movement, however, this is generally hard to demonstrate because, in most contexts, verb movement reconstructs and is therefore undone for the purposes of interpretation in the standard frameworks of semantics, such as Heim and Kratzer's (1998), as Bhatt and Keine (2015) argue (see also Matushansky 2006). Thus, a syntactically raised head can usually not scope from the position it moves to.

By contrast, Lechner (2006) and Roberts (2010) have shown that in selected contexts, the modal _can_ (**CAN**) and negation (**NEG**) in English, do show semantic effects when they undergo head movement in syntax. In this sense, CAN and NEG are two exceptions among syntactic heads with regard to semantic vacuity of head movement. Subsequently, I focus on these two types of exceptional heads, whose movement shows semantic effects.

3.1   Head Movement and Scope Properties

First, let us review Lechner's (2006) arguments below. He convincingly shows that some instances of head movement can have semantic effects. A modal head can be interpreted both in the surface and the reconstructed positions, given observations below. In (7), the modal head _can_ moves and reconstructs to a position below negation and the _v_P-adverb

always.[5]

(7)　a.　John can not t_{can} come along today.　　　　　　　¬ ◇ / ??◇ ¬
　　　b.　You can always t_{can} count on me.　　　always > ◇ / *◇ > always

Lechner then assumes that the modal head is externally merged lower than these elements followed by head-movement to a higher position. With this in mind, observe (8) below. The sentences in (8a-b) are ambiguous, as in (8c-f). The modal is interpreted between *not* and *every*, though *not* and *every* are generally assumed to form a constituent to the exclusion of the modal (Roberts 2010, p.15).

(8)　a.　Not every pearl can be above average in size.
　　　b.　Not every boy can make the basketball team.
　　　c.　¬ ◇ > ∀: It is not possible for every pearl to be above average size.
　　　d.　¬ ◇ > ∀: It is not possible for every boy to make the team.
　　　e.　¬ ∀ > ◇: Not every pearl in this world is above average size in some world.
　　　f.　¬ ∀ > ◇: Not every boy in this world will get on the team in some world.

The ambiguity is accounted for if the head-moved modal is interpreted either in the base or the derived position. In (9), *can* is base-generated somewhere below *every*, and moves higher than *every*, as in (9a) and (9b). In the next step, abstract negation NOT is introduced in (9c), resulting in the ¬ ◇ > ∀ interpretation. Another interpretation, ¬ ∀ > ◇ emerges when CAN reconstructs to its original position in (9d).[6]

(9)　a.　[every... can ⇒
　　　b.　[can [every... ~~can~~ ⇒
　　　c.　[not [can [every... ~~can~~ ⇒
　　　d.　[not [~~can~~ [every... can

For this reason, I follow Lechner (2006) (see also Roberts 2010) in assuming that there are indeed instances of semantically active head movement. As is widely known, NEG becomes able to license Negative Polarity Items via head movement. That said, I argue that the observations in this section lead us to conclude that head movement of at least CAN and NEG do show semantic effects.

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[5] I claim that the reported judgment in (7) is not problematic to the claim that movement of CAN shows semantic effects. CAN here is capable of scoping over NEG when read with appropriate prosody. Moreover, whether the modal is interpreted as deontic or epistemic also matters to interpretation (Hacquard 2006). Given that the judgment of (7a) is subject to non-syntactic factors, I continue to assume that head movement of CAN and NEG is capable of having certain semantic effects, along with Lechner (2006) and Roberts (2010).

[6] Note that it is CAN, not the XP, that creates the relevant ambiguity in (8). On this point, Lechner (2006) assumes negative DPs like [*not every X*] bear a feature [+neg] that requires them to appear in the local scope of an abstract NOT operator (von Stechow 1993; Penka 2002). Since the canonical subject position precedes NOT, Lechner concludes that the subject must be interpreted in a reconstructed position. Thus, the ambiguity between ¬ ◇ > ∀ and ¬ ∀ > ◇ in (9c) and (9d) cannot be captured by XP-movement of [*not every X*].

3.2 Evidence of Semantic Effects of Syntactic NEG-raising in Japanese

Before considering the NCC data, I provide a case where a moved head takes scope in its derived position in Japanese.[7] Kishimoto (2007) shows that a negative head *-nai* undergoes head movement, extending its scope. *-nai* resists suffixation of focus particles, such as *-mo* 'also', *-sae* 'even', *-dake* 'only', *-wa* 'TOP' (Kishimoto 2007, p.250). This is illustrated in (10).

(10)   *Nimotu-ga   todoka-naku-sae/mo at-ta.
          luggage-NOM reach-NEG-even/also be-PST
          'The luggage did not even/also arrive.'

(Kishimoto 2007, p.250)

Why are focus particles not permitted to the right of a negative head *-nai*? Kishimoto (2007, pp.251-252) suggests that this fact naturally follows from the assumption that the negative head undergoes head raising in certain environments. Kageyama (1993) points out that particles such as *-mo/-sae* 'also/even' mark the right edge of a (complex) head [__#], hence they can never be inserted inside the complex head created in Narrow Syntax. For a compound noun like *zidoosya-syuuri* 'automobile repair', *-mo* can appear only at the right edge of the whole lexical word, as in (11) (Kishimoto 2007, pp.252-253).

(11)   a.   zidoosya-syuuri-mo
              automobile-repair-also
              'also automobile repair'
        b.   *zidoosya-mo-syuuri
              automobile-also-repair

What is crucial here is that *-mo* is prevented from intervening between the two heads forming a complex one. Revisiting the ungrammaticality of (10), Kishimoto (2007) suggests that *-nai* and *-ta* form a complex syntactic head via syntactic head movement; therefore, focus particles are not allowed to be appear inside it.

Kishimoto (2007), assuming that the subject is placed in [Spec, TP] to receive Nominative Case in Japanese, further proposes that this syntactic NEG-raising is the source of no-subject/object asymmetries in Japanese NPI licensing. He argues that NEG-raising extends negative scope. In Japanese, an NPI (*-sika* 'only' here) is unlike in English and other languages licensed in the subject and in the object position, as illustrated in (12).

(12)   a.   Taro-sika sakana-o tabe-nakat-ta.
              Taro-only fish-ACC eat-NEG-PST
              'Only Taro ate fish.'
        b.   Taro-ga   sakana-sika tabe-nakat-ta.
              Taro-NOM fish-only   eat-NEG-PST
              'Taro ate only fish.'

If Kishimoto's claim about NEG-raising to its adjacent heads is on the right track, then the lack of subject/object asymmetries in NPI licensing is its natural outcome. Based on

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[7]I thank an anonymous reviewer for observing the necessity of showing that Japanese also has an instance of semantically active head movement.

these observations, I conclude that a moved head in Japanese can also be interpreted in its derived position similar to NEG in English.

3.3 Scope between All/Most QPs and NEG in NCC

Consider, at this point, the NCC data in (13), which differs from the previous examples in that possible scope interactions involve a verbal head and two conjunct-internal operators. If the verb raises in NCC in (13), it first moves to NEG, to T, and then to C in ATB-fashion, creating the [V-NEG-T-C] amalgam, as in (14). This predicts that NEG in C unambiguously takes wide scope over the whole NCC. However, the NCC in (13) only allows the QP > ¬ reading, but not the ¬ > NCC reading ($\neg (p \wedge q) = \neg p \vee \neg q$).[8] If the ¬ > NCC reading were available, then $\neg p \vee \neg q$ should be allowed, but this is not the case.

(13)   [Subete-no josi-gakusei-ga   ringo] to   [hotondo-no dansi-gakusei-ga
        all-GEN   female-students-NOM apple CONJ most-GEN   male-students-NOM
        banana]-o   tabe-nakat-ta.
        banana-ACC eat-NEG-PST

    a.   QP > ¬: [All female students didn't eat an apple] ∧ [most male students didn't eat a banana].

    b.   *¬ > QP ($\neg p \wedge \neg q$): [It's not the case that [$_p$ all female students ate an apple]] ∧ [It's not the case that [$_q$ most male students ate a banana]].

    c.   *¬ > NCC ($\neg (p \wedge q) = \neg p \vee \neg q$): It is not the case that [[$_p$ all female students ate an apple] ∧ [$_q$ most male students ate a banana]].

(14)   [$_{CP}$ [$_{TP}$ [all-NP [$_{VP}$ . . . t_V] t_{NEG} t_T] & [most-NP [$_{VP}$ . . . t_V] t_{NEG} t_T]] [V-NEG-T-C]]

(Predictions: ¬ > NCC/*QP > ¬)

One might object that QPs such as all/most-NPs may freely raise and take wider scope over negation by QR.[9] However, such movement violates the Coordinate Structure Constraints (**CSC**) (Ross 1967), as illustrated in (15) below because distinct elements can not be extracted in ATB-fashion; hence, QPs such as all/most-NPs must remain in-situ within the coordinate structure.

(15)   *All-NP$_i$ most-NP$_j$ [[t_i [. . . [. . . t_V] t_{NEG}] t_T] & [t_j [. . . [. . . t_V] t_{NEG}] t_T] [V-NEG-T-C]]

An anonymous reviewer observed the argument in this section (as well as the following section), may not go through if the unavailability of the ¬ > NCC reading is due to the following derivation: the verb raises up to T, and scrambling of the coordinated VP occurs to a position higher than T. This is schematically illustrated in (16).

(16)   a.   [$_{TP}$ [$_{\&P}$ [$_{VP}$ ...] & [$_{VP}$ ...]] V-NEG-T]
      b.   [$_{\&P}$ ...]$_i$ [$_{TP}$ t_i V-NEG-T]

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[8]The ¬ > QP reading is absent as well, which does not affect our discussion here.

[9]It is standardly assumed that numerals can undergo QR without violating island conditions, because of the choice function analysis. For this reason, I use strong quantifiers such as *subete* 'all' and *hotondo* 'most', instead of numerals. I thank an anonymous reviewer for the suggestion.

I claim that this alternative derivation cannot explain at least two important questions. First, the lack of reconstruction of the &P to obtain the ¬ > NCC reading, remains unclear. Second, the &P scrambling analysis above cannot explain the unavailability of the ¬ > NCC reading in (13), because scrambling is an optional operation in Japanese. If scrambling is optional, then it need not apply in (16a) and the ¬ > NCC reading should be available in such cases. However, the relevant reading is not available in (13); hence, I conclude that the absence of the ¬ > NCC reading is not due to the scrambling of &P in (16).[10]

In this section, we saw that the verb-raising approach of Koizumi (2000) and Funakoshi (2014) makes wrong predictions about the scope between NEG and a subject QP inside NCC. Note that the gapping analysis without verb-raising out of the conjunct correctly derives the observed scope relations in (13), because NEG always stays inside each conjunct, possibly as large as a TP. In the next section, I provide further counter-evidence to the verb-raising analysis from the nominative object construction in Japanese.

3.4 Scope between a Nominative Object and CAN in NCC

This section investigates the scopal interactions between the stative *v* head -(*rar*)*e* 'can', and nominative objects in Japanese. Since CAN is another head that shows semantic effects via head movement, it should be asked whether its Japanese equivalent -(*rar*)*e* also exceptionally takes scope in its derived position post head movement. Observations in Tada (1992) suggest that nominative objects are obligatorily interpreted above stative predicates, as in (17).[11]

(17)   a.   John-ga   migi-me-dake-o   tumur-e-ru.
           John-NOM right-eye-only-ACC close-CAN-PRS
           (i) can > only, (ii) *?only > can
       b.   John-ga   migi-me-dake-ga   tumur-e-ru.
           John-NOM right-eye-only-NOM close-CAN-PRS
           (i) *can > only, (ii) only > can
       (i)   can > only: 'John can wink his right eye.' (John can close his right eye without closing his left eye.)
       (ii) only > can: 'It is only his right eye that he can close.' (Tada 1992, p.94(6))

A stative predicate may take wide scope over nominative objects they c-command, though as in (18). Thus, there is no independent semantic constraint prohibiting the scope order CAN > a nominative object.

(18)   Sensei-wa [Taro-ga eigo-dake-ga   joozu-da   to] kakusin-deki-ta.
       teacher-TOP Taro-NOM English-only-NOM good.at-COP that feel.certain-CAN-PST
       'The teacher was ascertained that Taro was only good at English.'
       a.   can > only: The teacher was ascertained that English was the only thing Taro was good at.

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[10]I thank an anonymous reviewer for referring me to the possible alternative analysis in (16).

[11]In out-of-the-blue contexts, nominative objects cannot be interpreted under the stative predicates (but see Nomura 2005, p.271, for an opposite view).

b. *only > can: The only thing the teacher could feel certain about was that Taro was good at English.

Now consider (19), where two different nominative objects, *migi-ude-dake-ga* 'right-arm-only-NOM' and *hidari-ude-dake-ga* 'left-arm-only-NOM', are in the first and the second conjunct, respectively.

(19) Jutu-go   [Taro-ga migi-ude-dake-ga kata-made] to [Ziro-ga
      operation-after Taro-NOM right-arm-only-NOM shoulder-to CONJ Ziro-NOM
      hidari-ude-dake-ga ago-made] age-rare-ru (yooni-nat-ta)
      left-arm-only-NOM chin-to   raise-CAN-PRS like-become-PST
      a. *can > only: 'After the operation, it became possible [for Taro to raise only his right arm up to his shoulder, without raising his left arm], and [for Ziro to raise only his left arm up to his chin, without raising his right arm].'
      b. only > can: 'After the operation, [it is only his right arm that Taro can now raise up to his shoulder], and [it is only his left arm that Ziro can now raise up to his chin].'

The non-NCC counterpart is provided in (20) for comparison. As we saw in (17), the nominative object is obligatorily interpreted above the stative modal.

(20) Taro-ga migi-ude-dake-ga   kata-made age-rare-ru.
      Taro-NOM right-arm-only-NOM shoulder-to raise-CAN-PRS
      a. *can > only: 'It is possible for Taro to raise only his right arm up to his shoulder with-out raising his left arm.
      b. only > can: It is only his right arm that Taro can now raise up to his shoulder.'

Let us reassume that there exists string-vacuous verb-raising in Japanese NCC, along with Koizumi (2000). If such verb raising were possible, then the stative *v* should also raise all the way up to C, as illustrated in (21), resulting in wide scope over the nominative objects. However, this prediction is not borne out, as witnessed by the absence of the reading can > only in (19).

(21) $[_{CP}$ $[_{TP}$ right.arm-only-NOM $[_{vP}$ $t_V]$ $t_T]$ & $[_{TP}$ left.arm-only-NOM $[_{vP}$ $t_V]$ $t_T]$ $[v_{can}$-T]-C]

(Predictions: can > only/*only > can)

Moreover, movement of the nominative objects out of their respective conjuncts in (22) violates the CSC, just as we saw in (15). Note that the ATB-movement out of conjuncts is not an option, since the two nominative objects are not identical.

(22) *right.arm-only$_i$ left.arm-only$_j$ $[[t_i [[...t_V] t_{can}] t_T]$ & $[t_j [[...t_V] t_{can}] t_T]$ $[V-v_{can}$-T-C]]

To sum up, it was argued that Japanese NCC does not implicate syntactic verb-raising. The behavior of two types of verbal heads and QP/NPs: (i) All/Most-QPs and NEG; and (ii) *dake*-NPs 'only' and -(*rar*)*e* 'can' indicate that the verb raising analysis makes wrong

predictions about the scope of arguments.

4 Conclusion

In this study, I identified problems for the verb-raising approach to NCC in Japanese. It under-generates when NCC is VP-fronted. Furthermore, it makes wrong predictions about the scope between heads and arguments inside NCC, and heads and the whole NCC. I conclude that there is no syntactic V-to-T-to-C head movement in Japanese NCC.

Before we conclude this study, a note on Takano (2002) is in order. He argues that NCC is derived through *Oblique Movement*: movement of an element to another element that does not dominate it (Takano 2002, p.243). Based on the assumption that only a single constituent can be clefted, Takano argues that what seems to be a non-constituent is actually a syntactic constituent, which is derived through repetitive applications of adjunction-to-arguments. Under Takano's analysis, conjuncts are base-generated through repetitive application of oblique movement. Therefore, the relevant NCC does not involve any verb raising as in (23).

(23)   Mary-ga   [[ringo-o [John-ni [2-tu]]] to   [banana-o [Bob-ni [3-bon]]]]
         Mary-NOM apple-ACC John-DAT 2-CL   CONJ banana-ACC Bob-DAT 3-CL

         age-ta.
         give-PST
         'Mary gave two apples to John and three bananas to Bob.'

Takano's approach seems to be successful in explaining the nature of NCC. However, Funakoshi (2014) brings to attention the data in (24), where direct objects in the first and the second conjunct are assigned different case markers.

(24)   a.   Taro-ga   tyoosyoku-ni [ringo-ga 3-tu] to   [banana-o 2-hon]
              Taro-NOM breakfast-for apple-NOM 3-CL CONJ banana-ACC 2-CL

              tabe-rare-ru.
              eat-can-PRS
              'For breakfast, Taro can eat three apples and two bananas.'
         b.   Taro-ga   tyoosyoku-ni [ringo-o 3-tu] to   [banana-ga 2-hon]
              Taro-NOM breakfast-for apple-ACC 3-CL CONJ banana-NOM 2-CL

              tabe-rare-ru.
              eat-can-PRS
              'For breakfast, Taro can eat three apples and two bananas.'

Given that nominative and accusative objects are complementary in the syntactic environments of their appearance, examples such as (24) pose a problem for Takano's analysis. There must be at least two distinct functional *v* heads, for one of them to mark an object nominative, while the other marks another object accusative. The analysis predicts that there would be only one *v*, since Takano does not assume the relevant NCC to be derived from verbal coordination, as illustrated in (23). Thus, I conclude, following Funakoshi (2014), that Takano's (2002) oblique movement analysis is not sufficiently general. This study has shown the insufficiency of the string-vacuous verb-raising analysis and the oblique movement analysis that lead to over/under-generation problems. Conse-

quently, this study supports the gapping analysis of NCC in Japanese proposed by Fukui and Sakai (2003).

In the present study, I spelled out two arguments against an analysis of NCC in Japanese that relies on overt head movement. Needless to say, further inquiry is necessary to conclude the general absence of string-vacuous verb-raising in Japanese. However, I hope that this study contributes to the long-discussed controversial issue in Japanese syntax.

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