

String-Vacuous Head Movement in Japanese: New Evidence from Verb-Echo Answers

Abstract: Whether Japanese has verb raising or not has been one of the most contentious issues for more than twenty years in the literature. This paper presents novel evidence for string-vacuous head movement from the previously unexplored perspective of verb-echo answers. We propose that such an answer form in Japanese is derived through V-T-C movement in overt syntax, followed by TP-ellipsis at PF, rejecting the alternative pro-drop analysis. Our analysis is supported by a wide range of new facts on verb-echo answers, including the indefinite pro-drop restriction, the impossibility of voice-mismatches and adverb-inclusive interpretations. As our theory presupposes head movement as its central analytical premise, the results of this paper indicate that Japanese grammar is equipped with string-vacuous verb raising. We will also briefly explore some curious behaviors of verb raising in Japanese relating to the scope of negation under ellipsis and intervention effects. We will argue that this phenomenon is fundamentally different from its counterpart in European languages such as French in that the former is an optional operation in narrow syntax that only occurs if it yields new outcomes at PF and/or LF.

An earlier version of this paper was presented at the linguistic colloquium hosted by the Department of Humanities and Social Sciences of the Indian Institute of Technology Delhi (October 2016) and at an advanced syntax seminar at the Department of English Language and Literature of the National University of Singapore (Fall 2016). We thank the participants on those venues as well as Yoshi Dobashi, Nobu Goto, Hideki Kishimoto, Shin-Ichi Kitada, Ryoichiro Kobayashi, Si Kai Lee, Wanyan Len, Hannah Lin, Chandra Pritha, Martina Wiltschko, and Dwi Hesti Yuliani for invaluable comments on earlier versions of this paper. All remaining errors are our own. This research has been supported by the Singapore Ministry of Education Academic Research Fund Tier 1 Grant (R-103-000-124-112) awarded to the first author.

Keywords string-vacuous head movement, verb-echo answer, TP-ellipsis, pro-drop, adjunct-inclusive interpretation, Japanese

1. Introduction

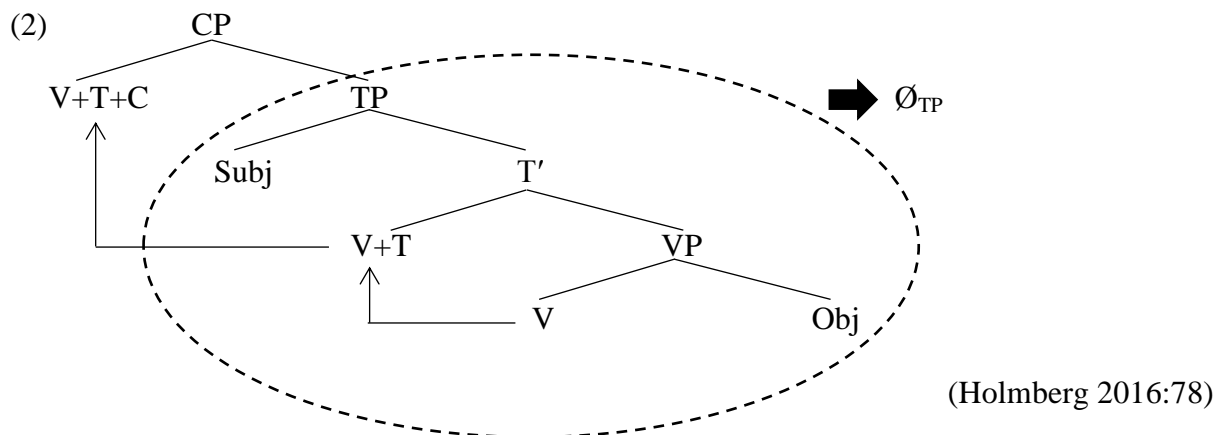
It has been one of the most controversial questions for more than twenty years in the literature whether Japanese has verb raising because the existence of such an operation, if any, is always string-vacuous due to the strict head-final character of the language. Thus, while Otani and Whitman (1991) and Koizumi (2000) have argued for the existence of string-vacuous head movement in Japanese on the basis of null object constructions and coordination respectively, their arguments for this position have since been questioned by much subsequent work, particularly by Hoji (1998) and Fukui and Sakai (2003). Thus, it seems fair to say that no convincing evidence has been discovered for head movement in Japanese.

Against this backdrop, the purpose of this remark is to point out novel empirical support for the existence of string-vacuous head movement in Japanese through the previously unexplored perspective of verb-echo answers, a type of stand-alone answer to *yes-no* questions by repeating the verb of the questions. Verb-echo answers are prevalent among many languages of the world, as evidenced by Holmberg's (2016:64–72) survey of languages, which have been reported to employ them as a standard form of answer to a *yes-no* question. Japanese belongs to this type of language, as illustrated by example (1Aa). Example (1Ab) shows that the response using a polar particle is independently available as another standard form of answer to the *yes-no* question.

- (1) Q: Moo hirugohan-o tabe-mashi-ta-ka?
already lunch-ACC eat-POL-PAST-Q
'Did you already eat lunch?'

- A: a. Tabe-mashi-ta-yo.
 eat-POL-PAST-PRT
 ‘Lit. Ate.’
- b. Hai.
 Yes
 ‘Yes.’

Holmberg (2016) shows that verb-echo answers in languages such as Finnish, Welsh, and Kokama-Kokamilla are best accounted for in terms of clausal ellipsis. More specifically, this answer form results from subject raising to [Spec, TP] and overt verb raising all the way to C, followed by TP-ellipsis in the phonological component, as schematically depicted in (2).



We will propose that verb-echo answers in Japanese as in (1Aa) be similarly derived as the by-product of overt verb raising, with subsequent ellipsis of the TP constituent, as shown in (2), rejecting the otherwise plausible pro-drop analysis of such answer forms. Thus, to the extent that the analysis in (2) holds true, we have strong evidence in favor of overt verb raising in Japanese.

In section 2, we will review Holmberg’s (2016:80) generalization that an existential indefinite singular subject cannot undergo pro-drop in a diverse range of languages, such as Italian, Brazilian

Portuguese, Thai, and Mandarin Chinese, which exhibit different types of pro-drop. We will show that Japanese, as a pro-drop language, also obeys this restriction. We will then present our key observation that verb-echo answers are available under those contexts where elliptical subjects and/or objects are indefinite to reject the possibility, proposed by Kuroda 1965, that this answer type is derived through radical pro-drop. The relevant observation is straightforwardly accounted for within the clausal ellipsis theory. In section 3, we will point out that the verb-echo answer form patterns with sluicing, but not with pro-drop, in that it disallows voice-mismatches. This observation suggests that the syntactic derivation of verb-echo answers involves TP-ellipsis and, by extension, head movement to C, as depicted in (2). In section 4, we will demonstrate that verb-echo answers permit the adjunct-inclusive interpretation whereby certain adjuncts are interpreted together with other elided VP-internal arguments such as direct objects. We will argue that the very existence of this interpretation supports our clausal ellipsis analysis of verb-echo answers over the pro-drop alternative. We will then discuss apparently problematic cases where this interpretation is systematically prohibited – an adverb-exclusive interpretation – and argue that upon closer examination, these cases are consistent with our analysis, and better still, support our analysis rather than undermine it. In section 5, we will briefly consider the nature of head movement involved in the derivation of verb-echo answers and its theoretical implications within the minimalist framework. We will examine some differences between verb-echo answers and their non-elliptical counterparts with respect to the scope of negation with conjunction and the presence/absence of focus-intervention to show that verb raising in Japanese is optional; it occurs only when the resulting representation brings about new effects at PF and/or LF. We will conclude then that verb raising in Japanese is qualitatively different from verb raising in European languages such as French and German, which is generally assumed to be obligatory and lack any substantial semantic consequences (Chomsky 2001). Section 6 is the conclusion.

2. The Indefinite Pro-Drop Restriction and Verb-Echo Answers in Japanese

In deciding whether verb-echo answers are derived through (radical) pro-drop or clausal ellipsis, Holmberg (2016:79–90) devises the diagnostic statement in (3).

(3) The Indefinite Pro-Drop Restriction (Holmberg 2016:80)

An existential indefinite singular subject pronoun cannot be pro-dropped.

Suppose that a verb-echo answer is grammatical when the question preceding it has an indefinite subject pronoun. In this case, the answer cannot be derived through subject pro-drop by virtue of the restriction shown in (3). Holmberg shows that this restriction holds true in a diverse range of languages exhibiting different types of pro-drop. Let us start with agreement-based pro-drop languages. In Italian, for instance, the null subject in (4) can only be interpreted as a definite, third-person, singular individual. Importantly, it cannot be interpreted as an indefinite subject.

(4) Può controllare questo macchinario con una mano sola.

can.3SG control this machine with one hand only

‘He/she can control this machine with one hand.’

‘*Someone can control this machine with one hand.’ (Italian: Holmberg 2016:79)

On the other hand, in Brazilian Portuguese, a third-person, null subject can have inclusive generic interpretation, but it cannot be interpreted as an indefinite subject. This point is shown in (5).

(5) Esta máquina pode controlar com uma mão só.
this machine can.3SG control with one hand only

‘One can control this machine with one hand.’

‘*Someone can control this machine with one hand.’

(Brazilian Portuguese: Holmberg 2016:80)

The restriction in (3) holds no less true for radical pro-drop languages. Phimsawat (2011) observes that the null subject in Thai can receive either the definite personal reading, if there is a third-person antecedent in the local discourse, or the inclusive generic reading. However, crucially, it cannot receive the indefinite reading. This point is shown in (6). Mandarin Chinese, another radical pro-drop language (Huang 1984), exhibits the same range of interpretive options, as illustrated in (7).

(6) cim bɔ̀k wâa khř̩ǔcàk ní baŋkháb dâaj ď̩ǔaj m̩̌ǔ diiw.
Jim say COMP machine DEM control able with hand one

‘Jim says that he/one can control this machine with one hand.’

‘*Jim says that someone can control this machine with one hand.’

(Thai: Holmberg 2016:80)

(7) Lisi shuo zhi yong yi-zhi shou jiu neng kongzhi zhe tai jiqi.
Lisi say only can one-CL hand then can control this CL machine

‘Lisi says that he/one can control this machine with one hand.’

‘*Lisi says that someone can control this machine with one hand.’

(Mandarin Chinese)

Japanese also obeys the indefinite pro-drop restriction. Example (8) shows that the null subject can receive either the definite or generic interpretations, but cannot be interpreted as indefinite. Example (9) shows that the same restriction also holds true for the null object.

- (8) Yoichiro-ga kono kikai-wa e katate-de soosadekiru-to itteiru.
 Yoichiro-NOM this machine-TOP one hand-with can.control-COMP say

‘Yoichiro says that he/one can control this machine with one hand.’

‘*Yoichiro says that someone can control this machine with one hand.’

- (9) Yoichiro-wa Megumi-ga e tatai-ta-to itteiru.
 Yoichiro-TOP Megumi-NOM hit-PAST-COMP say

‘Yoichiro says that Megumi hit him.’

‘*Yoichiro says that Megumi hit someone.’

It is not our concern to understand why the restriction in (3) manifests itself in Japanese or in those languages discussed above with different types of pro-drop, for that matter, since its validity in archetypical radical pro-drop paradigms within subordinate and matrix clauses as illustrated in (8) and (9) is sufficient for our purposes.¹ Our task, thus, is to capitalize on this generalization, where applicable, to identify the syntax of verb-echo answers. Consider now example (10).

¹ For example, a reviewer points out that the data in (i) are problematic for (3). In these gapless relative clause examples, the subject can be readily interpreted as indefinite.

- (i) a. [_{RC} *pro* kodomo-o shikaru] koe
 child-ACC scold voice

‘Lit. the voice that someone scolds a child’

(10) Q: Dareka-ga kinoo kokode tabako-o sui-mashi-ta-ka?
someone-NOM yesterday here cigarette-ACC smoke-POL-PAST-Q

‘Did anyone smoke a cigarette here yesterday?’

A: Sui-mashi-ta-yo. Tabun Fujita-san-desu-ne.
smoke-POL-PAST-PRT probably Fujita-TIT-COP.POL-PRT

‘Yes. Someone smoked a cigarette yesterday. Probably it was Fujita.’

b. [_{RC} *pro* sakana-o yaku] nioi
fish-ACC grill smell

‘Lit. the smell that someone grills fish’

Our point here is that null subjects and objects in matrix/subordinated constructions as shown in (8) and (9) do obey the restriction. Indeed, once we construct the corresponding matrix clauses based on the gapless relative clauses, as in (ii), the null subject cannot be interpreted as indefinite.

(i) a. *pro* kodomo-o shikat-ta
child-ACC scold-PAST

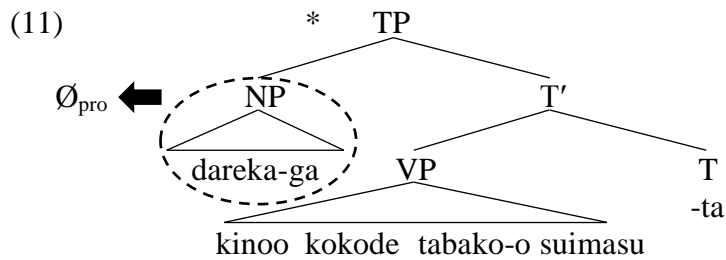
‘*Someone scolded a child.’

b. *pro* sakana-o yai-ta.
fish-ACC grill-PAST

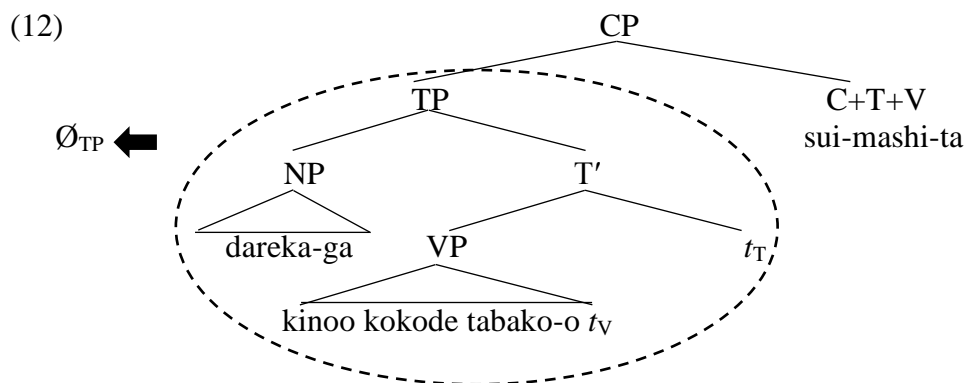
‘*Someone grilled fish.’

For this reason, we will build our argument based on the Indefinite Pro-Drop Restriction for the clausal ellipsis analysis of verb-echo answers on those contexts as in (8) and (9), and will leave the identification of the exact scope and limitation of the restriction for another occasion.

Here, the question contains *dareka-ga* ‘someone-NOM’. Given (3), the subject argument in the verb-echo answer cannot be pro-dropped. Consequently, the pro-drop analysis has no way to derive the verb-echo answer through subject pro-drop, even if the VP can somehow be elided through VP-ellipsis (Otani and Whitman 1991). This point is schematically depicted in (11).



Our alternative theory, on the other hand, straightforwardly derives the verb-echo answer in (10A), as shown in (12). Here, the verb undergoes head movement from the V position all the way to the C position. We assume, following Holmberg 2016, that the verb, endowed with information focus, undergoes overt movement into the head of PolP within the C-region to lexically spell-out the polarity feature.



Note that our analysis predicts that the indefinite interpretation of the null subject, available in (10A), should become inaccessible when some TP-internal material is pronounced together with the echoed verb in a response to (10Q). The reason is that the derivation of such a response

cannot involve TP-ellipsis so that the only way to derive the null subject is through pro-drop. Consequently, the null subject in question should now be subject to the restriction in (3). This prediction is indeed borne out. Consider examples (10A) and (13A, B) as responses to (10Q).

(13) A: Tabako-o sui-mashi-ta-yo.

cigarette-ACC smoke-POL-PAST-PRT

‘*Yes. Someone smoked a cigarette.’ ‘? Yes, I smoked a cigarette.’

B: Kinoo sui-mashi-ta-yo.

yesterday smoke-POL-PAST-PRT

‘*Yes. Someone smoked yesterday.’ ‘? Yes, I smoked yesterday.’

Our native speaker consultants have detected a robust interpretive contrast between (10A) and (13A, B) with respect to the possibility of the indefinite subject interpretation. They have unanimously reported that it is difficult, if not impossible, to get the relevant interpretation in (13A, B). Many of our consultants have also pointed out that they find the responses in (13A, B) marginally acceptable under the interpretation that the null subject refers to the speaker of those responses.² Indeed, these answers can be employed more felicitously if the question does not contain the indefinite subject, as in (10A), but contains a definite subject, as in (14).

² A reviewer notes that (13A, B) are not acceptable unless there is a pause before the verb, as in (i).

(i) Kinoo? Sui-mashi-ta-yo.

yesterday smoke-POL-PAST-PRT

‘Yesterday? Ah, yes, smoked.’

(14) Q: Anata moshikashite kinoo kokode tabako-o sui-mashi-ta-ka?
you by any chance yesterday here cigarette-ACC smoke-POL-PAST-Q
‘Did you smoke a cigarette here yesterday by any chance?’

A: Tabako-o sui-mashi-ta-yo.
cigarette-ACC smoke-POL-PAST-PRT
‘Yes, I smoked a cigarette.’

B: Kinoo sui-mashi-ta-yo.
yesterday smoke-POL-PAST-PRT
‘Yes, I smoked yesterday.’

This observation thus indicates that what makes (13A, B) sound odd has to do with the indefinite subject in (10Q). Consequently, the unavailability of the indefinite subject interpretation in (13A, B) provides further evidence for our theory. On the other hand, the interpretive contrast between (10A) and (13A, B) would be problematic for the pro-drop alternative analysis of verb-echo answers, as depicted in (11). This analysis would make the wrong prediction that the indefinite subject interpretation should be uniformly available in the three fragmentary replies due to the restriction in (3) regardless of whether or not any TP-internal constituent survives TP-ellipsis.³

The present authors do not need a pause to make them sound acceptable. We also note that the speaker-based interpretation is the only interpretation available in (i), suggesting again that the ban on the indefinite subject applies to truncated verb-based answers with some TP-internal remnants.

³ A reviewer provides the question-answer response in (iQ-A1). In this example, the verb in an answer is different from the verb in the question. Under our analysis, TP-ellipsis is not an option so that the null subject must be derived through other means such as pro-drop.

There is independent evidence from verbal inflections that the derivational source for verb-echo answers contains a full-fledged sentential structure before ellipsis. It is generally agreed upon in the

-
- (i) Q: Dareka-ga yonakani sawai-dei-mashi-ta-yo-ne?
someone-NOM late at night make noise-LINK.PROG-POL-PAST-PRT-PRT
‘Was someone making noise late last night, right?’
- A1: e Oogoe-de utat-tei-mashi-ta.
loud voice-with sing-LINK.PROG-POL-PAST
‘Was singing loudly.’
- A2: e Oogoe-de utat-tei-mashi-ta-yo-ne.
loud voice-with sing-LINK.PROG-POL-PAST-PRT-PRT
‘Was singing loudly.’

When asked what interpretations were available for the null subject, many of our Japanese consultants pointed out that the subject of the sentence in (A1) would only be interpreted as the speaker of (A1) whereas that of the sentence in (A2) would be interpreted as indefinite as a valid response to (i). In other words, they felt they needed some pragmatic discourse particles such as *yo-ne* to obtain the indefinite subject interpretation. Given (3), the null subject cannot be analysed as indefinite *pro*. We conjecture that the null subject in (iA2) functions as an *E-type pronoun* (Evans 1985; Heim 1990), i.e., the definite description that copies its descriptive content from the context of utterance. Under this analysis, (iA2) means roughly ‘that someone who you said was making noise late last night, he/she was singing loudly, right?’ This analysis gives the appearance that (iA2) allows the indefinite(-like) interpretation for the null subject in a manner consistent with (3). Admittedly, this analysis is not complete and does not do full justice to the relevance of the discourse particles to the indefinite subject interpretation, a task which we wish to come back to in our future research.

Japanese literature that tense morpheme is a morphological manifestation of the T category. Given this assumption, the fact that the verb-echo answer in (10A) is marked for tense indicates that its derivational source must have been endowed with a full-fledged TP structure before ellipsis takes place. We can make a similar argument for the same position through the slightly different perspective of honorific morphology. There has been considerable debate concerning the proper theoretical treatment of subject honorification (Toribio 1990; Ura 2000; see also Hasegawa 2006 for a comprehensive overview of the literature on Japanese honorifics), but the consensus view is that some feature of a nominal in subject position, i.e., the social information that the referent of the subject is “Socially Superior to the Speaker” in the sense of Harada 1976, is reflected on the verb. With this said, it is significant that the verb-echo reply may contain a subject honorification marker, as shown in (15A), which expresses the speaker’s deference to the referent of the subject. Note that the subject argument *donataka* in (15Q) is the polite form of *dareka* ‘someone’ in (10Q).

- (15) Q: Donataka kinoo kochirade tabako-o o-sui-ninari-mashi-ta-ka?
 someone yesterday here cigarette-ACC HON-smoke-HON-POL-PAST-Q
 ‘Did anyone smoke a cigarette here yesterday?’
- A: O-sui-ninari-mashi-ta-yo. Tashika Fujita-sensei-da-to-omoi-masu.
 HON-smoke-HON-POL-PAST-PRT as I recall Fujita-TIT-COP-COMP-think-POL
 ‘Yes. As I recall, it was Professor Fujita.’

Let us now turn to those question-answer pairs where the question contains an indefinite object. Example (16) is a case in point.

(16) Q: Taroo-ga kinoo kokoni dareka-o tsureteki-mashi-ta-ka?

Taro-NOM yesterday here someone-ACC bring-POL-PAST-Q

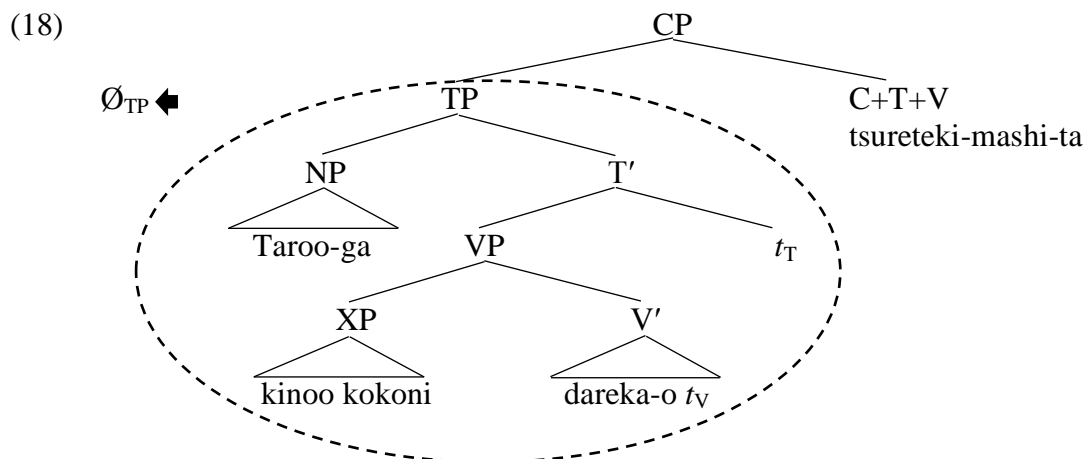
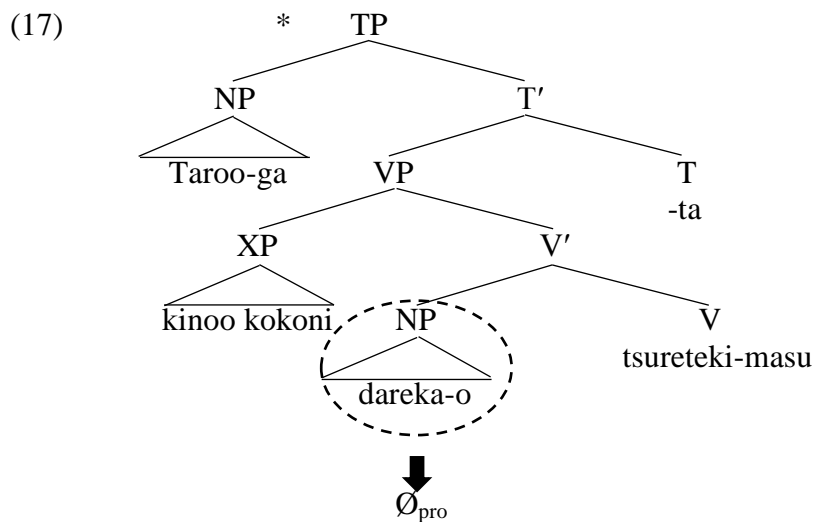
‘Did Taro take anyone here yesterday?’

A: Tsureteki-mashi-ta-yo. Tabun tomodachi-no Yashima-san-desu-yo.

took-POL-PAST-PRT probably friend-LINK Yashima-TIT-COP.POL-PRT

‘Yes. Probably it was his friend, Yashima.’

Given (3), the verb-echo response in (16A) cannot be derived by pro-drop, as shown in (17). On the other hand, our theory correctly predicts the same response as grammatical, as shown in (18).



To complete our argument in this section, example (19) illustrates a verb-echo answer whose triggering question contains an indefinite phrase in both subject and object positions.

- (19) Q: Dareka-ga kinoo kokoni dareka-o tsureteki-mashi-ta-ka?
 someone-NOM yesterday here someone-ACC bring-POL-PAST-Q
 ‘Did anyone bring anyone here yesterday?’
- A: Tsureteki-mashi-ta-yo. Sato-san-ga yuujin-no Goto-san-o
 bring-POL-PAST-PRT Sato-TIT-NOM friend-LINK Goto-TIT-ACC
 tsureteki-mashi-ta-yo.
 bring-POL-PAST-PRT
 ‘Yes. Sato brought his friend, Goto, here.’

To sum up, the restriction in (3) serves to block the pro-drop analysis of the verb-echo answer. We have seen independent evidence from tense and other related inflections such as honorification markers which show that such an answer is endowed with a full-fledged TP. Given these facts, we propose that the only plausible analysis for such an answer form is through head movement of V all the way up to C in narrow syntax, followed by TP-ellipsis in the phonological component.

3. Impossibility of Voice-Mismatches under Verb-Echo Answers in Japanese

We have argued that verb-echo answers in Japanese are derived through TP-ellipsis, preceded by V-T-C movement in overt syntax. This analysis makes one interesting prediction. Merchant (2001, 2008, 2013) and Chung (2006) observe that sluicing in English, an instance of TP-ellipsis, disallows active-passive voice mismatches between the antecedent clause and the sluice, as in (20).

- (20) *Someone shot Ben, but I don't know by who(m)_i [~~TP Ben was shot _i]. (Merchant 2001:35)~~

Merchant (2008, 2013) rules out voice-mismatches as a violation of a syntactic identity constraint: the example in (20) is ungrammatical because the antecedent TP does not match with the elliptical TP in terms of voice features. Sugisaki (2014) points out that sluicing in Japanese does not tolerate voice-mismatches, like sluicing in English. This observation is witnessed in (21a).

- (21) a. * Dareka-ga John-o yatot-ta-rashii-ga, boku-wa dare-ni-ka
 someone-NOM John-ACC hire-PAST-seem-but I-TOP who-by-Q
 shira-na-i.
 know-NEG-PRES
 ‘Someone hired John, but I don’t know by whom.’
- b. Dareka-ga John-o yatot-ta-rashii-ga, boku-wa dare-ga-ka
 someone-NOM John-ACC hire-PAST-seem-but I-TOP who-NOM-Q
 shira-na-i.
 know-NEG-PRES
 ‘Someone hired John, but I don’t know who.’ ((21a) from Sugisaki 2014:6)

If the verb-echo answer is derived through TP-ellipsis on a par with sluicing, as argued in our current analysis, then the former should also prohibit voice-mismatches because the latter is independently known to obey the above-mentioned syntactic identity constraint on voice specifications imposed on TP-ellipsis. This prediction is indeed borne out in (22). The *yes-no* question in (22Q) is associated with the active voice structure whereas the responses in (22A1) and (22A2) are associated with the active and passive voice structures, respectively. The ungrammaticality of (21A2) shows that verb-echo answers do not tolerate voice-mismatches.

(22) Q: Anata-no gakka-wa kotoshi John-o yatoi-mashi-ta-ka?
you-GEN department-TOP this year John-ACC hire-POL-PAST-Q
‘Did your department hire John this year?’

A1: Yatoi-mashi-ta-yo.

hire-POL-PAST-PRT

‘Intended: Yes. My department hired John this year.’

A2: *Yatow-are-mashi-ta-yo.

hire-PASS-POL-PAST-PRT

‘Intended: Yes. John was hired by my department this year.’

It is significant, then, that pro-drop in Japanese does permit such mismatches. Thus, the question in (23Q) contains an active voice structure whereas the elliptical replies to the question in (23A1) and (23A2) contain active and passive voice structures, respectively.

(23) Q: John-ga kotoshi anata-no gakka-ni ooboshi-ta-yoo-desu-ga.
John-NOM this year you-GEN department-to apply-PAST-seem-COP.POL-but
Doo-nari-mashi-ta-ka?
how-become-POL-PAST-Q

‘I heard that John applied to your department this year. How did it go?’

A1: Yatoi-mashi-ta-yo.

hire-POL-PAST-PRT

‘Intended: Yes. My department hired John this year.’

A2: Yatow-are-mashi-ta-yo.

hire-PASS-POL-PAST-PRT

‘Intended: Yes. John was hired by my department this year.’

Here, we follow Merchant’s (2008, 2013) syntactic identity-based theory of voice-mismatches in English sluicing noted above and assume that the response in (22A2) is ungrammatical because its passive voice feature does not match the active voice feature of the yes-no question in (22Q). The ungrammaticality of (22A2) presents a strong argument against the pro-drop analysis of verb-echo answers. If *pro*_{John} were available there, (22A2) would end up being grammatical. We can then safely conclude that *pro* is not an option in verb-echo answers.

Recall that we established in Section 2 that *pro* is unavailable in verb-echo answers at least when an indefinite NP is involved in the question. The data in (22–23) now show that *pro* is also unavailable when a definite DP is involved in the antecedent question. These two observations therefore permit us to draw a stronger conclusion that pro-drop is in fact not responsible at all for the derivation of verb-echo answers in Japanese. Consequently, TP-ellipsis emerges as the only analytical option to derive verb-echo answers.⁴

4. The Adjunct-Inclusive Interpretation and Focus Intervention Effects

Our third and final argument in favor of the head movement + clausal ellipsis analysis of verb-echo answers in Japanese concerns the interpretation of adjuncts in this construction. It has been assumed since Oku 1998 that adjuncts cannot undergo ellipsis. This point is shown in (24). The second clause here cannot be interpreted as ‘Hanako polished her car carefully.’

- (24) Taroo-wa toire-o teineini migai-ta. Hanako-wa kuruma-o migai-ta.
 Taro-TOP toilet-ACC carefully polish-PAST Hanako-TOP car-ACC polish-PAST
 ‘Taro polished his toilet carefully. Hanako polished her car.’

⁴ We are very grateful to an anonymous reviewer for suggesting this line of argumentation.

Against this conventional view, Funakoshi (2016) has argued that there are certain cases where an adjunct-inclusive interpretation seem to be available, and has proposed a generalization that an adjunct can be null only if the clause-mate object or other VP-internal materials are also null – a pattern which he argues follows from verb-stranding VP-ellipsis (see also Hayashi and Fujii 2016 for additional support for Funakoshi’s view). Furthermore, Simpson et al. (2013) also independently came up with the same generalization on the basis of their investigations into null arguments in Bangla, Hindi, and Malayalam. Despite this latest controversy, however, it is clear that the consensus assumption still prevails among researchers, namely that adjuncts themselves cannot undergo ellipsis, a point acknowledged as uncontroversial by Funakoshi (2016:123) and Simpson et al. (2013:112).

Below, we capitalize on this assumption to support our analysis of verb-echo answers as follows. If verb-echo answers are derived through pro-drop, the adverb-inclusive interpretation should never be available in such answers. If verb-echo answers are derived through TP-ellipsis, fed by head movement, such an interpretation should, in principle, be available. Example (25) shows that the prediction of the TP-ellipsis analysis, not of the pro-drop analysis, is correct. In (25A), the adverb-inclusive interpretation is available and in fact the only possible interpretation.⁵

⁵ To the best of our knowledge, Sugimura (2012:149–150) first pointed out that the adverb-inclusive interpretation is available in verb-echo answers. She provides examples such as (i) to illustrate.

(i) Q: Ha-o shikkari migai-ta-no?

teeth-ACC thoroughly polish-PAST-Q

‘Did you thoroughly brush your teeth?’

A: Un, migai-ta.

yes brush-PAST

‘Yes, I did (I thoroughly brushed my teeth). *lit.* Brushed.’ (Sugimura 2012:150)

(25) Q: Moo kuruma-o teineini migai-ta-no?
 already car-ACC carefully polish-PAST-Q
 ‘Did you already polish your car carefully?’

A: Migai-ta-yo.
 polish-PAST-PRT
 ‘Yes. I already polished my car carefully.’

The same point can be made with (26) and (27). The elliptical clause in (26) cannot allow the adjunct-inclusive interpretation. This example thus conforms to the generalization stated above about adjunct ellipsis. With this point in mind, the verb-echo answer in (27A) allows, and in fact forces, the adjunct-inclusive interpretation that ‘I ate dinner in my house today as well’.

(26) Hanako-wa jitaku-de yuushoku-o tabe-ta. Megumi-wa
 Hanako-TOP self’s house-in dinner-ACC eat-PAST Megumi-TOP
 yuushoku-o tabe-nakat-ta.
 dinner-ACC eat-NEG-PAST
 ‘Hanako had her dinner in her house. Megumi didn’t have her dinner.’

Sugimura herself accounts for this kind of example in terms of VP-ellipsis. Although we agree that clausal ellipsis takes place in the derivation of verb-echo answers with (or without) adverb-inclusive interpretations, we take the empirical argument discussed in sections 2 and 3 to suggest that the constituent deleted is large, i.e., TP, not VP.

(27) Q: Kyoo-mo jitaku-de yuushoku-o tabe-mashi-ta-ka?

today-also self's house-in dinner-ACC eat-POL-PAST-Q

‘Did you have your dinner in your house today as well?’

A: Tabe-mashi-ta-yo. Hitoride terebi-o minagara tabe-tai-node.

eat-POL-PAST-PRT alone TV-ACC watching.while eat-want-because

‘Yes. That is because I want to eat dinner while watching TV alone.’

Our analysis raises the question concerning how it can capture those cases where such an interpretation is systematically excluded. Example (28) is a case in point.

(28) Q: Sono shatsu kawaii-desu-ne. Hawaii-de kat-ta-no-desu-ka?

that shirt cute-COP.POL-PRT Hawaii-in buy-PAST-COP-POL-Q

‘That shirt is cute. Did you buy it in Hawaii?’

A1: * Kai-mashi-ta-yo.

buy-POL-PAST-PRT

‘Yes, I bought it in Hawaii.’

A2: Hai.

yes

‘Yes, I bought it in Hawaii.’

In this example, the verb-echo answer cannot be used at all to express the adverb-inclusive interpretation. Such an interpretation can only be expressed by the use of the alternative polarity marker. This interpretation is also blocked in the following example.

(29) Q: Kyoo-wa kokoni-wa densha-de ki-mashi-ta-ka?
today-TOP here-TOP train-by come-POL-PAST-Q
‘Did you come here today by train?’

A1: * Ki-mashi-ta-yo.
come-POL-PAST-PRT
‘Yes, I came here today by train.’

A2: Hai.
yes
‘Yes, I came here today by train.’

The question thus is how our current system can correctly distinguish between (25, 27) and (28, 29). One may observe that the contrast between those two cases boils down to the size of the focused constituent. In (25), the yes-no question serves to highlight the entire VP as the focus domain so that the interlocutor is primed to provide an affirmation or negation to the action denoted by the entire VP instead of the verb + complement combination. A similar pattern holds true for (27). Here, the question is formed in a way such that the questioner’s intention is to ask the interlocutor whether s/he had dinner in her/his house instead of merely having dinner. Such is not the case with (28) and (29). In (28), the focus is placed on the location where the interlocutor purchased the T-shirt instead of the event denoted by the entire VP. In (29), the question presupposes that the questioner is aware that the interlocutor has already arrived, so what the question is really asking is the means of transportation. Thus, the size of a constituent in focus is responsible for the adverb-inclusive vs. adverb-exclusive interpretations: VP-focus for the former interpretation and adjunct-focus for the latter interpretation. In the rest of this section, we will present two different analyses which will allow us to integrate this crucial observation into our current theory of verb-echo answers. We will conclude that the existence of adverb-exclude

examples such as (28–29) are consistent with our theory, and, better still, actually support our theory rather than undermine it.

Kuno (1978, 1995) proposes a general constraint on ellipsis, defined as in (30), which is sensitive to information structure of individual constituents within an utterance.⁶

(30) Pecking Order of Deletion Principle (Kuno 1995:209)

Delete less important information first, and more important information last.

To illustrate this principle, consider English examples of partial ellipsis shown in (31–32).

(31) Q. Were you still a small boy in 1960?

A. Yes, I was still a small boy Ø. (Kuno 1978:16)

(32) Q. Were you born in 1960?

A. * Yes, I was born Ø. (Kuno 1978:16)

Kuno argues that the deletion of the temporal PP is fine in (31A) because the PP is information-theoretically less important than *was still a small boy*, thereby rendering the deletion of the PP grammatical. In (32A), on the other hand, the deletion of the same PP results in ungrammaticality. Kuno argues that this is due to the violation of the principle in (30) because the less important information *was born* is retained whilst the more important information *in 1960* was elided.

Kuno's principle can correctly rule out those cases such as (28) and (29). In (28), *Hawaii-de* 'in Hawaii' is information-theoretically more important than *kai-mashi-ta-yo* 'bought'; the former

⁶ We thank a reviewer for drawing our attention to Kuno's (1978, 1995) theory of deletion in the present context. The basic principle stated in (30) was first proposed in Kuno (1978).

cannot be deleted while retaining the latter, as shown in (28A1). A similar analysis applies to (29). Thus, the impossibility of adjunct-inclusive interpretation in cases such as (28–29) is (at least) consistent with our movement + deletion analysis of verb-echo answers.

The other alternative analysis we develop here to account for the contrast between (25, 27) and (28, 29) is based on Simpson’s (2015) theory of adverb-exclusive cases by means of focus intervention based on his own study of verb-echo answers in Mandarin Chinese. Consider (33–34).

(33) Q: Ni an-le liang-ci le ma?

you press-ASP two-time ASP Q

‘Did you click (on the mouse) twice?’

A: an-le.

press-ASP

‘Intended: Yes.’ (Simpson 2015:310)

(34) Q: Ni meitian dou gua huzi ma?

you every day shave bear Q

‘Do you shave every day?’

A: * Gua (huzi).

shave (beard)

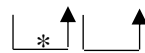
‘Intended: Yes.’ (Simpson 2015:312)

Simpson notes that the context for the question in (33) was such that the event described by the combination of the adverb with the verb and its direct object is likely to occur so that the hearer is much more easily able to interpret the question as asking for confirmation of whether the relevant VP event is completed and therefore, placing focus on the VP. As for (34), on the other hand,

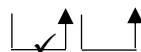
Simpson points out that the speaker of this utterance knows that the hearer shaves with some regularity and asks whether his shaving is done on a daily basis or not. This context then serves to focalize the adjunct itself as the point of attention.

Simpson (2015:314–316) opts to account for the contrast between (33) and (34) through focus intervention (Beck 2006; Kim 2002), and here, we follow and extend his analysis to the Japanese examples above. Let us define intervention in terms of asymmetric command: γ intervenes between α and β if β asymmetrically c-commands both γ and α whereas γ asymmetrically c-commands α . In the schematic derivation shown in (35) for (28, 29), the adverb bears focus and c-commands the base position of the verb. Consequently, the focus-driven movement of the verb to T is blocked by focus intervention. In the other derivation shown in (36) for (25, 27), it is the entire VP that bears focus. Crucially, then, the VP does not c-command the base position of the focused verb. Accordingly, the verb can undergo movement through T all the way up to C without any intervention.

(35) [CP [TP Subj [VP Obj **Adverb**_[+FOC] t_V] t_T] C+T+V]] (intervention effect)



(36) [CP [TP Subj [VP_[+FOC] Obj Adverb t_V] t_T] C+T+V]] (intervention effect)



Note that this particular analysis of the adjunct-exclusive cases in terms of focus intervention presupposes that some movement of a focused element has taken place to cross another focused element. If there were no competing focus-driven movement in the derivation of verb-echo answers, as in the pro-drop theory, such an effect should never be expected. Upon close examination, then, the

presence of such effects in (28, 29) therefore provides further supporting evidence for our analysis and, by extension, its central premise that Japanese has string-vacuous head movement to C.⁷

5. Notes on String-Vacuous Verb Raising in Japanese: Optional, hence Interface-Sensitive?

We have argued that various data concerning verb-echo answers cannot be fully accounted for unless Japanese is endowed with string-vacuous verb raising. In this section, we will briefly highlight some curious properties of this operation in Japanese in connection with ellipsis and scope. Our preliminary data below show that verb raising in Japanese is optional but occurs only when required by phonological and semantic needs, thereby rendering it qualitatively different from verb raising in European language such as French (Pollock 1989) and German (see footnote 7).⁸

⁷ A reviewer comments that the intervention-based analysis might be too strong. In German, verb raising occurs while focus may remain in situ. In (i), Zubizarreta (1998) notes that focus falls on the indirect object, and the verb moves to the T position, crossing the focused object in its path.

- (i) Karl [CP hat [TP ... [XP ein Buch [VP ins Regal *t_V*]] gestellt]].
Karl has a book on-the shelf put
'Karl put a book on the shelf.' (Zubizarreta 1998:50)

Our analysis is free from this problem. In verb-echo answers, the verb is endowed with information focus and moves into the head of PolP to lexically spell-out the polarity feature. The derivation in (35) creates an intervention configuration because the focused verb crosses another c-commanding focused adjunct in its path. The grammaticality of (i) won't cause any issue with regard to this intervention as long as we can assume that the movement of the verb to the T position is *not* triggered by focus.

⁸ Thanks to a reviewer for all the data in this section as well as his/her intriguing observations.

Just because verbs are raised in verb-echo answers does not mean that they are *always* raised. In fact, the contrast between (37) and (38) indicates that verb raising does not occur without TP-ellipsis.

(37) Dareka-ga ko-nakat-ta.
someone-NOM come-NEG-PAST
'Someone didn't come.' (*Neg>∃, ∃>Neg)

(38) Q: Dareka-ga ki-ta-no?
someone-NOM come-PAST-Q
'Did anyone come?'
A: Ko-nakat-ta-yo.
come-NEG-PAST-PRT
'Nobody came.' (Neg>∃, *∃>Neg)

In (37), the negated verb cannot take scope over the existential subject. Let us assume that this is because the subject, situated in [Spec, TP], is structurally higher than negation in the standardly postulated array of functional projections (i.e., V-Neg-T-C) for Japanese clausal architecture. In (38), by contrast, the negated verb now takes scope over the subject. This indicates that the verb has moved to the C position. The examples above reveal two intriguing properties of verb raising. First, it occurs only when TP-ellipsis applies. Second, it occurs in overt syntax because it affects scope interpretation.

The optionality of verb raising in Japanese is further supported by the grammaticality of (39). If verb raising were obligatory in Japanese, this example would be excluded by (35). This example lends further support for our view that verb raising is not required when TP-ellipsis does not apply.

(39) [CP [TP Anata-wa [VP sono shatsu-o **Hawaii-de**_[+FOC] kat] -ta] -no]
 you-TOP that shirt-ACC Hawaii-in buy PAST Q

‘Did you buy that shirt in Hawaii?’

We will thus conclude that string-vacuous V-T-C movement is itself not obligatory, but is obliged to feed ellipsis (a PF operation) and, when obliged, occurs in narrow syntactic computation, as witnessed by new interpretive outcomes which otherwise would not have been obtained. This cluster of properties characterizing verb raising vindicates one of the central minimalist conjectures (Chomsky 2001; Fox 2000; Reinhart 2006) that an optional rule may apply only when necessary to yield a new interpretive outcome which otherwise would not be obtained. In this sense, verb raising in Japanese seems to be fundamentally different in nature from its counterpart in European languages such as French (Pollock 1989) and German, where verb movement to T/C positions is standardly assumed to be obligatory and to have little or no semantic consequences on LF outputs.

We hope to have shown that the present paper has not only uncovered new arguments in favor of string-vacuous verb raising in Japanese through verb-echo answers, but also unearthed a rich domain of inquiry for subsequent studies to enhance our understanding of the nature and design of head movement in Japanese and other languages within the context of the minimalist program.

6. Conclusion

In this remark, we have presented three arguments for string-vacuous head movement in Japanese through the new perspective of verb-echo answers, taking Holmberg’s (2016) theory as our overall analytical framework. We have argued that the syntax of such answers involves successive-cyclic V-T-C movement, followed by TP-ellipsis. We have introduced a wide range of data concerning indefinite subjects and/or objects, voice-mismatches, and adjunct-inclusive interpretations to reject the likely alternative analysis of the phenomenon. Our analysis assumes string-vacuous head movement as its

central analytical ingredient. To the extent that the analysis holds, we have discovered new heuristics to diagnose the existence of such movement in Japanese. We have also presented our data to suggest that verb raising in this language is fundamentally different from its counterpart in European languages such as French and German in that it is not obligatory and occurs only when forced by some interface needs at PF and/or LF. This curious nature of verb raising in Japanese merits serious study on its own right.

References

- Beck, S. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14:1–56.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. M. Kenstowicz, 1–52. Cambridge, MA: MIT Press.
- Chung, S. 2006. Sluicing and the lexicon: The point of no return. In *Proceedings of the Annual Meeting of the Berkeley Linguistics Society 31*, ed. R. T. Cover & Y. Kim, 73–91. Berkeley, CA: Berkeley Linguistics Society.
- Evans, G. 1985. Pronouns. *Linguistic Inquiry* 11:337–362.
- Fox, D. 2000. *Economy and semantic interpretation*. Cambridge, MA: MIT Press.
- Fukui, N. & S. Hiromu. 2003. The visibility guideline for functional categories: verb raising in Japanese and related issues. *Lingua* 113:321–375.
- Funakoshi, K. 2016. Verb-stranding verb phrase ellipsis in Japanese. *Journal of East Asian Linguistics* 25:113–142.
- Harada, S.-I. 1976. Honorifics. In *Syntax and semantics 5: Japanese generative grammar*, ed. M. Shibatani, 499–561. New York: Academic Press.
- Hasegawa, N. 2006. Honorifics. In *The Blackwell companion to syntax vol. II*, ed. M. Everaert & H. van Riemsdijk, 493–543. Oxford: Blackwell.

- Hayashi, S. & T. Fujii. 2016. Predicate ellipsis, null adjuncts, and predicate raising in Japanese. In *Proceedings of the 51st Annual Meeting of the Chicago Linguistic Society (CLS 51)*, 225–239. Chicago, IL: Chicago Linguistic Society.
- Heim, I. 1990. E-type pronouns and Donkey anaphora. *Linguistics and Philosophy* 13:137–178
- Hoji, H. 1998. Null objects and sloppy identity in Japanese. *Linguistic Inquiry* 29:127–152.
- Holmberg, A. 2016. *The syntax of yes and no*. Cambridge: Cambridge University Press.
- Huang, C.-T. J. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15:531–574.
- Kim, S.-S. 2002. Intervention effects are focus effects. In *Japanese/Korean linguistics 10*, ed. N. Akatsuka & S. Strauss, 615–628. Stanford, CA: CSLI.
- Koizumi, M. 2000. String vacuous overt verb-raising. *Journal of East Asian Linguistics* 9:227–285.
- Kuno, S. 1978. *Danwa-no bunpoo* (Grammar of discourse). Tokyo: Taishukan.
- Kuno, S. 1995. Null Elements in Parallel Structures in Japanese. In *Japanese Sentence Processing*, ed. R. Mazuka & N. Nagai, 209–233. Hillsdale, NJ: Lawrence Erlbaum Associate.
- Kuroda, S.-Y. 1965. Generative grammatical studies in the Japanese language. Ph.D. dissertation, MIT, Cambridge, MA.
- Merchant, J. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.
- Merchant, J. 2008. An asymmetry in voice mismatches in VP-ellipsis and pseudogapping. *Linguistic Inquiry* 39:169–179.
- Merchant, J. 2013. Voice and ellipsis. *Linguistic Inquiry* 44: 77–179.
- Oku, S. 1998. A theory of selection and reconstruction in the minimalist perspective. Ph.D. dissertation, University of Connecticut, Storrs.
- Otani, K. & J. Whitman. 1991. V-raising and VP-ellipsis. *Linguistic Inquiry* 22:345–358.

- Phimsawat, O.-U. 2011. The syntax of pro-drop in Thai. Ph.D. dissertation, Newcastle University, Newcastle upon Tyne.
- Pollock, J.-Y. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistic Inquiry* 20:365–424.
- Reinhart, T. 2006. *Interface strategies: Optimal and costly computation*. Cambridge, MA: MIT Press.
- Simpson, A. 2015. Verbal answers to yes/no questions, focus, and ellipsis. In *Chinese syntax in a cross-linguistic perspective*, ed. A. Li, A. Simpson & W-T. D. Tsai, 300–333. Oxford: Oxford University Press.
- Simpson, A., A. Choudhury & M. Menon. 2013. Argument ellipsis and the licensing of covert nominals in Bangla, Hindi and Malayalam. *Lingua* 134:103–128.
- Sugimura, M. 2012. Domain extension: A study of restructuring predicates in Japanese and the role of head movement. Ph.D. dissertation, McGill University, Montreal.
- Sugisaki, K. 2014. Sluicing and its identity conditions in Child Japanese: A preliminary report. Paper presented at the workshop on Korean-Japanese Linguistics, Seoul National University, October 17–18.
- Toribio, A. J. 1990. Specifier-head agreement in Japanese. In *Proceedings of the 9th West Coast Conference on Formal Linguistics (WCCFL9)*, ed. A. L. Halpern, 535–548. Stanford, CA: Stanford Linguistics Association.
- Ura, H. 2000. *Checking theory and grammatical functions in universal grammar*. New York: Oxford University Press.
- Zubizarreta, M. L. 1998. *Prosody, focus, and word order*. Cambridge, MA: MIT Press.

Yosuke Sato

National University of Singapore

Department of English Language and Literature

Faculty of Arts and Social Sciences

Block AS 5, 7 Arts Link

Singapore 117570

ellys@nus.edu.sg

Shintaro Hayashi

Mie University

College of Liberal Arts and Sciences

1577 Kurimamachiya-cho

Tsu, Mie Japan 514-8507

hayashi@ars.mie-u.ac.jp