

# Reversed Polarity Sluicing in Japanese\*

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## 1 Introduction

Reversed polarity sluicing (RPS, hereafter) is a type of sluicing first discovered by Kroll (2019, 2020) where the presumed antecedent TP differs from the elliptical TP in terms of polarity, as illustrated in (1):

- (1) I don't think that [<sub>TP</sub> California will comply]<sub>A</sub>, but I don't know why [<sub>TP</sub> ~~California won't comply~~]<sub>E</sub>.

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The primary contribution of this paper is in showing that Japanese sluicing exhibits RPS; see Yagi (2021) and Yagi et al. (2021) for a different type of reversed-polarity ellipsis involving the proform *soo* ‘so’. (2) is a case in point:

- (2) Boku-wa [TP kotosizyuuni koronaka-ga  
 I-TOP by.the.end.of.this.year coronavirus.crisis-NOM  
 syuusokusuru]<sub>A</sub>-to omottei-nai-si, naze [TP...]<sub>E</sub>-ka-mo  
 is.over-COMP think-NEG-and why Q-also  
 aruteido kentoogatuiteiru.  
 to.some.extent can.guess  
 ‘I don’t think that [the coronavirus crisis will be over by the end of this year]<sub>A</sub>, and I can also kind of guess why [it will not be over by then]<sub>E</sub>.’

Theoretically, I will develop a pragma-semantic analysis of RPS in Japanese which adopts Kroll’s (2019, 2020) dynamic semantic approach to its English counterpart and will uncover hitherto unnoticed syntactic/semantic properties associated with this construction, including its verb-sensitivities to RPS and its clear contrast with clausal argument ellipsis with respect to RPS.

This paper is organized as follows. In section 2, I will extend the pragma-semantic analysis of RPS developed by Kroll (2019, 2020) to its Japanese counterpart. In section 3, I will argue against the alternative analysis of Japanese RPS based on the Syntactic NEG Raising hypothesis. In section 4, I will report my novel finding that *omow* ‘to think’, but not *sinziru* ‘to believe’, allows RPS, and show how this contrast can be accounted for under my analysis. I will conclude this paper in section 5 by pointing out one issue with my analysis from the impossibility of RPS under clausal argument ellipsis.

## 2 A Pragma-Semantic Analysis of RPS in Japanese

Let us start by making sure that examples like (2) represent a genuine case of polarity reversals under ellipsis. One might ask whether the reversed polarity reading in (2) is derived not because the ellipsis site selects the positive subordinate clause of the antecedent clause marked by <sub>A</sub>, but because it takes the whole antecedent clause including the matrix negative clause. This extra antecedent option, one might continue, assigns the negative antecedent to the ellipsis site, thereby giving the impression that we are dealing with the reversed polarity-like interpretation. Let us call this the ‘long-source reading’, to be compared with the ‘short-source reading’, where the ellipsis site takes the embedded clause of the antecedent marked by <sub>A</sub>. There are two strategies to distinguish between these two readings. One is to use two different subjects in antecedent and elliptical clauses (Gajewski 2021); the other is to use inherent pragmatic incompatibilities in the choice of the matrix verb heading

the elliptical clause vis-à-vis the matrix verb of the antecedent clause. The first strategy is exemplified in (3).

- (3) Boku-wa [TP tinpanzii-ga gengo-o hanaseru]<sub>A</sub>-to-wa  
 I-TOP chimpanzee-NOM language-ACC can.speak-COMP-TOP  
 omottei-nai-ga hontoonotokoro gengogakusyatati-desura  
 think-NEG-but in.truth linguists-even  
 naze [TP ...]<sub>E</sub>-ka-wa wakattei-nai.  
 why Q-TOP understand-NEG  
 ‘I don’t think that [chimpanzees can speak language]<sub>A</sub>, but the truth is that  
 even linguists have not understood yet why [they cannot speak language]<sub>E</sub>.’

In this example, the long-source reading is pragmatically infelicitous, for linguists are not expected or obliged to figure out why the speaker thinks that chimpanzees cannot speak language; their goal is to try to understand why chimpanzees cannot do so. This way, we can make sure that (3) involves RPS.

The other strategy is to use inherent pragmatic incompatibility between the matrix verb heading the whole antecedent clause and the matrix verb heading the embedded clause to undergo ellipsis. To illustrate, consider (4).

- (4) # Boku-wa naze kotosizyuuni koronaka-ga  
 I-TOP why by.the.end.of.this.year coronavirus.crisis-NOM  
 syuusokusuru-to omow-anai-ka aruteido kentoogatuiteiru.  
 is.over-COMP think-NEG-Q to.some.extent can.guess  
 ‘I can kind of guess why I don’t think that the coronavirus crisis  
 will be over by the end of this year.’

(4) is odd because people don’t make a guess about why they themselves think this or that. The oddness of this example thus shows that *omow* ‘to think’ cannot head a clausal complement when it is further embedded by the matrix verb *kentoogatuiteiru* ‘can guess’. Indeed, the example in question becomes acceptable when the embedded verb is removed, as shown in (5).

- (5) Boku-wa naze kotosizyuuni koronaka-ga  
 I-TOP why by.the.end.of.this.year coronavirus.crisis-NOM  
 syuusokusi-nai-ka aruteido kentoogatuiteiru.  
 is.over-NEG-Q to.some.extent can.guess  
 ‘I can kind of guess why the coronavirus crisis will not be over by the  
 end of this year.’

Keeping this background in mind, let us return to (2). Since the matrix verb selecting the elliptical clausal complement is *kentoogatuiteiru*, the ellipsis site cannot contain the whole antecedent clause headed by *omow*, given the pragmatic incompatibility between the two verbs. Thus, we can guarantee that (2) involves a bona fide instance of RPS in which the elliptical clause is



- b.  $\lambda w'. [\forall w [w \in \text{DOX}(s)(w') \rightarrow \text{will\_be\_over\_by\_the\_end\_of\_the\_year}(\text{Covid-19})(w)] \vee \forall w [w \in \text{DOX}(s)(w') \rightarrow \neg \text{will\_be\_over\_by\_the\_end\_of\_the\_year}(\text{Covid-19})(w)]]$
- c.  $\lambda w'. \forall w [w \in \text{DOX}(s)(w') \rightarrow \neg \text{will\_be\_over\_by\_the\_end\_of\_the\_year}(\text{Covid-19})(w)]$
- d.  $W \cap C(\lambda w. \neg \text{will\_be\_over\_by\_the\_end\_of\_the\_year}(\text{Covid-19})(w)) = W \cap \{w: \neg \text{will\_be\_over\_by\_the\_end\_of\_the\_year}(\text{Covid-19})(w)\} = c_{LE}$
- e.  $ExClo([E])^s = \{w: \neg \text{will\_be\_over\_by\_the\_end\_of\_the\_year}(\text{Covid-19})(w)\}$
- f.  $c_{LE} \subseteq \{w: \neg \text{will\_be\_over\_by\_the\_end\_of\_the\_year}(\text{Covid-19})(w)\}$

(9a) states that the speaker does not think that the coronavirus crisis will be over by the end of this year. Due to the EM presupposition triggered by *omow*, the speaker thinks that the crisis will be over by then or that it won't be over by then: (9b). These two steps yield the neg-raised reading for the antecedent: (9c). Kroll assumes that verbs like *think*, *see*, and *believe* may assert their clausal complement as true in a local context independently of the matrix clause (Higginbotham 1975). Then, (9c) creates a local context  $c_L$  in which the worlds under consideration are restricted to those worlds in which the crisis won't be over by the end of this year: (9d). (9e) shows that the sluice denotes the set of worlds in which the crisis won't be over by the end of this year. Since the local context set-up in (9d) entails the elided TP, as shown in (9f), the reversed-polarity reading is obtained in (2).

### 3 Against the Syntactic NEG Raising Analysis of Japanese RPS

In this section, I will compare my analysis of Japanese RPS with a potential alternative drawing on the Syntactic NEG Raising Hypothesis (Fillmore 1963; Collins and Postal 2014). According to this hypothesis, negation starts its life in the embedded clause and is interpreted there before it undergoes movement into a matrix position for pronunciation. This hypothesis yields a straightforward account of the Japanese RPS example. Consider the relevant representations of the antecedent and elliptical clauses of (2) in (10a, b).

- (10) a. Antecedent: [Kotosizyuuni koronaka-ga syuusokusuru-NEG]<sub>A</sub>  
 b. Ellipsis site: [Kotosizyuuni koronaka-ga syuusokusuru-NEG]<sub>E</sub>

In the rest of this section, I will present three arguments against this alternative analysis of Japanese RPS. I owe all the arguments below to Yagi (2021) and Yagi et al. (2021), who also argue against the same analysis as applied to the type of polarity-reversed ellipsis involving the anaphoric proform *soo* 'so'.

My first argument comes from the distribution of positive polarity items such as *dareka* ‘someone’. Such items take scope over clausemate negation, as shown in (11). The syntactic analysis then predicts that they must exhibit the same scope relation under PSR, but this prediction is falsified by (12), where *anata-no taisetuna dareka-o* takes scope under negation.

- (11) Kono keikaku-wa anata-no taisetuna dareka-o sukuw-nai.  
 this plan-TOP you-GEN important someone-ACC save-NEG  
 ‘This plan won’t save your special someone.’  
 (\*Neg>someone; someone>Neg)

- (12) Boku-wa [TP kono keikaku-ga anata-no taisetuna  
 I-TOP this plan-TOP you-GEN important  
 dareka-o sukuw]<sub>A</sub>-to-wa omow-anai-si, kako-no zibun-no  
 someone-ACC save-COMP-TOP think-NEG-and past-GEN self-GEN  
 keiken-kara naze [TP ...]<sub>E</sub>-ka-mo aruteido kentoogatuku.  
 experience-from why Q-also to.some.extent can.guess  
 ‘I don’t think that [this plan will save anyone important to you]<sub>A</sub>,  
 and, based on my past experiences, I can also kind of guess why  
 [it won’t do so]<sub>E</sub>.’ (Neg>someone; \*someone>Neg)

By contrast, my own analysis correctly predicts this scope reversal. There is no stage of syntactic derivation for (12) at which negation would stand in the clausemate relation with the negation in the embedded clause because negation takes the embedded scope only through the EM presupposition.

My second argument is concerned with the distribution of reduplicated universal quantifiers of the form *NP-ga-NP* ‘NP-NOM-NP’. Aihara (2007) points out that such reduplicated quantifiers cannot co-occur with negation in the same local clause, as illustrated in (13). Given this observation, the syntactic analysis wrongly predicts that a RPS example as in (14) should be ungrammatical because negation and the reduplicated quantifier *minna-ga-minna* ‘everyone-NOM-everyone’ would both occur in the embedded clause.

- (13) \* Minna-ga-minna wakutinsessyu-o kiboositei-nai.  
 everyone-NOM-everyone vaccination-ACC wish.for-NEG  
 ‘Everyone doesn’t wish to get vaccinated.’

- (14) Boku-wa [TP minna-ga-minna wakutinsessyu-o  
 I-TOP everyone-NOM-everyone vaccination-ACC  
 kiboositeiru]-to-wa omottei-nai-si mawarini-mo  
 wish.for-COMP-TOP think-NEG-and around-also  
 tyuutyositeiru-hito-ga iru-node naze [TP...]<sub>E</sub>-ka-mo  
 hesitate-person-NOM exist-because why -Q-also  
 aruteido kentoogatuku.

to.some.extent can.guess  
 ‘I don’t think that [everyone wishes to get vaccinated]<sub>A</sub>, and I can also kind of guess why [not everyone wishes to get vaccinated]<sub>E</sub>, because there are people around me who hesitate to do so.’

The contrast between (13) and (14) can be accounted for under my present analysis, on the other hand, because the matrix negation is not associated with any syntactic position within the embedded clause.

The final argument is based on the distribution of what Watanabe (2013) calls bipolar expressions such as *NP-o nanika* ‘some NP-ACC’. Bipolar expressions are so named because they are acceptable neither in positive nor negative contexts, as shown by the ungrammaticality of both (15a) and (15b).

- (15) a. \*Kono purojekuto-wa zyuyyoona seika-o  
 this project-TOP significant achievement  
 nanika ageta  
 something raised  
 ‘Intended: This project yielded some significant achievement.’
- b. \* Kono purojekuto-wa zyuyyoona seika-o  
 this project-TOP significant achievement  
 nanika age-nak-atta.  
 something raise-NEG-PST  
 ‘Intended: This project didn’t yield any significant achievement.’  
 (Watanabe 2013:191, with minor modifications)

With Watanabe’s observation in place, consider now (16):

- (16) Boku-wa [<sub>TP</sub> kono purojekuto-ga zyuyyoona seika-o  
 I-TOP this project-NOM significant achievement-ACC  
 nanika ageru]<sub>A</sub>-to-wa omottei-nai-si, naze  
 something raise-COMP-TOP think-NEG-and why  
 [<sub>TP</sub> ...]<sub>E</sub>-ka-mo aruteido kentoogatuku.  
 Q-also to.some.extent can.guess  
 ‘I don’t think that [this project will yield some significant achievement]<sub>A</sub>, and I can also kind of guess why [the project won’t yield any significant achievement]<sub>E</sub>.’ (adopted from Watanabe 2013:191)

If the Syntactic NEG raising analysis were right, the derivation of the antecedent clause in (16) would involve the negation within the same clause with *zyuyyoona seika-o nanika*, thereby erroneously ruling out (16) on a par with (15b). Again, the pragma-semantic alternative is consistent with the grammatical example in (16) vis-à-vis (15b) because at no stage of the syntactic derivation is the anti-clausemate restriction ever violated.

#### 4 Verb-Sensitivity to RPS and Evidentiality in Japanese

Interestingly, the verb *omow* ‘to think’ allows, but the verb *sinziru* ‘to believe’ disallows, PRS. This point is clear from the contrast between (2) and (17):

- (17) # Boku-wa [TP kotosizyuuni koronaka-ga  
 I-TOP by.the.end.of.this.year coronavirus.crisis-NOM  
 syuusokusuru]<sub>A</sub>-to sinzitei-nai-si, naze [TP...]<sub>E</sub>-ka-mo  
 is.over-COMP believe-NEG-and why Q-also  
 aruteido kentoogatuiteiru.  
 to.some.extent can.guess  
 ‘I don’t believe that [the coronavirus crisis will be over by the end  
 of this year]<sub>A</sub>, and I can also kind of guess why [it will not be over  
 by then]<sub>E</sub>.’

One common criticism leveled against the pragma-semantic approach has been why neg-raising predicates are idiosyncratically distributed both within and across languages (Horn 1978). Yet, my current analysis permits a principled explanation for the contrast between (2) and (17). *Sinziru* requires some sort of evidence for the truth of the embedded proposition. This observation is verified by (18), where *sinziru*, unlike *omow*, is incompatible with *tokuni riyuu-wa nai-kedo* ‘I don’t have any particular reason but...’.

- (18) Boku-wa tokuni riyuu-wa nai-kedo [CP Toranpu-ga  
 I-TOP in.particular reason-TOP not.exist-but Trump-NOM  
 daitooryoosen-ni saisyutubasuru-to] {omotteiru/#sinz-  
 iteiru} presidential.election-for run.again-COMP think/believe  
 ‘I don’t have any particular reason why, but I {think/believe} that  
 Trump will run again for office.’

Notably, a person not having evidence for a proposition *p* is sufficiently different from that person having evidence for the falsehood of *p*. It is this extra evidential flavor, I contend, that blocks the EM presupposition from being triggered with *sinziru*. Note, furthermore, that this verb-sensitivity to RPS is problematic for a pseudosluicing analysis of Japanese RPS (cf. Nishiyama et al 1996; Merchant 1998, 2001). According to this analysis, the reversed polarity reading in (2) would be derived from the underlying structure in (19), where the deep propositional anaphor *soo* ‘so’ picks up a salient antecedent (the negative variant of the antecedent TP) before it undergoes ellipsis.

- (19) ...naze ~~soo~~-ka-mo aruteido kentoogatuku.

This analysis, however, incorrectly predicts that (17) allows RPS because the variant of (17) with *soo* inserted before *naze* ‘why’ allows this reading.



## 5 An Open Issue: Clausal Argument Ellipsis and RPS

I conclude this paper with a brief discussion of one outstanding issue with my proposed analysis and a potential solution to the issue. The issue comes from clausal argument ellipsis. Let us assume that the ellipsis of a clausal complement of *omow* involves a full-fledged sentential base, followed by CP-ellipsis. (20) shows that the CP complement of this verb blocks RPS, unlike in (2).

- (20) #Hanako-wa [<sub>CP</sub> zibun-no teian-ga saiyoosareru-to]<sub>A</sub>  
Hanako-TOP self-GEN proposal-NOM accepted-COMP  
omottei-nai. Taroo-wa [<sub>CP</sub> ...]<sub>E</sub> omotteiru.  
think-NEG Taro-TOP think  
'intended: Hanako doesn't think [that her proposal will be accepted]<sub>A</sub>. Taro thinks [that his proposal will be accepted]<sub>E</sub>.'

Why doesn't CP-ellipsis yield RPS? Here is a possible answer to this question. Under Kroll's theory, RPS is derived via PF-deletion, which tolerates a local contextual update triggered by the EM presupposition associated with *omow*. Given this, the impossibility of RPS in (20) follows if CP-ellipsis involves LF-copy (Shinohara 2006; Saito 2007, 2017) instead, which, by definition, may only copy a syntactic object already constructed from an antecedent clause to the empty slot in the elliptical clause. This solution, in turn, yields the new generalization that mismatch may be tolerated under PF-deletion, but not under LF-copy (Matsuo 1998; Sato 2021). This emerging dichotomy in clausal ellipsis also ties well with Sakamoto's (2017, 2020) generalization that phasal ellipsis is implemented by LF-copy whereas phasal complement ellipsis is derived through PF-deletion.

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