Reversed Polarity Sluicing in Japanese and PF-Deletion through Local Contextual Licensing

Reversed polarity sluicing (RPS), first discovered in English by Kroll (2019, 2020), is a type of sluicing where the presumed antecedent TP differs from the elliptical TP in terms of polarity, as illustrated in (1). In this paper, I will present new evidence based on examples like (2) that Japanese also exhibits RPS. I will develop a pragma-semantic analysis of Japanese RPS based on Kroll's dynamic semantic approach to English RPS and explore implications of my proposed analysis for three prominent issues revolving around a) syntactic vs. semantic approaches to neg-raised interpretations (Collins and Postal 2014; Bartsch 1973), b) verb-sensitivity to neg-raising (Horn 1978), and c) PF-deletion vs. LF-copy theories of ellipsis.

(1) I don't think [$_{TP}$ California will comply]$_A$, but I don't know why [$_{TP}$ ~~California won't comply~~]$_E$.

(2) Boku-wa [$_{TP}$ kotosizyuuni   koronaka-ga   syuusokusuru]$_A$-to
     I-TOP   by.the.end.of.this.year COVID-19 crisis-NOM   will.be.over-COMP
     omottei-nai-si, naze   [$_{TP}$ …]-ka-mo   aruteido   kentoogatuiteiru.
     think-NEG-and   why   Q-also   to.some.extent can.guess
     'I don't think that [$_{TP}$ the COVID-19 crisis will be over by the end of this year]$_A$, and I can kind of guess why [$_{TP}$ it will not be over by then]$_E$.'

One might think that the elliptical site in (2) takes the whole preceding clause as its antecedent, and that this should give the (false) impression that we have a reversed-polarity reading. This analysis is easy to dismiss; the verb selecting the elliptical clause in (2), *kentoogatuiteiru* 'to guess', cannot select a propositional complement headed by *omow* 'to think', as witnessed by the semantic anomaly of (3).

(3)# Boku-wa   naze   kotosizyuuni   koronaka-ga   syuusokusuru-to
     I-TOP   why   by.the.end.of.this.year COVID-19 crisis-NOM   will.be.over-COMP
     <u>omow</u>-anai-ka aruteido   <u>kentoogatuiteiru</u>.
     think-NEG-and to.some.extent can.guess
     'I can kind of guess why I don't think that the COVID-19 crisis will be over by the end of this year.'

As a point of departure, I will adopt Kroll's (2019, 2020) recent analysis of English RPS to its Japanese counterpart. Kroll proposes that sluicing is essentially a pragmatics-sensitive PF-deletion phenomenon licensed by local contextual entailment, as formally stated in (4) (Kroll 2019:13).

(4) Local Givenness: A TP α can be deleted *iff ExClo* ([[α]]) expresses a proposition *p* such that $c \subseteq p$.
Following her analysis, the step-by-step derivation of the RPS in (2) will be as shown in (5a-f). (5a) states that the speaker does not think that the COVID-19 crisis will be over by the end of this year. Due to the excluded middle (EM) presupposition triggered by the neg-raising verb *omow* (Bartsch 1973; Gajewski 2005), the speaker thinks that the crisis will be over by then or that it won't be over by then: (5b). The two steps jointly yield the neg-raised reading for the antecedent: (5c). 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, (5c) 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: (5d). (5e) 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 (5d) entails the elided TP, as in (5f), the reversed-polarity reading is obtained in (2), as desired.

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

Below, I will explore theoretical consequences of my proposed extension of Kroll's theory to Japanese RPS for three current issues on ellipsis and neg-raising. Firstly, there has been a well-known competing approach to neg-raising based on syntactic NEG raising (Fillmore 1963; Collins and Postal 2014), according to which negation is interpreted in an embedded clause before it moves in syntax to a matrix position to be pronounced. The analysis, if correct, correctly predicts the RPS reading in (2), for the alleged antecedent TP is syntactically negative on a par with the sluice, with no polarity mismatch. However, data in (6–7) (noted by Yagi et al. 2021) show that our analysis is to be preferred over the syntactic alternative. (6) shows that the reduplicated universal quantifier *minna-ga-minna* 'everyone-NOM-everyone' may not occur with clausemate negation (Aihara 2007). Keeping this in mind, the grammaticality of the RPS example in (7) would be mysterious under the syntactic alternative because negation would be interpreted in the embedded clause containing the

negation, violating the above restriction. Our analysis correctly accounts for (7); the c_{LE} triggered by the antecedent clause (i.e., *not everybody wishes to get vaccinated*) entails the sluice.

(6) * [TP Minna-ga-minna   wakutinsessyu-o   kiboositei-nai] 'Everyone does not
         everyone-NOM-everyone vaccination-ACC   wish.for-NEG   wish to get vaccinated.'

(7) Boku-wa   [TP minna-ga-minna   wakutinsessyu-o   kiboositeiru]-to-wa
     I-TOP   everyone-NOM-everyone   vaccination-ACC   wish.for-COMP-TOP
     omottei-nai-si, mawarino taikendan-kara   naze [TP …]-ka-mo daiitai   kentoogatuku.
     think-NEG-and around   experience-from why   Q-also   roughly can.guess
     'I don't think that [everyone wishes to get vaccinated]A, and, based on experiences told by
     people around, I can roughly guess why [not everyone wishes to get vaccinated]E.'

Secondly, Japanese RPS exhibits a hitherto unnoticed verb-sensitivity. Comparison of (2) with (8) shows that *omow* allows, but *sinziru* 'to believe' disallows, RPS. One common criticism leveled against the pragma-semantic analysis of the neg-raised interpretation has been precisely why neg-raising predicates are idiosyncratically distributed both within and across languages (Horn 1978).

(8) # Boku-wa   [TP kotosizyuuni   koronaka-ga   syuusokusuru]A-to
     I-TOP   by.the.end.of.this.year   COVID-19 crisis-NOM   will.be.over-COMP
     sinzitei-nai-si,   naze   [TP …]-ka-mo   aruteido   kentoogatuiteiru.
     believe-NEG-and   why   Q-also   to.some.extent   can.guess
     'I don't believe that [TP the COVID-19 crisis will be over by the end of this year]A, and I can
     kind of guess why [TP it will not be over by then]E.

Our current analysis allows for an illuminating solution to the verb-sensitivity puzzle posed by the contrast between the two Japanese verbs, a prospect very hard to obtain under the syntactic analysis, which could do nothing but lexically stipulate a class of neg-raising predicates for a given language. My key observation here is that the felicitous use of *sinziru* requires one to have some source of evidence for the truth of the proposition it selects. This observation is supported by (9).

(9) Boku-wa   tokuni   riyuu-wa   nai-kedo,   [CP Toranpu-ga   yonengo
     I-TOP   in.particular reason-TOP   not.exist-but   Trump-NOM   four.years.later
     daitooryoosen-ni   saisyutubasuru-to]   {omottei-masu/#sinzitei-masu}.
     presidential.election-for run.again-COMP   think-POL/believe-POL
     'lit. I don't have any particular reason why, but I {think/#believe} that Trump will run again
     for office four years later.'

(9) shows that *sinziru*, unlike *omow*, is incompatible with statements to the effect that the speaker has no particular reason to support his/her statement. Crucially, a person not having evidence for *p* is sufficiently different from that person having evidence for ¬*p*. I propose that it is this extra evidential flavor that blocks the EM presupposition with *sinziru*, but not with *omow*. Note, furthermore, that the verb-sensitivity to RPS illustrated above is problematic for a pseudosluicing analysis of Japanese RPS (cf. Merchant 1998, 2001). According to this analysis, the reversed polarity reading in (2) would be derived from the underlying structure in (10), where the deep propositional anaphor *soo* 'so' picks up a salient antecedent (the negative variant of the antecedent TP) before it undergoes ellipsis. This analysis, however, incorrectly predicts that (8) should allow RPS because the variant of (8) with *soo* inserted before the *wh*-phrase *naze* 'why' actually allows this reading.

(10) … naze ~~soo~~-ka-mo aruteido kentoogatuiteiru

Finally, I will present novel evidence showing that Japanese RPS must be analyzed in terms of PF-deletion (Merchant 2001) instead of LF-Copy (Chung et al. 1995), based on contrasting behavior between RPS and clausal argument ellipsis. Assuming that the ellipsis of a CP-complement of *omow* involves a full-fledged sentential base, (11) shows that CP-ellipsis blocks RPS.

(11) # Hanako-wa   [CP zibun-no   teian-ga   saiyoosareru-to]A   omottei-nai.
      Hanako-TOP   self-GEN   proposal-NOM   be.accepted-COMP think-NEG
      Taroo-wa   [CP …]E   omotteiru.
      Taro-TOP   think
      '# under the intended reading: Hanako doesn't think [that her proposal will be accepted]A.
      Taro thinks [that his proposal will not be accepted]E.

The ill-formedness of RPS here is accounted for if CP-ellipsis involves LF-Copy (Saito 2007), which by definition may only copy a syntactic object from an antecedent clause to the empty slot in the elided clause. This being so, (2) (which allows RPS) is to be derived instead through PF-deletion, which permits local contextual updates as per (4). This dichotomy, then, furnishes a novel diagnostic to tease apart PF-deletion and LF-copy theories of ellipsis, namely, that elliptical mismatch may be tolerated in principle under PF-deletion, but never under LF-copy (cf. Kroll and Rudin 2017; Rudin 2017).

Selected References [1] Bartsch, R. 1973. 'Negative transportation' gibt es nicht. *Linguistische Berichte* 27. [2] Kroll, M. 2019 Polarity reversals under sluicing. *Semantics and Pragmatics* 12.