Scope and Disjunction Feed an Even More Argument for Argument Ellipsis in Japanese*

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1   Introduction

Japanese is one of the radical *pro*-drop languages, where both subjects and objects can be null under an appropriate context in spite of the absence of relevant agreement morphology on the verb, as shown in (1).

(1)   A: Taroo-wa   doo   simasita ka?
          Taroo-TOP   how   did   Q
          'What happend to Taroo?'

B: *e* ie-ni kaerimasita.
    home-to returned
    'lit. *e* returned home.'
C: Sensei-ga *e* sikarimasita.
    teacher-NOM scolded
    'lit. The teacher scolded *e*.' (Takahashi 2008a:394)

In (1), the sentences uttered by Speaker B and C serve as a reply to Speaker A's question. Although the subject in (1B) and the object in (1C) are phonologically null, they are naturally interpreted as Taroo.

   The traditional approach to Japanese null arguments was to assume that they are uniformely empty pronouns (*pro*). However, Saito (2007), Şener and Takahashi (2010), Takahashi (2008a, b, 2014), among others, argue that they cannot always be pronominal based on the example like (2).[1,2]

(2) a. Taroo-wa sannin-no sensei-o sonkeisiteiru.
        Taroo-TOP three-GEN teacher-ACC respects
        'Taroo respects three teachers.'
    b. Hanako-mo *e* sonkeisiteiru.
        Hanako-also respects [✓E-reading;✓Q-reading]
        'lit. Hanako also respects *e*.' (Şener and Takahashi 2010:81-82)

(2b) is ambiguous in that the set of the teachers Hanako respects can be either identical to the set of the teachers Taroo respects (E(-type) reading; see Evans 1980) or different from it (Q(-uantificational) reading). (2) patterns in the relevant respect with (3c), which involves VP-Ellipsis (VPE), rather than (3b), which involves a pronominal.

(3) a. John respects three teachers.
    b. Mary respects them too. [✗Q-reading]
    c. Mary does *e*, too. [✓Q-reading]
        (Şener and Takahashi 2010:82)

With (3a) as its antecedent, (3c) is ambiguous in that the set of the teachers Mary respects can be either identical to the set of the teachers John respects or different from it. On the other hand, (3b) can only be assigned the former

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[1] Otani and Whitman (1991), Oku (1998), among others, argue that the sloppy reading as well as the Q-reading of null arguments indicates ellipsis.
[2] The following discussion does not rule out *pro* as one option for null arguments in Japanese. It merely shows that not all null arguments can be treated as *pro*.

reading. Therefore, the *pro* analysis is taken to face a problem since it would wrongly predict (2b) to pattern with (3b).[3]

There are two major alternative analyses of Japanese null arguments: Otani and Whitman's (1991) V-stranding VPE and Oku's (1998) Argument Ellipsis (AE). In the former, null arguments are derived via overt V-movement to T which is followed by VPE; in the latter, arguments can directly undergo ellipsis. Both of the ellipsis strategies can account for the Q-reading in (2b) as shown in (4).

(4)　　a.　*V-stranding VP-Ellipsis*
　　　　　[TP Hanako also [VP three teachers tV] V+T (respects)]
　　　b.　*Argument Ellipsis*
　　　　　Hanako also [NP three teachers] respects

The ellipsis site in (4a) and (4b) includes *sannin-no sensei* 'three teachers' respectively, so that the availability of the Q-reading is naturally explained.

In this paper, I aim at differentiating V-stranding VPE and AE, a distinction which has been controversial, and providing novel evidence for the availability of the latter strategy in Japanese. The organization of this paper is as follows. In section 2, I argue that the Q-reading of null subjects does not necessarily favor AE over V-stranding VPE, contrary to the previous literature. In section 3, I provide novel data on quantificational null arguments which interact with negation in terms of scope, and argue that they pose an issue for the *pro* analysis and the V-stranding VPE analysis. In section 4, I claim that a reading obtained through disjunction can be exploited as a novel diagnostic for ellipsis, and that the availability of such

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[3] A J/K reviewer pointed out that the Q-reading could be obtained if we assume Hoji's (1998) null indefinite pronoun (*ec*), which can stand for bare nouns. However, there is a discrepancy between null arguments which are anaphoric on quantified arguments and *ec* in Japanese as shown in (i).

(i)　a.　Taroo-wa　gonin-izyoo-no　　sensei-o　　　sonkeisiteiru.
　　　　Taroo-TOP　five-or.more-GEN　teacher-ACC　respects
　　　　'Taroo respects five or more than five teachers.'
　　b.　Hanako-mo　　*e*　　sonkeisiteiru.
　　　　Hanako-also　　　　respects
　　　　'lit. Hanako also respects *e*.'
　　c.　Hanako-mo　　*ec* (=sensei)　　sonkeisiteiru.
　　　　Hanako-also　　　　　　　　　respects
　　　　'lit. Hanako also respects *ec* (= teacher).'

(ib) can only mean that Hanako also respects five or more than five teachers, not that Hanako also respects teachers. It is not clear how Hoji's (1998) *ec* analysis can capture this fact (see also Saito 2007 and Takahashi 2008a). Therefore, I assume throughout this paper that the availability of the Q-reading is an indication of ellipsis.

a reading provides new evidence for the availability of AE in Japanese. Section 5 concludes this paper.

2 Subject Ellipsis and V-stranding VP-ellipsis

Takahashi (2008a, b) notes that null subjects as well as null objects can yield the Q-reading. Consider the following example.[4]

(5) a. Yamada sensei-wa [sannin-no gakusei-ga eigo-o
         Yamada teacher-TOP three-GEN   student-NOM English-ACC
         hanasu to] omotteiru.
         speak C   think
         'Prof. Yamada thinks that three students speak English.'
     b. Tanaka sensei-wa   [*e* huransugo-o hanasu to] omotteiru.
         Tanaka teacher-TOP   French-ACC speak C   think
         'lit. Prof. Tanaka thinks that *e* speak French.'
                                          [✓E-reading;✓Q-reading]

In (5b), the embedded null subject can be assigned the Q-reading: the set of the students Prof. Tanaka thinks speak French can be different from the set of the students Prof. Yamada thinks speak English. This fact seems to favor AE over V-stranding VPE since subjects are in general outside of the VPE domain, i.e., [Spec, TP].

However, Kuroda (1988), among others, argues that Japanese subjects can remain within VP because of the lack of obligatory subject agreement. Given the possibility of subjects staying in-situ and object scrambling (cf. Miyagawa 2001), V-stranding VPE can feed the subject ellipsis configuration as in (6).

(6)   [$_{TP}$ Obj$_i$ [$_{VP}$ ~~Subj~~ ~~t$_i$~~ ~~t$_V$~~] V+T]

Therefore, the Q-reading of null subjects does not necessarily favor AE over V-stranding VPE. To attest the availability of AE in Japanese, we then have to seek a null argument which is located outside of the VPE domain and cannot be analyzed as *pro*.

3 Quantificational Arguments and Scope

Saito (2009) shows that a quantified subject can take scope over negation and vice versa under an appropriate context as in (7).

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[4] Oku (1998) observes that null subjects can also yield the sloppy reading.

(7) Yamada sensei-wa [zyuunin-izyoo-no gakusei-ga   siken-o
     Yamada teacher-TOP ten-or.more-GEN   student-NOM exam-ACC
     erabanai   to] omotteiru.
     not.choose C   think
     'Prof. Yamada thinks that ten or more than ten students will not
     choose an exam (over a paper).'   [✓subj>>Neg;✓Neg>>subj]

(7) is ambiguous under the context where students have a choice of taking
an exam or submitting a paper to receive credit for a course. Specifically, it
can be interpreted as either Prof. Yamada thinks that ten or more than ten
students will not choose an exam or Prof. Yamada thinks that it is not the
case that ten or more than ten students will choose an exam. This scopal
ambiguity is kept in a sequential sentence with a null subject as in (8).

(8) Tanaka sensei-wa   [e peepaa-o   erabanai   to] omotteiru.
     Tanaka teacher-TOP   paper-ACC not.choose C   think
     'lit. Prof. Tanaka thinks that e will not choose a paper (over an
     exam).'   [✓subj>>Neg;✓Neg>>subj] [✓E-reading;✓Q-reading]

In addition, the null subject here can be asisgned the Q-reading as well as
the E-reading. What is of interest to us here is the interpretation where the
null subject takes scope over negation and yields the Q-reading
simultaneously. The *pro* analysis seems to face difficulty in handling the Q-
reading. V-stranding VPE also seems unable to derive such a null subject
since the subject occupies a higher position than negation in terms of scope,
i.e., it is outside of the VPE domain as in (9).

(9)   …[$_{TP}$ [ten-or.more.than.ten-students]$_i$ [$_{NegP}$ [$_{vP}$ t$_i$ [$_{VP}$ paper t$_V$] t$_v$] t$_{Neg}$]
      V+v+Neg+T (not.choose)]…   *VPE domain*

Since the quantified subject *zyuunin-izyou-no gakusei* 'ten or more than ten
students' is not in the domain that V-stranding VPE can affect, the null
subject in question cannot be derived via such an ellipsis strategy.
     However, if we assume with Han, Storoshenko and Sakurai (2004) that
Japanese NegP is located between *v*P and VP, the embedded null subject in
question can in principle be derived via V-stranding VPE as in (10).

(10) …[$_{TP}$ paper$_i$ [$_{vP}$ [ten or.more.than.ten students] [$_{NegP}$ [$_{VP}$ t$_i$ t$_V$] t$_{Neg}$]
      t$_v$] [V(choose)+Neg+v+T]]…

 Here, the quantified subject remains in [Spec, *v*P], and the object scrambles

out of the VPE domain, deriving the surface string of the embedded clause of (8). The derivation in (10), nevertheless, incorrectly predicts that quantified subjects should always take scope over negation. Therefore, [Spec, vP], the original position of subjects, must be lower than NegP, and V-stranding VPE is then still excluded. AE, however, can derive the null subject in question since it allows arguments to undergo ellipsis in a higher position than negation as in (11) (cf. Takahashi 2008b).

(11) …[$_{TP}$ ~~ten or.more.than.ten students~~]$_i$ [$_{NegP}$ [$_{vP}$ t$_i$ [$_{VP}$ paper V(choose)] v] Neg] T]…

(11) can correctly capture both the wide scope of the quantified null subject over negation and the availability of the Q-reading.[5] This in turn provides pure evidence for the existence of AE in Japanese.

4 Disjunctive Arguments and Scope

4.1 Disjunction and Anaphora

English pronouns which are anaphoric on disjunctive arguments only yield the Disjunctive E-type (DE) reading, as shown in (12) and (13) (cf. Simons 1996, 1998).[6]

(12) a. Last year, either John or Bill visited UConn.
       b. This year too, he visited UConn.   [✓DE-reading;✗D-reading]

(13) a. John scolded either Mary or Nancy.
       b. Bill scolded her, too.   [✓DE-reading;✗D-reading]

The subject pronoun *he* in (12b) can only be interpreted as the one who visited UConn last year (DE-reading), not as the disjunctive argument as a whole, i.e., either John or Bill (D(-isjunctive) reading). Also, the object pronoun *her* in (13b) can only be interpreted as the one John scolded (DE-reading), not the disjunctive argument as a whole, i.e., either Mary or Nancy (D-reading). However, ellipsis can yield the D-reading as shown in (14).

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[5] The inverse scope of the quantified null subject with respect to negation is also captured since its trace occupies [Spec, vP], a lower position than negation. Througout this paper, I then assume that Japanese NegP is located higher than vP and VP.

[6] Simons (1996, 1998) actually argues that pronouns cannot take disjunctive arguments which contain a proper name as their antecedents.

(i)   a. Either a soprano or an alto will sing. She will stand on that platform.
      b. Either Jane or Maud will sing. #She will stand on that platform. (Simons 1996:250)

However, my informants all accept the DE-reading but reject the D-reading in (12b) and (13b). I leave this matter for future research, but this issue does not affect the discussion here.

(14)   John scolded either Mary or Nancy, and Bill did [$_{VP}$ e], too.

[✓D-reading]

The second conjunct of (14) can be interpreted as Bill scolded either Mary or Nancy too. Therefore, the D-reading seems to be contingent on ellipsis rather than pronouns.

Significantly, Japanese null arguments can yield the D-reading unlike English pronouns as in (15) and (16).

(15)   a.   Kinoo   Taroo ka Ziroo-ga   Kanako-o   sikatta.
             yesterday Taroo or Ziroo-NOM Kanako-ACC   scolded
             'Yesterday, either Taroo or Ziroo scolded Kanako.'
       b.   Kyoo-wa e Ayaka-o   sikatta.
             today-TOP   Ayaka-ACC   scolded
             'lit. Today, e scolded Ayaka.'   [✓D-reading]

(16)   a.   Taroo-wa   Kanako ka Ayaka-o   sonkeisiteiru.
             Taroo-TOP Kanako or Ayaka-ACC   respects
             'Taroo respects either Kanako or Ayaka.'
       b.   Ziroo-mo e sonkeisiteiru.
             Ziroo-also   respects
             'lit. Ziroo also respects e.'   [✓D-reading]

The null subject in (15b) and the null object in (16b) can be interpreted as a disjunctive argument as a whole, i.e., either Taroo or Ziroo and either Kanako or Ayaka, respectively. It then seems hard to analyze the null arguments in question as *pro* since (empty) pronouns would only predict the DE-reading.[7] V-stranding VPE and AE, however, can correctly predict the D-reading in (15b) and (16b) as follows.

(17)   a.   *V-stranding VP-Ellipsis*
             [$_{TP}$ Today [$_{TP}$ Ayaka$_i$ $_{VP}$ [$_{NP}$ ~~Taroo or Ziroo~~] t$_i$ t$_V$] V+T (scolded)]]
       b.   *Argument Ellipsis*
             [$_{TP}$ Today [$_{TP}$ [$_{NP}$ ~~Taroo or Ziroo~~] [$_{VP}$ Ayaka scolded]]]

(18)   a.   *V-stranding VP-Ellipsis*
             [$_{TP}$ Ziroo [$_{VP}$ [$_{NP}$ ~~Kanako or Ayaka~~] t$_V$] V+T (respects)]]
       b.   *Argument Ellipsis*
             [$_{TP}$ Ziroo [$_{VP}$ [$_{NP}$ ~~Kanako or Ayaka~~] respects]]

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[7] For more arguments against the *pro* analysis of Japanese null arguments which take disjunctive arguments as their antecedents, see Sakamoto (2014).

(17) and (18) correspond to (15b) and (16b), respectively. Regardless of whether V-stranding VPE (a) or AE (b) is adopted, the ellipsis sites here all include disjunctive arguments, so that the D-reading in (15b) and (16b) is naturally accounted for under these ellipsis strategies.

4.2   Disjunction and Scope

The disjunction -*ka* in Japanese behaves as if it is a positive polarity item since it always takes scope over negation (cf. Goro 2007).

(19)   John-wa   supeingo ka huransugo-o   hanasanai.
       John-TOP   Spanish or French-ACC   not.speak
       'lit. John does not speak Spanish or French.'

                                         [✓obj>>Neg;✗Neg>>obj] (Goro 2007:3)

(19) can only mean Taroo either does not speak Spanish or does not speak French, not that Taroo speaks neither Spanish nor French. Interestingly, this scopal property also holds for a sequential sentence with an anaphoric null argument that has a disjunction as its antecedent: in (20), the null object must take scope over negation.

(20)   Bill-mo   *e*   hanasanai.
       Bill-also   not.speak
       'lit. Bill does not speak *e*.'   [✓obj>>Neg;✗Neg>>obj] [✓D-reading]

V-stranding VPE cannot derive the null object here since it is outside of the VPE domain given its scope. Moreover, the null object in (20) is assigned the D-reading: it is interpreted as either Spanish or French. The *pro* analysis is then also excluded since it cannot capture the D-reading in (20). AE, however, can correctly capture the interpretation in (20) since it allows the disjunctive argument to undergo ellipsis in a higher position than negation as in (21).

(21)   [Spanish or French]$_i$ [$_{TP}$ Bill [$_{NegP}$ [$_{VP}$ t$_i$ speak]]]

Since the ellipsis site in (21) includes disjunction, the D-reading in (20) is also explained.

    The same argument also holds for a null subject which simultaneously takes a disjunctive argument as its antecedent and interacts with negation in terms of scope, as shown in (22).

(22) a. Kinoo   [Kanako ka Ayaka]-ga   yuushoku-o tabenakatta.
     yesterday Kanako or Ayaka-NOM dinner-ACC not.ate
     'Yesterday, either Kanako or Ayaka did not have dinner.'

    b. Kyoo-wa   *e* tyooshoku-o   tabenalatta.
     today-TOP   breakfast-ACC not.ate
     'lit. Today, *e* did not have breakfast.'

                    [✓subj>>Neg;✗Neg>>subj] [✓D-reading]

The null subject in (22b) must take scope over negation. In addition, it can be assigned the D-reading: specifically, it can be interpreted as either Kanako or Ayaka. The *pro* analysis is then excluded since such an analysis cannot account for the availability of the reading in question. Furthermore, V-stranding VPE cannot derive the null subject in (22b) since it must occupy a higher position than negation in terms of scope, i.e., it is outside of the VPE domain. By contrast, AE can straightforwardly derive the null subject in question as shown in (23).

(23)   [$_{TP}$ Today ~~[Kanako or Ayaka]~~ [$_{NegP}$ [$_{vP}$ [$_{VP}$ breakfast ate]]]]

The disjunctive subject is located in a higher position than negation and undergoes AE in that position, explaining the scope fact. Moreover, the availability of the D-reading in (22b) is also naturally captured since the ellipsis site in (23) involves disjunction.

    Therefore, AE is the only strategy which can correctly derive the null object in (20) and the null subject in (22b). This in turn provides novel evidence for the availability of AE in Japanese.

5   Conclusion

In this paper, I first pointed out that the Q-reading of null subjects does not necessarily favor AE over V-stranding VPE given subjects staying in-situ and object scrambling. I then provided novel data on null arguments which seem hard to be derived via either *pro* or V-stranding VPE. Specifically, I argued that null arguments which simulatenously yield the reading which would not be captured by *pro* (the Q-reading and the D-reading) and take scope over negation provide novel evidence for the availability of AE in Japanese. Although null elements are hard to investigate because of their emptiness, I provided some tools to investigate the nature of them.

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