On the Scope Property of *Zen'in, Zenbu* and *All**

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Abstract

This paper shows that the universal quantifiers *zen'in* 'everyone' and *zenbu* 'everything' in Japanese exhibit different scope patterns from the two types of quantificational noun phrases (henceforth, QPs) identified in Homma (2011). I propose that *zen'in* and *zenbu* do not undergo Quantifier Raising (henceforth, QR), in contrast to such QPs as *subete-no gakusei* 'every student', to which QR applies. I also discuss the difference in the scope properties between *zen'in/zenbu* and the other type of QP that does not undergo QR. Lastly, I discuss the quantifier *all* in English and suggest that QPs involving *all* do not undergo QR, as opposed to *every/each* + N, which does undergo QR.

Keywords: quantifier, scope, negation, QR (Quantifier Raising)

0. Introduction

Homma (2011) identifies two types of QP that are distinguished from each other in terms of the (in)applicability of QR. Specifically, it is proposed that QR applies only to those QPs with a quantifier in [Spec, DP] (henceforth, Type 1 QPs), but not to those QPs whose quantifier is in a lower position such as [Spec, NP] (henceforth, Type 2 QPs). The distinction between these two types in Homma (2011) is summarized as (1):

(1)   a.   Type 1:   QPs that i) have a quantifier in [Spec, DP], ii) undergo QR and
　　　　　　　　　 iii) are presuppositional e.g. *subete-no* N 'every N', *hotondo-no* N 'most
　　　　　　　　　 of the Ns', *hanbun-izyoo-no* N 'more than half of the N's, *san-nin-no* N
　　　　　　　　　 'three of the N's', etc.
　　　 b.   Type 2:   QPs that i) do not have a quantifier in [Spec, DP], ii) do not undergo QR
　　　　　　　　　 and iii) are nonpresuppositional (in most cases)   e.g. *san-nin-no* N
　　　　　　　　　 'three N's', *takusan-no* N 'many N's', N-*ga/o san-nin/subete/hotondo*
　　　　　　　　　 'three/all of the /most of the N's', etc.[1]

This paper considers the syntactic and semantic properties of the universal QPs *zen'in* 'everyone' and *zenbu* 'everything' in Japanese and shows that they do not undergo QR, as opposed to Type 1 QPs, but differ from Type 2 in their scope-taking property. It also suggests that this characterization of *zen'in* and *zenbu* can be extended to QPs involving *all* in English.

Section 1 points out a difference between *zen'in/zenbu* and Type 1 QPs with respect to their scope property and proposes that *zen'in/zenbu* does not undergo QR, as opposed to Type 1 QPs which do. We then compare the scope property of *zen'in/zenbu* and Type 2 QPs (Section 2) and propose that the difference in scope property between these two types is ascribed to their (in)compatibility with the Topic feature (Section 3). In Section 4, we turn to the examination of the quantifier *all* in English and propose to explain the scope property of QPs with *all* in terms of its semantic nature, and propose that QPs with *all* do not undergo QR, as oppose to *every/each* + N, which does.

1. Scope of *Zen'in* and *Zenbu*

Zen'in and *zenbu* can be considered as bimorphemic words consisting of the universal quantifier *zen-* 'all' and the bound morphemes *– in* 'member' and *– bu* 'part', which serve as the restrictor of *zen-*. Thus *zen'in*, directly translated as 'all members', ranges over a set of people and picks out the maximum number of its members. *Zenbu*, which can be translated as 'all parts', refers to the maximum number of members from a set of inanimate entities.[2] Thus these two QPs can be regarded as universal QPs, and may be paraphrases of Type 1 QPs in the form of *subete-no* N 'every N'. Furthermore, it seems at first sight that *zen'in* and *zenbu* exhibit the same scope property as Type 1 QPs:

(2) a. Hutari-no sensei-ga *{subete-no/go-nin-no}* gakusei-o sidoo-sita
 2-Cl-Gen professor-Nom all-Gen/5-Cl-Gen student-Acc supervised
 'Two professors supervised every student/five students.'
 [unambiguous: 2 > ∀/5, *∀/5 > 2]

 b. *{Subete-no/go-nin-no}* gakusei-o hutari-no sensei-ga sidoo-sita
 all-Gen/5-Cl-Gen student-Acc 2-Cl-Gen professor-Nom supervised
 'Lit. Every student/Five students, two professors supervised.'
 [ambiguous: 2 > ∀/5, ∀/5 > 2]

(3) a. Hutari-no sensei-ga   *zen'in-o*   sidoo-sita

　　　　2-Cl-Gen   professor-Nom everyone-Acc supervised

　　　　'Two professors supervised everyone.'

　　　　[unambiguous: $2 > \forall$, *$\forall > 2$]

　　b. *Zen'in-o*   hutari-no sensei-ga   sidoo-sita

　　　　everyone-Acc 2-Cl-Gen   professor-Nom supervised

　　　　'Lit. Everyone, two professors supervised.'

　　　　[ambiguous: $2 > \forall$, $\forall > 2$]

(4) a. Hutari-no gakusei-ga   *subete-no kyoku-o*   utatta

　　　　2-Cl-Gen   student-Nom all-Gen   song-Acc sang

　　　　'Two students sang every song.'

　　　　[unambiguous: $2 > \forall$, *$\forall > 2$]

　　b. *Subete-no kyoku-o* hutari-no gakusei-ga   utatta

　　　　all-Gen   songAcc 2-Cl-Gen   student-Nom sang

　　　　'Lit. Every song, two students sang.'

　　　　[ambiguous: $2 > \forall$, $\forall > 2$]

(5) a. Hutari-no gakusei-ga   *zenbu-o*   utatta

　　　　2-Cl-Gen   student-Nom everything-Acc sang

　　　　'Two students sang everything (every song).'

　　　　[unambiguous: $2 > \forall$, *$\forall > 2$]

　　b. *Zenbu-o*   hutari-no gakusei-ga   utatta

　　　　everything-Acc 2-Cl-Gen   student-Nom sang

　　　　'Everything (Every song), two students sang.' [3]

　　　　[ambiguous: $2 > \forall$, $\forall > 2$]

The examples in (2) and (4) constitute a well-attested pattern of scope interaction. The object QP (*subete-no/go-nin-no* N-*o*) can take scope over the subject when scrambled to the pre-subject position ((2b) and (4b)), but not in its original position ((2a) and (4a)). As shown in (3) and (5), *zen'in* and *zenbu* exhibit the same scope pattern as *subete-no/go-nin-no* N-*o*.

　　However, with negation *zen'in* and *zenbu* show a quite different pattern of scope interaction. Firstly, consider the following examples involving a Type 1 QP and

negation:

(6) a. Taroo-wa *subete-no hito-o* seme-*nak*-atta
   Taro-Top all-Gen   person-Acc blame-Neg-Past
   'Taro did not blame all the people.'
   [∀ > Neg, Neg > ∀]

   b. Taroo-wa *san-nin-no hito-o* seme-*nak*-atta
   Taro-Top 3-Cl-Gen   person-Acc blame-Neg-Past
   'Taro did not blame three people.'
   [3 > Neg, ?Neg > 3]

(7) a. Taroo-wa *subete-no konpyutaa-o* sirabe-nak-atta
   Taro-Top all-Gen   computer-Acc inspect-Neg-Past
   'Taro did not inspect all the computers.'
   [∀ > Neg, Neg > ∀]

   b. Taroo-wa *san-dai-no konpyutaa-o* sirabe-*nak*-atta
   Taro-Top 3-Cl-Gen   computer-Acc inspect-Neg-Past
   'Taro did not inspect three computers.'
   [3 > Neg, ?Neg > 3]

The point is that the object QPs in all these examples can take wide scope over negation, as well as narrow scope under negation.[4] In contrast, it is quite difficult, if not impossible, for *zen'in* and *zenbu* to take wide scope over negation:

(8) Taroo-wa *zen'in-o* seme-nak-atta
   Taro-Top everyone-Acc blame-Neg-Past
   'Taro did not blame all.'
   [??∀ > Neg, Neg > ∀]

(9) Taroo-wa *zenbu-o* sirabe-nak-atta
   Taro-Top everything-Acc inspect-Neg-Past
   'Taro did not inspect everything.'
   [??∀ > Neg, Neg > ∀]

The relevant contrast between *zen'in/zenbu* on one hand and the QPs with a prenominal quantifier on the other seems clearer when *zen'in/zenbu* is preceded by a dative argument:

(10) a. Taroo-wa paatii-ni *subete-no hito-o*   sasow-*anak*-atta
        Taro-Top party-Dat all-Gen   person-Acc invite-Neg-Past
        'Taro did not invite everyone to the party.'
        [∀ > Neg, Neg > ∀]

   b.   Taroo-wa paatii-ni *3-nin-no hito-o*   sasow-*anak*-atta
        Taro-Top party-Dat 3-Cl-Gen person-Acc invite-Neg-Past
        'Taro did not invite three people to the party.'
        [3 > Neg, ?Neg > 3]

(11) *Taro was supposed to send Hanako several parcels. As it turned out, however,*
   a. Taroo-wa Hanako-ni   *subete-no nimotu-o*   okur-*anak*-atta
       Taro-Top Hanako-Dat all-Gen   parcel-Acc send-Neg-Past
       'Taro did not send every parcel to Hanako.'
       [∀ > Neg, Neg > ∀]
   b. Taroo-wa Hanako-ni   *san-ko-no nimotu-o*   okur-*anak*-atta
       Taro-Top Hanako-Dat 3-Cl-Gen   parcel-Acc send-Neg-Past
       'Taro did not send three parcels to Hanako.'
   [3 > Neg, ?Neg > 3]

Again the object QP in all these four cases can take wide scope over negation. However, it is rather difficult, if not impossible, for *zen'in* and *zenbu* to take wide scope over negation, as we see in (12) and (13):

(12) Taroo-wa paatii-ni *zen'in-o*   sasowa-*nak*-atta
     Taro-Top party-Dat everyone-Gen invite-Neg-Past
     'Taro did not invite everyone to the party.'
     [??∀ > Neg, Neg > ∀]

(13) Taroo-wa Hanako-ni *zenbu-o*   okur-*anak*-atta
   Taro-Top Hanako-Dat everything-Gen send-Neg-Past

[??∀ > Neg, Neg > ∀]

'Taro did not send everything to Hanako.'

As the preceding facts tell us, the scope of *zen'in* and *zenbu* is not as wide as Type 1 QPs.[5] Now how can we explain these facts? Let us assume the following structure where the negative morpheme *– nai* constitutes the head of a projection between vP and TP (Miyagawa (2010)):[6]

(14)
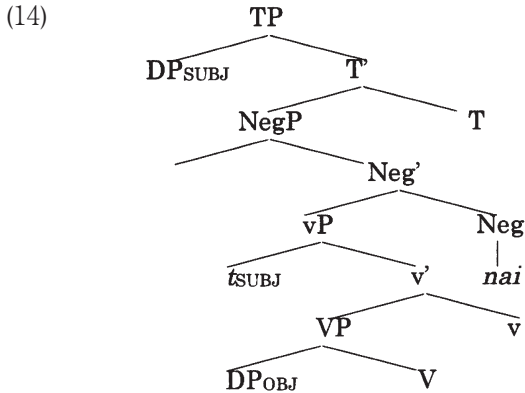
Let us also assume that a QP with a quantifier in [Spec, DP] (a Type 1 QP) undergoes QR in the sense that its q-feature undergoes covert movement.[7]   Thus the q-feature of the object QP in (6) and (7) is moved by QR as in the following manner:

(15)   a.

   b.
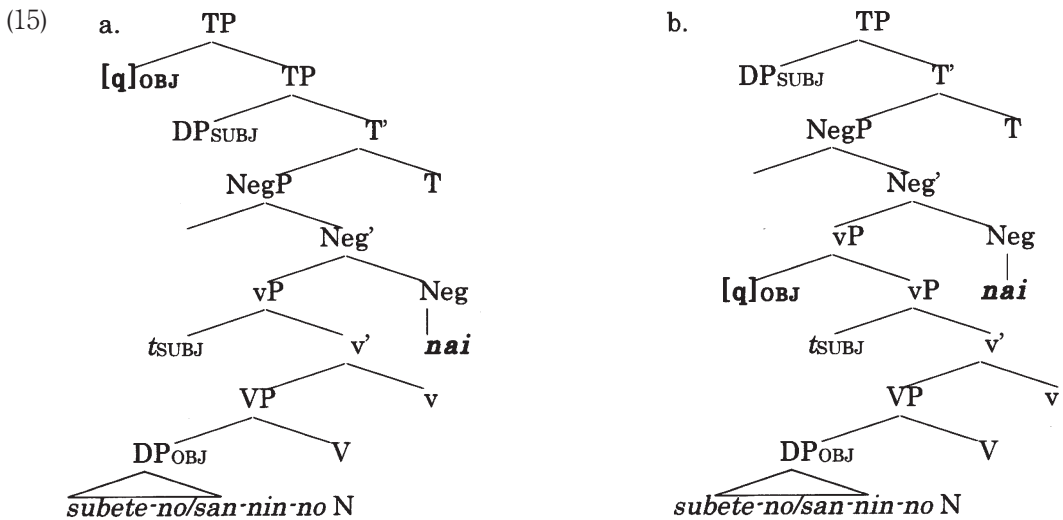
I assume that the q-feature can adjoin either to TP ((15a)) or to vP ((15b)). Adjunction to

TP allows the QP to take wide scope over the negation as it places the q-feature in the position c-commanding the negative. On the other hand, adjunction of the q-feature to vP leads to the wide scope of *nai* since this adjoined position is c-commanded by the negative.

On the other hand, the narrow scope property of *zen'in* and *zenbu* can be accounted for if we assume that these two QPs do not undergo QR. Thus the scope of these QPs is limited to their surface position:

(16)
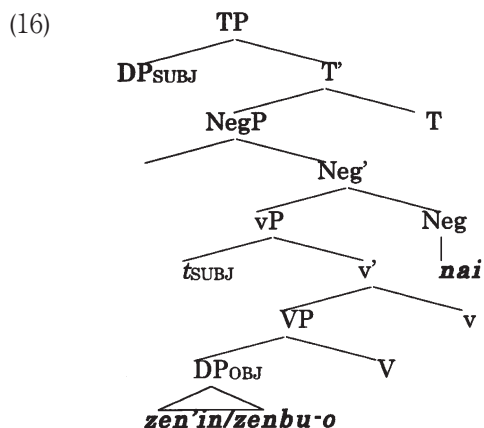
Since the object is asymmetrically c-commanded by the negative, it can only take narrow scope under negation.

Now how can we motivate the idea that QR applies to QPs with a prenominal quantifier in [Spec, DP] but not to *zen'in* and *zenbu*? The answer comes from the morphosyntactic and semantic properties of *zen'in* and *zenbu*. Firstly, these two QPs consist of the quantificational prefix *zen-* 'all' which is attached to the morpheme $-in$ 'member' and $-bu$ 'part' to form a noun. Then we can say that *zen'in* and *zenbu* constitute the head N in the whole structure of DP, as in:

(17) [$_{DP}$ ...... [$_{NP}$ ... [$_{N}$ zen'in/zenbu]].....]
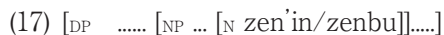
This structure does not meet the requirement for a QP to be of Type 1, the requirement that a QP have a quantifier in [Spec, DP]. Since *zen'in* and *zenbu* lack a quantifier in [Spec, DP], they do not undergo QR.

Secondly, the prefix *zen-* in *zen'in* and *zenbu* is distinguished semantically as well as morphosyntactically from Type 1 quantifiers such as *subete-no* 'every'. Type 1

quantifiers have the following two semantic functions: (i) it presupposes the existence of a set of entities denoted by the following noun and (ii) it ranges over the set and picks out the appropriate proportion/number of entities designated by the quantifier. Thus the Type 1 QP *subete-no gakusei* 'every student' is understood to presuppose the existence of a set consisting of students and to pick out the maximum number of students from that set of students.

This may also be true of *zen'in* and (partly) of *zenbu*. *Zen'in* is a universal QP ranging over a presupposed set of people and picks out all the members of this set, while *zenbu* ranges over a set of inanimate entities and picks out all the members of this set. However, the prefix *zen-* may also be attached to a semantically singular noun to refer to the whole part of the single entity denoted by the noun, not to all the entities in the set of plural entities:

(18) a. zen-koo

     all-school   'the whole school'

  b. zen-koku

     all-nation   'the whole nation'

  c. zen-kai

     all-committee 'the whole committee'

The noun phrase *zen-koo* in (18a), for example, denotes the whole part of one single school (the whole part of the body of students/teachers).[8] The semantics of these examples are in contrast to the following cases of QPs with *subete-no:*

(19) a. subete-no gakkoo

     all-Gen   school   'every school'

  b. subete-no kuni

     all-Gen   nation   'every nation'

  c. subete-no kai

     all-Gen   committee 'every committee'

The examples in (19) all refer to the maximum number of entities in the set of entities denoted by the noun. Thus *subete-no gakkoo* in (19a) means every school in a set of schools. We can conclude from this consideration that the prefix *zen-* is not a quantifier

in the sense mentioned above about Type 1 quantifiers such as *subete-no*, but is understood to be an expression referring to the totality of the denotation of the accompanying noun, whether the noun denotes a singular entity or plural entities.[9]

Thus our proposal that *zen'in* and *zenbu* do not undergo QR is supported by the above morphosyntactic and semantic considerations about the prefix *zen-*, which is different from Type 1 quantifiers both morphosyntactically and semantically.

2. *Zen'in* and *Zenbu* are not Type 2 QPs

We have observed in the preceding section that *zen'in* and *zenbu* in the object position do not take wide scope over negation, in contrast to Type 1 QPs which do. This narrow scope property of *zen'in* and *zenbu* might suggest that they are Type 2 QPs in the sense mentioned at the outset of this paper: Type 2 QPs lack a quantifier in [Spec, DP] and thus do not undergo QR. Observe that Type 2 QPs in the object position take only a narrow scope under negation:

(20) a. Taroo-wa *gakusei-o*　3-nin seme-*nak*-atta
　　　 Taro-Top student-Acc 3-Cl blame-Neg-Past
　　　 'Taro did not blame three students.'
　　　 [??3 > Neg, Neg > 3]
　　 b. Hanako-wa　*hon-o*　　*2-satu* yom-*anak*-atta
　　　 Hanako-Top book-Acc 2-Cl　 read-Neg-Past
　　　 'Hanako did not read three books╱'
　　　 [??2 > Neg, Neg > 2]

As discussed in Homma (2011), the QPs in (20), which involve a floating quantifier, do not undergo QR since they lack a quantifier in [Spec, DP]. This explains the examples in (20). The object QP in (20) does not undergo QR so it can only be interpreted in the scope of the negative. Compare (20) with the examples in (21), which involve Type 1 QPs with a prenominal quantifier:

(21) a. Taroo-wa *3-nin-no gakusei-o*　　seme-*nak*-atta
　　　 Taro-Top 3-Cl-Gen student-Acc blame-Neg-Past
　　　 'Taro did not blame three students.'
　　　 [3 > Neg, Neg > 3]

b. Hanako-wa *2-satu-no hon-o*   yom-*anak*-atta
   Hanako-Top 2-Cl-Gen book-Acc read-Neg-Past
   'Hanako did not read two books.'
   [2 > Neg, Neg > 2]

The impossibility of taking wide scope over negation from the object position is also true of *zen'in* and *zenbu*, as we have already observed:

(22) Taroo-wa *zen'in-o*   seme-nak-atta
    Taro-Top everyone-Acc blame-Neg-Past
    'Taro did not blame everyone.'
    [??$\forall$ > Neg, Neg > $\forall$]   (= (8))

(23) Taroo-wa *zenbu-o*   sirabe-nak-atta
    Taro-Top everything-Acc inspect-Neg-Past
    'Taro did not inspect everything.'
    [??$\forall$ > Neg, Neg > $\forall$]   (= (9))

However, there is one significant difference with respect to the scope-taking property between Type 2 QPs on one hand and *zen'in* and *zenbu* on the other. Observe that the object Type 2 QP cannot take scope over the subject QP even when scrambled to the left of the subject:[10]

(24) a. *Gakusei-o   3-nin subete-no hito-ga*   semeta
       student-Acc 3-Cl all-Gen   person-Nom blamed
       'Lit. Three students, every person blamed.'
       [$\forall$ > 3, *3 > $\forall$]
    b. *Hon-o   2-satu daremo-ga*   yonda
       book-Acc 2-Cl   everyone-Nom read
       'Lit. Two books, everyone read.'
       [$\forall$ > 2, *2 > $\forall$]

In contrast, *zen'in* and *zenbu* may take wide scope over the subject QP when scrambled to the left of the subject, as observed in Section 1.

(25) a. *Zen'in-o*　　　hutari-no sensei-ga　　　sidoo-sita

　　　everyone-Acc 2-Cl-Gen professor-Nom supervised

　　　'Lit. Everyone, two professors supervised.'

　　　[ambiguous: $2 > \forall$, $\forall > 2$]　　　　　　　　(= (3b))

　　b. *Zenbu-o*　　　　hutari-no gakusei-ga　　utatta

　　　everything-Acc 2-Cl-Gen student-Nom sang

　　　'Everything (Every piece), two students sang.'

　　　[ambiguous: $2 > \forall$, $\forall > 2$]　　　　　　　　(= (5b))

Therefore, *zen'in* and *zenbu* cannot be Type 2 QPs.

3. Accounting for the Scope of *Zen'in* and *Zenbu*

Now if *zen'in* and *zenbu* are neither Type 1 nor Type 2 QPs and thus constitute a separate class of QPs, Type 3, how can we explain the scope property of *zen'in* and *zenbu* that we observed above? The relevant properties of the three types of QP are summarized as follows:
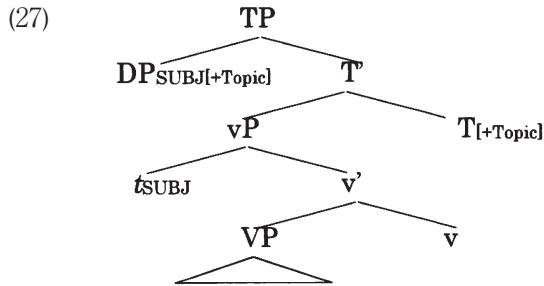
(26)

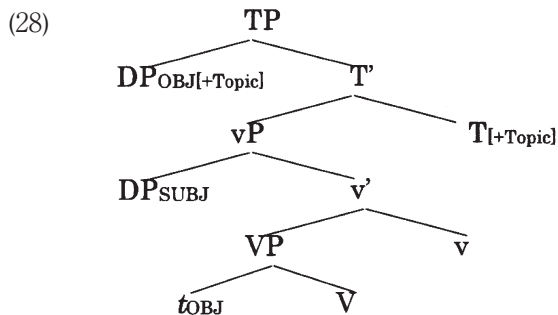|	a quantifier in [Spec, DP]	application of QR	scope over Neg from the object position	scope over the subject when scrambled
Type 1	yes	yes	yes (ambiguous)	yes (ambiguous)
Type 2	no	no	no (only Neg > Obj)	no (only Subj > Obj)
Type 3	no	no	no (only Neg > Obj)	yes (ambiguous)

We have already accounted for the scope interaction between the object and the negative by means of the (non)applicability of QR. Type 1 QPs can take scope over negation because they undergo QR, but Type 2 and Type 3 QPs take only narrow scope under negation because they do not move by QR. An explanation of the difference in the scope interaction between the scrambled object and the subject, on the other hand, needs some other mechanism than QR, since Type 2 and Type 3 QPs exhibit different scope patterns in this respect, although they both do not undergo QR.

I propose that *zen'in* and *zenbu* may be assigned scope where their [+Topic] feature is licensed, an option that is not available for Type 2 QPs. In order to make this proposal, let us illustrate how the [+Topic] feature licenses the subject and the object

DPs. I adopt the proposal in Miyagawa (2010) that the subject moves from its original position [Spec, vP] into [Spec, TP] by being attracted by the [+Topic] probe on T, which has been inherited from the relevant head in the CP domain, as in:[11]

(27)

```
                TP
          ┌─────┴─────┐
    DP_SUBJ[+Topic]   T'
                 ┌────┴──────┐
                vP         T[+Topic]
           ┌────┴────┐
         t_SUBJ      v'
                ┌────┴────┐
               VP         v
             ┌──┴──┐
```

When the object is scrambled to the left of the subject, it is the object DP that has the [+Topic] feature and thus is attracted by [+Topic] on T and is moved into [Spec, TP]. In this case, the subject DP stays in its base position [Spec, vP], as in:

(28)

```
                TP
          ┌─────┴─────┐
    DP_OBJ[+Topic]    T'
                ┌─────┴─────┐
               vP         T[+Topic]
          ┌────┴────┐
      DP_SUBJ       v'
               ┌────┴────┐
              VP         v
          ┌───┴───┐
        t_OBJ     V
```

As a piece of evidence for this movement, Miyagawa (2010) points out that while the subject can only take wide scope over negation in the basic order Subj-Obj-V, it can take either wide or narrow scope with respect to negation when the object is scrambled to the front of the subject. Consider:
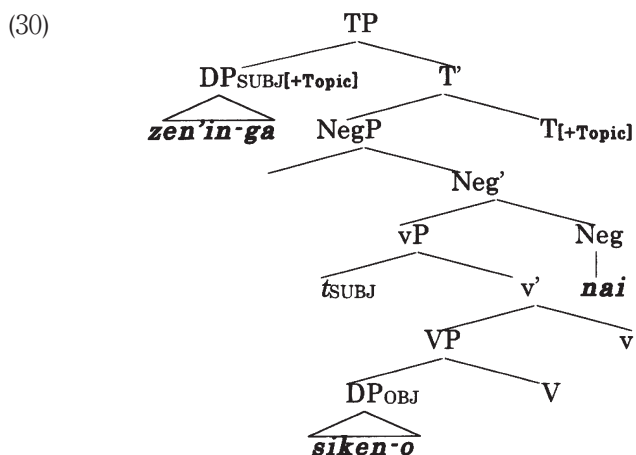
(29) a. *Zen'in-ga*   siken-o   uke-*nak*-atta
         everyone-Nom test-Acc take-Neg-Past
         'Everyone did not take the test.'
         [$\forall$ > Neg, *Neg > $\forall$]
    b. Siken-o   *zen'in-ga*   uke-*nak*-atta
         test-Acc everyone-Nom take-Neg-Past

'Lit. The test, everyone did not take.'
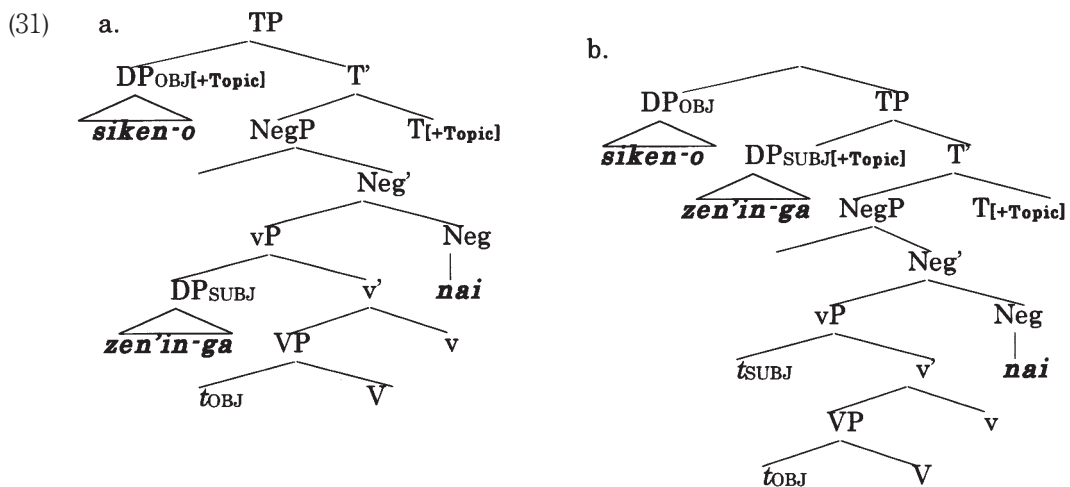
$[\forall > \text{Neg}, \text{Neg} > \forall]$ (Miyagawa (2010))

The sentence in (29a) has the following structure:

(30)

```
                    TP
           DP_SUBJ[+Topic]      T'
             zen'in-ga    NegP         T[+Topic]
                            Neg'
                      vP          Neg
                  t_SUBJ    v'     nai
                        VP      v
                   DP_OBJ    V
                    siken-o
```

Since the subject DP *zen'in-ga* has moved into [Spec, TP], it is in the position c-commanding the negative *nai*. Thus the subject can only take wide scope over negation in (29a). On the other hand, (29b) has either of the following derivations:

(31)　a.

```
                  TP
        DP_OBJ[+Topic]     T'
          siken-o   NegP        T[+Topic]
                      Neg'
                 vP        Neg
           DP_SUBJ   v'    nai
           zen'in-ga  VP    v
                    t_OBJ  V
```

b.

```
        DP_OBJ                 TP
        siken-o   DP_SUBJ[+Topic]      T'
                  zen'in-ga   NegP         T[+Topic]
                                Neg'
                           vP          Neg
                       t_SUBJ    v'     nai
                             VP      v
                          t_OBJ    V
```

In (31a), where it is the scrambled object that is licensed by the [+Topic] probe on T, the subject stays in [Spec, vP], and thus is interpreted as taking narrow scope under negation, since it is in a position c-commanded by the negative. In the other derivation

(31b), the subject is attracted by the [+Topic] probe and the object is scrambled to a higher position. In this case, the subject *zen'in-ga* c-commands the negative, so that it takes wide scope over negation.

Let us adopt this analysis and examine whether a Type 2 QP and a Type 3 QP (*zen'in* and *zenbu*) can be licensed by the [+Topic] probe. Consider the following example:
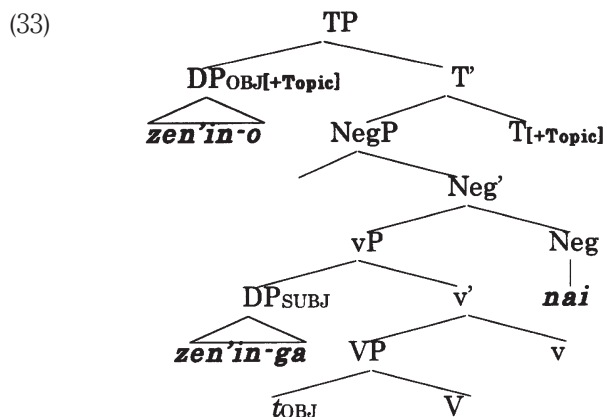
(32) a. *Zen'in-o   zen'in-ga   * suisensi-*nak*-atta
      everyone-Acc everyone-Nom recommend-Neg-Past
      'Lit. Everyone, everyone did not recommend.'
      [*zen'in-o* > *zen'in-ga* > Neg, *zen'in-o* > Neg > *zen'in-ga*]

   b. *Zenbu-o   zen'in-ga   * risyuusi-*nak*-atta
      everything-Acc everyone-Nom take-Neg-Past
      'Lit. Everything, everyone did not take.'
      [*zenbu-o* > *zen'in-ga* > Neg, *zenbu-o* > Neg > *zen'in-ga*]

Example (32a) is somewhat unnatural because of the two occurrences of *zen'in* as the subject and the object. Nevertheless, this example could somehow be uttered in the following context. A list of several professional baseball players are being considered as candidates for the Most Valuable Player (MVP) of the season. The consideration is being done by a group of newspaper journalists. After the final meeting for the selection of the MVP, it turned out that one player was chosen as the MVP but none of the nominated players received a full vote from the journalists. In other words, for each nominated player, it is not the case that every journalist recommended him. If the group of players and the group of journalists are expressed by *zen'in-o* and *zen'in-ga*, respectively, the above situation is described by the scope order *zen'in-o* > Neg > *zen'in-ga* and sentence (33a) could be uttered to describe this situation.

Likewise, sentence (32b) could be uttered in a context such as the following. Suppose that there is a list of compulsory courses that every first year student must take during the designated semester. After the semester was over, however, it turned out that each of these compulsory courses was attended by most of the first year students, but not all of them. In other words, none of these compulsory courses was such that it was taken by every first year student. If the list of the courses and the group of fist year students are expressed by *zenbu-o* and *zen'in-ga*, respectively, in (32b),

the above-mentioned situation would be described by the scope order *zen'in-o* > Neg > *zen'in-ga* of (32b) and example (32b) could be uttered felicitously to describe this situation.

Now the availability of the partial negation reading of the subject QP in (32a) and (32b) tells us that the scrambled objects *zen'in-o* and *zenbu-o* are indeed attracted by the [+Topic] probe and moved into [Spec, TP]. The structure of (32a), for example, for the reading *zen'in-o* > Neg > *zen'in-ga* is represented as follows:

(33)

For Type 2 QPs, on the other hand, the following facts tell us that this class of QPs cannot bear the [+Topic] feature and thus cannot be scrambled into [Spec, TP]. Consider:

(34) a. *Sensyu-o　3-nin zen'in-ga*　　　suisensi-*nak*-atta
　　　　players-Acc 3-Cl everyone-Nom recommend-Neg-Past
　　　　'Lit. Three players, everyone did not recommend.'
　　　　[∀ > Neg, *Neg > ∀]

　　b. *Kamoku-o　hutatu zen'in-ga*　　　risyuusi-*nak*-atta
　　　　course-Acc 2-Cl　everyone-Nom take-Neg-Past
　　　　'Lit. Two courses, everyone did not take.'
　　　　[∀ > Neg, *Neg > ∀]

If the scrambled Type 2 QP were licensed by the [+Topic] feature, it would move into [Spec, TP] and keep the subject down in [Spec, vP], resulting in the Neg > ∀ reading As indicated by the examples in (34), however, scrambling of this type of QP does not make it possible for the subject to take scope under negation. This fact means that

Type 2 QPs are somehow incompatible with the [+Topic] feature and thus are not licensed by this feature. If the scrambled object is not licensed by the [+Topic] feature, it must be the subject that is licensed by [+Topic] and is moved into [Spec, TP], obligatorily taking scope over negation. The relevant structure is illustrated in (35). I assume that the scrambling not attracted by [+Topic] takes a DP to the TP-adjoined position.

(35)
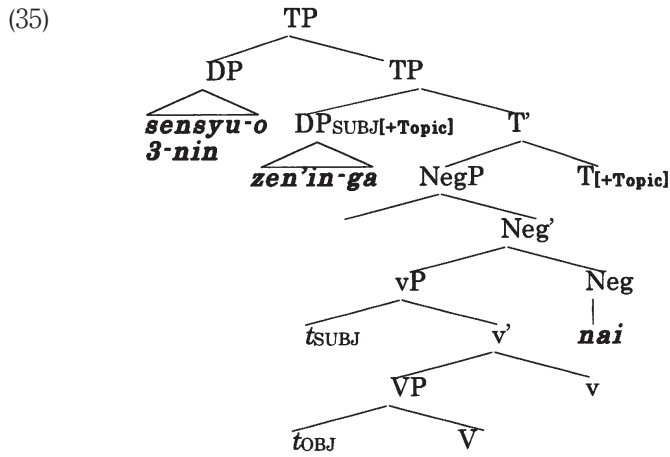
I would like to propose that this difference in the compatibility with the [+Topic] feature between Type 2 and Type 3 QPs is the source of the difference in scope between (24) and (25), repeated below as (36) and (37):

(36) a. *Gakusei-o   3-nin subete-no hito-ga   semeta*
         student-Acc 3-Cl   all-Gen   person-Nom blamed
         'Lit. Three students, every person blamed.'
         [unambiguous: $\forall > 3$, $^*3 > \forall$]

   b. *Hon-o   2-satu daremo-ga   yonda*
      book-Acc 2-Cl   everyone-Nom read
      'Lit. Two books, everyone read.'
      [unambiguous: $\forall > 2$, $^*2 > \forall$]   (= (24))

(37) a. *Zen'in-o   3-nin-no hito-ga   semeta*
         everyone-Acc 3-Cl-Gen person-Nom blamed
         'Lit. Everyone, three people blamed.'

[ambiguous: 3 > ∀, ∀ > 3]

b. *Zenbu-o   hutari-no gakusei-ga*   yonda

everything 2-Cl-Gen   student-Nom read

'Lit. Everything, two students read.'

[ambiguous: 2 > ∀, ∀ > 2]   (= (25))

The structure of (36a) and (37a), for example, is given as follows:

(38) (For (36a))

[TP [gakusei-o 3-nin]ⱼ [TP **q**subete-no hito-ga [TP [subete-no hito-ga]ᵢ [vP *t*ᵢ [vP ***t*ⱼ**

semeta]]]]]

(39) (For (37a))

a. [TP [zen'in-o]ⱼ [+Topic] [**q**3-nin-no hito-ga [[3-nin-no hito-ga]ᵢ [vP *t*ⱼ semeta]]]]]

b. [TP **q**3-nin-no hito-ga [TP [zen'in-o]ⱼ [+Topic] [[3-nin-no hito-ga]ᵢ [vP *t*ⱼ semeta]]]]]

The crucial difference between (38) and (39) is the presence/absence of the [+Topic] feature on the scrambled object QP. I suggest that the scrambled QP with the [+Topic] feature takes scope in the scrambled position since the [+Topic] feature is relevant for semantic interpretation and thus is visible for the computation of scope. This is why the scrambled object *zen'in* can take scope in the scrambled position. The scope ambiguity results from the position of the subject QP's q-feature that has moved by QR: the q-feature either adjoins to a lower or a higher position than *zen'in* as shown in (39a) and (39b).

On the other hand, a Type 2 QP cannot have the [+Topic] feature. Moreover, it does not undergo QR. Then the only position that is relevant for the computation of scope is the original object position in the complement of the verb, since this is the position where the object's thematic meaning is determined. Thus a Type 2 QP can only take scope in its original position, whether it is scrambled or not. This explains the obligatory narrow scope of Type 2 QPs.

4. A Note on English *All*

It is worth discussing the quantifier *all* in English since the characterization of *zen'in* and *zenbu* as QPs that do not undergo QR seems to hold with the quantifier *all* in

English as well. Firstly, observe the following examples:

(40) a. A (different) boy read *every book*.
   b. A (different) boy read *each book*.
   c. A (different) boy read *all the books*.   (Beghelli and Stowell (1997))

Beghelli and Stowell (1997) point out that *all the books* in (40c) does not allow the subject *a (different) boy* to "be construed as distributed shares" (Beghelli and Stowell (1997: 90)), while *every book* and *each book* in (40a, b) do allow this distributive reading. In terms of the analysis in this paper, this means that *every book* in (40a) and *each book* in (40b), but not *all the books* in (40c), can take wide scope over the subject. Note that this does not mean that *all* can never take wide scope since *all* in the subject position does take scope over the object, as observed by Beghelli and Stowell (1997). Thus the following sentences all have the reading where the subject takes scope over the object:[12]

(41) a. **Every boy** read two books about India.
   b. **Each boy** read two books about India.
   c. *All the boys* read two books about India.

    An observation to the same effect is made in Szabolsci (2010), who points out that *all the events* in (42b) does not allow the subject *a journalist* to vary with the events, while *all the men* in the subject position in (42a) does allow the referent of the object *a table* to vary with the referents of *all the men*:

(42) a. *All the men* lifted up a table.
   b. A journalist reported *all the events*.   (Szabolsci (2010))

Again this means in our terms that *all* in the object cannot take scope over the subject.

    If the wide scope reading of *every boy* and *each boy* in (41) is due to the applicability of QR to these QPs, then a possible analysis of the narrow scope property of *all* is to say that QPs with *all* do not undergo QR, on a par with *zen'in* and *zenbu* in Japanese. In fact, there are two characteristic properties of *all* which distinguishes *all* from the quantifiers *every* and *each*, one of which is shared by *zen'in* and *zenbu* in Japanese.

    Firstly, *all* shares one property with the prefix *zen-* in Japanese in that it does not

range over a set of entities denoted by the following noun but simply expresses the totality of the denotation of the following noun. Recall that *zen-* may be attached to a semantically singular noun to express the whole part of the noun:

(43) a. zen-koo

　　　　all-school　　'the whole school'

　　b. zen-koku

　　　　all-nation　　'the whole nation'

　　c. zen-kai

　　　　all-committee　'the whole committee'　　　　　(= (18))

(44) a. subete-no gakkoo

　　　　all-Gen　　school　　　　'every school'

　　b. subete-no kuni

　　　　all-Gen　　nation　　　　'every nation'

　　c. subete-no kai

　　　　all-Gen　　committee　'every committee'　　(= (19))

The examples in (43) all refer to the whole part of the singular entity denoted by the base morpheme *–koo* 'school', *-koku* 'nation' and *–kai* 'committee', while the examples in (44) with the quantifier *subete-no* refer to the maximum number in the set of entities denoted by the head noun. Thus *zenkoo* in (43a) refers to the whole part of one school while the apparent paraphrase *subete-no gakkoo* in (44a) refers to the plural number of schools in that it ranges over a set of schools and picks out the maximum number of schools from that set.

　　This property of *zen* is shared by *all* in English. Observe the following examples:

(45) a. I haven't read *all the book*.

　　b. I spent *all the day* cooking.　　　　　　　　(Huddleston and Pullum (2003))

(46) a. all the men

　　b. all the tables

In addition to the use of *all* in (46), where *all* + a plural noun refers to the maximum

number of the entities denoted by the noun, *all* has another use in (45) where *all* + a singular noun refers to the whole part of the referent of the noun. Thus *all the book* in (45a), for example, refers to the whole part of one single book, but not to every member of a set of books. The examples in (45) can be paraphrased as:

(47) a. I haven't read *the whole book*.

b. I spent *the whole day* cooking. (Huddleston and Pullum (2003))

This property of *all* is not shared the quantifiers *every* and *each*. The combination is *every/each* + a singular noun necessarily yields the reading where it ranges over a set of referents denoted by the noun and picks out the maximum number of the referents of that noun. Thus the italicized noun phrases in (48) picks out all the referents from the set consisting of books and days, but lacks the reading where the noun phrase refers to the whole part of a single book/day.

(48) a. I haven't read *every book*.

b. I spend *every day* cooking.

The relevant property of *all* is also suggested by the fact that *all*, but not *every* or *each*, may be combined with an uncountable noun to refer to the whole part of the referent of the noun:

(49) a. I drank *all the whisky*.

b. You will need *all your patience*. (Huddleston and Pullum (2003))

This property is not shared by *every* or *each*. The combination of *each/each* + an uncountable noun results in ungrammaticality:

(50) a. *every/each money

b. *every/each sand

The second property of *all* that distinguishes it from the quantifiers *every* and *each* is the fact that *all* does not presuppose a set of referents of the accompanying noun. To understand this, recall that quantifiers such as *every* have the following two functions:

(51) a. Presupposition of a set of entities denoted by the accompanying noun

    b. Ranging over that set and picking out the relevant number/proportion of entities from that set

We have seen above that the property (51b) is not shared by *all* in English since *all* may refer to the whole part of one single entity. The other property in (51a) is also missing in the semantics of *all*. It has been widely pointed out in the past literature that while the combination of *all* and a definite determiner such as *the, these/those* and a possessive personal pronoun (*my, your,* etc.) refers to the whole set of referents, the combination of *all* + a bare noun does not. For instance, while *all the children* in (52a) refers to the whole set of children who are presupposed to exist in the previous discourse, *all children* in (52b) has a generic reference.[13]

(52) a. *All the children* wanted to go to the zoo.

    b. *All children* like going to the zoo.　　　　　(Declerck (1991))

This difference between *all the* + N and *all* + N is also shown by the following examples. Suppose that the speaker is taking about, and hence presupposing the existence of, a particular group of linguists. In this situation, use of *all* without a definite determiner as in (53b) is not appropriate.

(53) a. I admire *all linguists*.

    b. !I talked to *all linguists*.

    c. I talked to *all the linguists*.　　　　　(Matthewson (1998, 2001))

The use of *all* + a bare noun is possible in cases where the speaker intends to refer generically to linguists in general, as in (53a), not to a particular set of linguists that is presupposed to exist in the preceding discourse. This fact tells us that *all* lacks the relevant property of presupposing a particular set. The presuppositional interpretation in (52a) and (53c) can be said to come from the use of a definite determiner such as *the*. If so, the function of *all* is limited to that of expressing the totality of the entity/entities denoted by the accompanying noun.

    From these considerations, we can say that *all* is not a quantifier in the first place in the sense that *every* and *each* are. Thus the inapplicability of QR to *all* can be

motivated.

5. Conclusion

This paper has considered the syntactic and semantic properties of *zen'in* and *zenbu* and characterized them as constituting a different class of QPs from Type 1 and Type 2 QPs. *Zen'in* and *zenbu* are different from Type 1 QPs in that they do not undergo QR. Moreover, they are different from Type 2 QPs in that their scope can be determined by the [+Topic] feature, whereas Type 2 QPs cannot. Lastly, we have shown that *all* in English exhibits a similar property to that of *zen'in* and *zenbu* in Japanese, and thus may be characterized as a type of quantifier that does not undergo QR, as with *zen'in* and *zenbu*.

Notes

[1] QPs with a prenominal numeral quantifier such as *san-nin-no* 'three-Cl-Gen' are ambiguous between the presuppositional and the nonpresuppositional reading, and thus can be either Type 1 or Type 2 QPs. The QP *san-nin-no gakusei* 'three students", for example, can be understood either to refer to a subset consisting of three students contained in a set of students, or to refer to three students that are referred to for the first time in the discourse.

[2] It is possible for the prefix *zen-* to be attached to nouns quite productively:

(i) a. zen-gakusei   b. zen-giin
　　　all-student 'all the students'   all-congressman   'all the congressmen'
   c. zen-gakkoo   d. zen-ken
　　　all-school 'all the schools'   all-prefecture   'all the prefectures'

This paper will, however, be limited to *zen'in* and *zenbu* since the behavior of the examples in (i) with respect to scope seems rather different from that of *zen'in* and *zenbu*, as we will see shortly in Footnote 5.

[3] Note that the occurrence of *zenbu* in (5) is intended to refer to every song in a particular set of songs (e.g. the list of songs that students are expected to choose from for a test in their vocal music course), not to the whole part of one piece of music. As we will see shortly in the text, *zen-* can be atatched to a semantically singular noun to refer to the whole part of the referent of the noun.

[4] Notice that in order to make the object QP in (6b) and (7b) take wide scope over negation, one needs

to understand the QP as having a presuppositional interpretation: the QP needs to refer to a subset of a certain set of people/computers that is understood to exist prior to the utterance. Without having such a set of people/computers in mind, the wide scope reading of the object QP is extremely difficult, if not impossible.

[5] Scope property of the examples in Footnote 2 seems different from that of *zen'in* and *zenbu*. Consider:

(i)　a.　Yamada-sensei-wa　　*zen-gakusei-o*　　seme-nak-atta
　　　　　Yamada-teacher-Top all-student-Acc blame-Neg-Past
　　　　　'Professor Yamada did not blame all the students.'
　　　　　[∀ > Neg, Neg > ∀]
　　　b.　Taroo-wa Hanako-ni　　*zen-kyoositu-o*　　mise-nak-atta
　　　　　Taro-Top Hanako-Dat all-classroom-Acc show-Neg-Past
　　　　　'Taro did not show all the classrooms to Hanako.'
　　　　　[∀ > Neg, Neg > ∀]

It seems easier to interpret *zen-gakusei* and *zen-kyoositu* as taking wide scope over negation than in the case of *zen'in* and *zenbu*. At present, however, I do not have a convincing account of this fact.

[6] Here I tentatively use the label "Neg" for the projection of the negative morpheme. The name "Neg" may imply that the negative morpheme *nai* is a member of the functional projections, but one can analyze *nai* as belonging to a lexical category as it exhibits the same inflectional paradigm as adjectives. See Nakau (1973), McGloin (1976) and Homma (1998) foir relevant discussion.

[7] Here I follow Saito (2005) in asuming QR as a covert movement of the q(uantifier)-feature of QPs.

[8] The reference to the whole part of a singular entity is not the only reading of *zen*-N. The form *zen*-N can also refer to the maximum number in a set of N's. Thus *zen-koo* may also be taken to mean "all the schools", as well as "the whole school".

[9] This property of referring to the totality is also true of the English *all*, as we will see shortly in Section 4.

[10] The impossibility of the wide scope reading of floating quantifiers has been pointed by Homma et al. (1992), Hasegawa (1993), Watanabe (2001) and Aoyagi (2010).

[11] In Miyagawa (2010) the relevant feature on T is called the [-focus] probe, the uninterpretable feature that is to enter into an agreement with the corresponding interpretable feature on a target DP. When the target DP is focused, the [-focus] probe is turned into [+focus], while it remains [-focus] when it agrees with a DP that is to be interpreted as a topic of a sentence. I assume this system in this paper, but I represent the relevant feature as [+Topic] for the ease of exposition since a DP such as *zen'in* is regarded as a topic in Miyagawa (2010).

[12] A remark is in order as to the subject-object asymmetry with respect to the scope of *all* pointed out in the text. Beghelli and Stowell utilize the sentence-internal reading (Carlson (1987)) of the adjective *different* in order to diagnose the distributivity of *every, each* and *all*. They point out that *all* does not allow the sentence-internal reading of *different* even when it is in the subject:

(i)　a.　Every boy read a different book.
　　　b.　Each boy read a different book.

   c. *All the boys read a different book.

Therefore, the point made in the text about the scope property of *all* only holds with the cases not involving the adjective *different*.

[13] The relevant property is pointed out by Quirk et al. (1985), Declerck (1991), Matthewson (2001), Huddleston and Pullum (2003) and Borer (2005).

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