Scope Interaction in DPs with NP-Deletion in Japanese
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In this article I consider scope interaction of quantified phrases (QPs) inside determiner phrases (DPs) involving NP-deletion in Japanese. I point out that an apparently puzzling fact can be accounted for easily once we assume with Kim (1999), Oku (1989), Saito (2004), and Takahashi (to appear) among others that arguments can be elliptic in the language.

NP-deletion is the relatively new term for what Jackendoff (1971) originally calls N’-deletion. The following is a typical case in English cited from Jackendoff (1971):

(1) Tom’s dog with one eye attacked Fred’s.

In this example the object has an elliptic part, and the elided material is understood to be dog with one eye. Advocates of NP-deletion such as Lobeck (1990) and Saito and Murasugi (1990) analyze (1) as follows (hereafter, struck-through materials indicate that they are elided at PF):

(2) \[DP \text{Tom’s} e_D [\text{NP dog with one eye}] \text{attacked} [\text{DP Fred’s} e_D [\text{NP dog with one eye}]]\]

Here the NP portion of the object DP is elided under the identity with the corresponding part of the subject. For expository convenience, the determiner heads are assumed to be empty here, though ‘s may actually serve as such (Fukui and Speas (1987)). The choice is immaterial to the present discussion.

Saito and Murasugi (1990) argue that NP-deletion is operative in Japanese as well. Consider the following example:

(3) Nihon-no kokuren-kara-no dattai-wa mitomerareta ga, Japan-GEN United-Nations-from-GEN withdrawal-TOP was-approved though doitu-no-wa mitomerarenakatta. Germany-GEN-TOP was-not-approved.

'Though Japan's withdrawal from UN was approved, Germany's was not approved.'
Here the subject of the main clause is incomplete in being realized only with the agentive genitive phrase doitu-no ‘Germany’s’ and the missing part is understood to take the part of the subordinate subject excluding nihon-no ‘Japan’s’ as its antecedent. According to Saito and Murasugi (1990), (3) is analyzed as below:

(4) \[
\begin{array}{c}
[DP nihon-no [NP kokuren-kara-no dattai] e_D]-wa mitomerareta ga, \\
[DP doitu-no [NP kokuren-kara-no dattai] e_D]-wa mitomerarenakatta.
\end{array}
\]

The agentive genitive phrases nihon-no ‘Japan’s’ and doitu-no ‘Germany’s’ occupy the specifier positions of the DPs, whereas the source PPs together with the head nouns are located inside the complement NPs (note in passing that PPs which are constituents of nominal phrases are accompanied by the genitive marker in Japanese). The second NP is elided under the identity with the first NP.

Let us now consider the following example, where both the agentive genitive phrase and the source PP inside the subject DP are quantificational:

(5) Azia-no ikka-koku-no taitei-no sosiki-kara-no
    Asia-GEN one-country-GEN most-GEN organization-from-GEN
    dattai-wa mitomerareta.
    withdrawal-TOP was-approved.

‘One Asian country's withdrawal from most organizations was approved.’

It has been known that when two quantifiers occur in a sentence in accordance with the basic word order in Japanese, the hierarchically higher one asymmetrically takes wide scope over the other (Kuroda (1971), Kuno (1973), Hoji (1985), and so on). This is true of quantifiers occurring in nominal phrases as well (Aoun and Li (1993) make a similar observation for Chinese). Given that the base position of the agent argument is higher than that of the source argument, the word order in the subject DP in (5) is deemed to be basic and the example only allows the reading where the agentive QP asymmetrically takes wide scope over the source QP (henceforth, the agent wide scope reading). If, on the other hand, the source PP is scrambled over the agentive phrase, the example
becomes ambiguous, as shown below:

(6) Taitei-no sosiki-kara-no azia-no ikka-koku-no
most-GEN organization-from-GEN Asia-GEN one-country-GEN
dattai-wa mitomerareta.
withdrawal-TOP was-approved.
'lit. From most organizations one Asian country's withdrawal was approved.'

In (6) the preposed PP is either adjoined to the subject DP (Saito (1985)) or located in the extra specifier position of the DP. I assume with Saito (1989) and Bošković and Takahashi (1998) among others that scrambling can be undone optionally at LF and that it is responsible for the ambiguity of (6). Specifically, I assume that the subject DP in (6) can be associated with either of the following LF representations:

(7) a. [DP __ [DP azia-no ikka-koku-no [NP taitei-no sosiki-kara-no dattai] eD ]]
    |___________________________________↑

b. [DP taitei-no sosiki-kara-no [DP azia-no ikka-koku-no [NP tPP dattai] eD ]]

In (7a) the scrambled PP is reconstructed in the original position, so that it is structurally lower than the agentive phrase, yielding the agent wide scope reading. In (7b), on the other hand, the source PP remains in the surface position, taking wide scope over the agentive phrase (henceforth, the source wide scope reading).

Having this as the background, we are ready to examine how the scopes of DP-internal QPs are affected by NP-deletion. Let us first consider the following data:

(8) Azia-no ikka-koku-no taitei-no sosiki-kara-no dattai-wa
Asia-GEN one-country-GEN most-GEN organization-from-GEN withdrawal-TOP
mitomerareta ga, yooroppa-no ikka-koku-no-wa mitomerarenakatta.
was-approved though Europe-GEN one-country-GEN-TOP was-not-approved
'Though one Asian country's withdrawal from most organizations was approved, one European country's was not approved.'
In (8) the NP part of the subordinate subject serves as the antecedent of the ellipsis inside the matrix subject, and both subject DPs only allow the agent wide scope interpretations. This is rather expected under the NP-deletion analysis, which assigns the following representation to (8):

(9)  
\[
[DP \text{azia-no ikka-koku-no } [D[NP \text{taitei-no sosiki-kara-no dattai }] e_D]-wa \text{mitomerareta ga,} \\
[DP \text{yooroppa-no ikka-koku-no } [D[NP \text{taitei-no sosiki kara no dattai }] e_D]-wa \text{mitomerarenakatta.}]
\]

Here the second NP, which contains the source PP *taitei-no sosiki-kara-no* ‘from most organizations’ and the head noun *dattai* ‘withdrawal’, is elided under the identity with the preceding NP. Notice that both the subordinate subject DP and the matrix subject DP have their constituents aligned in conformity with the basic word order: namely, the agents precede the source PPs, which precede the head nouns. It is expected from (5) that in this case, they have the agent wide scope readings.

Let us go on to modify (8) so that the order of the agentive genitive phrase and the source PP is reversed in the first DP, as follows:

(10)  
\[
\text{Taitei-no sosiki-kara-no azia-no ikka-koku-no dattai-wa} \\
\text{most-GEN organization-from-GEN Asia-GEN one-country-GEN withdrawal-TOP} \\
\text{mitomerareta ga, yooroppa-no ikka-koku-no-wa mitomerarenakatta.} \\
\text{was-approved though Europe-GEN one-country-GEN-TOP was-not-approved} \\
\text{'lit. Though from most organization one Asian country's withdrawal was approved, one} \\
\text{European country's was not approved.'}
\]

As we have already noted in (6), the subordinate subject DP is ambiguous, permitting either the agent QP or the source QP to take wide scope over the other. At the same time, the matrix subject DP is ambiguous too: either *yooroppa-no ikka-koku* ‘one European country’ or *taitei-no sosiki* ‘most organizations’, which is understood to be included in the elliptic site, can take scope over the other. Because the subordinate clause and the main clause have two interpretations each, the entire sentence might be expected to be four way ambiguous. It turns out, however, that (10) is ambiguous in only two ways and is understood in a parallel fashion: when the subordinate clause
has the agent wide scope reading, the main clause does too; or when the former has the source wide
scope reading, the latter is similarly construed.

The parallel ambiguity exhibited by (10) is not a peculiar phenomenon, but rather is a general
property of phonological reduction, of which deletion is the extreme case (Fox (2000) and Lasnik
(1972)). Consider the following case of VP-deletion in English due to Fox (2000):

(11) A boy admires every teacher. A girl does, too.

As Fox (2000) and others observe, cases like (11) exhibit parallel ambiguity just like (10). To
account for that, Fox (2000) assumes the following parallelism requirement:

(12) In an ellipsis/phonological reduction construction the scopal relationship among the
elements in the antecedent sentence must be identical to the scopal relationship among
the parallel elements in the ellipsis sentence.

In essence (12) allows (11) to have either of the following LF representations:

(13) a. \[
\text{TP a boy}_1 \left[ \text{VP every teacher}_2 \left[ \text{VP } t_1 \text{ admires } t_2 \right] \right] \\
\text{TP a girl}_3 \left[ \text{VP every teacher}_4 \left[ \text{VP } t_3 \text{ admires } t_4 \right] \right]
\]
b. \[
\text{TP every teacher}_2 \left[ \text{TP a boy}_1 \left[ \text{VP } t_1 \text{ admires } t_2 \right] \right] \\
\text{TP every teacher}_4 \left[ \text{TP a girl}_3 \left[ \text{VP } t_3 \text{ admires } t_4 \right] \right]
\]

According to the VP-internal subject hypothesis, the subject QPs in the specifier positions of TP can
have clausal scope without further undergoing movement, and thus they are located in the specifiers
of TP in (13). Also, it is assumed that object QPs must undergo quantifier raising (QR) either to VP
or to TP. In (13a), the object QPs are adjoined to VP in the antecedent and elliptic sentences, so that
both sentences have the readings where the subject QPs have wide scope. In (13b), on the other
hand, the object QPs are adjoined to TP, so that the antecedent and the elliptic sentences have the
interpretations where the object QPs have wide scope over the subjects. Since the antecedent and
the elliptic sentences are parallel in (13a-b), ellipsis is allowed to take place in the elliptic sentences.

Bearing the parallelism constraint in (12) in mind, let us return to the cases of NP-deletion in
Japanese. First of all, the analysis of (8) in (9) conforms to (12). The antecedent DP and the elliptic
DP are configured in a parallel way, so that NP-deletion is allowed to apply to the latter. At this point, one may notice that the QPs in the source PPs do not undergo QR in (9). In this article I just assume with Takahashi (to appear), who follows Takahashi (2002) and Yatsushiro (2001), that covert QR does not exist in Japanese and that relative scope of quantifiers is obtained from their surface configuration (except those cases where scrambled phrases are reconstructed at LF).

Let us next consider (10). When the subordinate subject and the matrix subject have the agent wide scope readings, the example is analyzed as follows:

(14)  a. (overt syntax: scrambling only in the first DP)

\[
[DP \text{ taitei-no sosiki-kara-no } [DP \text{ azia-no ikka-koku-no } [D[NP tPP dattai] e_D]]-wa
\]
mitomerareta ga, [DP yooroppa-no ikka-koku-no [D[NP taitei-no sosiki-kara-no dattai] e_D]]-wa mitomerarenakatta

b. (LF: scrambling undone)

\[
[DP \_ \_ [DP \text{ azia-no ikka-koku-no } [D[NP taitei-no sosiki-kara-no dattai] e_D]]-wa
\]
mitomerareta ga, [DP yooroppa-no ikka-koku-no [D[NP taitei-no sosiki-kara-no dattai] e_D]]-wa mitomerarenakatta

c. (PF: NP-deletion in the second DP)

\[
[DP \text{ taitei-no sosiki-kara-no } [DP \text{ azia-no ikka-koku-no } [D[NP tPP dattai] e_D]]-wa
\]
mitomerareta ga, [DP yooroppa-no ikka-koku-no [D[NP taitei-no sosiki-kara-no dattai] e_D]]-wa mitomerarenakatta

In overt syntax the source PP undergoes scrambling inside the subordinate subject, as shown (14a). There is no need to apply scrambling to the source PP in the matrix subject, which therefore preserves the basic word order in (14a). When the derivation enters LF, the scrambled PP is reconstructed into the complement position of NP, as indicated in (14b). Because the agentive genitive QPs are higher than the QPs in the source PPs both in the subordinate subject and in the matrix subject, they have the agent wide scope readings. The parallelism between the two DPs in (14b) licenses NP-deletion at PF, which is shown in (14c). Note that deletion is conditioned not by PF identity but by LF parallelism (Merchant (2000), Sag (1976), and so on) and hence that the configurational difference between the two subject DPs in (14c) should not matter.
When, on the other hand, the subject DPs have the source wide scope construals in (10), the sentence should be analyzed as below:

(15)  

(a. (overt syntax: scrambling in the first and second DPs)

\[
\text{[DP taitei-no sosiki-kara-no [DP azia-no ikka-koku-no [D[NP tPP dattai] eD]]]-wa mitomerareta ga, [DP taitei-no sosiki-kara-no [DP yooroppa-no ikka-koku-no [D[NP tPP dattai] eD]]]-wa mitomerarenakatta.}
\]

(b. (LF: scrambling retained)

\[
\text{[DP taitei-no sosiki-kara-no [DP azia-no ikka-koku-no [D[NP tPP dattai] eD]]]-wa mitomerareta ga, [DP taitei-no sosiki-kara-no [DP yooroppa-no ikka-koku-no [D[NP tPP dattai] eD]]]-wa mitomerarenakatta.}
\]

(c. (PF: NP-deletion in the second DP)

\[
\text{[DP taitei-no sosiki-kara-no [DP azia-no ikka-koku-no [D[NP tPP dattai] eD]]]-wa mitomerareta ga, [DP taitei-no sosiki-kara-no [DP yooroppa-no ikka-koku-no [D[NP tPP dattai] eD]]]-wa mitomerarenakatta.}
\]

In this case the matrix subject as well as the subordinate subject has the source PP scrambled to the phrase-initial position, as indicated in (15a). The two DPs retain their configurations involving scrambling at LF, as shown in (15b), where the source PPs are higher than the agent phrases and consequently have wider scope. Since the two DPs are parallel at LF, NP-deletion should be able to apply to the second DP at PF, as indicated in (15c). However, there arises a problem here. In the matrix subject DP in (15c) the source PP survives NP-deletion as it is dislocated out of NP in overt syntax by scrambling. This does not correctly represents the surface form of (10), where the source PP is missing as well.

One might think that this problem can be circumvented by assuming that the relocation of the source PP in the matrix subject DP in (15b) is done by covert QR rather than scrambling. In that case (10) has the following derivation instead of (15):

(16)  

(a. (overt syntax: scrambling only in the first DP)

\[
\text{[DP taitei-no sosiki-kara-no [DP azia-no ikka-koku-no [D[NP tPP dattai] eD]]]-wa mitomerareta ga, [DP yooroppa-no ikka-koku-no [D[NP taitei-no sosiki-kara-no dattai] eD]]-wa mitomerarenakatta.}
\]
b. (LF: QR in the second DP)

\[ [DP \text{taitei-no sosiki-kara-no } [DP \text{azia-no ikka-koku-no } [D[NP \text{yooroppa-no ikka-koku-no } [D[NP \text{taitei-no sosiki-kara-no } [D[NP \text{dattai-e } e_D]]-wa mitomerareta ga, } [DP \text{taitei-no sosiki-kara-no } [DP \text{yooroppa-no ikka-koku-no } [D[NP \text{taitei-no sosiki-kara-no } [D[NP \text{dattai-e } e_D]]-wa mitomerarenakatta.]

Here the source PP in the matrix subject DP stays in situ in overt syntax and hence at PF, so that it should be elided by NP-deletion, as shown in (16c). Although this yields the correct surface form, it cannot be adopted here, mainly because it would make the wrong prediction that DPs containing multiple QPs arranged in accordance with the basic word order, such as the one in (5), should be ambiguous in Japanese, just like its English counterpart some country’s withdrawal from most organizations (see Aoun and Li (1993) for the observation that cases like this are ambiguous in English). If, on the other hand, covert QR is unavailable in Japanese, the absence of ambiguity in cases like (5) is rather expected (see Takahashi (to appear) for a related discussion).

Returning to (15), we should note that the surface form it yields can actually be realized as a possible sentence:

(17) Taitei-no sosiki-kara-no azia-no ikka-koku-no dattai-wa
     most-GEN organization-from-GEN Asia-GEN one-country-GEN withdrawal-TOP
     mitomerareta ga, taitei-no sosiki-kara-no yooroppa-no
     was-approved though most-GEN organization-from-GEN Europe-GEN
     ikka-koku-no-wa mitomerarenakatta.
     one-country-GEN-TOP was-not-approved

     ‘lit. Though from most organizations one Asian country’s withdrawal was approved,
     from most organizations one European country’s was not approved.’

Here NP-deletion occurs in the matrix subject, and the source PP as well as the agentive genitive phrase appears as a remnant (see Kimura (1994) and Fukui and Saito (1998) for the observation that NP-deletion in Japanese allows multiple remnants). The problem posed by (15) can be solved if
the source PP in the matrix subject can be elided from (17) (or (15c)) so as to derive the surface form of (10).

In fact, several researchers including Kim (1999), Oku (1998), Saito (2004), and Takahashi (to appear), among others, have argued in one way or another that arguments can be elliptic in Japanese-type languages. Consider the following sentential counterpart of the DPs in Japanese examined above:

(18) Nihon-ga taitei-no sosiki-kara dattaisita ato, doitu-mo dattaisita.

‘lit. After Japan withdrew from most organizations, Germany withdrew, too.’

Although the source argument PP appears to be missing in the main clause, the clause can be understood to mean that Germany withdrew from most organizations, too. This is straightforwardly accounted for by the argument ellipsis analysis, according to which the understood source PP in the main clause is actually present in overt syntax and at LF but is elided at PF (see the references mentioned above for details).

Given that arguments can be elliptic in Japanese, nothing prevents the source PP in the main subject DP in (17) (or in (15c)) from being elided, as shown below:

(15) c’. (PF: NP-deletion and argument ellipsis in the second DP)

\[
\begin{align*}
\text{[DP taitei-no sosiki-kara-no [DP azia-no ikka-koku-no [D[NP tpp dattai] eD]]]-wa mitomerareta ga, [DP taitei-no sosiki-kara-no [DP yooroppa-no ikka-koku-no [D[NP tpp dattai] eD]]]-wa mitomerarenakatta.}
\end{align*}
\]

This yields the surface form of (10) as desired.

To summarize, I have shown that NP-deletion in Japanese exhibits the parallelism effect, just like VP-deletion in English. This provides further confirmation for Saito and Murasugi’s (1990) claim that the construction in question such as (3) involves deletion. I have also noted that when the subject DPs in (10) have the source wide scope interpretations, the example cannot be derived thoroughly by NP-deletion, and that it additionally involves argument ellipsis, which is shown independently in the literature to be available in the grammar of Japanese.
References
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