On the Lack of Criterial Freezing Effects

基準凍結効果の欠如について

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1　Criterial Freezing Effects and the Lack Thereof

Rizzi (2006) observes that once a constituent reaches a criterial position (a position dedicated to the expression of scope-discourse properties), it cannot move further, and calls this effect criterial freezing. The Japanese example in (1) shows this phenomenon.

(1)　*Ken-ga　[Mari-ga　Masao-ni　ageta　ka]　siritagatteiru　no-wa
Ken-NOM　Mari-NOM　Masao-DAT　gave　Q　want.to.know　C-TOP
nani-o　da.
what-ACC　COP
'It is what that Ken wants to know Mari gave to Masao.'

(1) is a cleft sentence and the *wh*-phrase *nani-o* 'what-ACC' (a theme argument of the verb *ageta* 'gave') appears in the focus position of the cleft, which comes between the presuppositional clause ending with the topic marker *-wa* and the copula (the focus phrase is bold-faced). At the same time *nani-o* needs to take *wh*-scope inside the embedded clause (which is the only interrogative clause). As Takano (2002) and Hiraiwa and Ishihara (2012) observe, this pattern is unacceptable. This fact shows that the *wh*-phrase cannot move from the Spec of the embedded CP, namely, its criterial position (the same holds for the ungrammatical English counterpart of (1) given in the translation).

The cleft sentence in (1) has one phrase in the focus position. However, Japanese clefts quite freely allows more than one phrase to appear there. Interestingly, the criterial freezing effect seen in (1) disappears in such multiple-focus clefts. Compare (1) with (2), which is identical to (1) except that there are two focus phrases.

(2)　Ken-ga　[Mari-ga　ageta　ka]　siritagatteiru　no-wa　**Masao-ni**
Ken-NOM　Mari-NOM　gave　Q　want.to.know　C-TOP　Masao-DAT
nani-o　da.
what-ACC　COP

‘It is what to Masao that Ken wants to know Mari gave.’

The example in (2) improves on the one in (1).[1] The following examples show the same phenomenon.[2]

(3) a. Ken-ga [Mari-ga ageta ka] siritagatteiru no-wa **dare-ni**
Ken-NOM Mari-NOM gave Q want.to.know C-TOP who-DAT
nani-o da.
what-ACC COP
‘It is what to whom that Ken wants to know Mari gave.’

b. Ken-ga [Mari-ga ageta ka] siritagatteiru no-wa **dare-ni**
Ken-NOM Mari-NOM gave Q want.to.know C-TOP who-DAT
dewanaku **nani-o** da.
not what-ACC COP
‘It is what, not to whom, that Ken wants to know Mari gave.’

The contrast between (1) on the one hand and (2)/(3) on the other thus constitutes a puzzle that calls for an explanation.

The purpose of this paper is to consider this puzzle about criterial freezing. I will show that the puzzle can be resolved under the analysis of multiple-focus clefts that I proposed in Takano 2020, according to which what I call double sideward movement plays an essential role in deriving those clefts.

2 Extension of Merge and Double Sideward Movement

The most fundamental operation in syntax is Merge (Chomsky 2000 and subsequent work). Merge applies to two syntactic objects (SOs) and combines them into a single SO. Thus, applying to the SOs X and Y, Merge creates the new SO {X, Y} in the workspace. In Chomsky’s view, Merge can apply to X and Y in two situations: (i) X and Y are independent SOs (External Merge), or (ii) one of them is contained in the other (Internal Merge). Internal Merge accounts for movement in the traditional sense.

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[1] The example in (2) becomes unacceptable if the order of the two focus phrases is reversed, as in (i) below.

(i) *Ken-ga [Mari-ga ageta ka] siritagatteiru no-wa **nani-o**
Ken-NOM Mari-NOM gave Q want.to.know C-TOP what-ACC
Masao-ni da.
Masao-DAT COP
‘It is what to Masao that Ken wants to know Mari gave.’

However, this fact is independent of criterial freezing because the examples in (ii), which have nothing to do with criterial freezing, show the same pattern.

(ii) a. Ken-ga ageta no-wa **Masao-ni** **nani-o** desu ka.
Ken-NOM gave C-TOP Masao-DAT what-ACC COP Q
‘What to Masao is it that Ken gave?’

b. *Ken-ga ageta no-wa **nani-o** **Masao-ni** desu ka.
Ken- NOM gave C-TOP what-ACC Masao-DAT COP Q

Although it is not clear why (iib) is unacceptable, it is reasonable to think that the same factor that is responsible for it accounts for (i).

[2] I thank Shigeo Tonoike and Mamoru Saito for bringing (3b) to my attention.

In Takano 2020 I proposed to extend the application of Merge so that Merge can apply to two SOs both of which are contained in another SO and create a new SO in the workspace. The relevant situation is described in (4).

(4) $Z = \{\ldots X \ldots Y \ldots\} \rightarrow \text{Merge}(X, Y) \rightarrow Z = \{\ldots X \ldots Y \ldots\}$, $\{X, Y\}$

Suppose that the workspace has Z, which contains X and Y. Under my proposal, Merge can apply to X and Y and create the new SO {X, Y} in the workspace, as a result of which the workspace has {X, Y} and Z, which contains copies of X and Y. In this derivation, both X and Y have moved from one structure to another, namely, from Z to {X, Y}. This is a new kind of sideward movement: X and Y have undergone sideward movement at the same time (see Hornstein 2001 and Nunes 2001, among others, for discussion of standard sideward movement). I call it double sideward movement.

In Takano 2020 I showed that double sideward movement accounts for a variety of peculiar properties of multiple-focus clefts in Japanese. One such property is the lack of island effects. Japanese single-focus clefts are known to exhibit island effects (Hoji 1987). Consider (5) and (6).

(5) Ken-ga [Mari-ga ___ hon-o ageta to] omotteiru no-wa
Ken-NOM Mari-NOM book-ACC gave C think C-TOP
Masao-ni da.
Masao-DAT COP
'It is to Masao that Ken thinks that Mari gave a book.'

(6) ??Ken-ga [Mari-ga ___ hon-o ageta toyuu uwasa]-o
Ken-NOM Mari-NOM book-ACC gave C rumor-ACC
sinziteiru no-wa **Masao-ni** da.
believe C-TOP Masao-DAT COP
'It is to Masao that Ken believes a rumor that Mari gave a book.'

The underline in the presuppositional clause shows a position where the focus phrase receives thematic interpretation. In (5) the underlined position is embedded in a complement clause and the sentence is perfectly acceptable. However, in (6) it is contained in a complex NP and the sentence is degraded. Since complex NPs constitute syntactic islands, facts like this led Hoji (1987) to propose that the derivation of single-focus clefts involves movement of a null operator inside the presuppositional clause.

I observed an asymmetry between single-focus and multiple-focus clefts with respect to island effects. Compare (6) with (7).

(7) Ken-ga [Mari-ga ___ ___ ageta toyuu uwasa]-o sinziteiru
Ken-NOM Mari-NOM gave C rumor-ACC believe
no-wa **Masao-ni** **hon-o** da.
C-TOP Masao-DAT book-ACC COP
'It is to Masao a book that Ken believes a rumor that Mari gave.'

(7) differs only minimally from (6) in that it has two focus phrases, but (7) is fairly acceptable, in contrast to (6).

I proposed that the lack of island effects with multiple-focus clefts can be accounted for under an analysis invoking double sideward movement. I adopt an analysis of Japanese single-focus clefts according to which the focus is generated independently of the presuppositional clause and the presuppositional clause contains a null operator (Hoji 1987, Murasugi 1990).[3] The derivation in (8), where Y is a presuppositional clause, shows this analysis.

(8) a. $[_Y \ldots X \ldots]$
↓ Movement of the null operator X
b. $[_Y X \ldots X \ldots]$
↓ Merge of Y and the focus Z
c. $[[_Y X \ldots X \ldots] Z]$

After (8c) the copula and other material are merged. In this analysis, if movement of X inside Y crosses an island, the sentence degrades, as in (6).

On the assumption that only a single constituent can appear in the focus position of Japanese multiple-focus clefts, I proposed that the derivation of the presuppositional clause of multiple-focus clefts crucially involves double sideward movement. The derivation in (9) illustrates this.

(9) a. SO1 = […X…Y…] (X, Y = null operators)
↓ Merge of X and Y creating {X, Y} in the workspace (double sideward movement)
b. SO1 = […X…Y…]
SO2 = {X, Y}
↓ Expansion of SO1 to SO1' and Merge of SO1' and SO2
c. [{X, Y} […X…Y…]]

The resulting SO in (9c), the presuppositional clause, then gets merged with the SO containing two focus phrases {W, Z} (which is an "antecedent" of {X, Y}) created independently of the presuppositional clause.

[3] Hiraiwa and Ishihara (2012) propose another analysis in which the focus, directly generated inside the presuppositional clause, first moves out of the presuppositional clause and then the presuppositional clause moves to a higher position than the focus. The choice between the two analyses does not affect the discussion here.

The step from (9a) to (9b) involves merging X and Y and creating {X, Y} in the workspace, and thus yields double sideward movement of X and Y. I claimed that this derivation accounts for the lack of island effects with multiple-focus clefts. Suppose that there is an island between {X, Y} and their copies in (9c). Such a structure can be derived as in (10).

(10) a. SO1 = [… X … Y …]
↓ Merge of X and Y
b. SO1 = [… X … Y …]
SO2 = {X, Y}
↓ Expansion of SO1 to SO1'
c. SO1' = [… [$_W$ … X … Y …]], where W = an island
SO2 = {X, Y}
↓ Merge of SO1' and SO2
d. [{X, Y} [... [$_W$ … X … Y …]]]

In this analysis, the island W is formed in the derivation from (10b) to (10c). Crucially at the stage in (10b), both X and Y have already gotten out of SO1 to form SO2. Therefore, when the island is formed, it does not contain SO2. This means that nowhere in the derivation have X and Y moved out of the island. This is why multiple-focus clefts like (7) do not show island effects.

3 Double Sideward Movement and Criterial Freezing

Let us return to criterial freezing effects. For present purposes, let us assume the generalization in (11).[4]

(11) If a constituent moves to a criterial position, it cannot move further from that position.

Let us look at the derivation in (13) of the presuppositional clause of (1), repeated in (12).

(12) *Ken-ga [Mari-ga Masao-ni ageta ka] siritagatteiru no-wa
Ken-NOM Mari-NOM Masao-DAT gave Q want.to.know C-TOP
nani-o da.
what-ACC COP
'It is what that Ken wants to know Mari gave to Masao.'

(13) a. [$_{CP1}$ Mari-ga Masao-ni nani-o ageta ka]
↓ Movement of *nani-o* to Spec of CP1
b. [$_{CP1}$ nani-o Mari-ga Masao-ni nani-o ageta ka]
↓ Expansion of the presuppositional clause

[4] For recent proposals to explain criterial freezing, see Rizzi 2015 and Chomsky 2015.

c. [$_{CP2}$ Ken-ga [$_{CP1}$ nani-o Mari-ga ... ka] siritagatteiru no]-wa
↓ Movement of *nani-o* to Spec of CP2
d. [$_{CP2}$ nani-o Ken-ga [$_{CP1}$ nani-o Mari-ga … ka] … no]-wa

In (13) I assume that null operators are just regular phrases without phonetic content. Thus, what moves inside the presuppositional clause is the *wh*-phrase *nani-o* without phonetic content. First, it moves to the Spec of CP1, as in (13b), and then it moves from this position to the Spec of CP2, as in (13d). Given that the Spec of CP1 is a criterial position (for *wh*-interpretation), movement of *nani-o* from the Spec of CP1 to the Spec of CP2 violates the generalization in (11). Therefore, the example in (12) is excluded due to criterial freezing.

A different situation arises in the case of multiple-focus clefts if they are derived by double sideward movement. (15) illustrates the derivation of the presuppositional clause of (2), repeated in (14).

(14) Ken-ga [Mari-ga ageta ka] siritagatteiru no-wa **Masao-ni**
Ken-NOM Mari-NOM gave Q want.to.know C-TOP Masao-DAT
nani-o da.
what-ACC COP
'It is what to Masao that Ken wants to know Mari gave.'

(15) a. [Masao-ni nani-o ageta]
↓ Merge of *Masao-ni* and *nani-o* (double sideward movement)
b. [Masao-ni nani-o ageta]
{Masao-ni, nani-o}
↓ Expansion of the presuppositional clause to CP1
c. [$_{CP1}$ Mari-ga Masao-ni nani-o ageta ka]
{Masao-ni, nani-o}
↓ Movement of *nani-o* to Spec of CP1
d. [$_{CP1}$ nani-o Mari-ga Masao-ni nani-o ageta ka]
{Masao-ni, nani-o}
↓ Expansion of the presuppositional clause to CP2
e. [$_{CP2}$ Ken-ga [$_{CP1}$ nani-o Mari-ga ... ka] siritagatteiru no-wa]
{Masao-ni, nani-o}
↓ Merge of CP2 and {Masao-ni, nani-o}
f. [$_{CP2}$ {Masao-ni, nani-o} Ken-ga [$_{CP1}$ nani-o Mari-ga ... ka] … no]-wa

There are three important steps in the derivation in (15). First, *Masao-ni* and *nani-o* merge to form the new SO {Masao-ni, nani-o} in the workspace (double sideward movement of *Masao-ni* and *nani-o*). This yields (15b). Then inside CP1, *nani-o* moves to the Spec of CP1, as shown in (15d). Finally, the

presuppositional clause and {Masao-ni, nani-o} merge to form the entire presuppositional clause in (15f). We can see that this derivation does not violate the criterial freezing generalization. The copy of *nani-o* that has moved to the Spec of CP1 does not move any further but stays there. What appears in the Spec of CP2 in (15f) is {Masao-ni, nani-o}, which has merged with CP2 by External Merge. This derivation is made possible by double sideward movement. Double sideward movement creates two copies of *nani-o* in (15b), one in the presuppositional clause and the other in the newly created SO {Masao-ni, nani-o} in the workspace. The copy in the presuppositional clause moves to the Spec of CP1 and is licensed for *wh*-interpretation there. On the other hand, {Masao-ni, nani-o} merges to the Spec of CP2, where *nani-o*, together with *Masao-ni*, is licensed for focus interpretation. The net result is that *nani-o* receives *wh*-interpretation in the Spec of CP1 and focus interpretation in the Spec of CP2 without causing criterial freezing effects. The crucial point is that this is possible just because there is an additional copy of *nani-o* created in the workspace by double sideward movement. This makes (14) different from (12).[5]

(3a) is accounted for in essentially the same way as (14) and the same will be true of (3b) although the exact structure of *dare-ni dewanaku nani-o* 'who-DAT not what-ACC' is unclear.

4 Conclusion

There is a key aspect common to the analysis of the lack of island effects proposed in Takano 2020 and the analysis of the lack of criterial freezing effects shown here. In both cases, the crucial part of the derivation involves two phrases getting out of the relevant structure and this makes it possible for them to evade the syntactic conditions that would otherwise restrict them. Two phrases getting out of the structure is exactly the defining property of double sideward movement, carried out by the extended application of Merge. Therefore, the present discussion lends additional support to the theory of syntax that makes this type of Merge available.

References

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. by Roger Martin, David Michaels, and Juan Uriagereka, 89-

[5] The phenomenon where one phrase is given *wh*-interpretation in a lower clause and focus interpretation in a higher clause is not unique to Japanese. Huang (1982) observes that cleft sentences in Chinese allow this. Consider (i) below.

(i) Ta xiang-zhidao [shi shei da-la ta].
he wonder fm who beat him
'He wonders who it is that beat him.'

Chinese clefts do not involve overt dislocation of the focus phrase but are formed by putting the focus marker *shi* immediately before the focus phrase. Thus, in (i) the *wh*-phrase *shei* 'who' serves as a cleft focus as well. Given that in (i) only the embedded clause is an interrogative clause, *shei* is necessarily given *wh*-interpretation in the embedded clause. However, according to Huang, it can receive focus interpretation both in the embedded clause and in the matrix clause. If, as Huang claims, both *wh*-interpretation and focus interpretation involve (covert) movement of *shei* to the Spec of an interrogative CP and to the Spec of a CP where it is given focus interpretation, respectively, the fact that *shei* can be interpreted as a matrix focus is a mystery, given that it would violate the criterial freezing generalization. However, the fact receives a natural account under Tsai's (1999) theory of *wh*-questions, according to which Chinese *wh*-phrases are assigned *wh*-interpretation by unselective binding by the interrogative C. In that case, the Spec of the embedded clause in (i) is not a criterial position for *shei*. Thus, the grammatical cases in Japanese and Chinese involving apparent violations of the criterial freezing generalization are made possible by either double sideward movement or unselective binding.

155. Cambridge, MA: MIT Press.

Chomsky, Noam. 2015. Problems of projection: Extensions. In *Structures, strategies and beyond: Studies in honor of Adriana Belletti*, ed. by Elisa Di Domencio, Cornelia Hamann and Simona Matteini, 3-16. Amsterdam: John Benjamins.

Hiraiwa, Ken and Shinichiro Ishihara. 2012. Syntactic metamorphosis: Clefts, sluicing, and in-situ focus in Japanese. *Syntax* 15: 142-180.

Hoji, Hajime. 1987. Japanese clefts and chain binding/reconstruction effects. Paper presented at WCCFL VI.

Hornstein, Norbert. 2001. *Move!: A minimalist theory of construal*. Oxford: Blackwell.

Huang, C.-T. James. 1982. Move WH in a language without WH movement. *The Linguistic Review* 1: 369-416.

Murasugi, Keiko. 1990. Noun phrases in Japanese and English: A study in syntax, learnability, and acquisition. Doctoral dissertation, University of Connecticut.

Nunes, Jairo. 2001. Sideward movement. *Linguistic Inquiry* 32: 303-344.

Rzzi, Luigi. 2006. On the form of chains: Criterial positions and ECP effects. In Wh-*movement: Moving on*, ed. by Lisa Lai-Shen Cheng and Norbert Corver, 97-133. Cambridge, MA: MIT Press.

Rzzi, Luigi. 2015. Cartography, criteria and labeling. In *Beyond functional sequence: The cartography of syntactic structures, Volume 10*, ed. by Ur Shlonsky, 314-338. New York: Oxford University Press.

Takano, Yuji. 2002. Surprising constituents. *Journal of East Asian Linguistics* 11: 243-301.

Takano, Yuji. 2020. Exploring Merge: A new form of sideward movement. *The Linguistic Review* 37: 7-45.

Tsai, Wei-Tien Dylan. 1999. On lexical courtesy. *Journal of East Asian Linguistics* 8: 39-73.