The domain expansion mechanism of focus in Japanese and English

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In this paper I would like to offer a simple account of focus phenomena in Japanese and English. There are a few interesting features with regard to focus. First, the domain of focus may be wider than a phonologically stressed portion. Secondly, the positions of certain scope markers, which seem to induce focusing, are important when deciding the domain of focus. Thirdly, the domain of focus seems to expand, but does not shift. This paper will discuss these features and offer an account from which the features automatically follow. This paper is organised in the following order. I will introduce a few important facts about the focus phenomena in Japanese and English. Then I will review Aoyagi (1998), who attempts to account for the focus phenomena in Japanese. After mentioning a few problems with his approach, I will present an alternative account.

1. Introduction

1.1. Basic facts

There are three important facts regarding focus phenomena in general. First, the domain of focus cannot be solely determined by the phonological stress. To illustrate this, I will discuss one kind of focus phenomenon. Particles such as "mo" and "sae", which I call K (akari -joshi) -particles following Aoyagi (1998), are associated with focus in Japanese. K-particles may be associated with categories that dominate them, which is noted by Kuroda (1965).[1] This is illustrated as follows :

(1) (from Aoyagi(1998 : 148))
(kinoo-no paatii-de Mary-ga odor-ta dake-de naku ...)
yesterday-Gen party-at -Nom dance-Past not-only but ...
'At yesterday' s party, not only Mary danced, but ...)
a. [$_{vP}$ John-ga [$_{VP}$ piano-o hiki]]-**MO** si-ta[ii]
-Nom piano-Acc play-also do-Past
'It also happened that John played the piano.'
b. [$_{vP}$ John-ga [$_{VP}$ [$_{DP}$ PIANO] -**mo** hik]]-ta
-Nom piano-also play-Past
'(Lit.) John played also the piano.'

Stressed "mo" is attached to vP in (1) a, so that the focus contrast is expected at the level of vP, in other words, at the level of propositions. Accordingly, the natural interpretation of (1) a is something like '(at yesterday's party, not only Mary danced,) but also John played the piano'. But, what is interesting here is that the same vP contrast reading is available in (1) b though "mo" is directly attached to DP, "piano", in (1) b. Moreover, only the DP is phonologically stressed in (1) b(as shown in block letters). If an actually stressed element is the domain of focus, a DP contrast reading is expected of (1) b (which is also a possible reading for (1) b).[iii] Therefore, the domain of focus can be wider than a phonologically stressed portion. This fact shows that the domain of "mo" seems to extend, which I call the domain expansion of "mo" or focus in this paper.

A similar fact can be observed in English. As Chomsky (1972), Jackendoff (1972), Selkirk (1984), Cinque (1993) and Zubizarret (1993) argue, focus seems to "propagate" or expand. Consider the following examples :

(2) Question 1 : What did John fix ?
Question 2 : What did John do ?
Question 3 : What happened ?
Answer : John fixed THE BICYCLE.

All of the three questions above can be answered with "John fixed THE BICYCLE", where the DP, "THE BICYCLE", alone is focused.

In the case of question 1, focusing the DP is expected because that is what the question asks. However, in the case of question 2 and 3, what are inquired, and hence, stressed are not the DP, "THE BICYCLE". Since question 2 asks what John did, the phonological stress is expected to prevail over the VP level, "fixed the bicycle". However, focusing merely the DP can be an appropriate answer. Accordingly, the focus domain seems to have expanded from the DP to the VP level in the answer. Similarly, in the case of question 3, the focus domain appears to have expanded from the DP to the sentence level. Therefore, the domain expansion of focus is also possible in English.

The second important fact about the focus phenomena is that the domain expansion may be prohibited under a certain condition. Coming back to the Japanese data, (1) b, it is now clear that the domain of focus can be wider than an actually stressed phrase. However, as Aoyagi (1998) notes, if the focused DP and "mo" are not adjacent, the domain expansion is unavailable. Therefore, the following example cannot be an appropriate reply to the pretext in (1).

(3) (from Aoyagi (1998 : 169))
John-ga PIANO-o-MO hik-ta.
-Nom piano-Acc-MO play-Past
'(Lit.) John played also the piano.'

Accusative case is inserted between "piano" and "mo" in (3). If a focused phrase and "mo" are separated, the domain expansion is not available, and hence, (3) cannot be uttered in the place of (1) b, where not DP but vP focus is required.[iv]

The last important fact is that the domain for "mo" may expand, but never shifts. Examine the following context and utterance :

(4) (kinoo-no paatii-de Mary-ga piano-o sawat-ta dake-de naku
yesterday-Gen party-at -Nom piano-Acc touch-Past not-only but ...
'At yesterday's party, not only Mary touched the piano, but ...)
* [$_{vP}$ (Mary-wa) [$_{VP}$ [$_{DP}$ piano] -mo hik]]-ta (=(1) b)

What are supposed to be contrasted in this example are two Vs : touching and playing. The utterance in (4) is not acceptable because the

focus domain cannot shift from the DP to the verb. This example indicates that focus domain does not shift.

The same fact also obtains in English. Examine the following dialogue :

(5) Question : What did you do to Mary ?
Answer 1 : I HIT her.
Answer 2 : *I hit HER.

In this dialogue, what is supposed to be focused is the verb, "hit", not the DP, "her". The ungrammatical reply of answer 2 suggests that focus domain may propagate or expand, but does not shift in English as in Japanese.

To sum up, a few common characteristics of focus phenomena in Japanese and English have been introduced above. This degree of similarity between the two languages may suggest that it is indeed possible to account for the focus phenomena in a unified way. Before presenting such an account, let us take a look at the semantics of focus, first.

1.2. The semantics of focus

Rooth (1985, 1996) argues that a contrastive-focused phrase generates a set of alternatives. Compare the following sentences :

(6) John only introduced Mary to [Bill] $_{F}$.
(7) John only introduces [Mary] $_{F}$ to Bill.

"Bill" is focused in (6) and "Mary" is focused in (7). The focused phrases interact with "only", so that (6) and (7) may have different truth-values under certain circumstances. For example, if John introduced Mary and George to Bill, (6) is true, but (7) is false. To explain the semantic difference in a case such as this, Rooth (1985, 1996) argues that a sentence with a focused phrase has two kinds of semantic value : ordinary and alternative semantic value. Ordinary semantic value is what is directly derived from an uttered sentence, where no contextual information is taken into consideration. In contrast, alternative semantic value is what is derived from the same sentence and contextual infor-

mation. Rooth further argues that a focused phrase provides a set of contextually relevant alternatives. If "Mary" is focused as in (7), it may generate a set of people. But the set does not need to include all people on the planet. The set needs to have only relevant people. Suppose that the utterance of (7) is made at a certain meeting and the attendants include George and Rachel apart from John, Mary and Bill, then the set is made of George and Rachel. If each element of this set is inserted into the slot where focus is placed, a set of propositions is created and this set is listed as an alternative semantic value as in (8):

(8) (for (7))

i. ordinary semantic value

John introduced Mary to Bill (TRUE)

ii. alternative semantic value

John introduced x to Bill, where x∈ {George, Rachel} ^{v}

→ John introduced George to Bill, (FALSE)

John introduced Rachel to Bill (FALSE)

Suppose that "only" requires the ordinary semantic value to be true and every proposition in the alternative semantic value to be false in (8). Then, it is clear why (7) is a false statement if John introduced Mary and George to Bill. This is because John did not introduce George to Bill according to one of the false propositions.

Let us consider the representation of (6) in the same context. Examine (9):

(9) (for (6))

i. ordinary semantic value

John introduced Mary to Bill (TRUE)

ii. alternative semantic value

John introduced Mart to x, where x∈ {George, Rachel}

→ John introduced Mary to George, (FALSE)

John introduced Mary to Rachel (FALSE)

The representation above shows that (6) can be uttered even if John introduced Mary and George to Bill. This is because none of the

propositions in the alternative semantic falsifies John's introducing Mary and George to Bill. As the above illustration shows, it is possible to capture the meaning of focus if focused phrases generate sets of relevant alternatives for contrasting as Rooth (1985, 1996) argues.

Let me now apply Rooth's idea to the Japanese data, for example, (1), whose pretext and example b are repeated below:

(1) (kinoo-no paatii-de Mary-ga odor-ta dake-de naku ...)
yesterday-Gen party-at -Nom dance-Past not-only but ...
'At yesterday' s party, not only Mary danced, but ...)
b. [$_{vP}$ John-ga [$_{VP}$ [$_{DP}$ PIANO] **-mo** hik]]-ta
-Nom piano-also play-Past
'(but) also John played the piano.'

Suppose "piano" alone is contrastive-focused in (1) b. Then, its focus generates a set of alternatives as follows:

(10) i. ordinary semantic value
John played [$_{DP}$ the piano] (TRUE)
ii. alternative semantic value
John played x, where x∈ {violin, viola, ...} (**DP** focus)
→ John played the violin, (TRUE)
John played the viola, (TRUE)
John played ... (TRUE)
... ...

In the alternative semantic value in (10), the set of instruments is generated because the DP, "piano", is focused. When this set is inserted into 'John played x', the set of propositions 'John played the violin, John played the viola, John played ...' is provided. Due to the fact that "mo" functions as conjunction, which will be shown below, the alternative semantic value, which is influenced by context, is further added to the ordinary semantic value in (10). Thus, (1) b means that John played the piano, the violin, the viola, and so on. But since alternative semantic value is derived from the contextual information, and hence, it can be regarded as background information, the more precise meaning of (1) b should be that John played the piano in addition to

the other instruments. Although this meaning is available for (1) b, it does not conform to the pretext, which requires the comparison of propositions, not of instruments. In other words, (1) b is expected to mean that (not only Mary danced) but also John played the piano. But this interpretation is unavailable if the DP alone is contrastive-focused. Hence, the domain expansion is necessary.

Let us turn to the domain expansion case, then. It has been shown that (1) b has two more interpretations, which are derived by VP and vP focus. I will discuss only vP focus here. Examine (11):

(11) i. ordinary semantic value

[$_{vP}$ John play (ed) the piano] (TRUE)

ii. alternative semantic value

x, where x∈ {Mary danced, Tom sang, ...} (**vP** focus)

→ Mary danced, (TRUE)

Tom sang, (TRUE)

... ...

When the domain of focus expands from the DP to the vP level, the contrast will be made at the propositional level. Therefore, the set of relevant alternatives is a set of propositions as noted as in '{Mary danced, Tom sang, ...}'. Due to the conjunction function of "mo", the alternative semantic value is added to the ordinary semantic value, and hence, its interpretation is something like 'apart from the event that Mary danced and that Tom sang, John played the piano'. Note that the set of alternatives is subject to the context, so positing simply one alternative is also acceptable. Suppose 'Mary danced' is the only element in the alternative set. Then, it means that apart from the event that Mary danced, John played the piano, which is an appropriate interpretation after the pretext in (1).

Above it is discussed how the meaning of a sentence with a focused phrase and "mo" is derived. Throughout the discussion, I have assumed that the meaning of "mo" is conjunction. One piece of evidence is the following:

(12) John-**mo** Mary-**mo** kimasita.
-MO -MO came
'John and Mary (also) came.'

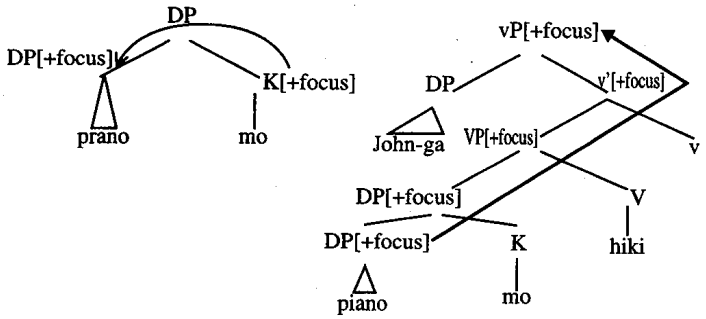
"mo" functions as a conjunction in (12). Accordingly, it is reasonable to unify the semantics of the two "mo" and to claim that it is conjunction. If the same "mo" is employed in the focus phenomenon, then a natural conclusion is that not only ordinary semantic value but also all propositions in alternative semantic value are true because conjunction requires every connected proposition to be true.

1.3. Aoyagi (1998)

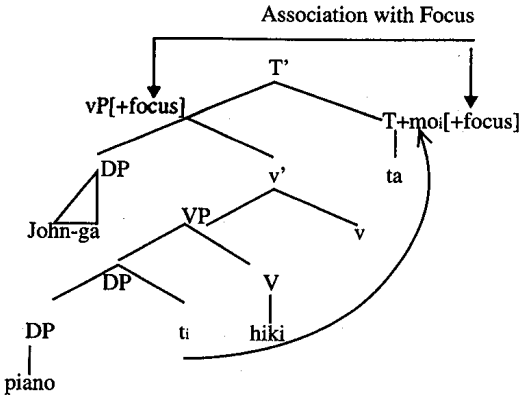
Let us discuss Aoyagi's (1998) explanation of the domain scope expansion. He argues that there are three syntactic steps in focus constructions : (i) copying a [+focus] feature onto a category that "mo" c-commands at the time of merger, (ii) propagation of the copied [+focus] feature and (iii) raising of "mo" to T at LF. When these steps are applied to (2) b, the following derivation is observed :

(13) (from Aoyagi (1998 : 176)[vi])

i. [+focus] copying ii. propagation of [+focus]



iii. movement of a K-particle to T



As one can see in the first step, Aoyagi (1998) considers that "mo" carries [+focus]. This [+focus] must be copied onto the DP, "piano", as in (i). In the second step, [+focus] propagates up to vP, so that the propositional contrast (i.e. vP focus) is possible as in (1). This propagation mechanism is not unique to Aoyagi (1998). Chomsky (1972), Jackendoff(1972), Selkirk(1984), Cinque(1993), and Zubizarreta(1993) propose a similar propagation analysis. Aoyagi claims that the propagation of [+focus] is optional, so it can remain in DP, and hence, the domain scope for "mo" is over DP, i.e. the contrast is made at the DP (or entity) level. Alternatively, [+focus] propagates up to VP, and hence, the contrast is made at the VP (or predicate) level. In this way, the ambiguity of the sentence is captured. However, [+focus] features only go up, but they do not shift in the tree, in other words, [+focus] in DP cannot be transferred to V as shown before(cf.(4)). In brief, the second step, that is, the propagation of [+focus], seems to determine the domain scope for "mo". In the third step, "mo" is raised to T at LF.

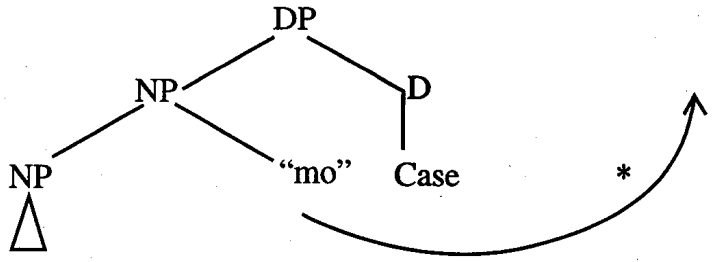
As shown at the first section, when focused phrases and "mo" are separated, domain expansion is unavailable. Consider the following example :

(14) (from Aoyagi (1998 : 169))
John-ga PIANO-o-MO hik-ta.
-Nom piano-Acc-MO play-Past
'(Lit.) John played also the piano.'

Unlike in (1) b, here accusative case is inserted between the focused phrase, "piano", and "mo", so that the focused phrase and "mo" are not adjacent to each other in (14). Aoyagi (1998) notes that (14) does not allow domain expansion, in other words, it allows only the DP focus reading. He argues that this phenomenon is expected in his approach. Aoyagi claims that the DP structure before Spell-Out is represented as follows :

(15) (from Aoyagi (1998 : 171))

a. Pre-Spell-Out representation



As (15) shows, according to Aoyagi (1998), "mo" is base-generated below the Case before Spell-Out (and later due to morphological fusion, "mo", being a clitic, is adjoined to the Case, so that "mo" follows the Case in the actual pronunciation as in (14)). Recall that "mo" needs to be raised to T. But another head D, which can also check "mo" as in T, is intervening, so due to the minimality condition, "mo" is not allowed to move to T. Hence only the DP focus reading is allowed in (14).

1.4. Three problems with Aoyagi (1998)

I would like to discuss three problems with Aoyagi's (1998) proposal. The first problem is that a few unattested mechanisms under the Minimalist syntax are employed to explain the propagation or domain expansion case. The first one is the copying feature mechanism (cf. (13) i). It is possible to leave a copy, but this is only possible after a category is moved. However, Aoyagi's copying mechanism does not conform to this custom. Somehow a [+focus] feature is copied from one lexical item to another, the process of which has not been attested elsewhere in the syntax. A problem is that once this mechanism is accepted, it may overgeneralise to other linguistic phenomena undesirably. It is not desirable to suggest a new mechanism to explain one phenomenon, because the theory may end up having too many mechanisms and may not be able to capture the real linguistic generalisation behind the data. Secondly, the propagation mechanism is also problematic. Features are considered not to transfer from one category

to another in the tree. Even if this kind of mechanism is permitted, a problem remains as to why features cannot go down in the tree (which would allow focus domain to shift). Thus, this mechanism is not attested, either. Accordingly, the two mechanisms need to be removed from Aoyagi's analysis.

The second problem with Aoyagi's (1998) proposal lies in the comparison of arguments and adjuncts. Aoyagi (1998) argues that if "mo" is attached to an adjunct, domain expansion is unavailable. He presents the following examples to support this claim :

(16) (from Aoyagi (1998 : 178-9))
(John-wa mai-asa tyuusha-o ut-ta dake-de naku ...)
-Top every-morning shot-Acc take-Past not only but
'John not only took a shot every morning, but. .'
iti-niti san-kai-**mo** kusuri-o nom-ta
one-day three-times-MO medicine-Acc drink-Past
'(he) took medicine as often as three times a day.'

(17) (from Aoyagi (1998 : 179))
(Bill-wa kata-asi-de booru-o ker-ta dake-de naku ...)
-Top one-leg-with ball-Acc kick-Past not-only-but
'Bill not only kicked a ball with one leg, but ...'
kata-te-de-**sae** batto-o hur-ta
one-hand-with-even bat-Acc swing-Past
'(he) swung a bat even with one hand.'

Both in (16) and (17),[vii] VP focus readings are required to follow the pretexts naturally. However, if "mo" or "sae" is attached to an adjunct, domain expansion seems to be impossible. Aoyagi (1998) claims that these data are expected in his approach because a head, "mo" in the present discussion, cannot be moved out of an adjunct due to Baker's (1988) version of the HMC (Head Movement Constraint); i.e., heads can move from complements, but not from adjuncts. If this explanation is correct, the movement of "mo" is supported. However, as Aoyagi mentions in his footnote, there seem to be exceptions. Examine the following example :

(18) (from Aoyagi(1998 : 181, fn. 18), whose example is attributed to Hoji (p.c.))
(Kinoo-wa gozen-tyuu kaze-ga tuyo-katta si, ...)
yesterday-Top morning-in wind-Nom strong-Past and ...
'Yesterday, the wind brew stron in the morning, and ...'
?gogo-ni-**mo** ame-ga hur-ta
afterneoon-in-MO rain-Nom fall-Past
'(lit.) It rained also in the afternoon.'

In (18), the most natural interpretation in the context given is to have vP focus. It seems that the vP focus reading is possible though "gogo -ni-mo"('in the afternoon') is an adjunct. Aoyagi explains this exception by claiming that locative and temporal adverbs can behave as in arguments. If this explanation is correct, (18) is not a counterexample for him. But, as Aoyagi also notes, the domain expansion of manner adverbs is possible in English as in (19) :

(19) (from Aoyagi (1998 : 184, fn. 20))
Q : What did John do?
A : He fixed the clock CAREFULLY.

A question remains : why is it the case that English allows the domain expansion of manner adverbs and Japanese does not? In fact, it seems that Japanese also permits such domain expansion. Consider the following example :

(20) (John-wa kakkoii dake de naku ...)
-Top handsome not only but
'John is not only handsome but ...'
?hayaku-mo oyog-e-ru.
quickly-MO swim-can-Present
'(he) can swim quickly.'

Though there is some clumsiness due to the direct attachment of "mo" to the adverb, a VP focus reading is possible in (20). Thus, even in the case of manner adverbs, domain expansion is possible. If this observation is correct, Aoyagi's use of the HMC is no longer satisfactory. One alternative suggestion is to include most of these data above

under the generalisation : when focused phrases and "mo" (or "sae") are not adjacent to each other, domain expansion is unavailable. If this suggestion is correct, we can explain why (17) is strange and (20) is fine. In (17), "sae" and the focused phrase, "katate" ('one hand'), are separated by the postposition, "de" ('with'). This is why domain expansion is unavailable in (17). In contrast, in (20), the focused phrase, "hayaku" ('quickly') and "mo" are adjacent to each other, so domain expansion is possible though "hayaku" is a manner adverb, and hence, an adjunct. What is more, if we remove "ni" from "gogo-ni-mo" in (18), the sentence sounds perfectly natural. Thus most data can be included under the generalisation (which remains to be explained, though). Only (16) is an exception. But as the English gloss shows, the meaning of "mo" there is not 'also' but 'as often as'. Thus, it is natural to conclude that "mo" there is of a different kind from the focus inducing particle, "mo".[viii] Hence, (16) does not count as a counterexample against the generalisation. One piece of advantage for attempting to explain the generalisation (rather than for employing the minimality condition) is that it is now theoretically possible to account for some of the Japanese and English focus phenomena in a unified way. For example, the domain expansion is possible even for adjuncts in English and indeed in Japanese, which would not be explained away with Aoyagi's HMC account.

The third problem is that (1) b does not allow the domain expansion of focus under a certain circumstance, which Aoyagi (1998) misses. (1) b is repeated below :

(1) b. [$_{vP}$ John-ga [$_{VP}$ [$_{DP}$ PIANO] -mo hik]]-ta
-Nom piano-also play-Past
'(but) also John played the piano.'

"Piano" receives a phonological stress in (1) b. However, if a stress falls on not "piano", but on "mo", the domain expansion is unavailable as follows :

(21) (kinoo-no paatii-de Mary-ga odor-ta dake-de naku ...)
yesterday-Gen party-at -Nom dance-Past not-only but ...
'At yesterday' s party, not only Mary danced, but ...)
* [$_{vP}$ John-ga [$_{VP}$ [$_{DP}$ piano] -**MO** hik]]-ta
-Nom piano-also play-Past
'(but) also John played the piano.'

Stressing "mo" alone is a permitted process as in (22):

(22) (kinoo-no paatii-de John-ga furuuto-o hik-ta dake-de naku ...)
yesterday-Gen party-at -Nom flute-Acc play-Past not-only but ...
'At yesterday' s party, not only John played the flute, but ...)
[$_{vP}$ (John-ga) [$_{VP}$ [$_{DP}$ piano] -**MO** hik]]-ta
-Nom piano-also play-Past
'(but) also John played the piano.'

This data cannot be accounted for under the HMC, so this data poses a problem to Aoyagi (1998). Actually, this data is slightly problematic to the generalisation above, which says that when focused phrases and "mo" (or "sae") are not adjacent to each other, domain expansion is unavailable. But, strictly speaking, "mo" is not adjoined to a focused phrase in (22) (though "mo" itself is focused), so the generalisation still holds. Accordingly, it is necessary to explain the generalisation rather than to resort to the HMC.

Three problems have been mentioned with Aoyagi's (1998) proposal above. The first one is that a few unattested mechanisms have been employed to account for the focus phenomenon. The second and the third problem show that the use of the minimality condition is not applicable to explain the availability of domain expansion. In the next section I will present a new proposal which resolves those problems.

2. A new proposal

2.1. A new mechanism

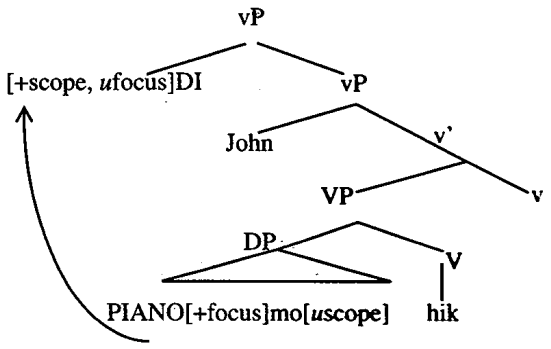
Two mechanisms in Aoyagi (1998) have been regarded as unmotivated. The first one is the copying feature mechanism. The second

one is the propagation mechanism. Both of these mechanism have been employed to explain the domain expansion phenomenon of "mo" in Japanese. But I would like to present an account which does not require either of the two mechanisms. Consider the pretext and example b of (1) again, which is repeated below :

(1) (kinoo-no paatii-de Mary-ga odor-ta dake-de naku ...)
yesterday-Gen party-at -Nom dance-Past not-only but ...
'At yesterday' s party, not only Mary danced, but ...)
b. [$_{vP}$ John-ga [$_{VP}$[$_{DP}$ PIANO] **-mo** hik]]-ta
-Nom piano-also play-Past
'(but) also John played the piano.'

In (1) b, although "mo" is base-generated next to the DP, "piano", a vP focus reading is available, which is due to the domain expansion. This domain expansion phenomenon is represented as follows :

(23)



(Word order is irrelevant.)

There are two new aspects in (23). The first one is that "mo" is merged with a lexical item which has [+focus] . Thus, "mo" is attached to "PIANO" in this example. In this way, copying [+focus] of "mo" onto the DP is unnecessary. The second aspect is that an invisible domain indicator (DI) is adjoined to vP, which guarantees that the c-command or checking domain of a DI is equivalent to that of contrastive-focus, and hence, a vP focus reading is provided there. Therefore, the propagation of [+focus] is unnecessary in this analysis.[ix] According to Pesetsky and Torrego (2001) , both a probe and a goal, in this case, the DI and "PIANO-mo" respectively, must have uninterpretable features in order for (overt or covert) Move to take place. Thus, an uninter-

pretable focus feature is implemented in the DI and an uninterpretable scope feature is implemented in "mo". Hence, the entire DP, "PIANO-mo", is expected to move to spec of VP (or be adjoined to the DI) covertly.

There is one piece of evidence for the involvement of covert movement with respect to the domain expansion: it is never applied across islands. Contrast the following examples:

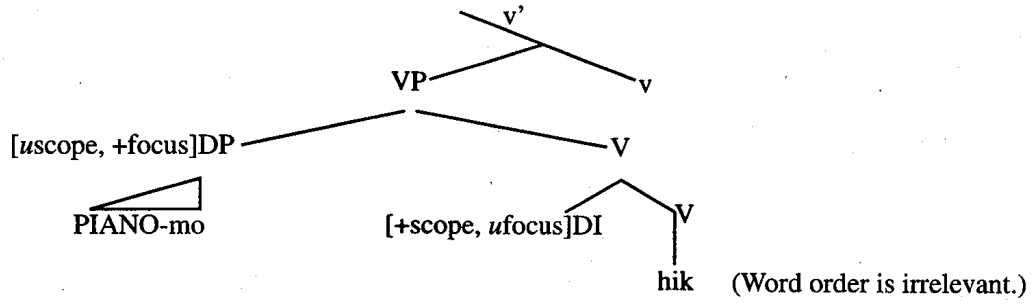
(24) John-wa [kuruma-**mo** katta] hito-ni atta.
-Top car-MO bought person-Dat saw
'John saw a person who also bought a car.'

(25) John-wa [kuruma-o katta] hito-ni-**mo** atta.
-Top car-Acc bought person-Dat-MO saw
'John also saw a person who bought a car.'

If a DI is base-generated at spec of "hito-ni" ('person-Dat') in (24), the same meaning as (25) is expected. However, (24) never means (25). This fact indicates that "kuruma-mo" cannot cross the relative clause, which is an island to movement. Hence, the movement of a focused phrase with "mo" to a DI is supported.

This base-generation analysis of a DI can explain why focus does not shift. Suppose a DI is base-generated next to V in the tree. Then it would be partially represented as follows:

(26)



In this representation, the DP and the DI are not in a checking configuration. Thus, the unintepretable features in the DP and the DI remain unchecked, and hence, the configuration results in ungrammaticality. In this manner, the fact that focus domain does not shift can

be captured. Although I concentrated on Japanese data here, the same method can be applied to English focus phenomena with regard to domain expansion and the unavailability of domain shift.

2.2. About the availability of domain expansion

A question remains to be resolved with regard to the two cases when the domain expansion is not possible. The first case is when "mo" and a focus phrase are not adjacent to each other. The second case is when "mo" itself is actually stressed. I will discuss the first case, first. Examine (14), which is repeated below :

(14) (from Aoyagi (1998 : 169))
John-ga PIANO-o-MO hik-ta.
-Nom piano-Acc-MO play-Past
'(Lit.) John played also the piano.'

In (14), the focused phrase, "PIANO", and "mo" are separated by accusative case, and hence, (14) provides only the DP contrasted reading. To explain this phenomenon, I present two conditions on the basis of the notion of phases in Chomsky (2000, 2001). For the sake of exposition, I concentrate on the "mo" data only. The two claims are the following :

(27) When "mo" is not included in the same numeration as a DI (domain indicator), it is adjoined to a focused phrase.

(28) When "mo" is included in the same numeration as a DI, it is directly adjoined to the DI. (Fixed scope)

Let us see how these two claims explain the generalisation. According to Chomsky (2000, 2001), not all lexical items are introduced in the derivation at the same time. Instead, a derivation proceeds phase by phase to decrease the computational complexity. One phase has its own set of lexical and functional items and this set is called a numeration. While building a phase, items from another numeration will be ignored. Hence, the computation can choose lexical and functional items from only one numeration at a time. When the computation finishes choosing every item, another numeration is introduced in the

derivation.

Bearing this proposal of Chomsky's in mind, let us first discuss the case when "mo" and focused phrases are adjacent. In this case, domain expansion is possible because "mo" and a DI are not in the same numeration. According to Chomsky, DP is a phase, so that it has its own numeration. Suppose not a DI but "mo" is included in this numeration. Then, according to (27), "mo" is adjoined to a focused NP in the same numeration. When the DP is completed, a new phase, and hence, a new numeration is introduced in the derivation. Suppose a DI is included in the new numeration. A DI unambiguously designates the domain scope for "mo" irrespective of the position of "mo" because the place where a DI is merged serves as a domain marker. The DI in the new numeration has several possible categories to merge with, and hence, ambiguity arises (cf. (1) b). The DI can merge with a DP, which results in a DP focus reading. Or it can merge with a VP, which results in a VP focus reading. Or it can merge with a vP, which results in a vP focus reading. As long as the DI enters the checking relation with "mo", it can merge anywhere. This optionality is available irrespective of whether focused phrases are arguments or adjuncts (cf. (18) and (20)). Hence this is one advantage for the present proposal against Aoyagi' s (1998), who claims that there is an asymmetry between arguments and adjuncts in terms of domain expansion.

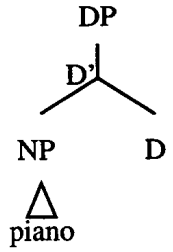
Let us now turn to the case when "mo" and a focused phrase are not adjacent to each other. For illustration, consider (14) again, which is repeated below :

(14) (from Aoyagi (1998 : 169))
John-ga [$_{DP}$ PIANO-o] -MO hik-ta.
-Nom piano-Acc-MO play-Past
'(Lit.) John played also the piano.'

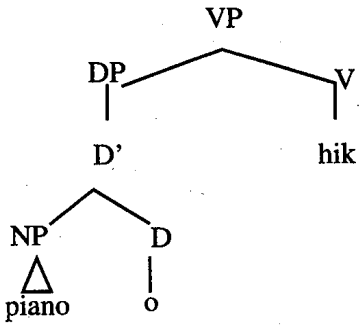
We have seen that domain expansion is impossible (because of the intervention of the accusative case between the focused phrase and "mo") and hence, only a DP focus reading is possible in (14). Aoyagi (1998) attributes this phenomenon to the minimality condition : when

"mo" is raised to T, Case intervenes. However, domain expansion is observed even in adjuncts, hence the minimality condition seems irrelevant there. Instead I explain this phenomenon in the following manner. I assume that before a Case particle appears on D, every item in the numeration is chosen and utilised. This assumption naturally follows from the fact that Case is considered to be assigned by another category, so that the first DP phase must be complete when it receives Case from another category. Thus, in the case of (14), when a numeration for DP is introduced, it does not contain either "mo" or a DI. When the second numeration (for vP) is introduced, both "mo" and a DI will be included there. According to (28), when the two items are in the same numeration, "mo" must be directly adjoined to a DI (to enter a checking relationship). Then, (14) is thought to have the following representation :

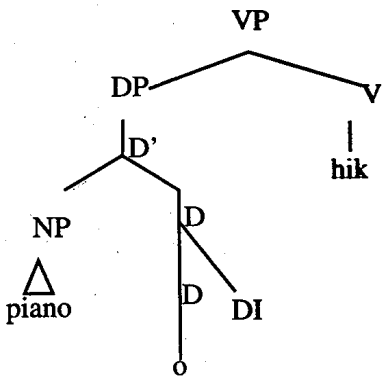
(29) (i) The firs phase (DP)



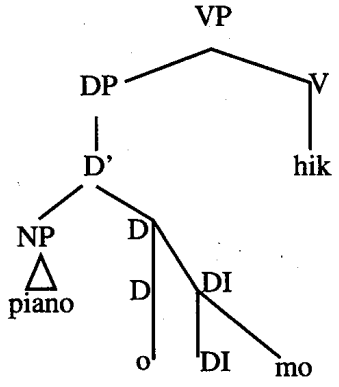
(ii) The second phase (vP)



(iii) the adjunction of a DI to D



(iv) the adjunction of "mo"



In (29) (i), the first numeration is introduced and the DP is formed. Neither "mo" nor a DI is introduced yet in (i). In (ii), the second nu-

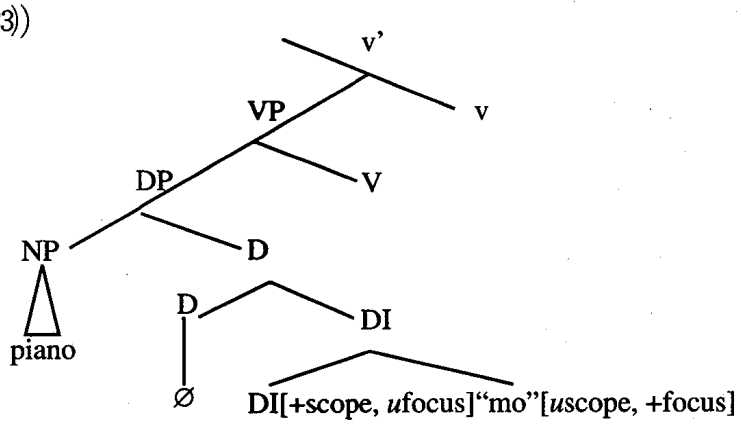
meration is introduced, which has "mo" and "DI". Here I suppose that accusative case is assigned from V and appears in D. In (iii), the DI is adjoined to D and the domain of focus is fixed here, and hence, a DP focus reading will be expected. Finally, according to (28), "mo" must be directly adjoined to a DI as in (iv). This is how only the DP focus reading is available in (14). The DI cannot appear elsewhere because if this happens, the position of "mo" would have to be changed, too (which would yield a different sentence from (14)). In this way, it is possible to explain why the domain expansion is unavailable when "mo" and a focused phrase are not adjacent to each other.[x]

Finally, let us turn to the second case when the domain expansion is unavailable. This case happens when phonological stress falls on "mo" as follows:

(30) (=(22)) (kinoo-no paatii-de John-ga furuuto-o hik-ta dake-de naku ...)
yesterday-Gen party-at -Nom flute-Acc play-Past not -only but ...
'At yesterday' s party, not only John played the flute, but ...)
[$_{vP}$ (John-ga) [$_{VP}$ [$_{DP}$ piano] **-MO** hik]]-ta
-Nom piano-also play-Past
'(but) also John played the piano.'

"mo" receives phonological stress, and as a result, only a DP focus reading is available in (30). Actually, "mo"in (14), where a focused phrase and "mo" are not adjacent, also receives stress. Therefore, it is likely that "mo", when directly adjoined to a DI, carries a phonological stress. The fact that "mo" carries a phonological stress in this case is also expected under the current proposal: "mo" alone (not the conjunction of DP and "mo") enters the checking relationship with a DI as follows (see also footnote ii):

(31) (cf. (23))



In (31), a DI is adjoined to D, which has no phonological content (as shown (as in "∅")unlike (29). The DI has an uninterpretable focus feature. But since the NP, "piano", has no [+focus], the uninterpretable feature remains unchecked. Then, "mo", which has [+focus], is adjoined to the DI and checks the uninterpretable focus feature of the DI. If "mo" is directly adjoined to a DI, the domain expansion is not available according to (28). Hence, the fact that when "mo" is stressed, the domain expansion is unavailable is also explained.

If the account above is correct, the two cases when the domain expansion is unavailable collapse into one case. That is to say, it is no longer necessary to claim that the unavailability of domain expansion arises when "mo" and a focused phrase are not adjacent to each other. Rather, it is sufficient to argue that the domain expansion is unavailable if "mo" carries a phonological stress. This unification is supported because "piano" in (14) actually does not need to be stressed.

In this paper I have discussed focus phenomena in Japanese and English. I have paid particular attention to one K(akari-joshi) particle, "mo", in Japanese. Three important properties with regard to focus have been examined. First, the domain of focus may be wider than an actually stressed portion. Secondly, when a scope-bearing element such as "mo" and "sae" receives a phonological stress, the domain expansion is not available. Thirdly, focus domain does not shift. To explain these properties of focus, I have argued that an invisible domain indicator (DI) is base-generated where the domain of focus is determined.

Thus, the domain is not actually expanding. Rather the domain of focus is fixed from the beginning. I have also argued that the availability of domain expansion can be explained with the use of Chomsky's (2000, 2001) phases. This paper makes it possible to explain some of the focus phenomena in Japanese and English in a simple way.

Notes

i Apart from this phenomenon, Kuroda (1970) also shows that a K-particle can be associated with any constituent which it c-commands as follows:

(a) (from Aoyagi (1998 : 145))

Mary-wa [$_{VP}$ [$_{DP}$ pan-o] [$_{v}$ yaki]]-**mo** sita.
-Top bread-Acc bake-also do-Past
'Mary also baked bread.'

(i). In addition to doing something else (e.g. waxing the kitchen floor), Mary baked bread. (VP focused)

(ii). In addition to baking something else(e.g. an apple pie), Mary baked bread. (DP focused)

(iii). In addition to doing something else with the bread (e.g. eating it), Mary baked it. (V focused)

In the sentence above, "mo" is attached to the (noun-) verb, "yaki", and it can take as its focus associate the whole VP as in (i), the object DP as in (ii) or the verb alone as in (iii). Hence, (a) is at least three-way ambiguous. However, I will not discuss this phenomenon in this paper.

ii In fact, there is another phonological pattern available in this context as follows:

(i) [$_{vP}$ John-ga [$_{VP}$ piano-o [$_{v}$ HIKI-mo]]]sita
-Nom -Acc play-mo do.Past
'(Lit.) John played also the piano.'

The verb, "hiki"('play'), receives a phonological stress in (i). (i) is also ambiguous in three ways: V focus, VP focus or vP focus reading. (i) can be regarded as a case when "mo" is directly attached to V, not VP or vP. If this analysis is correct, then the fact that (i) is ambiguous follows from the domain expansion.

iii DP contrast readings can be appropriately uttered when certain entities are

compared. The following example illustrates this phenomenon:

(i) (At yesterday's party, John played the flute.) He (=John) played also the PIANO.

In this example, since the instruments, which are entities, are contrasted, a DP reading is the most natural interpretation.

iv A similar phenomenon is attested in English. Larson (1985) notes that when "either" is base-generated next to a disjunction phrase, scope expansion is possible, but when "either" is dislocated from a disjunction phrase, the scope is fixed and scope expansion is unavailable. Compare the following two examples:

(i) (from Larson (1985 : 220))

a. Mary is looking for either a maid or a cook.

b. Either Mary is looking for a maid or a cook.

Here I ignore a de re reading. Interestingly, (i) a is ambiguous whereas (i) b is not. (i) a has two (de dicto) interpretations: narrow scope and wide scope. According to the narrow scope reading, "Mary is searching for a servant and would be satisfied with any individual x meeting the description 'x is a maid or x is a cook' (Larson (1985 : 218))." On the other hand, 'or' in the wide scope reading is interpreted as a sentence-level connective. Thus, the reading expresses something like 'Mary is looking for a maid or Mary is looking for a cook' and this interpretation can be continued with the following sentence, "... but I don't know which." This ambiguity naturally follows. If the scope for 'or' is under the scope of 'look for', the intensional reading (or the narrow scope reading) is provided. If the scope for 'or' is over the proposition, the wide scope reading is generated. However, (i) b allows only the wide scope reading. The fact that (i) a allows both readings suggests that scope expansion is possible when "either" is adjacent to disjunction phrases. Furthermore, the fact that (i) b allows only the wide scope reading suggests that its scope is fixed when "either" is dislocated from a disjunction phrase. Although it is not clear whether the disjunction phrase in English can be subsumed under the focus phenomena, the same fact as Japanese focus phenomena obtains in the disjunction of English.

v In fact, according to Rooth (1985, 1996), 'Mary' is also included in the set of alternatives. However, this change does not affect the present paper. I would like to thank Chris Tancredi (p.c.) for pointing this difference out to me. Moreover, it is possible that 'John' and 'Bill' are in the set, which may result in self-introduction. However, as argued above, the set is sensitive to context, so

for the sake of exposition, 'John' and 'Bill' along with 'Mary' are excluded from the set.

vi What is quoted here is slightly different from the original. This change is made in order for the notations throughout this paper to be consistent. But this change does not affect the present discussion or alter Aoyagi's (1998) essential claims.

vii "Sae" is employed here instead of "mo". But even if we replace "sae" with "mo", the same observation is made, that is, domain expansion is unavailable.

viii Having said this, it is still necessary to explain why "mo" there cannot be interpreted as 'also'. I leave this for future research.

ix If this proposal is correct, the term "domain expansion" is no longer appropriate because domain scope is fixed from the beginning due to DIs. Nevertheless, for the sake of exposition, I continue to use the term when the positions of DIs and the surface positions of "mo" are different.

x The same explanation can be applied to the disjunction phrase in English, which is mentioned in footnote 4. Here I will only provide two necessary conditions to account for the relevant data, but I omit the discussion here:

(i) When "either" is not included in the same numeration as a DI (domain indicator), it is adjoined to a disjunction phrase.

(ii) When "either" is included in the same numeration as a DI, it is directly adjoined to the DI.

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The domain expansion mechanism of focus in Japanese and English

日英語における、フォーカスドメインの拡張メカニズム

森田久司

この論文では、実際に音韻的に強調された語が、意味的にどのような影響をあらわし、その影響が統語的にどのように派生されるか、すなわち、日本語と英語、特に日本語のフォーカス現象を考察する。日本語のデータは主に、強調される句に結びつく、係助詞の「も」について取り扱う。日本語のフォーカスにおいて三つの現象が見られる。一つ目は、音韻的に強調された語よりも広範囲の強調の意味を取ることができる。二つ目は、強調を促す、「も」や「さえ」といった係助詞自体が強く発音されると、音韻的に強調された語よりも広範囲の強調の意味を取ることができなくなる。三つ目は、強調の意味が広がることはあっても、となりの語句にずれることはない。英語に関しても、一つ目と三つ目の現象に関して、同様なことが観察されている。これらの現象を説明するために、DIと呼ばれる目に見えない範疇が、意味の強調範囲をマークする場所に基底派生され、音韻的に強調された語と組成チェックを行うと主張する。したがって、音韻的に強調された語よりも広範囲の強調の意味を取れるといった現象は、フォーカス素性が素性浸透といった、実際に存在するのかどうか疑わしいメカニズムを経て、強調の範囲を拡大したためではなく、最初から、その範囲がDIにより決定されていることがわかる。さらには、強調の意味が隣の語句にずれない現象も、DIが音韻的に強調された語と組成チェックにできる位置に基底派生されなければいけないことから説明できる。以上のように、DIの存在を仮定することにより、日本語と英語のフォーカスの現象をシンプルに説明できる。